

# 2018 Annual Report

## Hidden Valley Landfill Puyallup, Washington

Pierce County Recycling, Composting  
& Disposal, LLC dba LRI  
17925 Meridian Street East  
Puyallup, Washington 98375



**SCS ENGINEERS**

04219002.03 | March 29, 2019

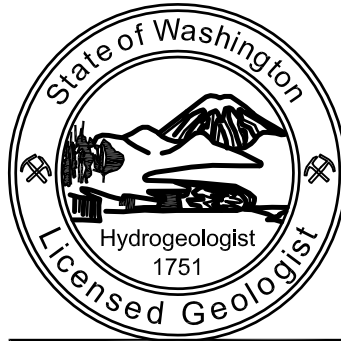
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This 2018 Annual Report for the Hidden Valley Landfill located in Puyallup, Washington, was prepared by Sam Graber and Kevin Lakey, LHG, and was reviewed by Daniel Venchiarutti, LHG, of SCS Engineers.



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## **1.0 INTRODUCTION**

This document represents the 2018 Annual Monitoring Report for the Hidden Valley Landfill (HVL) prepared on behalf of Pierce County Recycling, Composting and Disposal LLC, dba LRI (LRI). The facility is a closed municipal solid waste landfill that stopped accepting waste on December 31, 1998. The Hidden Valley Landfill is located at 17925 Meridian Street East, Puyallup, Washington (Figure 1). Post-closure activities are performed consistent with Consent Decree No. 032146876 between the Washington Department of Ecology (Ecology), Pierce County (County) and LRI. Ecology is the lead agency for post-closure activities. In addition, the Tacoma-Pierce County Health Department (TPCHD) is kept informed of post-closure activities and provided with the opportunity to review and comment upon proposed remedial action plans.

## **1.1 FACILITY CONTACT INFORMATION**

Hidden Valley Landfill  
17925 Meridian East  
Puyallup, Washington 98375  
Facility Contact: George Duvendack (253) 847-7555

## **1.2 FACILITY DESCRIPTION**

The landfill property is approximately 92 acres in size and is located in the north half of the northwest quarter of Section 34, Township 19N, Range 4E. The landfill includes approximately 56 acres of unlined fill and a 30-acre lined cell. Also present at the site are an office, maintenance shop, leachate pre-treatment facility, transfer station, and recycling center.

Hidden Valley Landfill began operations in the mid-1960s and accepted waste until December 31, 1998. Waste disposed of at the landfill included municipal solid waste, demolition wastes, commercial waste, industrial wastes, and small quantities of bulk liquids and sludge.

## **1.3 PROJECT HISTORY**

The U.S. Environmental Protection Agency (EPA) conducted an environmental assessment of the Hidden Valley Landfill between 1981 and 1985 and prepared a Preliminary Assessment (PA) and a Hazard Ranking System (HRS) score for the site. As a result of the HRS, the Hidden Valley Landfill was placed on the National Priority List (NPL) in April 1989.

A Remedial Investigation (RI) was conducted under Ecology Consent Order DE 86 S173. The final RI report was submitted to Ecology in March 1992. The RI found groundwater impacts downgradient of the landfill. Groundwater contaminants have included dissolved iron and manganese, chloride, ammonia, nitrate, sulfate, specific conductance, total dissolved solids, and low levels of volatile organic compounds (VOCs) including benzene, chlorobenzene, tetrachloroethene, 1,1-dichloroethane, and 1,4-dichlorobenzene.

In January 2004, Consent Decree No. 032146876 was finalized and signed. The Consent Decree and associated Cleanup Action Plan address long-term maintenance and monitoring activities at the landfill and establish groundwater cleanup levels.

In April 2014, the Consent Decree was amended (First Amendment) to revise the groundwater monitoring plan. In August 2014, the Groundwater Monitoring Plan (GWMP) was modified to include Appendix I WAC 173-351 metals testing. This requirement included eight rounds of total and

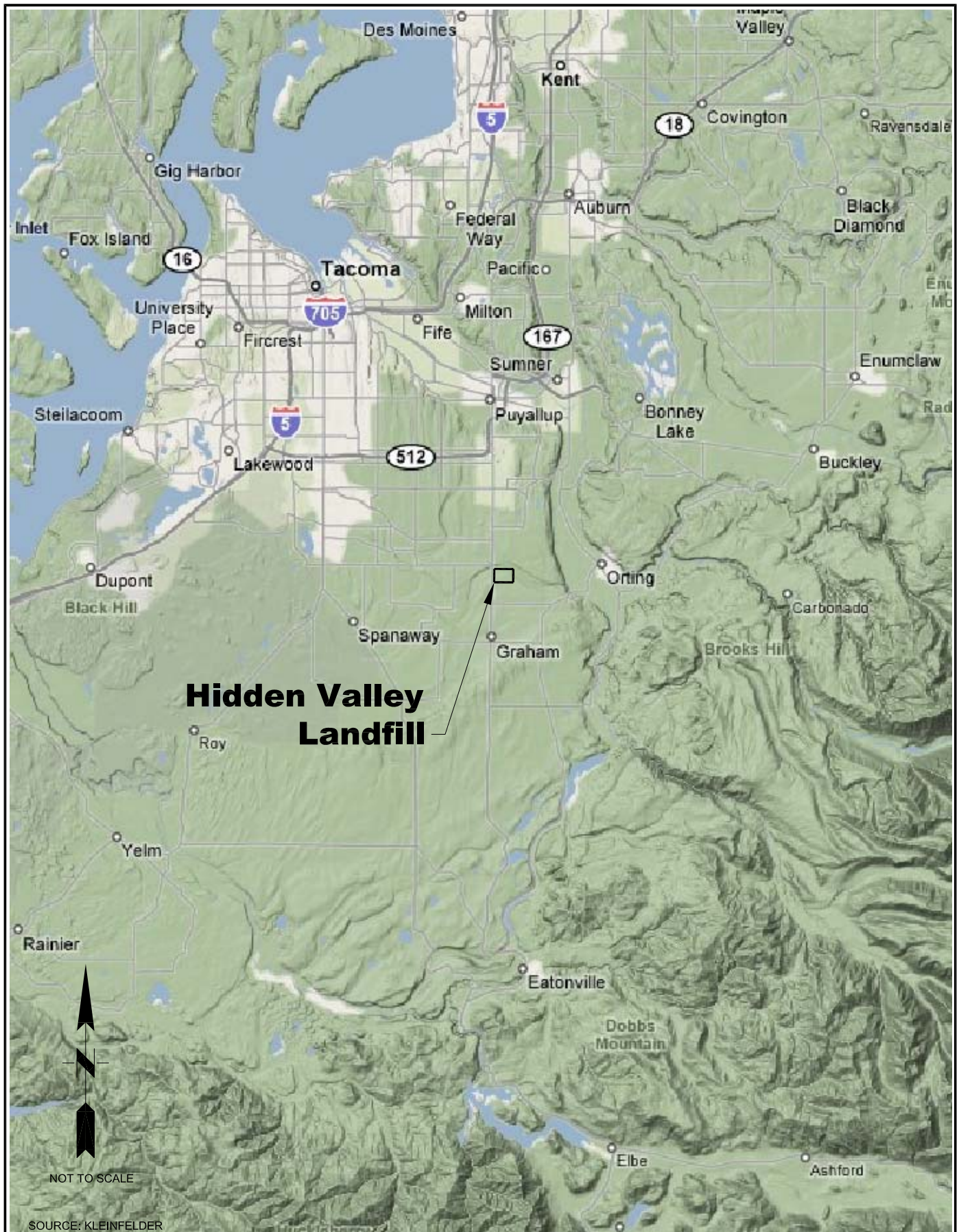
dissolved metals testing for 15 metals from 23 monitoring wells. Total metals testing began in July 2014 and was completed in April 2016. Following completion of the required monitoring, a Groundwater Monitoring Optimization Report was submitted to Ecology and the TPCHD in December 2016.

Consistent with the Groundwater Monitoring Optimization Report and approval received from Ecology, the groundwater monitoring frequency was changed from quarterly to semi-annual in 2017. The GWMP was revised in October of 2018 to reflect updates to the groundwater monitoring network, groundwater monitoring on a semi-annual schedule, and Appendix I metals testing on a five year schedule beginning in 2021. The October 18, 2018 GWMP is the current, approved, plan for HVL.

## **1.4 2018 MONITORING ACTIVITIES**

Groundwater monitoring was performed in January (first semi-annual monitoring event) and August (second semi-annual monitoring event) during 2018. Leachate monitoring was conducted in January. The side slope-leak detection system was sampled in March. Landfill gas monitoring was performed monthly.

Monitoring results for the first semi-annual monitoring event of 2018 were previously submitted to the TPCHD and Ecology in a report dated October 18, 2018. Groundwater laboratory reports for the second semi-annual monitoring event of 2018 and an updated groundwater database were provided to the TPCHD in a separate submittal. Groundwater data from 2018 were uploaded into Ecology's Environmental Information Management (EIM) system database.



SOURCE: KLEINFELDER

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PROJECT NO. 04219002.03	DES BY LEL
SCALE NOT TO SCALE	CHK BY S.G.
CAD FILE FIGURE 1	APP BY KGL

DES BY LEL
CHK BY S.G.
APP BY KGL

SITE LOCATION MAP  
 HIDDEN VALLEY LANDFILL  
 PIERCE COUNTY, WASHINGTON

DATE  
MARCH 2019

FIGURE  
**1**





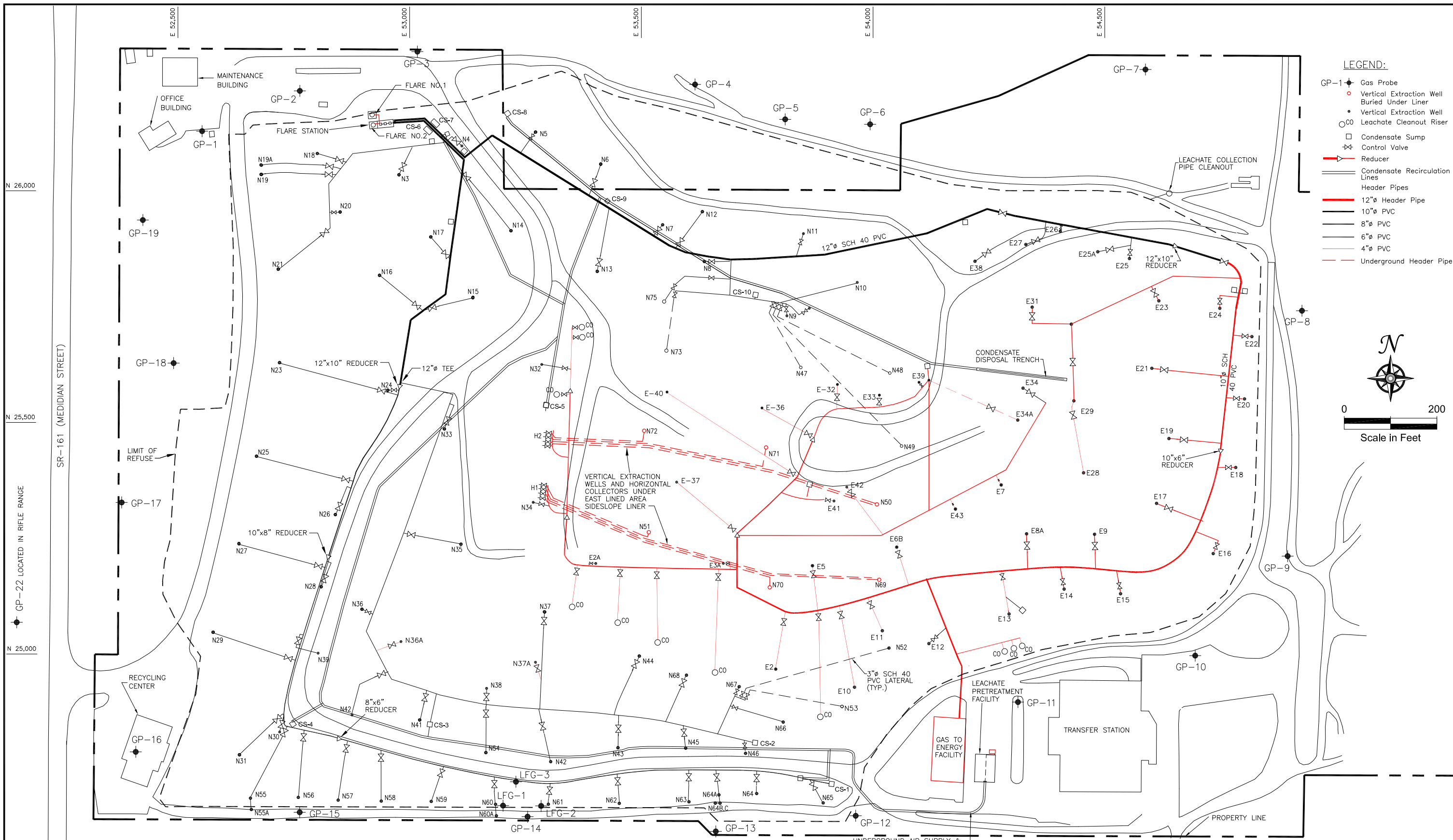
## 2.0 LANDFILL GAS MONITORING

Landfill gas probes were monitored monthly during 2018. Gas probe locations are shown on Figure 2. Parameters measured at the gas probes included carbon dioxide, oxygen, and combustible gas (measured as methane). Soil gas probe readings were less than five percent methane by volume in all probes each month in 2018, except for GP-13A during the March (6.1%), April (9.5%), and May (9.6%). After obtaining a reading greater than five percent methane by volume, the vacuum on the adjacent well field was adjusted to recapture the landfill gas. Monthly gas probe monitoring results are included in Appendix A.

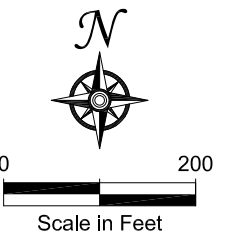
On-site buildings were monitored for the presence of combustible gas (measured as methane) on March 21, May 22, August 30, and November 28, 2018 using a flame ionization detector (FID). The main office, maintenance building, scale house/pay booth, leachate treatment buildings No. 1 and No. 2, recycling building, and transfer station were monitored. On March 21, a maximum methane concentration of 60 ppm was detected in the bathroom at the inbound scale house. However, a strong odor of cleaning supplies was noted near the area of detection. After the bathroom door was opened, the area was re-monitored and the methane concentration lowered to levels consistent with the rest of the building. Therefore, the initial detection was determined to be a result of nearby cleaning solutions. On May 22, a maximum methane concentration of 27 ppm was detected inside the inbound scale house. This detection was determined to be due to the presence of scented oil diffusers and cleaning supplies located inside the building. Low-level methane detections were recorded in August (7.2 ppm) and November (3.2 ppm) at the inbound scale house. These detections were also attributed to the presence of the scented oil diffusers and cleaning supplies. No other methane detections were reported within the buildings in 2018. Copies of the building survey reports are included in Appendix A.

A portion of the gas extraction system on the south slope of the landfill was shut off in September 2009 in response to a suspected area of subsurface oxidation (affected gas wells include N42, N43, N60, N61, N62, and N54). Although the suspected subsurface oxidation event has ceased and the affected landfill cover was repaired in 2014, this section of the gas extraction system will remain off-line until in-situ methane levels measured in interior waste probes LFG-1, -2, and -3, increase and stabilize.





- LEGEND:**
- GP-1 ◆ Gas Probe
  - Vertical Extraction Well Buried Under Liner
  - Vertical Extraction Well
  - Leachate Cleanout Riser
  - Condensate Sump
  - ⊗ Control Valve
  - Reducer
  - Condensate Recirculation Lines
  - Header Pipes
  - 12" Header Pipe
  - 10" PVC
  - 8" PVC
  - 6" PVC
  - 4" PVC
  - Underground Header Pipe



NOTE: GAS PIPING SHOWN IN RED IS ROUTED TO THE GAS ENERGY FACILITY

PROJECT NO.	04219002.03	DES BY	KGL
SCALE	AS SHOWN	CHK BY	S.G.
CAD FILE	FIGURE 2	APP BY	KGL

**GAS SYSTEM**  
**HIDDEN VALLEY LANDFILL**  
**PIERCE COUNTY, WASHINGTON**

DATE	MARCH 2019
FIGURE	2

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## 3.0 LEAK DETECTION MONITORING

### 3.1 LEAK DETECTION SYSTEM

The East Lined Area at the Hidden Valley Landfill includes a leak detection system between the primary geosynthetic liner and the secondary composite liner in the portion of the cell that was constructed over refuse (side slope liner area). Pursuant to Section II C of the Stipulation and Agreed Order of Dismissal (Order), LRI was required to implement the March 1994 Leak Detection Response Action Plan (RAP) once refuse was placed onto the side slope liner. The RAP provides a mechanism for evaluating the performance of the side slope liner. Major components of the plan include routine monitoring of leachate quantities and fluid in the leak detection system, data analysis, record keeping, delineation of acceptable liner performance levels, response actions, and an outline of how groundwater impacts would be evaluated in the event that excessive leakage is observed in the leak detection system.

### 3.2 LINER PERFORMANCE STANDARD

The RAP defines an acceptable performance standard of 300 gallons per acre per day for the primary side-slope liner in the Cell 2 East Lined Area. The side slope liner covers approximately 13.5 acres of refuse, and therefore, the corresponding liner performance standard is 4,050 gallons per day.

### 3.3 SUMMARY OF PERFORMANCE DATA

Leachate volumes pumped from the main sump (Cell 1) and side-slope liner sump (Cell 2), as well as volumes pumped from the side-slope leak detection system and rainfall totals from an on-site rain gauge, are recorded on a daily basis by on-site personnel. A summary of monthly leachate volume data is provided in Table 1, and copies of the monthly reports are included in Appendix B. The volume of fluid pumped from the side-slope liner leak detection system in 2018 remained well below the performance standard of 4,050 gallons per day defined in the RAP.

Table 1. 2018 Leachate and Side Slope Liner Data

Month	Cell 1 Monthly Leachate Volume (gallons)	Cell 2 Monthly Leachate Volume (gallons)	Cell 2 Monthly Leakage Volume (gallons)	Monthly Rainfall (inches)
January	28,676	4,628	0	11.3
February	14,327	0	1,764	4.4
March	222	0	666	3.0
April	0	0	0	7.0
May	36,902	8,515	1,256	2.6
June	11,471	772	0	1.2
July	0	10	0	0.6
August	0	0	0	0.2
September	0	0	0	2.65
October	2,508	78	0	6.95
November	0	0	0	7.3
December	31,351	0	0	13.6
<b>Totals</b>	<b>125,457</b>	<b>14,003</b>	<b>3,686</b>	<b>60.8</b>

### **3.4 SUMMARY OF LEAK DETECTION MONITORING DATA**

A sample of fluids that accumulate in the side-slope liner leak detection system was collected on March 22, 2018. The test results for this sample were similar to previous results and to the January 2018 test results from the side-slope leachate sump (see Appendix D, Table 10 Semi-Annual Monitoring Event No. 1).

### **3.5 HYDRAULIC GRADIENT CONTROL SYSTEM MONITORING**

In addition to the leak detection system, a hydraulic gradient control system is present beneath the main leachate collection sump for the East Lined Area. This system is routinely checked for the presence of liquid. If liquids are removed, the volume pumped is recorded and arrangements are made to collect an annual representative sample to be tested for leachate constituents.

A sample was collected from the hydraulic gradient control system on January 11, 2018. The results from this sample do not exhibit elevated levels of leachate indicator parameters such as ammonia, chloride, nitrate, or total dissolved solids.

## 4.0 GROUNDWATER LEVELS AND FLOW DIRECTIONS

### 4.1 LOCAL HYDROGEOLOGY

Hidden Valley Landfill is located within a Vashon age glacial melt-water channel that trends in an east-west direction and is approximately 50 to 100 feet deep and several hundred feet wide. The northern boundary of the channel lies just north of the landfill. The landfill is underlain by glacial outwash deposits consisting of coarse sand and gravel to a depth of about 55 feet below grade. North of the landfill (and the outwash channel), the outwash deposits are overlain by Vashon till (upper till unit). The outwash deposits are underlain by successive layers of Vashon till (lower till unit), Vashon advance outwash, Salmon Springs till and interglacial deposits, and Salmon Springs advance outwash.

Three aquifers underlie the Hidden Valley Landfill. The aquifers are referred to as the shallow perched aquifer, the upper regional aquifer, and the lower regional aquifer. An intermittent aquitard, referred to as the Vashon till aquitard, is present between the shallow perched aquifer and the upper regional aquifer. A thick section of low permeability deposits referred to as the Salmon Springs aquitard separates the upper regional aquifer and the lower regional aquifer.

The shallow perched aquifer is an unconfined (water table) aquifer that occurs within the Vashon recessional outwash deposit. The shallow perched aquifer represents the uppermost-saturated unit at the site. Depth to groundwater at the landfill ranges from approximately 11 to 15 feet below ground surface (bgs) in winter and spring months to about 25 feet bgs in late fall. Groundwater flow in the shallow perched aquifer beneath the site is towards the northwest with local components to the north and west. The downgradient extent of the shallow perched aquifer appears to be limited. Northwest of the landfill, the recessional outwash is either not saturated, or saturated to only a few feet. In areas where the recessional outwash is unsaturated, the uppermost zone of groundwater saturation occurs within the lower Vashon till unit.

The upper regional aquifer is present within Vashon advance outwash deposits. This aquifer is confined beneath the Vashon till aquitard and appears to be of regional extent. Groundwater flow, water level gradients, and seasonal water level fluctuations in the upper regional aquifer are similar to the shallow perched aquifer.

The lower regional aquifer is present within the Salmon Springs advance outwash deposits. The aquifer is confined and is interpreted to be of regional extent. Monitoring wells BC-4D, MW-14R, and MW-20R are completed at similar depth elevations and display similar water levels. Monitoring well MW-26R is completed approximately 80 feet higher in elevation and may be installed within a water-bearing zone in the Salmon Springs aquitard.

Detailed descriptions of the hydrogeologic units, as well as geologic cross-sections and boring logs/monitoring well details are included in the *Hidden Valley Landfill Remedial Investigation Report* (EMCON, 1991) and *Hidden Valley Landfill Hydrogeologic Report Addendum* (EMCON, 1998).

## 4.2 WATER LEVEL MEASUREMENTS

Static water levels were measured on January 12 and August 29, 2018. The water level database and water level contour maps are presented in Appendix C.

Groundwater flow within both the shallow perched aquifer and the upper regional aquifer was generally toward the northwest during all the 2018 monitoring events. Horizontal hydraulic gradients for both the shallow perched aquifer and the upper regional aquifer were less than 0.005 ft/ft in the central part of the site and approximately 0.025 ft/ft northwest of the landfill. This flow pattern remains consistent with previous data reported for the site. Water level gradients were similar to past measurements, indicating that the previously reported flow rates of 3.2 ft/day to 6.5 ft/day for the shallow perched aquifer and 0.5 to 1.3 ft/day for the upper regional aquifer have not changed significantly. Water level data for wells MW-14R, MW-20R, and BC-4D indicate that the groundwater flow direction in the lower regional aquifer is towards the northeast.

Background monitoring well MW-10S has a blockage approximately 5 feet down in the well. The blockage appears to be due to a compression fitting that was used to repair the pump tubing. The fitting prevents advancement of the water level probe beyond that point. An attempt to remove the pump and tubing was made during the Second Quarter 2013 sampling event; however, this attempt was unsuccessful and the pump appears to be wedged at depth. Rather than risk pulling the tubing loose from the pump, or possibly damaging the well screen, the pump will remain in place until it needs to be repaired or replaced. Until that time, there is adequate water level elevation data to determine groundwater flow directions and gradients without a measurement from MW-10S.

## 5.0 GROUNDWATER QUALITY

During 2018, groundwater samples were collected on a semi-annual basis from twenty-one monitoring wells; including eleven wells completed within the shallow perched aquifer, seven wells completed within the upper regional aquifer, and three wells completed within the lower regional aquifer. Groundwater sampling locations are shown on Figure 3.

Copies of groundwater quality summary data tables for each semi-annual monitoring event are provided in Appendix D. The summary tables include field parameters, laboratory parameters, and quality control samples. Time series plots for selected water quality parameters are included in Appendix E. Trilinear diagrams for each aquifer and leachate data are included in Appendix F. Statistical calculations performed on groundwater data are presented in Appendix G. The groundwater database was provided to the TPCHD as a Microsoft Access file in electronic format (on compact disk). In addition, groundwater data generated from the Hidden Valley Landfill during 2018 were validated and input into Ecology's EIM database system.

### 5.1 WATER SUPPLY WELL DATA

Water quality samples were collected from water supply wells at Corliss Resources, Inc. (Corliss) located immediately south of the landfill, and at the Paul Bunyan Rifle and Sportsman's Club (Paul Bunyan) located west of the landfill across Meridian East (see Figure 4) in January and August of 2018. Water quality results for the two water supply wells in 2018 were generally typical of previous results. No VOCs were detected in the samples collected during 2018 with the exception of a low-level detection of acetone (11 µg/L) at the Corliss water supply well in January. Acetone is a common laboratory contaminant and was also detected in the associated trip blank (12 µg/L), indicating this VOC detection likely represents laboratory contamination. Low concentrations of total metals and inorganic parameters, including chloride, ammonia, and nitrate, indicate the water quality at the Corliss and Paul Bunyan water supply wells is not affected by the Hidden Valley Landfill. A summary of the laboratory test results for the water supply wells is provided in Table 2.

### 5.2 BACKGROUND WATER QUALITY

Background water quality at the Hidden Valley Landfill is monitored using wells MW-10S (shallow perched aquifer) and MW-10D (upper regional aquifer). These wells have provided background water quality information since 1985.

In 2018, concentrations of inorganic parameters in samples from the background wells remained low and consistent with previous results. No detections of dissolved iron or manganese were reported above the laboratory method reporting limit in 2018.

### 5.3 DOWNGRAIDENT WATER QUALITY

Phased closure of the unlined portion of the landfill, which began in 1989 and was completed in 1993, included capping the waste with a low permeability composite cover and installing a landfill gas collection and control system (GCCS). These closure activities were designed to minimize the infiltration of precipitation through the refuse and remove landfill gas. These actions have improved the groundwater quality in the shallow perched aquifer and the upper regional aquifer.

Time series plots for specific conductance, ammonia, nitrate, dissolved iron, and dissolved manganese were prepared for wells in the shallow perched and upper regional aquifers that are located close to and downgradient of the landfill (MW-11S, MW-11D(2), MW-13S, MW-13D, MW-14S, MW-14D, and MW-17S, see Appendix E). These plots graphically display consistent trends of

decreasing concentrations of these parameters in monitoring wells located downgradient of the landfill.

A cation-anion balance was prepared based in milliequivalents per liter (meq/L) for each water sample to determine whether it was electro-neutral (balanced cation and anion charges). A threshold of ten percent difference was used if the total sum of cations and anions were less than or equal to 5.0 meq/L, and a threshold of five percent difference was used if the total cation-anion sums was greater than 5.0 meq/L. Calculated cation-anion balances were found to exceed these thresholds during at least one monitoring event at MW-12S, MW-13D, MW-13S, MW-17S, MW-18S, and FMMW-2 (see Appendix D).

Trilinear (Piper) diagrams were prepared for groundwater sample results from each of the three water bearing zones at the landfill; the shallow perched aquifer, upper regional aquifer, and lower regional aquifer (see Appendix F). As shown on the attached trilinear diagrams, the groundwater sample results from all three aquifers plot within a consistent area of the graph, while the leachate results (sampled annually in January) plot in a second, chemically distinct area.

The Hidden Valley Landfill Consent Decree established site groundwater cleanup levels and the groundwater point of compliance. Table 3 provides a summary of the site-specific groundwater cleanup levels and identifies the monitoring events in 2018 when water quality results were greater than the site-specific cleanup levels.

Shallow perched aquifer water quality results exceeded the cleanup level for nitrate during the first semi-annual monitoring event at monitoring well MW-12S and MW-17S, the cleanup level for dissolved iron during the second semi-annual monitoring event at MW-29S, and the cleanup level for dissolved manganese during both semi-annual monitoring events at MW-12S, MW-14S, MW-15S, MW-17S, and MW-29S. Upper regional aquifer water quality results exceeded the cleanup level for dissolved manganese during the first semi-annual monitoring event at MW-15D, and the cleanup level for dissolved iron and manganese during both semi-annual monitoring events at MW-14D. Lower regional aquifer water quality results exceeded the cleanup level for dissolved iron during both semi-annual monitoring events at MW-26R, and the cleanup level for dissolved manganese during both semi-annual monitoring events at MW-14R and MW-26R.

Results for the lower regional aquifer are interpreted to represent background water quality. As discussed in previous reports, the presence of dissolved iron and manganese in the lower regional aquifer does not appear to be related to the Hidden Valley Landfill. This interpretation is based on an overall assessment of the groundwater quality data, which include low concentrations of inorganic parameters and a general absence of VOCs. However, low-level detections of acetone were reported in samples from MW-14R and MW-26R during the second semi-annual monitoring event in 2018. See below for more information regarding these detections.

The following VOC's were reported present in groundwater samples collected at the Hidden Valley Landfill in 2018:

- Tetrachloroethene (PCE) was reported present in samples from MW-11D(2) during both semi-annual monitoring events at a concentration range of 0.80 to 0.86 µg/L. These detections are consistent with recent monitoring results and the result from August (0.86 µg/L) is slightly greater than the WAC 173-200 groundwater quality criteria of 0.80 µg/L, but lower than the primary drinking water standard of 5.0 µg/L.
- Chloromethane was reported present in samples from MW-14S (0.53 µg/L) and MW-13D (0.52 µg/L) during the first semi-annual monitoring event. However, chloromethane was also

detected in the associated field blank (0.62 µg/L) for that event. Therefore, the chloromethane detections likely represent laboratory contamination.

- Acetone was reported present in samples from MW-18S (12 µg/L), MW-14R (18 µg/L), and MW-26R (27 µg/L) during the second semi-annual monitoring event. As mentioned in the Water Supply Wells Data section of this report, acetone is a common laboratory contaminant and these detections are suspected to be a result of laboratory contamination.

## 5.4 STATISTICAL ANALYSIS

Groundwater quality data for the five-year period of January 2014 through July 2018 were statistically evaluated and compared to site-specific cleanup levels for all monitoring wells in the groundwater-monitoring network. A compound-specific evaluation was used to determine the data distribution type for each compound as normal, lognormal, or non-parametric. The Consent Decree established a cleanup level for 1,4-dichlorobenzene at 1.82 micrograms per liter (µg/L). Only one detection of 1,4-dichlorobenzene has been reported in samples collected over the last five years; 0.73 µg/L at well MW-12S in April 2016. No other VOCs have Consent Decree defined cleanup levels for the Hidden Valley Landfill. However, the distribution of data was also determined for tetrachloroethene at well MW-11D(2) for tracking purposes. Chlorobenzene was evaluated in previous reports, but since no detections of chlorobenzene were reported over the past five years, a statistical evaluation for this compound was discontinued.

If the data distribution was either normal or lognormal, the upper 95 percent confidence limits of the mean (UCL 95) were calculated for each data set using MTCASat, version 3.0 obtained from Ecology. The MTCASat program was used to evaluate data distributions (i.e., normal, lognormal, or neither) for constituents that were detected in at least 50 percent of the sampling events. One-half the MRL was used when a parameter was not detected at a concentration above the MRL.

If the distribution was neither normal nor lognormal, the UCL 95 was determined using the method of Van der Parren (1970) as described in the Statistical Guidance for Ecology Site Managers (Ecology 1992). For the data evaluated, this procedure defaults to the highest reported value. In addition, the highest reported value was used if either lognormal or normal distributions had the UCL 95 value outside of the data sample range. The UCL 95 was not calculated (NC) when any of the evaluated parameters were either not detected for 50 percent of the sampling events, or had less than five data entries.

Table 4 provides a summary of UCL 95 values. Shallow perched aquifer UCL 95 values that exceed site-specific cleanup levels include nitrate (MW-11S, MW-12S, MW-13S, MW-17S, MW-18S, and FMMW-2) and dissolved manganese (MW-12S, MW-13S, MW-14S, MW-15S, MW-17S, and FMMW-2). Upper regional aquifer UCL 95 values that exceed site-specific cleanup levels include dissolved iron (MW-14D) and dissolved manganese (MW-14D and MW-15D). Lower regional aquifer UCL 95 values that exceed site-specific cleanup levels include dissolved iron (MW-26R) and dissolved manganese (MW-14R and MW-26R). Statistical calculations are provided in Appendix G. These statistical results are consistent with previous analyses.



Table 2. 2018 Water Supply Well Data Summary

Parameter	MRL	Corliss		Paul Bunyon	
		January-11	August-29	January-11	August-29
<b>Volatile Organics (µg/L)</b>					
Acetone	10	11.0 B	*	*	*
<b>Total Metals (mg/L)</b>					
Arsenic	0.005	*	*	*	*
Iron	0.18	*	*	*	*
Manganese	0.001	0.0013	*	0.0064	*
Zinc	0.01	0.021	*	0.014	*
<b>Inorganic Parameters (mg/L)</b>					
Chloride	0.2	5.2	5.6	6.1	6.4
Ammonia as Nitrogen	0.1	*	*	*	*
Nitrate as Nitrogen	0.2	1.7 H	1.4	2.5 H	2.3
Nitrite as Nitrogen	0.5	* H	*	* H	*
Sulfate	0.2	9.2	11	9.9	11
Chemical Oxygen Demand	5	*	*	*	*
Total Organic Carbon	1	*	*	*	*
Color	5	* H	5	* H	5
<b>Field Parameters</b>					
pH	—	6.61	7.07	7.05	6.43
Conductance (µS)	—	225	241	296	301
Temperature (°C)	—	10.20	16.25	9.80	14.13

H = Sample was prepared or analyzed beyond specified holding time

B = Analyte was detected in an associated trip blank

\* = Not reported at or above the Method Reporting Limit



Table 3. 2018 Groundwater Quality Data versus Site-Specific Cleanup Levels  
Shallow Perched Aquifer

Parameter	Cleanup Level	MW-10S (BG)	MW-11S	MW-12S	MW-13S	MW-14S	MW-15S	MW-17S	MW-18S	MW-29S	FMMW-1	FMMW-2
<b>Inorganic (mg/L)</b>												
Chloride	250	—	—	—	—	—	—	—	—	—	—	—
Nitrate as Nitrogen	10.0	—	—	<b>SA 1</b>	—	—	—	<b>SA 1</b>	—	—	—	—
Sulfate	250	—	—	—	—	—	—	—	—	—	—	—
Specific Conductance	700	—	—	—	—	—	—	—	—	—	—	—
TDS	500	—	—	—	—	—	—	—	—	—	—	—
<b>Metals (mg/L)</b>												
Iron	0.30	—	—	—	—	—	—	—	—	<b>SA 2</b>	—	—
Manganese	0.05	—	—	<b>SA 1,2</b>	—	<b>SA 1,2</b>	<b>SA 1,2</b>	<b>SA 1,2</b>	—	<b>SA 1,2</b>	—	—
<b>Volatile Organics (µg/L)</b>												
1,4-Dichlorobenzene	1.8	—	—	—	—	—	—	—	—	—	—	—
<b>Notes:</b> — indicates results were less than cleanup level SA indicates results were greater than cleanup level 1 & 2 indicate the semi-annual monitoring event in which results were greater than the cleanup level												

Table 3. 2018 Groundwater Quality Data versus Site-Specific Cleanup Levels (Continued)  
Upper Regional Aquifer and Lower Regional Aquifer

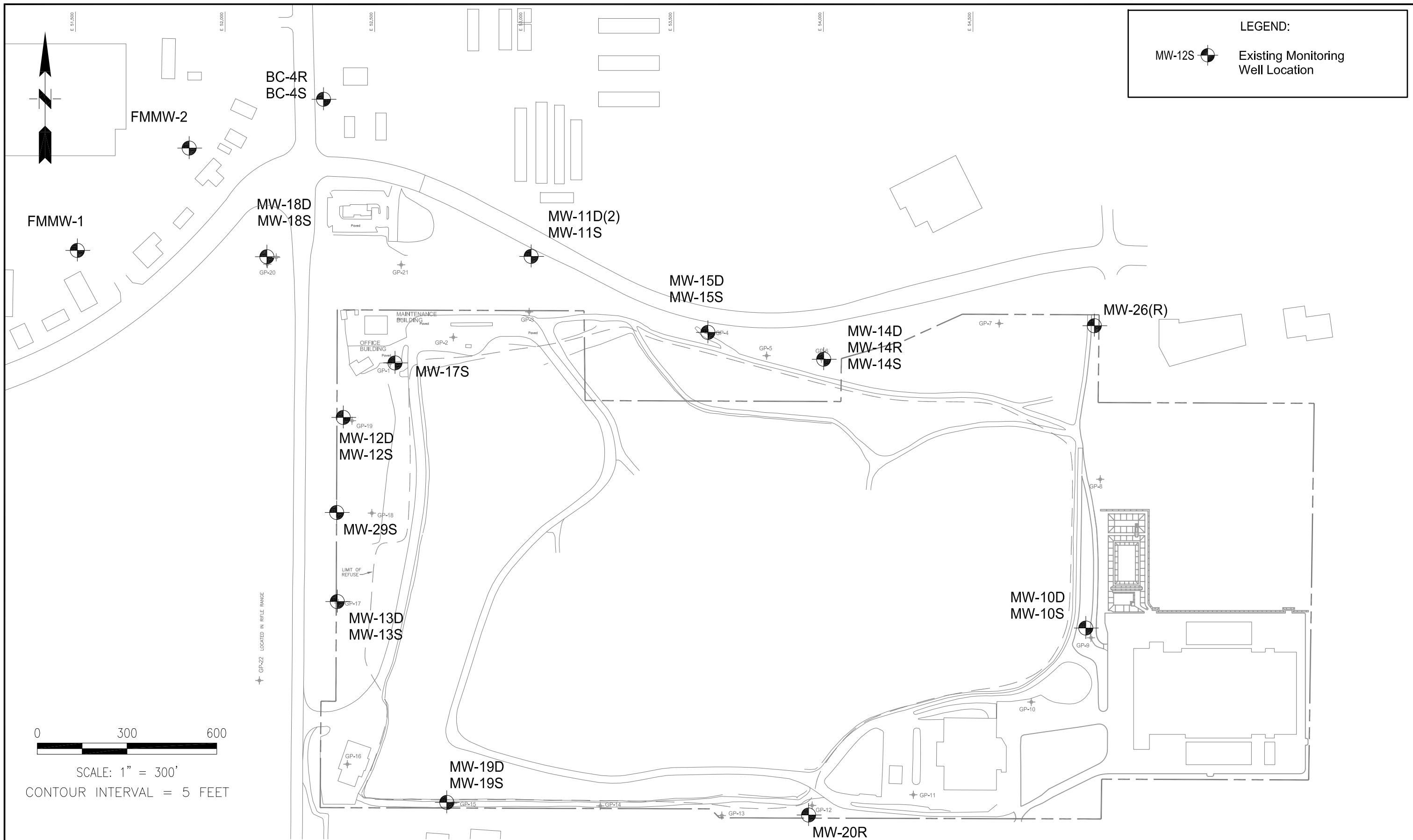
Parameter	Cleanup Level	Upper Regional Aquifer							Lower Regional Aquifer		
		MW-10D (BG)	MW-11D(2)	MW-12D	MW-13D	MW-14D	MW-15D	MW-18D	MW-14R	MW-20R	MW-26R
<b>Inorganic (mg/L)</b>											
Chloride	250	—	—	—	—	—	—	—	—	—	—
Nitrate as Nitrogen	10.0	—	—	—	—	—	—	—	—	—	—
Sulfate	250	—	—	—	—	—	—	—	—	—	—
Specific Conductance	700	—	—	—	—	—	—	—	—	—	—
TDS	500	—	—	—	—	—	—	—	—	—	—
<b>Metals (mg/L)</b>											
Iron	0.30	—	—	—	—	SA 1,2	—	—	—	—	SA 1,2
Manganese	0.05	—	—	—	—	SA 1,2	SA 1	—	SA 1,2	—	SA 1,2
<b>Volatile Organics (µg/L)</b>											
1,4-Dichlorobenzene	1.8	—	—	—	—	—	—	—	—	—	—
<b>Notes:</b>											
— indicates results were less than cleanup level											
SA indicates results were greater than cleanup level											
1 & 2 indicate the semi-annual monitoring event in which results were greater than the cleanup level											

Table 4. Summary of 5-Year Groundwater Statistics  
Shallow Perched Aquifer

Parameter	Cleanup Level	MW-10S (BG)	MW-11S	MW-12S	MW-13S	MW-14S	MW-15S	MW-17S	MW-18S	FMMW-1	FMMW-2
<b>Inorganic (mg/L)</b>											
Chloride	250	11.21	20.88	27.62	27.04	22.0*	20.0*	27.0*	25.55	23.0*	23.0*
Nitrate as Nitrogen	10.0	1.5*	<b>11.0*</b>	<b>19.0*</b>	<b>18.0*</b>	2.2*	NC	<b>23.0*</b>	<b>11.0*</b>	3.1*	<b>22.0*</b>
Sulfate	250	15.0*	17.8*	6.6*	22.0*	12.59	11.0*	10.0*	8.48	17.0*	20.0*
Specific Conductance	700	291*	293*	428*	420*	295*	297*	524.78	417.35	341*	501*
TDS	500	160*	210*	240*	250*	170*	170*	350*	260*	240*	330*
<b>Metals (mg/L)</b>											
Iron	0.30	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Manganese	0.05	NC	0.020	<b>0.990*</b>	<b>0.190</b>	<b>0.570</b>	<b>1.060</b>	<b>1.640</b>	NC	NC	<b>0.090*</b>
<b>Volatile Organics (µg/L)</b>											
1,4-Dichlorobenzene	1.8	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Tetrachloroethene	—	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
<b>Notes:</b> Values shown are the upper confidence limit on the mean (UCL 95). Evaluated data are from January 2014 through July 2018. (—) = not applicable. <b>Bold</b> indicates greater than Cleanup Level. (NC) = not calculated; less than 50 percent detection frequency. (* ) = maximum detected concentration listed because the UCL 95 calculated value was greater than the data range, or the distribution was neither normal nor lognormal.											

Table 4. Summary of 5-Year Groundwater Statistics (Continued)  
Upper Regional Aquifer and Lower Regional Aquifer

Parameter	Cleanup Level	Upper Regional Aquifer							Lower Regional Aquifer		
		MW-10D (BG)	MW-11D(2)	MW-12D	MW-13D	MW-14D	MW-15D	MW-18D	MW-14R	MW-20R	MW-26R
<b>Inorganic (mg/L)</b>											
Chloride	250	8.19	7.2*	13.0*	19.04	16.0*	12.28	9.6*	2.2*	2.0*	4.8*
Nitrate as Nitrogen	10.0	2.3*	1.9*	1.6*	6.0*	NC	1.0*	1.7*	NC	NC	NC
Sulfate	250	14.0*	9.20	7.38	19.0*	13.0*	10.0*	7.56	3.9*	3.2*	10.0*
Specific Conductance	700	243*	329*	316*	379*	265*	296*	274*	107*	105*	201*
TDS	500	160*	260*	219.39	240*	150*	380*	190*	106.24	200*	147.45
<b>Metals (mg/L)</b>											
Iron	0.30	NC	NC	NC	NC	<b>4.11</b>	NC	NC	NC	NC	<b>0.840*</b>
Manganese	0.05	NC	NC	NC	NC	<b>1.30*</b>	<b>0.300*</b>	NC	<b>0.420*</b>	NC	<b>1.00*</b>
<b>Volatile Organics (µg/L)</b>											
1,4-Dichlorobenzene	1.8	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Tetrachloroethene	—	NC	1.00*	NC	NC	NC	NC	NC	NC	NC	NC
<b>Notes:</b> Values shown are the upper confidence limit on the mean (UCL 95). Evaluated data are from January 2014 through July 2018. (—) = not applicable. <b>Bold</b> indicates greater than Cleanup Level. (NC) = not calculated; less than 50 percent detection frequency. (* ) = maximum detected concentration listed because the UCL 95 calculated value was greater than the data range, or the distribution was neither normal nor lognormal.											



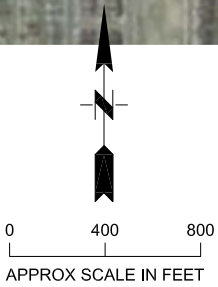
**SCS ENGINEERS**  
 Environmental Consultants and Contractors  
 2405 140th Avenue NE, Suite 107  
 Bellevue, Washington 98005  
 (425) 746-4600 FAX: (425) 746-6747

PROJECT NO.	04219002.03	DES BY	SG
SCALE	AS SHOWN	CHK BY	KGL
CAD FILE	FIGURE 3	APP BY	KGL

**GROUNDWATER MONITORING WELL LOCATIONS**  
 HIDDEN VALLEY LANDFILL  
 PIERCE COUNTY, WASHINGTON

DATE  
 MARCH 2019  
 FIGURE  
**3**





**LEGEND**

 WATER SUPPLY WELL LOCATION

SOURCE: KLEINFELDER

**SCS ENGINEERS**

Environmental Consultants and Contractors  
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 Bellevue, Washington 98005  
 (425) 746-4600 FAX: (425) 746-6747

PROJECT NO. 04219002.03	DES BY LEL
SCALE NOT TO SCALE	CHK BY S.G.
CAD FILE FIGURE 4	APP BY KGL

DES BY LEL
CHK BY S.G.
APP BY KGL

**WATER SUPPLY WELL LOCATION**  
**HIDDEN VALLEY LANDFILL**  
**PIERCE COUNTY, WASHINGTON**

DATE  
MARCH 2019

FIGURE  
**4**





## 6.0 LEACHATE QUALITY

Leachate quality is monitored on an annual basis. Samples of untreated leachate were collected from the East Lined Area leachate collection system (main sump, or Cell 1) and the Side Slope Area leachate collection system (Cell 2) on January 11, 2018. The samples were analyzed for the parameters specified in WAC 173-351, Appendix I and II. Leachate quality results for 2018 were generally typical of previous results. The analytical results for the leachate samples are summarized in Table 5 and are included with the groundwater results in Appendix D.

Table 5. 2018 Leachate Data Summary

Parameters	MRL	Leachate – East Area	Leachate – Side Slope
<b>Volatile Organics (µg/L)</b>			
2-Hexanone	5.0	*	*
Acetone	10.0	260	44
Benzene	0.5-0.64	*	2.0
Carbon disulfide	1.8	*	4.2
cis-1,2-Dichloroethene	0.5-0.6	*	3.2
Ethylbenzene	1.00	3.5	*
m-Xylene & p-Xylene	1.40	15	*
o-Xylene	0.76	6.2	*
Styrene	0.68	2.7	*
Toluene	0.5-0.68	25	2.3
<b>Total Metals (mg/L)</b>			
Antimony	0.002	0.021	0.030
Arsenic	0.005	0.055	0.13
Barium	0.005	0.96	0.30
Cadmium	0.005	0.006	*
Calcium	0.2	390	15
Chromium	0.005	0.110	0.037
Cobalt	0.01	0.031	0.015
Copper	0.01	0.80	0.051
Iron	0.18	58	2.4
Lead	0.002	0.220	0.0048
Magnesium	0.1	20	21
Manganese	0.005	1.5	0.12
Nickel	0.02	0.15	0.34
Potassium	2.0	120	450
Selenium	0.005	0.0052	0.010
Sodium	1.0	780	5,400
Vanadium	0.01	0.089	0.092
Zinc	0.02	2.7	0.054
<b>Inorganic Parameters (mg/L)</b>			

Alkalinity	5	760	5,700
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	5	760	5,700
Ammonia	0.1-1.1	43	540
Chloride	0.2-4	770	5,100
Nitrate as N	0.21	* H	* H
Nitrate plus Nitrite	0.1	0.24	0.57
Sulfate	0.2-10	470	150
Total Dissolved Solids	10-47	4,600	16,000
Total Organic Carbon	4.7	1,200	720
Total Suspended Solids	4-18	1,100	35
<b>Field Parameters</b>			
pH	—	7.34	8.51
Specific Conductance (µS/cm)	—	6,450	23,761
Temperature (°C)	—	17.31	13.27
<b>Notes:</b> Analyses performed by TestAmerica, Arvada, CO VOCs were not listed when not present at concentrations exceeding the MRL µg/L = micrograms per liter, mg/L = milligrams per liter, * = Not detected above MRL			

## 7.0 POST-CLOSURE MAINTENANCE

### 7.1 COVER SYSTEM MAINTENANCE

The landfill cover system was inspected on a quarterly basis during 2018. Informal cover inspections were also performed on an ongoing basis by LRI staff, as well as during the monthly landfill gas monitoring events. The inspections found minor areas requiring maintenance of the cover system during 2018. Copies of the inspection reports are included in Appendix I.

### 7.2 LANDFILL GAS COLLECTION & CONTROL SYSTEM (GCCS) MAINTENANCE

The landfill gas extraction wells, piping and blower/flare station were inspected, monitored and maintained on a monthly basis throughout 2018. In addition, the landfill gas condensate recirculation system was inspected quarterly during 2018 and the condensate sumps were observed to be working as designed. Sumps 5 and 10 did not collect condensate for a number of years, and therefore, the pumps were previously removed. Monthly records of GCCS maintenance activities and quarterly records of condensate sump inspections are included in Appendix I.

A record of the monthly volume of landfill gas combusted and the average monthly methane concentration at the flare station is provided in Table 6.

Table 6. 2018 Flare Station Data

Month	LFG Volume Combusted (scf)	Methane (% by volume)
January	11,668,668	34.3
February	8,776,082	31.5
March	10,034,928	34.4
April	8,557,788	34.6
May	8,718,704	34.2
June	7,745,954	36.9
July	8,301,564	36.1
August	8,605,548	34.1
September	10,676,742	34.6
October	9,137,922	36.1
November	9,666,719	34.3
December	9,562,926	37.6
<b>Totals</b>	<b>111,453,545</b>	<b>34.9 (average)</b>


Note: (scf) indicates standard cubic feet

## **7.4 GROUNDWATER WELL MAINTENANCE**

No significant well maintenance activities were necessary in 2018.

## **7.5 GROUNDWATER WELL RE-SURVEY**

The groundwater monitoring wells, and the landfill gas monitoring probes were resurveyed for elevation and position in 2018. The previous survey was not compatible with the requirements for submitting data into the Ecology EIM system. The new survey results are based on the Washington State Plane coordinate system. A copy of the survey results is included in Appendix J.



Appendix A  
LANDFILL GAS MONITORING DATA



# Landfill Gas Probe Monitoring

SCS Engineers

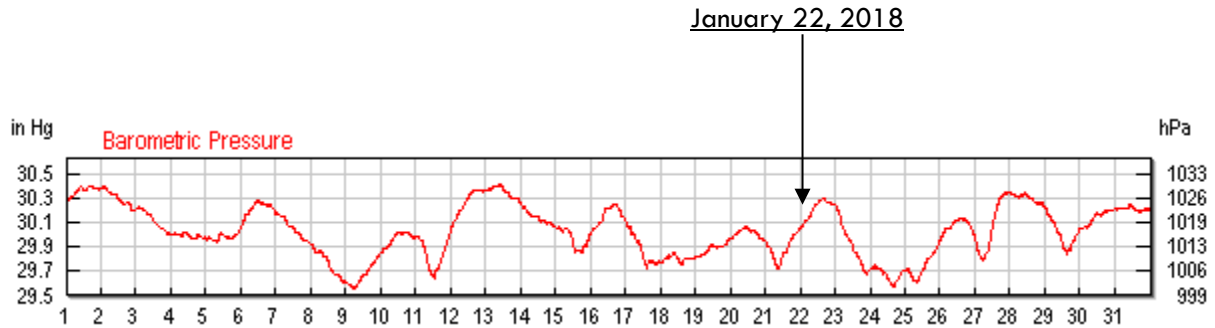
Hidden Valley Landfill  
PCRCO dba LRI

4218002.02  
January 22, 2018

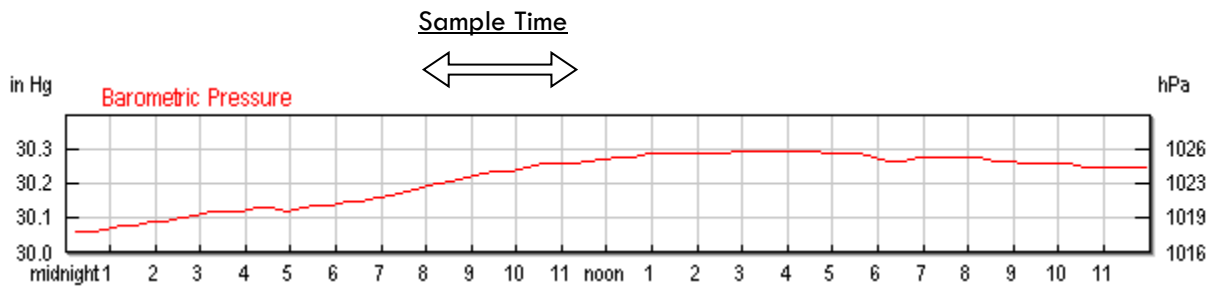
Location Reference Designation	Date	Time	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	Comments		
							Spike CH <sub>4</sub> Note 1 (% vol.)	Spike CO <sub>2</sub> Note 1 (% vol.)	Other
<b>Gas Probes</b>									
GP-1A	22-Jan-18	8:25	0.01	0.0	4.9	10.5	-	-	
GP-1B	22-Jan-18	8:28	0.67	0.0	8.7	12.7	-	-	
GP-1C	22-Jan-18	8:31	0.70	0.0	7.1	13.1	-	-	
GP-2A	22-Jan-18	8:40	0.61	0.0	2.1	18.9	-	-	
GP-2B	22-Jan-18	8:43	0.07	0.0	0.5	21.3	-	-	
GP-3S	22-Jan-18	8:54	0.64	0.0	2.7	16.1	-	-	
GP-3M	22-Jan-18	8:56	0.02	0.0	2.7	8.9	-	-	
GP-3D	22-Jan-18	8:59	0.03	0.0	8.1	6.1	-	-	
GP-4A	22-Jan-18	9:26	0.00	0.0	0.7	20.9	-	-	
GP-4B	22-Jan-18	9:29	0.00	0.0	0.2	21.2	-	-	
GP-5A	22-Jan-18	9:33	-0.03	0.0	0.1	21.2	-	-	
GP-5B	22-Jan-18	9:36	-0.05	0.0	0.0	21.2	-	-	
GP-6	22-Jan-18	9:41	-0.01	0.0	0.1	21.2	-	-	
GP-7S	22-Jan-18	9:48	0.37	0.0	0.9	20.6	-	-	
GP-7D	22-Jan-18	9:51	0.00	0.0	0.4	20.9	-	-	
GP-8A	22-Jan-18	10:02	0.00	0.0	0.7	20.0	-	-	
GP-8B	22-Jan-18	10:05	0.10	0.0	0.2	21.0	-	-	
GP-9	22-Jan-18	10:11	0.07	0.0	2.9	15.0	-	-	
GP-10	22-Jan-18	10:17	0.00	0.0	0.4	20.9	-	-	
GP-11	22-Jan-18	10:22	0.56	0.0	1.2	19.9	-	-	
GP-12	22-Jan-18	10:29	0.00	0.0	1.1	19.7	-	-	
GP-13A	22-Jan-18	10:38	0.00	0.0	0.0	21.0	-	-	
GP-13B	22-Jan-18	10:41	0.00	0.0	0.0	21.1	-	-	
GP-14S	22-Jan-18	10:57	1.11	0.0	6.8	13.2	-	-	
GP-14D	22-Jan-18	10:59	0.82	0.0	10.1	4.2	-	-	
GP-15A	22-Jan-18	11:04	-0.02	0.0	2.5	16.5	-	-	
GP-15B	22-Jan-18	11:07	-0.01	0.0	11.0	1.8	-	-	
GP-16A	22-Jan-18	11:15	-0.01	0.0	1.6	20.4	-	-	
GP-16B	22-Jan-18	11:17	0.00	0.0	0.3	21.0	-	-	
GP-17	22-Jan-18	11:27	0.69	0.0	1.3	19.4	-	-	
GP-18	22-Jan-18	11:32	0.00	0.0	0.2	21.0	-	-	
GP-19	22-Jan-18	11:38	0.00	0.0	0.1	21.0	-	-	
LFG-1							-	-	Note 2
LFG-2							-	-	Note 2
LFG-3							-	-	Note 2
<b>General Data</b>									
Monitored by: A. Deep				Weather Conditions					
Instruments: GEM 2000				Sky Cover: Cloudy					
Calibration Date: 22-Jan-18				Wind / Rain / Snow: -					
				Temperature (°F): 42					
<b>Notes</b>									
1. Measurement for spike concentrations of CH <sub>4</sub> and CO <sub>2</sub> are recorded if observed during sampling									
2. Not monitored. Probe casing rusted shut.									
<b>Legend</b>									
GP = Gas Probe	CH <sub>4</sub> = Methane	S = shallow	A = shallow						
NM = Not measured	CO <sub>2</sub> = Carbon Dioxide	M = medium	B = medium						
equipment malfunction	O <sub>2</sub> = Oxygen	D = deep	C = deep						

## Barometric Pressure Trend – January 2018 Hidden Valley Landfill, Pierce County, Washington

Barometric Pressure Trend for January 2018



Barometric Pressure Trend for January 22, 2018



Source : KPLU

[https://www.wunderground.com/history/airport/KPLU/2018/1/22/DailyHistory.html?req\\_city=Graham&req\\_state=WA&req\\_statename=&reqdb.zip=98338&reqdb.magic=1&reqdb.wmo=99999](https://www.wunderground.com/history/airport/KPLU/2018/1/22/DailyHistory.html?req_city=Graham&req_state=WA&req_statename=&reqdb.zip=98338&reqdb.magic=1&reqdb.wmo=99999)



# Landfill Gas Probe Monitoring

SCS Engineers

Hidden Valley Landfill  
PCRCO dba LRI

04218002.02  
February 28, 2018

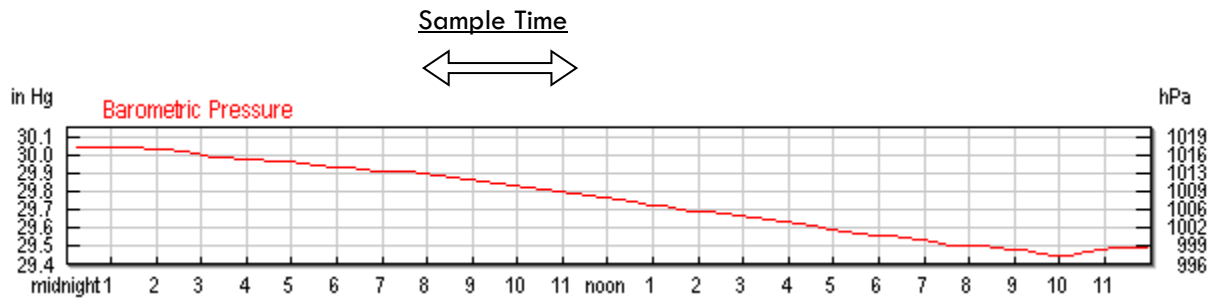
Location Reference Designation	Date	Time	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	Comments		
							Spike CH <sub>4</sub> Note 1 (% vol.)	Spike CO <sub>2</sub> Note 1 (% vol.)	Other
<b>Gas Probes</b>									
GP-1A	28-Feb-18	7:46	0.00	0.0	5.3	10.1	-	-	
GP-1B	28-Feb-18	7:48	0.05	0.0	8.6	12.3	-	-	
GP-1C	28-Feb-18	7:51	0.04	0.0	0.3	20.0	-	-	
GP-2A	28-Feb-18	7:56	0.07	0.0	12.8	4.1	-	-	
GP-2B	28-Feb-18	7:58	0.06	0.0	0.3	20.2	-	-	
GP-3S	28-Feb-18	8:03	0.26	0.0	3.3	14.7	-	-	
GP-3M	28-Feb-18	8:06	0.07	0.0	3.3	5.7	-	-	
GP-3D	28-Feb-18	8:08	0.06	0.0	6.6	8.9	-	-	
GP-4A	28-Feb-18	8:16	0.00	0.0	2.0	19.1	-	-	
GP-4B	28-Feb-18	8:19	0.01	0.0	0.2	20.6	-	-	
GP-5A	28-Feb-18	8:28	0.01	0.0	0.2	20.7	-	-	
GP-5B	28-Feb-18	8:31	0.03	0.0	0.1	20.6	-	-	
GP-6	28-Feb-18	8:37	0.00	0.0	0.2	20.6	-	-	
GP-7S	28-Feb-18	8:43	0.25	0.0	0.2	20.5	-	-	
GP-7D	28-Feb-18	8:46	0.01	0.0	0.4	20.4	-	-	
GP-8A	28-Feb-18	8:55	0.00	0.0	0.5	20.3	-	-	
GP-8B	28-Feb-18	8:58	0.22	0.0	0.2	20.4	-	-	
GP-9	28-Feb-18	9:03	0.01	0.0	3.4	14.6	-	-	
GP-10	28-Feb-18	9:09	0.00	0.0	0.2	20.4	-	-	
GP-11	28-Feb-18	9:14	0.44	0.0	1.8	16.1	-	-	
GP-12	28-Feb-18	9:24	0.00	0.0	2.0	16.0	-	-	
GP-13A	28-Feb-18	9:30	0.03	4.5	9.5	0.0	4.5	-	
GP-13B	28-Feb-18	9:35	0.00	0.0	0.1	20.2	-	-	
GP-14S	28-Feb-18	9:40	0.00	0.0	7.5	13.9	-	-	
GP-14D	28-Feb-18	9:43	0.05	0.0	8.0	6.0	-	-	
GP-15A	28-Feb-18	9:48	0.00	0.0	3.1	13.2	-	-	
GP-15B	28-Feb-18	9:50	0.05	0.0	10.9	2.0	-	-	
GP-16A	28-Feb-18	9:57	0.00	0.0	3.6	15.7	-	-	
GP-16B	28-Feb-18	10:00	0.06	0.0	4.0	15.2	-	-	
GP-17	28-Feb-18	10:06	0.28	0.0	0.3	20.1	-	-	
GP-18	28-Feb-18	10:10	0.00	0.0	1.5	18.9	-	-	
GP-19	28-Feb-18	10:14	0.05	0.0	3.6	16.9	-	-	
LFG-1							-	-	Note 2
LFG-2							-	-	Note 2
LFG-3							-	-	Note 2
<b>General Data</b>									
Monitored by: A. Deep				Weather Conditions					
Instruments: GEM 2000				Sky Cover: Cloudy					
Calibration Date: 28-Feb-18				Wind / Rain / Snow: -					
				Temperature (°F): 44					
<b>Notes</b>									
1. Measurement for spike concentrations of CH <sub>4</sub> and CO <sub>2</sub> are recorded if observed during sampling									
2. Not monitored. Probe casing rusted shut.									
GP = Gas Probe      CH <sub>4</sub> = Methane      S = shallow      A= shallow NM = Not measured      CO <sub>2</sub> = Carbon Dioxide      M = medium      B = medium equipment malfunction      O <sub>2</sub> = Oxygen      D = deep      C = deep									

## Barometric Pressure Trend – February 2018 Hidden Valley Landfill, Pierce County, Washington

Barometric Pressure Trend for February 2018



Barometric Pressure Trend for February 28, 2018



Source : KPLU

[https://www.wunderground.com/history/airport/KPLU/2018/2/28/DailyHistory.html?req\\_city=&req\\_state=&req\\_statename=&reqdb.zip=&reqdb.magic=&reqdb.wmo=](https://www.wunderground.com/history/airport/KPLU/2018/2/28/DailyHistory.html?req_city=&req_state=&req_statename=&reqdb.zip=&reqdb.magic=&reqdb.wmo=)

# Landfill Gas Probe Monitoring

SCS Engineers

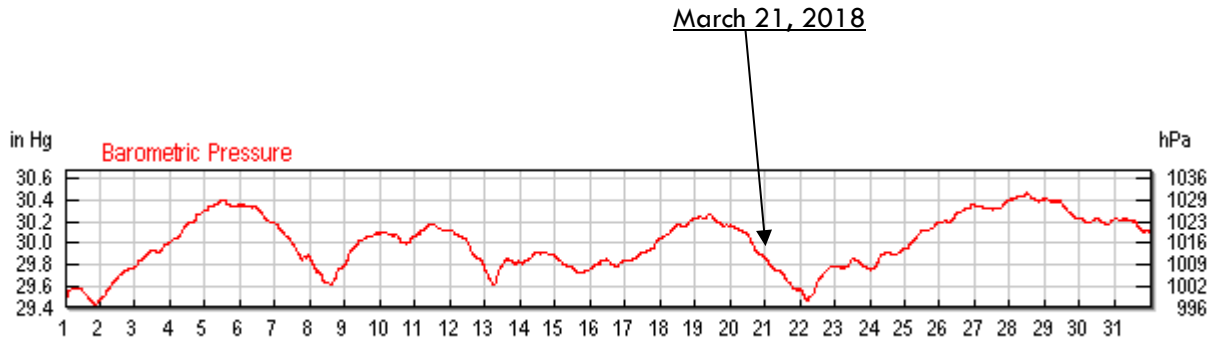
Hidden Valley Landfill  
PCRCO dba LRI

04218002.02  
March 21, 2018

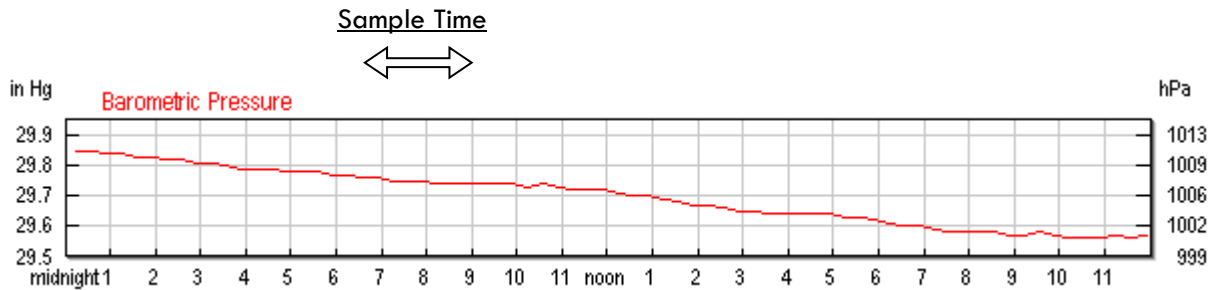
Location Reference Designation	Date	Time	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	Comments		
							Spike CH <sub>4</sub> Note 1 (% vol.)	Spike CO <sub>2</sub> Note 1 (% vol.)	Other
<b>Gas Probes</b>									
GP-1A	21-Mar-18	7:18	0.35	0.0	4.8	11.0	-	-	
GP-1B	21-Mar-18	7:20	0.04	0.0	7.5	14.2	-	-	
GP-1C	21-Mar-18	7:23	0.06	0.0	4.5	16.5	-	-	
GP-2A	21-Mar-18	7:27	0.00	0.0	5.0	14.4	-	-	
GP-2B	21-Mar-18	7:29	0.01	0.0	0.3	21.7	-	-	
GP-3S	21-Mar-18	7:33	0.06	0.0	2.4	17.7	-	-	
GP-3M	21-Mar-18	7:36	0.00	0.0	3.1	6.2	-	-	
GP-3D	21-Mar-18	7:38	0.03	0.0	2.3	18.5	-	-	
GP-4A	21-Mar-18	7:44	0.00	0.0	1.9	20.8	-	-	
GP-4B	21-Mar-18	7:47	0.00	0.0	0.4	22.0	-	-	
GP-5A	21-Mar-18	7:53	0.00	0.0	0.3	21.7	-	-	
GP-5B	21-Mar-18	7:55	0.00	0.0	0.1	21.8	-	-	
GP-6	21-Mar-18	7:59	0.00	0.0	0.2	21.6	-	-	
GP-7S	21-Mar-18	8:29	0.20	0.0	0.6	21.1	-	-	
GP-7D	21-Mar-18	8:31	0.00	0.0	0.4	21.3	-	-	
GP-8A	21-Mar-18	8:37	0.15	0.0	0.5	20.6	-	-	
GP-8B	21-Mar-18	8:39	0.27	0.0	0.5	20.6	-	-	
GP-9	21-Mar-18	8:43	0.03	0.0	3.0	15.9	-	-	
GP-10	21-Mar-18	8:47	-0.01	0.0	0.2	21.3	-	-	
GP-11	21-Mar-18	8:52	0.03	0.0	1.9	13.2	-	-	
GP-12	21-Mar-18	8:56	-0.01	0.0	0.9	19.5	-	-	
GP-13A	21-Mar-18	8:08	0.01	6.1	6.3	3.9	6.1	-	
GP-13B	21-Mar-18	8:10	0.01	0.0	1.2	21.5	-	-	
GP-14S	21-Mar-18	8:15	0.00	0.0	5.8	16.6	-	-	
GP-14D	21-Mar-18	8:17	0.00	0.0	6.2	9.3	-	-	
GP-15A	21-Mar-18	8:20	0.00	0.0	2.2	17.4	-	-	
GP-15B	21-Mar-18	8:22	0.00	0.0	7.4	9.0	-	-	
GP-16A	21-Mar-18	9:03	0.00	0.0	3.6	14.0	-	-	
GP-16B	21-Mar-18	9:05	0.00	0.0	3.4	15.3	-	-	
GP-17	21-Mar-18	9:11	0.02	0.0	1.7	20.0	-	-	
GP-18	21-Mar-18	9:15	0.00	0.0	1.3	20.2	-	-	
GP-19	21-Mar-18	9:19	0.01	0.0	2.5	19.3	-	-	
LFG-1							-	-	Note 2
LFG-2							-	-	Note 2
LFG-3							-	-	Note 2
<b>General Data</b>									
Monitored by: A. Deep				Weather Conditions					
Instruments: GEM 2000				Sky Cover: Sunny					
Calibration Date: 21-Mar-18				Wind / Rain / Snow: -					
				Temperature (°F): 45					
<b>Notes</b>									
1. Measurement for spike concentrations of CH <sub>4</sub> and CO <sub>2</sub> are recorded if observed during sampling									
2. Not monitored. Probe casing rusted shut.									
GP = Gas Probe      CH <sub>4</sub> = Methane      S = shallow      A= shallow NM = Not measured      CO <sub>2</sub> = Carbon Dioxide      M = medium      B = medium equipment malfunction      O <sub>2</sub> = Oxygen      D = deep      C = deep									

## Barometric Pressure Trend – March 2018 Hidden Valley Landfill, Pierce County, Washington

Barometric Pressure Trend for March 2018



Barometric Pressure Trend for March 21, 2018



Source : KPLU

[https://www.wunderground.com/history/airport/KPLU/2018/3/21/DailyHistory.html?req\\_city=&req\\_state=&req\\_statename=&reqdb.zip=&reqdb.magic=&reqdb.wmo=](https://www.wunderground.com/history/airport/KPLU/2018/3/21/DailyHistory.html?req_city=&req_state=&req_statename=&reqdb.zip=&reqdb.magic=&reqdb.wmo=)

# Landfill Gas Probe Monitoring

SCS Engineers

Hidden Valley Landfill  
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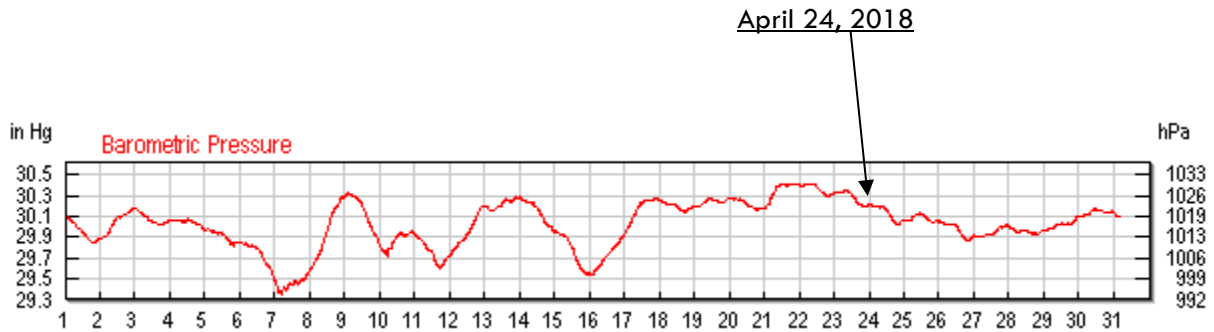
4218002.02  
April 24, 2018

Location Reference Designation	Date	Time	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	Comments		
							Spike CH <sub>4</sub> Note 1 (% vol.)	Spike CO <sub>2</sub> Note 1 (% vol.)	Other
<b>Gas Probes</b>									
GP-1A	24-Apr-18	8:14	0.01	0.0	4.9	9.2	-	-	
GP-1B	24-Apr-18	8:16	0.73	0.0	7.1	14.5	-	-	
GP-1C	24-Apr-18	8:19	0.38	0.0	3.0	17.6	-	-	
GP-2A	24-Apr-18	8:26	0.55	0.0	2.4	17.1	-	-	
GP-2B	24-Apr-18	8:29	0.70	0.0	0.4	20.7	-	-	
GP-3S	24-Apr-18	8:35	0.00	0.0	1.9	17.7	-	-	
GP-3M	24-Apr-18	8:37	0.79	0.0	2.9	6.3	-	-	
GP-3D	24-Apr-18	8:40	0.63	0.0	6.9	7.7	-	-	
GP-4A	24-Apr-18	8:54	0.00	0.0	1.4	20.2	-	-	
GP-4B	24-Apr-18	8:56	0.02	0.0	0.5	20.6	-	-	
GP-5A	24-Apr-18	9:10	0.00	0.0	0.2	20.8	-	-	
GP-5B	24-Apr-18	9:13	0.00	0.0	0.1	20.8	-	-	
GP-6	24-Apr-18	9:18	0.00	0.0	0.3	20.6	-	-	
GP-7S	24-Apr-18	9:24	0.55	0.0	0.8	19.8	-	-	
GP-7D	24-Apr-18	9:28	0.00	0.0	0.3	20.3	-	-	
GP-8A	24-Apr-18	9:38	0.52	0.0	0.6	20.0	-	-	
GP-8B	24-Apr-18	9:41	0.60	0.0	0.4	20.2	-	-	
GP-9	24-Apr-18	9:46	0.01	0.0	2.4	16.5	-	-	
GP-10	24-Apr-18	9:52	-0.01	0.0	0.2	20.6	-	-	
GP-11	24-Apr-18	9:59	0.29	0.0	1.0	19.6	-	-	
GP-12	24-Apr-18	10:07	0.00	0.0	0.7	17.9	-	-	
GP-13A	24-Apr-18	10:16	0.00	9.5	9.7	0.3	9.5	-	
GP-13B	24-Apr-18	10:21	0.00	0.0	0.2	20.0	-	-	
GP-14S	24-Apr-18	10:26	0.00	0.0	5.2	15.4	-	-	
GP-14D	24-Apr-18	10:29	0.65	0.0	8.2	3.1	-	-	
GP-15A	24-Apr-18	10:33	0.00	0.0	2.8	15.3	-	-	
GP-15B	24-Apr-18	10:36	0.01	0.0	9.0	5.0	-	-	
GP-16A	24-Apr-18	10:44	0.00	0.0	1.5	18.6	-	-	
GP-16B	24-Apr-18	10:47	0.09	0.0	1.0	19.1	-	-	
GP-17	24-Apr-18	10:54	0.00	0.0	2.2	18.2	-	-	
GP-18	24-Apr-18	10:59	0.00	0.0	2.2	17.6	-	-	
GP-19	24-Apr-18	11:04	0.00	0.0	0.8	20.0	-	-	
LFG-1							-	-	Note 2
LFG-2							-	-	Note 2
LFG-3							-	-	Note 2
<b>General Data</b>									
Monitored by: A. Deep				Weather Conditions					
Instruments: GEM 2000				Sky Cover: Sunny		-			
Calibration Date: 24-Apr-18				Wind / Rain / Snow: -		57			
				Temperature (°F):					
<b>Notes</b>									
1. Measurement for spike concentrations of CH <sub>4</sub> and CO <sub>2</sub> are recorded if observed during sampling									
2. Not monitored. Probe casing rusted shut.									
GP = Gas Probe      CH <sub>4</sub> = Methane      S = shallow      A= shallow NM = Not measured      CO <sub>2</sub> = Carbon Dioxide      M = medium      B = medium equipment malfunction      O <sub>2</sub> = Oxygen      D = deep      C = deep									

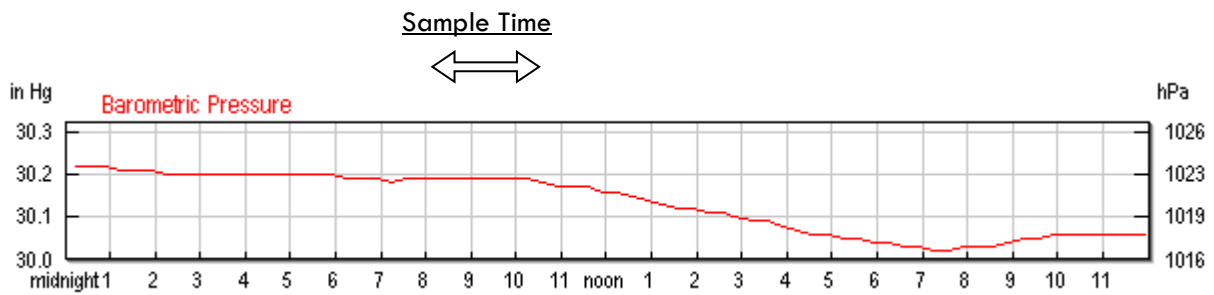
# Barometric Pressure Trend – April 2018

## Hidden Valley Landfill, Pierce County, Washington

Barometric Pressure Trend for April 2018



Barometric Pressure Trend for April 24, 2018



Source : KPLU

[https://www.wunderground.com/history/airport/KPLU/2018/4/24/DailyHistory.html?req\\_city=&req\\_state=&req\\_statename=&reqdb.zip=&reqdb.magic=&reqdb.wmo=](https://www.wunderground.com/history/airport/KPLU/2018/4/24/DailyHistory.html?req_city=&req_state=&req_statename=&reqdb.zip=&reqdb.magic=&reqdb.wmo=)

# Landfill Gas Probe Monitoring

SCS Engineers

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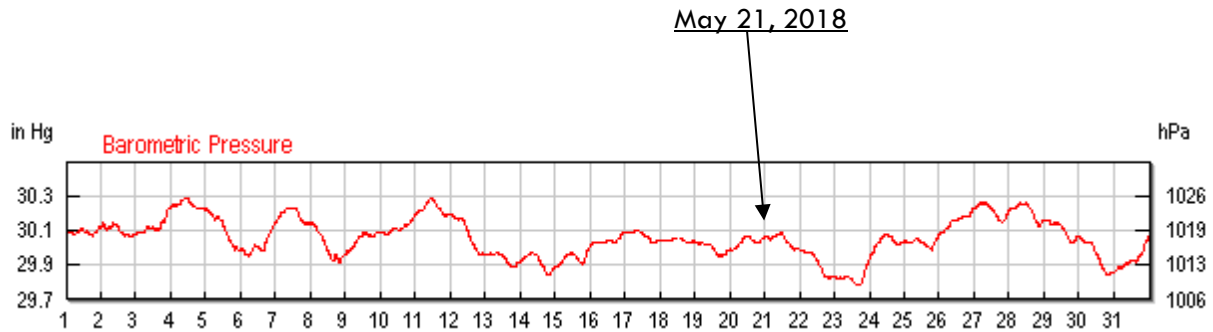
4218002.02  
May 21, 2018

Location Reference Designation	Date	Time	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	Comments		
							Spike CH <sub>4</sub> Note 1 (% vol.)	Spike CO <sub>2</sub> Note 1 (% vol.)	Other
<b>Gas Probes</b>									
GP-1A	21-May-18	7:57	0.00	0.0	4.6	9.4	-	-	
GP-1B	21-May-18	8:01	0.00	0.0	7.1	14.7	-	-	
GP-1C	21-May-18	8:05	0.17	0.0	1.5	19.5	-	-	
GP-2A	21-May-18	8:18	0.07	0.0	0.5	20.3	-	-	
GP-2B	21-May-18	8:21	0.07	0.0	0.2	20.8	-	-	
GP-3S	21-May-18	8:28	0.00	0.0	1.5	18.1	-	-	
GP-3M	21-May-18	8:32	-0.02	0.0	2.7	6.4	-	-	
GP-3D	21-May-18	8:35	0.07	0.0	4.9	16.8	-	-	
GP-4A	21-May-18	8:43	0.00	0.0	0.5	20.7	-	-	
GP-4B	21-May-18	8:49	0.00	0.0	0.1	20.9	-	-	
GP-5A	21-May-18	8:55	0.00	0.0	0.2	20.5	-	-	
GP-5B	21-May-18	8:58	0.00	0.0	0.2	20.7	-	-	
GP-6	21-May-18	9:05	0.00	0.0	0.6	20.3	-	-	
GP-7S	21-May-18	9:12	0.00	0.0	0.5	20.2	-	-	
GP-7D	21-May-18	9:15	0.51	0.0	0.6	20.2	-	-	
GP-8A	21-May-18	9:27	0.68	0.0	2.9	16.1	-	-	
GP-8B	21-May-18	9:30	0.00	0.0	2.3	18.5	-	-	
GP-9	21-May-18	9:36	0.00	0.0	2.1	17.4	-	-	
GP-10	21-May-18	9:52	0.00	0.0	0.4	20.2	-	-	
GP-11	21-May-18	9:58	0.59	0.0	1.1	19.6	-	-	
GP-12	21-May-18	10:05	0.00	0.0	0.6	19.8	-	-	
GP-13A	21-May-18	10:14	0.04	9.6	10.8	0.7	9.5	-	
GP-13B	21-May-18	10:20	-0.01	0.0	0.3	20.5	-	-	
GP-14S	21-May-18	10:26	0.00	0.0	5.6	15.9	-	-	
GP-14D	21-May-18	10:29	0.07	0.0	8.6	3.9	-	-	
GP-15A	-	-	-	-	-	-	-	-	Flow Restriction No Reading
GP-15B	21-May-18	10:38	0.98	0.0	8.0	8.7	-	-	
GP-16A	21-May-18	10:46	-0.01	0.0	1.0	19.9	-	-	
GP-16B	21-May-18	10:49	0.09	0.0	0.6	20.2	-	-	
GP-17	21-May-18	10:56	0.57	0.0	3.0	16.3	-	-	
GP-18	21-May-18	11:03	0.00	0.0	4.3	13.4	-	-	
GP-19	21-May-18	11:10	0.00	0.0	0.4	20.7	-	-	
LFG-1							-	-	Note 2
LFG-2							-	-	Note 2
LFG-3							-	-	Note 2
<b>General Data</b>									
Monitored by: A. Deep				Weather Conditions					
Instruments: GEM 2000				Sky Cover: Cloudy					
Calibration Date: 21-May-18				Wind / Rain / Snow: -					
				Temperature (°F): 57					
<b>Notes</b>									
1. Measurement for spike concentrations of CH <sub>4</sub> and CO <sub>2</sub> are recorded if observed during sampling									
2. Not monitored. Probe casing rusted shut.									
GP = Gas Probe      CH <sub>4</sub> = Methane      S = shallow      A= shallow NM = Not measured      CO <sub>2</sub> = Carbon Dioxide      M = medium      B = medium equipment malfunction      O <sub>2</sub> = Oxygen      D = deep      C = deep									

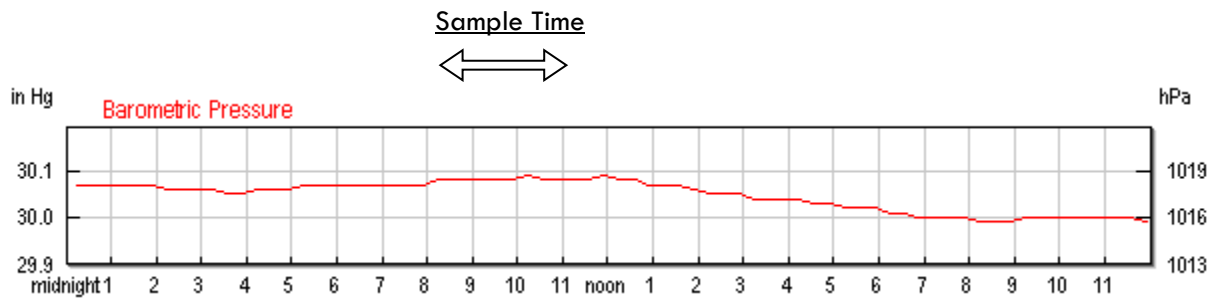
# Barometric Pressure Trend – May 2018

## Hidden Valley Landfill, Pierce County, Washington

Barometric Pressure Trend for May 2018



Barometric Pressure Trend for May 21, 2018



Source : KPLU

<https://www.wunderground.com/history/airport/KPLU/2018/5/21/DailyHistory.html?&reqdb.zip=&reqdb.magic=&reqdb.wmo=>



# Landfill Gas Probe Monitoring

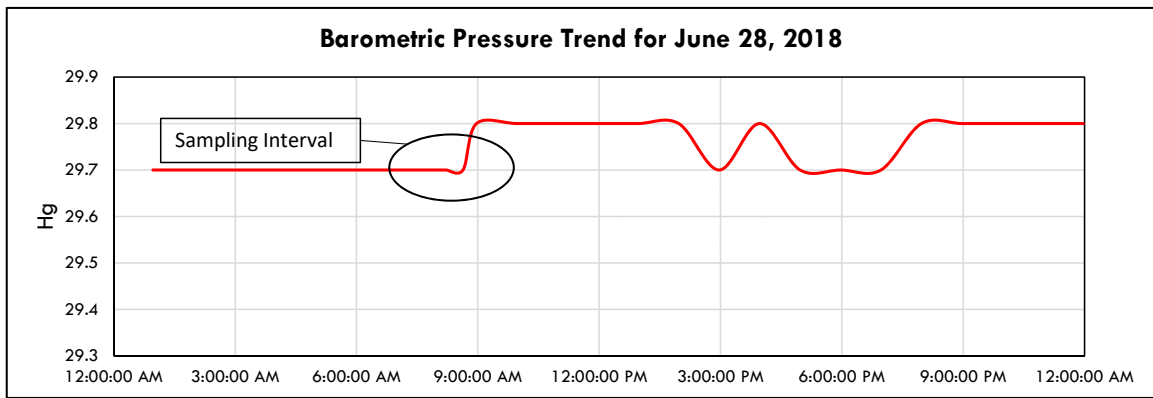
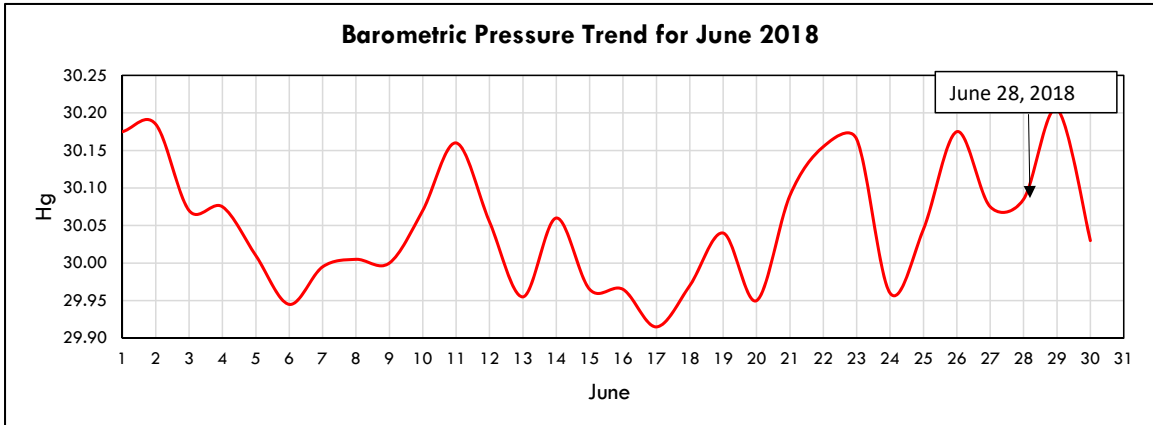
SCS Engineers

Hidden Valley Landfill  
PCRCO dba LRI

4218002.02  
June 28, 2018

Location Reference Designation	Date	Time	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	Comments		
							Spike CH <sub>4</sub> Note 1 (% vol.)	Spike CO <sub>2</sub> Note 1 (% vol.)	Other
<b>Gas Probes</b>									
GP-1A	28-Jun-18	7:44	0.23	0.0	5.4	5.0	0.6	-	
GP-1B	28-Jun-18	7:47	0.14	0.0	8.1	10.7	-	-	
GP-1C	28-Jun-18	7:50	0.11	0.0	2.1	17.4	-	-	
GP-2A	28-Jun-18	7:55	0.17	0.0	0.6	18.4	-	-	
GP-2B	28-Jun-18	7:58	0.14	0.0	0.0	19.3	-	-	
GP-3S	28-Jun-18	8:04	0.12	0.0	1.7	16.7	-	-	
GP-3M	28-Jun-18	8:07	0.14	0.0	3.1	5.2	-	-	
GP-3D	28-Jun-18	8:10	0.16	0.0	5.5	11.4	-	-	
GP-4A	28-Jun-18	8:24	0.00	0.0	0.5	18.9	-	-	
GP-4B	28-Jun-18	8:27	0.00	0.0	0.0	19.4	-	-	
GP-5A	28-Jun-18	8:32	0.00	0.0	0.5	18.9	-	-	
GP-5B	28-Jun-18	8:35	0.00	0.0	0.3	18.8	-	-	
GP-6	28-Jun-18	8:41	0.00	0.0	0.5	19.0	-	-	
GP-7S	28-Jun-18	8:52	0.09	0.0	0.8	18.5	-	-	
GP-7D	28-Jun-18	8:49	0.00	0.0	0.4	18.6	-	-	
GP-8A	28-Jun-18	9:02	0.14	0.0	2.7	17.0	-	-	
GP-8B	28-Jun-18	9:05	0.14	0.0	1.6	17.8	-	-	
GP-9	28-Jun-18	9:10	0.10	0.0	2.6	14.5	-	-	
GP-10	28-Jun-18	9:17	0.01	0.0	0.4	18.6	-	-	
GP-11	28-Jun-18	9:23	0.09	0.0	1.0	18.1	-	-	
GP-12	28-Jun-18	9:32	0.01	0.0	1.3	18.2	-	-	
GP-13A	28-Jun-18	9:41	0.02	0.0	0.0	19.6	-	-	
GP-13B	28-Jun-18	9:47	0.02	0.0	0.0	19.6	-	-	
GP-14S	28-Jun-18	9:55	0.14	0.0	5.4	14.9	-	-	
GP-14D	28-Jun-18	9:58	0.11	0.0	8.4	2.6	-	-	
GP-15A	28-Jun-18	10:03	0.00	0.0	0.9	18.4	-	-	
GP-15B	28-Jun-18	10:06	0.00	0.0	5.8	11.9	-	-	
GP-16A	28-Jun-18	10:14	0.00	0.0	0.3	18.9	-	-	
GP-16B	28-Jun-18	10:17	0.00	0.0	0.0	19.5	-	-	
GP-17	28-Jun-18	10:23	0.08	0.0	4.6	14.0	-	-	
GP-18	28-Jun-18	10:28	0.00	0.0	8.9	10.6	-	-	
GP-19	28-Jun-18	10:36	0.00	0.0	0.0	19.2	-	-	
LFG-1							-	-	Note 2
LFG-2							-	-	Note 2
LFG-3							-	-	Note 2
<b>General Data</b>									
Monitored by: A. Deep				Weather Conditions					
Instruments: GEM 2000				Sky Cover: Cloudy					
Calibration Date: 28-Jun-18				Wind / Rain / Snow: -					
				Temperature (°F): 59					
<b>Notes</b>									
1. Measurement for spike concentrations of CH <sub>4</sub> and CO <sub>2</sub> are recorded if observed during sampling									
2. Not monitored. Probe casing rusted shut.									
GP = Gas Probe      CH <sub>4</sub> = Methane      S = shallow      A= shallow NM = Not measured      CO <sub>2</sub> = Carbon Dioxide      M = medium      B = medium equipment malfunction      O <sub>2</sub> = Oxygen      D = deep      C = deep									

**Barometric Pressure Trend - June 2018**  
**Hidden Valley Landfill, Pierce County, Washington**



Source: Pierce County - Thun Field Station  
 Lat: 47.1 Long: 122.29 Elev: 538 ft-AMSL

Data Source: <https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2018-6-28>

# Landfill Gas Probe Monitoring

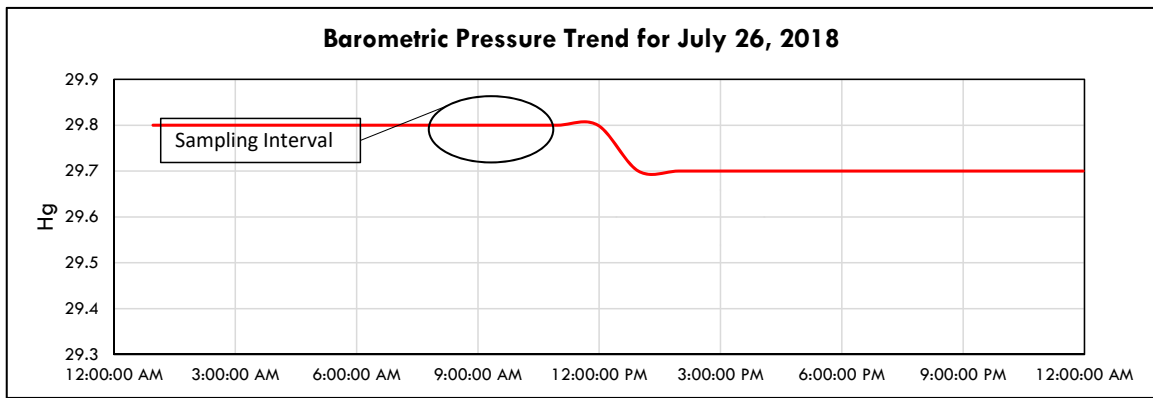
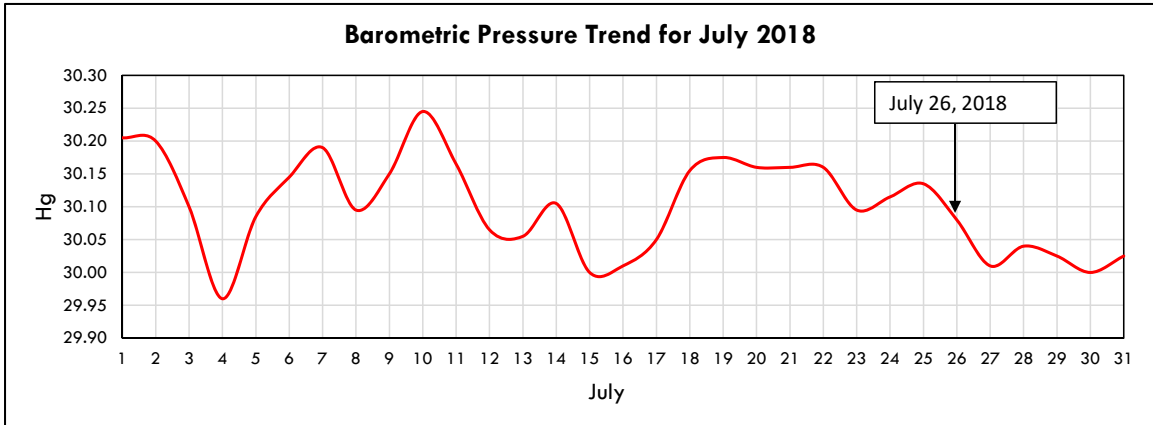
SCS Engineers

Hidden Valley Landfill  
PCRCO dba LRI

4218002.02  
July 26, 2018

Location Reference Designation	Date	Time	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	Comments		
							Spike CH <sub>4</sub> Note 1 (% vol.)	Spike CO <sub>2</sub> Note 1 (% vol.)	Other
<b>Gas Probes</b>									
GP-1A	26-Jul-18	8:09	0.01	0.0	4.9	6.4	-	-	
GP-1B	26-Jul-18	8:13	0.00	0.0	7.7	12.2	-	-	
GP-1C	26-Jul-18	8:15	0.32	0.0	0.7	19.7	-	-	
GP-2A	26-Jul-18	8:22	0.00	0.0	0.1	20.0	-	-	
GP-2B	26-Jul-18	8:24	0.00	0.0	0.1	20.2	-	-	
GP-3S	26-Jul-18	8:31	0.00	0.0	0.6	19.3	-	-	
GP-3M	26-Jul-18	8:34	-0.02	0.0	2.3	13.0	-	-	
GP-3D	26-Jul-18	8:37	-0.01	0.0	3.5	18.2	-	-	
GP-4A	26-Jul-18	8:47	0.00	0.0	0.7	19.7	-	-	
GP-4B	26-Jul-18	8:50	0.10	0.0	0.3	19.6	-	-	
GP-5A	26-Jul-18	9:01	0.00	0.0	0.4	18.9	-	-	
GP-5B	26-Jul-18	9:05	0.00	0.0	0.4	19.0	-	-	
GP-6	26-Jul-18	9:13	-0.01	0.0	0.3	19.7	-	-	
GP-7S	26-Jul-18	9:19	0.02	0.0	0.8	18.9	-	-	
GP-7D	26-Jul-18	9:22	0.00	0.0	0.4	19.4	-	-	
GP-8A	26-Jul-18	9:34	0.00	0.0	4.2	14.3	-	-	
GP-8B	26-Jul-18	9:36	0.49	0.0	3.7	15.3	-	-	
GP-9	26-Jul-18	9:47	0.25	0.0	2.2	13.7	-	-	
GP-10	26-Jul-18	9:55	0.01	0.0	0.6	17.1	-	-	
GP-11	26-Jul-18	10:02	0.00	0.0	0.6	19.4	-	-	
GP-12	26-Jul-18	10:11	0.00	0.0	4.7	10.6	-	-	
GP-13A	26-Jul-18	10:26	0.03	1.8	3.3	14.0	1.9	-	
GP-13B	26-Jul-18	10:32	-0.03	0.0	0.0	19.9	-	-	
GP-14S	26-Jul-18	10:39	0.01	0.0	5.3	15.0	-	-	
GP-14D	26-Jul-18	10:42	0.00	0.0	8.5	3.5	-	-	
GP-15A	26-Jul-18	10:48	0.00	0.0	2.8	16.8	-	-	
GP-15B	26-Jul-18	10:51	0.00	0.0	3.8	15.7	-	-	
GP-16A	26-Jul-18	10:57	0.00	0.0	0.5	19.6	-	-	
GP-16B	26-Jul-18	11:00	0.00	0.0	0.5	19.5	-	-	
GP-17	26-Jul-18	11:10	0.32	0.0	4.6	12.7	-	-	
GP-18	26-Jul-18	11:25	0.00	0.0	12.0	3.6	-	-	
GP-19	26-Jul-18	11:35	0.01	0.0	1.4	19.0	-	-	
LFG-1							-	-	Note 2
LFG-2							-	-	Note 2
LFG-3							-	-	Note 2
<b>General Data</b>									
Monitored by: T. Berndahl				Weather Conditions					
Instruments: GEM 2000				Sky Cover: Sunny					
Calibration Date: 26-Jul-18				Wind / Rain / Snow: -					
				Temperature (°F): 74					
<b>Notes</b>									
1. Measurement for spike concentrations of CH <sub>4</sub> and CO <sub>2</sub> are recorded if observed during sampling									
2. Not monitored. Probe casing rusted shut.									
GP = Gas Probe      CH <sub>4</sub> = Methane      S = shallow      A = shallow NM = Not measured      CO <sub>2</sub> = Carbon Dioxide      M = medium      B = medium equipment malfunction      O <sub>2</sub> = Oxygen      D = deep      C = deep									

**Barometric Pressure Trend - July 2018**  
**Hidden Valley Landfill, Pierce County, Washington**



Source: Pierce County - Thun Field Station  
Lat: 47.1 Long: 122.29 Elev: 538 ft-AMSL

Data Source: <https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2018-7-26>

# Landfill Gas Probe Monitoring

SCS Engineers

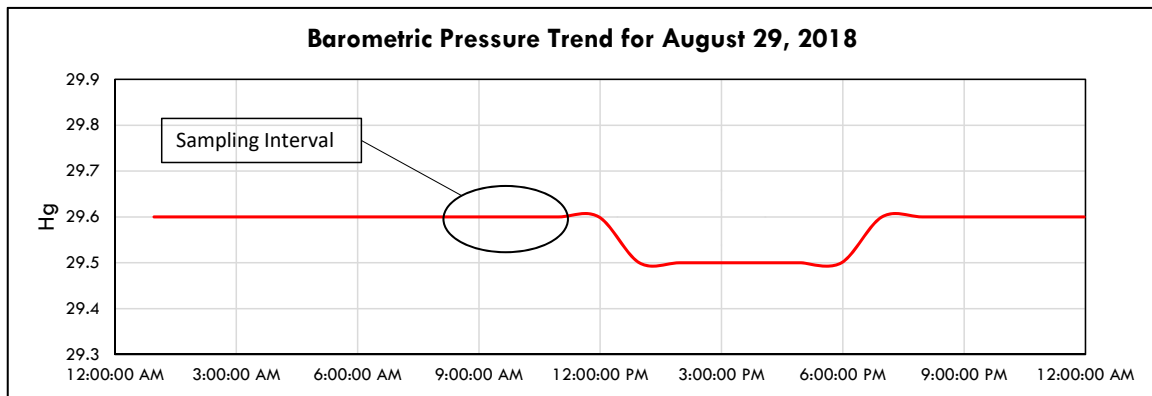
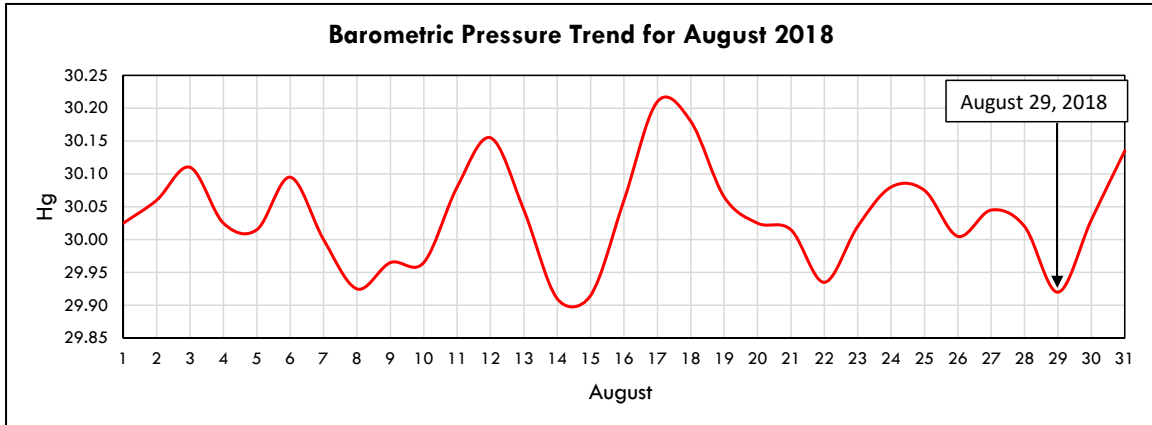
Hidden Valley Landfill  
PCRCO dba LRI

4218002.02  
August 29, 2018

Location Reference Designation	Date	Time	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	Comments		
							Spike CH <sub>4</sub> Note 1 (% vol.)	Spike CO <sub>2</sub> Note 1 (% vol.)	Other
<b>Gas Probes</b>									
GP-1A	29-Aug-18	8:30	0.00	0.0	4.6	6.2	-	-	
GP-1B	29-Aug-18	8:32	0.59	0.0	6.4	14.1	-	-	
GP-1C	29-Aug-18	8:35	0.43	0.0	1.3	19.8	-	-	
GP-2A	29-Aug-18	8:42	0.93	0.0	0.5	20.2	-	-	
GP-2B	29-Aug-18	8:44	0.67	0.0	0.2	20.9	-	-	
GP-3S	29-Aug-18	8:51	0.43	0.0	0.5	20.2	-	-	
GP-3M	29-Aug-18	8:53	0.01	0.0	2.1	17.1	-	-	
GP-3D	29-Aug-18	8:56	0.19	0.0	2.9	17.5	-	-	
GP-4A	29-Aug-18	9:58	0.00	0.0	0.6	19.9	-	-	
GP-4B	29-Aug-18	10:01	0.00	0.0	0.1	20.8	-	-	
GP-5A	29-Aug-18	9:08	0.00	0.0	0.8	20.0	-	-	
GP-5B	29-Aug-18	9:11	0.00	0.0	0.6	19.4	-	-	
GP-6	29-Aug-18	9:21	0.00	0.0	0.6	19.8	-	-	
GP-7S	29-Aug-18	9:32	0.54	0.0	1.1	20.1	-	-	
GP-7D	29-Aug-18	9:29	0.00	0.0	0.5	20.2	-	-	
GP-8A	29-Aug-18	10:12	0.04	0.0	2.8	18.5	-	-	
GP-8B	29-Aug-18	10:14	0.17	0.0	2.0	19.1	-	-	
GP-9	29-Aug-18	10:20	0.38	0.0	2.8	13.0	-	-	
GP-10	29-Aug-18	10:25	0.18	0.0	0.8	20.1	-	-	
GP-11	29-Aug-18	10:31	-0.08	0.0	0.8	19.8	-	-	
GP-12	29-Aug-18	10:38	0.00	0.0	0.4	20.1	-	-	
GP-13A	29-Aug-18	10:50	0.00	0.0	0.0	20.4	-	-	
GP-13B	29-Aug-18	10:56	0.00	0.0	0.0	20.3	-	-	
GP-14S	29-Aug-18	11:04	0.00	0.0	5.5	15.2	-	-	
GP-14D	29-Aug-18	11:06	0.91	0.0	9.3	3.3	-	-	
GP-15A	29-Aug-18	11:14	0.00	0.0	3.2	17.2	-	-	
GP-15B	29-Aug-18	11:16	-0.01	0.0	5.8	10.5	-	-	
GP-16A	29-Aug-18	11:24	0.00	0.0	0.9	19.1	-	-	
GP-16B	29-Aug-18	11:26	0.01	0.0	0.2	20.6	-	-	
GP-17	29-Aug-18	11:36	0.27	0.0	8.5	6.4	-	-	
GP-18	29-Aug-18	11:42	0.00	0.0	11.0	6.8	-	-	
GP-19	29-Aug-18	11:48	0.01	0.0	1.9	19.1	-	-	
LFG-1							-	-	Note 2
LFG-2							-	-	Note 2
LFG-3							-	-	Note 2
<b>General Data</b>									
Monitored by: A. Deep				Weather Conditions					
Instruments: GEM 2000				Sky Cover: Sunny					
Calibration Date: 29-Aug-18				Wind / Rain / Snow: -					
				Temperature (°F): 63					
<b>Notes</b>									
1. Measurement for spike concentrations of CH <sub>4</sub> and CO <sub>2</sub> are recorded if observed during sampling									
2. Not monitored. Probe casing rusted shut.									
GP = Gas Probe      CH <sub>4</sub> = Methane      S = shallow      A= shallow NM = Not measured      CO <sub>2</sub> = Carbon Dioxide      M = medium      B = medium equipment malfunction      O <sub>2</sub> = Oxygen      D = deep      C = deep									

# Barometric Pressure Trend - August 2018

## Hidden Valley Landfill, Pierce County, Washington



Source: Pierce County - Thun Field Station  
Lat: 47.1 Long: 122.29 Elev: 538 ft-AMSL

Data Source: <https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2018-8-29>

# Landfill Gas Probe Monitoring

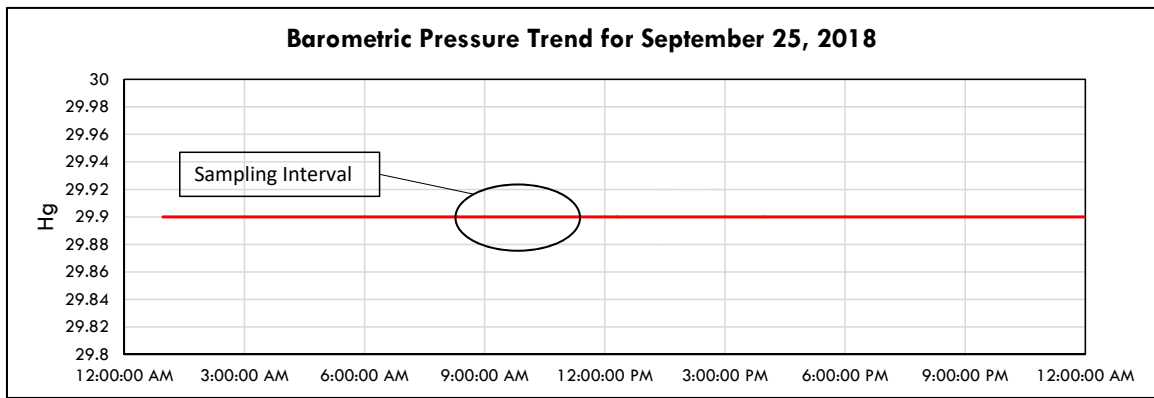
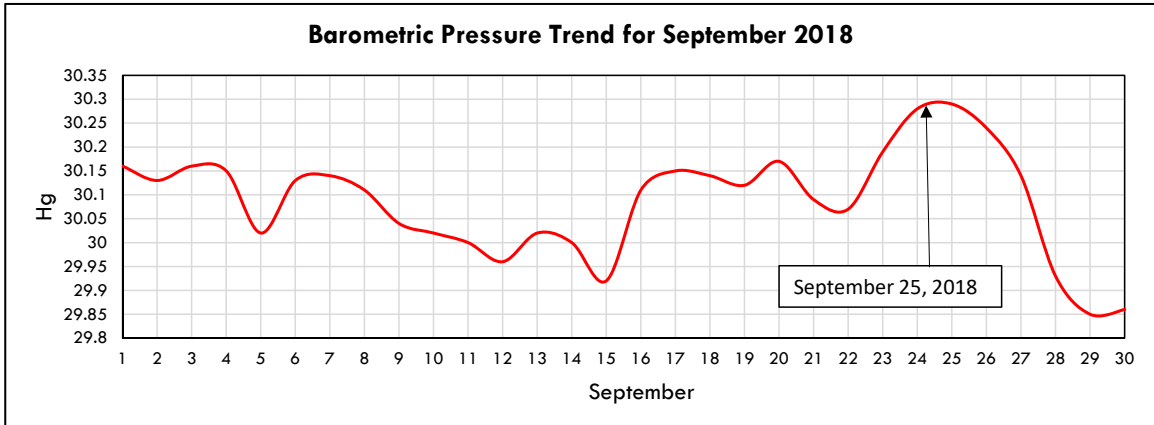
SCS Engineers

Hidden Valley Landfill  
PCRCO dba LRI

4218002.02  
September 25, 2018

Location Reference Designation	Date	Time	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	Comments		
							Spike CH <sub>4</sub> Note 1 (% vol.)	Spike CO <sub>2</sub> Note 1 (% vol.)	Other
<b>Gas Probes</b>									
GP-1A	25-Sep-18	9:00	0.00	0.0	4.0	8.5	-	-	
GP-1B	25-Sep-18	9:03	-0.01	0.0	7.1	13.1	-	-	
GP-1C	25-Sep-18	9:05	-0.01	0.0	1.5	19.1	-	-	
GP-2A	25-Sep-18	9:10	-0.01	0.0	0.4	19.9	-	-	
GP-2B	25-Sep-18	9:12	0.00	0.0	0.1	20.7	-	-	
GP-3S	25-Sep-18	9:17	-0.01	0.0	0.6	19.9	-	-	
GP-3M	25-Sep-18	9:20	-0.02	0.0	1.6	17.8	-	-	
GP-3D	25-Sep-18	9:24	-0.01	0.0	0.7	19.5	-	-	
GP-4A	25-Sep-18	9:30	-0.02	0.0	0.4	20.4	-	-	
GP-4B	25-Sep-18	9:33	-0.01	0.0	0.3	20.5	-	-	
GP-5A	25-Sep-18	9:37	-0.02	0.0	0.1	20.9	-	-	
GP-5B	25-Sep-18	9:40	-0.01	0.0	0.5	19.3	-	-	
GP-6	25-Sep-18	9:46	-0.02	0.0	0.3	20.7	-	-	
GP-7S	25-Sep-18	9:51	-0.03	0.0	0.6	20.5	-	-	
GP-7D	25-Sep-18	9:54	-0.03	0.0	0.3	20.6	-	-	
GP-8A	25-Sep-18	10:04	-0.01	0.0	2.8	17.8	-	-	
GP-8B	25-Sep-18	10:07	-0.02	0.0	1.0	20.0	-	-	
GP-9	25-Sep-18	10:12	-0.03	0.0	3.5	13.5	-	-	
GP-10	25-Sep-18	10:20	0.00	0.0	0.5	20.2	-	-	
GP-11	25-Sep-18	10:25	-0.01	0.0	0.9	19.8	-	-	
GP-12	25-Sep-18	10:34	-0.01	0.0	1.0	19.6	-	-	
GP-13A	25-Sep-18	10:43	-0.02	2.0	15.5	0.1	2.0	-	
GP-13B	25-Sep-18	10:47	0.00	0.0	0.4	20.2	-	-	
GP-14S	25-Sep-18	10:54	-0.02	0.0	3.8	17.0	-	-	
GP-14D	25-Sep-18	10:57	-0.04	0.0	3.6	14.2	-	-	
GP-15A	25-Sep-18	11:03	-0.02	0.0	1.3	19.4	-	-	
GP-15B	25-Sep-18	11:05	-0.02	0.0	1.5	19.1	-	-	
GP-16A	25-Sep-18	11:11	-0.02	0.0	1.1	19.6	-	-	
GP-16B	25-Sep-18	11:13	-0.03	0.0	0.1	20.9	-	-	
GP-17	25-Sep-18	11:20	-0.02	0.0	4.1	14.9	-	-	
GP-18	25-Sep-18	11:25	-0.02	0.0	4.5	18.2	-	-	
GP-19	25-Sep-18	11:31	-0.02	0.0	0.2	20.9	-	-	
LFG-1							-	-	Note 2
LFG-2							-	-	Note 2
LFG-3							-	-	Note 2
<b>General Data</b>									
Monitored by: T. Berndahl				Weather Conditions					
Instruments: GEM 2000				Sky Cover: Sunny		-			
Calibration Date: 25-Sep-18				Wind / Rain / Snow: -		55			
Temperature (°F):									
<b>Notes</b>									
1. Measurement for spike concentrations of CH <sub>4</sub> and CO <sub>2</sub> are recorded if observed during sampling									
2. Not monitored. Probe casing rusted shut.									
<b>Legend</b>									
GP = Gas Probe	CH <sub>4</sub> = Methane	S = shallow	A = shallow						
NM = Not measured	CO <sub>2</sub> = Carbon Dioxide	M = medium	B = medium						
equipment malfunction	O <sub>2</sub> = Oxygen	D = deep	C = deep						

**Barometric Pressure Trend - September 2018**  
**Hidden Valley Landfill, Pierce County, Washington**



Source: Pierce County - Thun Field Station  
 Lat: 47.1 Long: 122.29 Elev: 538 ft-AMSL

Data Source: <https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2018-9-25>



**Landfill Gas Probe Monitoring**

SCS Engineers

Hidden Valley Landfill

04218002.02

PCRCD dba LRI

October 24, 2018

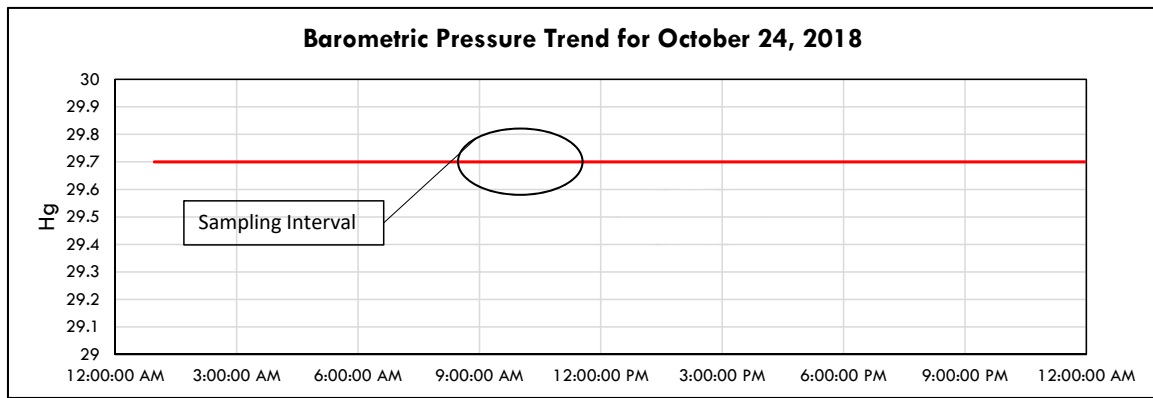
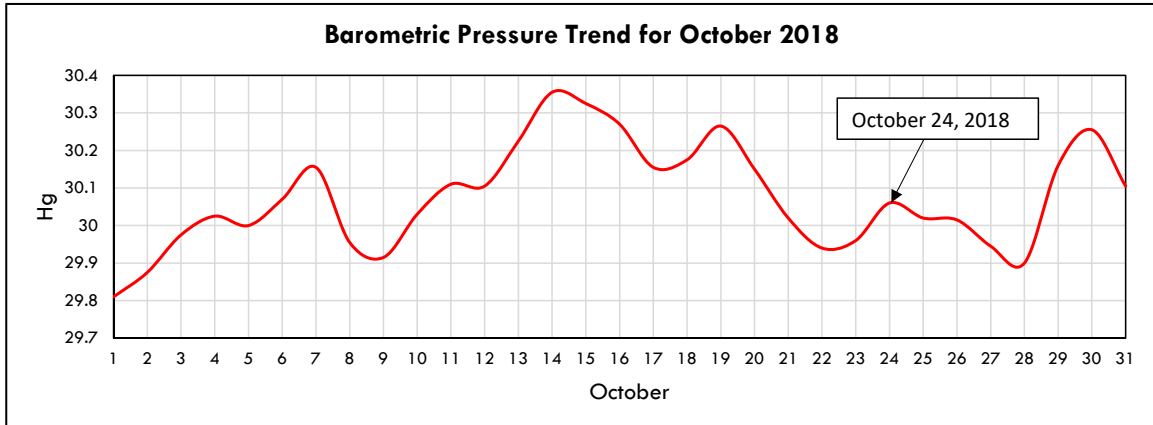
Location Reference Designation	Date	Time	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	Comments		
							Spike CH <sub>4</sub> Note 1 (% vol.)	Spike CO <sub>2</sub> Note 1 (% vol.)	Other
<b>Gas Probes</b>									
GP-1A	24-Oct-18	8:20	0.00	0.0	4.6	8.1	-	-	
GP-1B	24-Oct-18	8:23	0.00	0.0	7.6	12.9	-	-	
GP-1C	24-Oct-18	8:25	0.05	0.0	3.0	17.3	-	-	
GP-2A	24-Oct-18	8:30	0.00	0.0	1.3	18.3	-	-	
GP-2B	24-Oct-18	8:33	0.00	0.0	0.2	21.0	-	-	
GP-3S	24-Oct-18	8:37	0.00	0.0	1.1	19.5	-	-	
GP-3M	24-Oct-18	8:40	0.00	0.0	1.4	17.7	-	-	
GP-3D	24-Oct-18	8:42	0.00	0.0	1.0	18.8	-	-	
GP-4A	24-Oct-18	8:53	0.01	0.0	1.7	16.3	-	-	
GP-4B	24-Oct-18	8:56	0.02	0.0	0.3	20.9	-	-	
GP-5A	24-Oct-18	9:01	0.01	0.0	0.5	19.9	-	-	
GP-5B	24-Oct-18	9:04	0.02	0.0	0.7	18.7	-	-	
GP-6	24-Oct-18	9:11	0.01	0.0	0.3	21.0	-	-	
GP-7S	24-Oct-18	9:18	0.00	0.0	0.4	20.9	-	-	
GP-7D	24-Oct-18	9:23	0.00	0.0	0.4	20.9	-	-	
GP-8A	24-Oct-18	9:33	0.01	0.0	3.0	18.4	-	-	
GP-8B	24-Oct-18	9:36	0.01	0.0	0.6	20.8	-	-	
GP-9	24-Oct-18	9:41	0.00	0.0	3.9	11.0	-	-	
GP-10	24-Oct-18	9:47	0.00	0.0	0.4	20.9	-	-	
GP-11	24-Oct-18	9:52	0.00	0.0	2.2	13.5	-	-	
GP-12	24-Oct-18	10:00	0.00	0.0	2.8	16.5	-	-	
GP-13A	24-Oct-18	10:17	0.00	0.1	14.7	0.0	0.2	-	
GP-13B	24-Oct-18	10:21	0.12	0.0	0.7	20.4	-	-	
GP-14S	24-Oct-18	10:26	0.00	0.0	6.1	14.2	-	-	
GP-14D	24-Oct-18	10:29	-0.01	0.0	10.2	3.0	-	-	
GP-15A	24-Oct-18	10:34	-0.01	0.0	2.8	17.6	-	-	
GP-15B	24-Oct-18	10:36	0.00	0.0	7.5	9.3	-	-	
GP-16A	24-Oct-18	10:43	-0.01	0.0	1.2	19.8	-	-	
GP-16B	24-Oct-18	10:46	0.18	0.0	1.0	19.9	-	-	
GP-17	24-Oct-18	10:55	0.00	0.0	5.0	14.6	-	-	
GP-18	24-Oct-18	11:00	0.00	0.0	2.0	19.5	-	-	
GP-19	24-Oct-18	11:09	0.00	0.0	0.1	21.0	-	-	
LFG-1							-	-	Note 2
LFG-2							-	-	Note 2
LFG-3							-	-	Note 2

<b>General Data</b>			
Monitored by:	T. Berndahl	Weather Conditions	
Instruments:	GEM 2000	Sky Cover:	Cloudy
Calibration Date:	24-Oct-18	Wind / Rain / Snow:	-
		Temperature (°F):	49

- Notes
1. Measurement for spike concentrations of CH<sub>4</sub> and CO<sub>2</sub> are recorded if observed during sampling
  2. Not monitored. Probe casing rusted shut.

GP = Gas Probe      CH<sub>4</sub> = Methane      S = shallow      A= shallow  
 NM = Not measured      CO<sub>2</sub> = Carbon Dioxide      M = medium      B = medium  
 equipment malfunction      O<sub>2</sub> = Oxygen      D = deep      C = deep

**Barometric Pressure Trend - October 2018**  
**Hidden Valley Landfill, Pierce County, Washington**



Source: Pierce County - Thun Field Station  
Lat: 47.1 Long: 122.29 Elev: 538 ft-AMSL

Data Source: <https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2018-10-24>

# Landfill Gas Probe Monitoring

SCS Engineers

Hidden Valley Landfill

04218002.02

PCRCD dba LRI

November 27, 2018

Location Reference Designation	Date	Time	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	Spike CH <sub>4</sub> Note 1 (% vol.)	Spike CO <sub>2</sub> Note 1 (% vol.)	Comments
									Other
<b>Gas Probes</b>									
GP-1A	27-Nov-18	8:18	0.46	0.0	4.3	9.5	-	-	
GP-1B	27-Nov-18	8:20	-0.17	0.0	6.4	13.9	-	-	
GP-1C	27-Nov-18	8:23	-0.16	0.0	4.1	15.8	-	-	
GP-2A	27-Nov-18	8:35	-0.16	0.4	9.0	9.2	0.2	-	
GP-2B	27-Nov-18	8:38	-0.02	0.0	0.2	20.5	-	-	
GP-3S	27-Nov-18	8:42	-0.02	0.0	2.6	15.6	-	-	
GP-3M	27-Nov-18	8:45	0.01	0.0	2.0	14.4	-	-	
GP-3D	27-Nov-18	8:48	0.00	0.0	2.0	16.3	-	-	
GP-4A	27-Nov-18	8:56	0.00	0.0	0.2	20.6	-	-	
GP-4B	27-Nov-18	8:59	0.19	0.0	0.3	20.2	-	-	
GP-5A	27-Nov-18	9:03	0.00	0.0	0.2	20.4	-	-	
GP-5B	27-Nov-18	9:06	0.00	0.0	0.2	20.1	-	-	
GP-6	27-Nov-18	9:13	0.00	0.0	0.3	19.9	-	-	
GP-7S	27-Nov-18	9:19	0.00	0.0	0.4	20.0	-	-	
GP-7D	27-Nov-18	9:23	-0.01	0.0	0.4	20.1	-	-	
GP-8A	27-Nov-18	9:33	0.00	0.0	1.7	18.6	-	-	
GP-8B	27-Nov-18	9:36	0.00	0.0	0.9	19.2	-	-	
GP-9	27-Nov-18	9:41	-0.01	0.0	4.3	12.8	-	-	
GP-10	27-Nov-18	9:47	-0.01	0.0	0.3	20.2	-	-	
GP-11	27-Nov-18	9:52	-0.01	0.0	2.2	15.3	-	-	
GP-12	27-Nov-18	10:00	-0.01	0.0	4.6	11.7	-	-	
GP-13A	27-Nov-18	10:13	0.02	0.0	0.1	20.4	-	-	
GP-13B	27-Nov-18	10:15	0.01	0.0	0.1	20.5	-	-	
GP-14S	27-Nov-18	10:21	-0.01	0.0	0.6	19.8	-	-	
GP-14D	27-Nov-18	10:23	-0.01	0.0	3.5	14.5	-	-	
GP-15A	27-Nov-18	10:28	-0.03	0.0	1.6	17.3	-	-	
GP-15B	27-Nov-18	10:30	-0.03	0.0	3.8	14.4	-	-	
GP-16A	27-Nov-18	10:38	-0.03	0.0	1.1	19.3	-	-	
GP-16B	27-Nov-18	10:40	0.12	0.0	0.9	19.5	-	-	
GP-17	27-Nov-18	10:49	-0.02	0.0	3.1	16.6	-	-	
GP-18	27-Nov-18	10:54	-0.01	0.0	1.9	18.4	-	-	
GP-19	27-Nov-18	10:59	-0.02	0.0	0.2	20.1	-	-	
LFG-1							-	-	Note 2
LFG-2							-	-	Note 2
LFG-3							-	-	Note 2

**General Data**

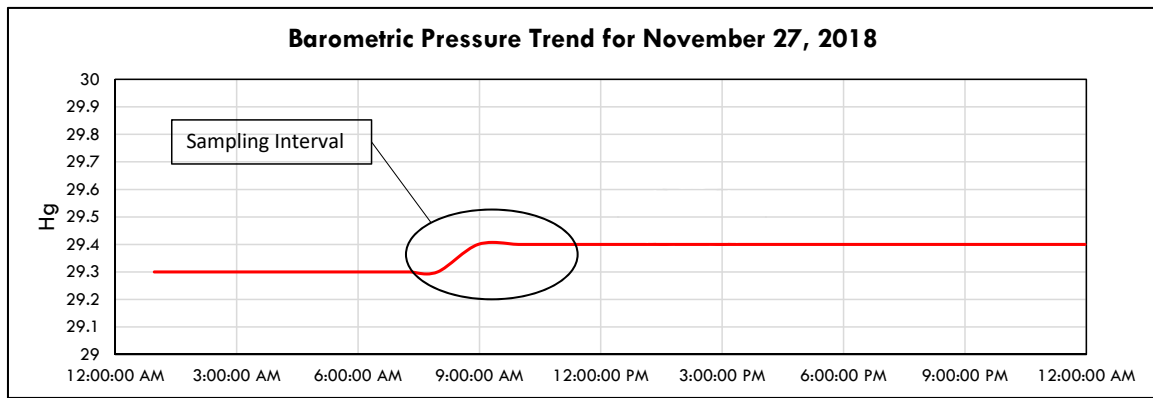
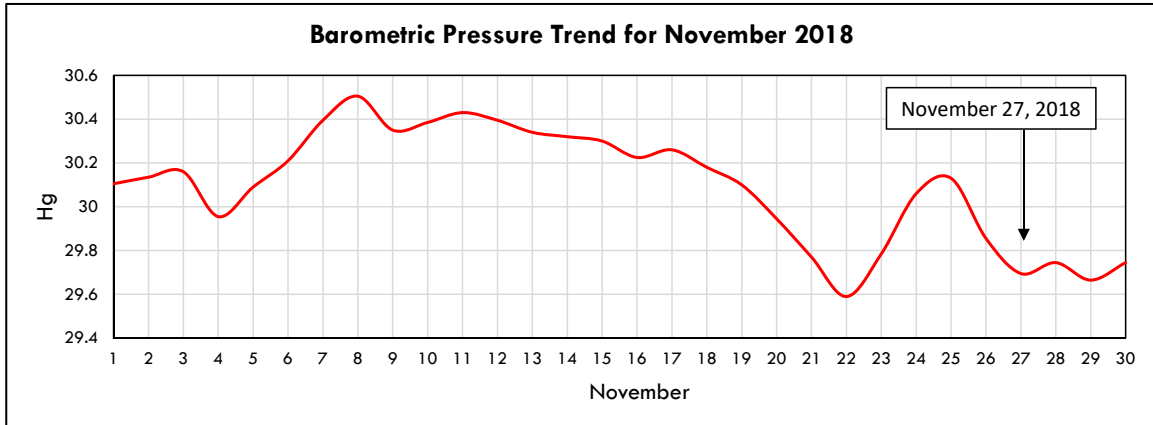
Monitored by:	T. Berndahl	Weather Conditions	
Instruments:	GEM 2000	Sky Cover:	Sunny
Calibration Date:	27-Nov-18	Wind / Rain / Snow:	-
		Temperature (°F):	55

- Notes
1. Measurement for spike concentrations of CH<sub>4</sub> and CO<sub>2</sub> are recorded if observed during sampling
  2. Not monitored. Probe casing rusted shut.

GP = Gas Probe	CH <sub>4</sub> = Methane	S = shallow	A= shallow
NM = Not measured	CO <sub>2</sub> = Carbon Dioxide	M = medium	B = medium
equipment malfunction	O <sub>2</sub> = Oxygen	D = deep	C = deep

# Barometric Pressure Trend - November 2018

## Hidden Valley Landfill, Pierce County, Washington



Source: Pierce County - Thun Field Station  
Lat: 47.1 Long: 122.29 Elev: 538 ft-AMSL

Data Source: <https://www.wunderground.com/history/monthly/us/wa/puyallup/KPLU/date/2018-11>

# Landfill Gas Probe Monitoring

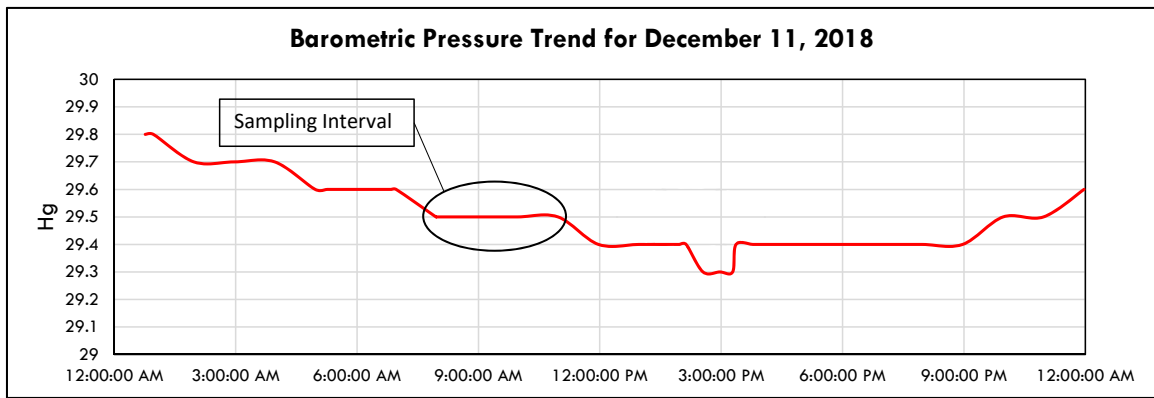
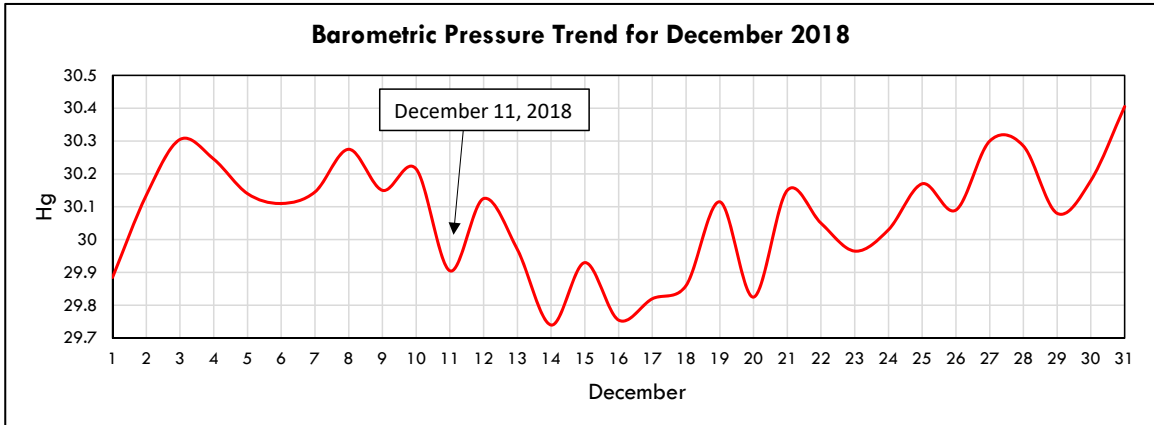
SCS Engineers

Hidden Valley Landfill  
PCRCO dba LRI

04218002.02  
December 11, 2018

Location Reference Designation	Date	Time	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	Comments														
							Spike CH <sub>4</sub> Note 1 (% vol.)	Spike CO <sub>2</sub> Note 1 (% vol.)	Other												
<b>Gas Probes</b>																					
GP-1A	11-Dec-18	8:00	0.05	0.0	3.2	13.5	-	-													
GP-1B	11-Dec-18	8:03	0.07	0.0	3.8	16.6	-	-													
GP-1C	11-Dec-18	8:06	0.05	0.0	2.8	17.4	-	-													
GP-2A	11-Dec-18	8:10	0.04	0.1	2.4	17.4	0.1	-													
GP-2B	11-Dec-18	8:13	-0.01	0.0	0.2	20.7	-	-													
GP-3S	11-Dec-18	8:19	0.03	0.0	1.5	17.5	-	-													
GP-3M	11-Dec-18	8:21	0.03	0.0	1.4	16.5	-	-													
GP-3D	11-Dec-18	8:24	0.00	0.0	0.9	18.3	-	-													
GP-4A	11-Dec-18	8:31	0.03	0.0	0.5	20.0	-	-													
GP-4B	11-Dec-18	8:33	0.04	0.0	0.1	20.8	-	-													
GP-5A	11-Dec-18	8:38	0.05	0.0	0.2	20.8	-	-													
GP-5B	11-Dec-18	8:41	0.02	0.0	0.1	20.9	-	-													
GP-6	11-Dec-18	8:47	0.06	0.0	0.0	20.8	-	-													
GP-7S	11-Dec-18	8:55	0.04	0.0	0.1	20.7	-	-													
GP-7D	11-Dec-18	8:58	0.05	0.0	0.2	20.6	-	-													
GP-8A	11-Dec-18	9:07	0.05	0.0	0.4	20.5	-	-													
GP-8B	11-Dec-18	9:09	0.00	0.0	0.4	20.5	-	-													
GP-9	11-Dec-18	9:36	0.00	0.0	2.2	16.4	-	-													
GP-10	11-Dec-18	9:43	-0.01	0.0	0.1	20.3	-	-													
GP-11	11-Dec-18	9:47	0.00	0.0	0.4	20.0	-	-													
GP-12	11-Dec-18	9:53	-0.01	0.0	0.2	20.5	-	-													
GP-13A	11-Dec-18	10:03	-0.02	0.0	0.0	20.8	-	-													
GP-13B	11-Dec-18	10:06	-0.06	0.0	0.0	20.8	-	-													
GP-14S	11-Dec-18	10:10	0.00	0.0	0.2	20.3	-	-													
GP-14D	11-Dec-18	10:14	0.03	0.0	2.8	15.3	-	-													
GP-15A	11-Dec-18	10:18	0.00	0.0	1.0	19.6	-	-													
GP-15B	11-Dec-18	10:20	0.01	0.0	0.4	20.7	-	-													
GP-16A	11-Dec-18	10:28	0.00	0.0	1.8	19.2	-	-													
GP-16B	11-Dec-18	10:30	0.00	0.0	0.0	20.7	-	-													
GP-17	11-Dec-18	10:50	0.00	0.0	0.0	20.5	-	-													
GP-18	11-Dec-18	10:55	0.00	0.0	0.4	20.3	-	-													
GP-19	11-Dec-18	11:00	0.00	0.0	2.0	18.8	-	-													
LFG-1							-	-	Note 2												
LFG-2							-	-	Note 2												
LFG-3							-	-	Note 2												
<b>General Data</b>																					
Monitored by: T. Berndahl				Weather Conditions																	
Instruments: GEM 2000				Sky Cover: Sunny																	
Calibration Date: 11-Dec-18				Wind / Rain / Snow: -																	
				Temperature (°F): 47																	
<b>Notes</b>																					
1. Measurement for spike concentrations of CH <sub>4</sub> and CO <sub>2</sub> are recorded if observed during sampling																					
2. Not monitored. Probe casing rusted shut.																					
<table border="0"> <tr> <td>GP = Gas Probe</td> <td>CH<sub>4</sub> = Methane</td> <td>S = shallow</td> <td>A = shallow</td> </tr> <tr> <td>NM = Not measured</td> <td>CO<sub>2</sub> = Carbon Dioxide</td> <td>M = medium</td> <td>B = medium</td> </tr> <tr> <td>equipment malfunction</td> <td>O<sub>2</sub> = Oxygen</td> <td>D = deep</td> <td>C = deep</td> </tr> </table>										GP = Gas Probe	CH <sub>4</sub> = Methane	S = shallow	A = shallow	NM = Not measured	CO <sub>2</sub> = Carbon Dioxide	M = medium	B = medium	equipment malfunction	O <sub>2</sub> = Oxygen	D = deep	C = deep
GP = Gas Probe	CH <sub>4</sub> = Methane	S = shallow	A = shallow																		
NM = Not measured	CO <sub>2</sub> = Carbon Dioxide	M = medium	B = medium																		
equipment malfunction	O <sub>2</sub> = Oxygen	D = deep	C = deep																		

**Barometric Pressure Trend - December 2018**  
**Hidden Valley Landfill, Pierce County, Washington**



Source: Pierce County - Thun Field Station  
 Lat: 47.1 Long: 122.29 Elev: 538 ft-AMSL

Data Source: <https://www.wunderground.com/history/monthly/us/wa/puyallup/KPLU/date/2018-12>

# Hidden Valley Landfill Landfill Gas Monitoring of On-site Buildings

Date: 3/21/2018

Weather Conditions: sunny

Instrument: MICR PID

Measured By: A. Deep

The atmosphere inside buildings at the landfill were monitored for possible intrusion of methane gas. Per WAC 173-351, concentrations of methane in on-site structures must not exceed 25% of the lower explosive limit (LEL). If off-site gas migration is suspected, concentrations of methane in off-site structures must not exceed 100 ppm methane.

The areas monitored included:

- The general overall work area
- Floor drains
- Underground conduit protrusions
- Closed areas where landfill gas could collect, such as under cupboards and inside closets

The gas detection instrument must be calibrated using calibration gas containing methane equal to 50 % LEL. Calibration must be performed before and after the survey is completed.

Checked boxes indicate that the survey revealed **no detectable methane**.

- Main Office - individual office spaces, storage areas and within open crawl-space area.
- Repair Shop – survey atmosphere conditions throughout (lower height levels).
- Pay/Scale Booth – interior of building.\*
- Recycle Building – throughout facility and water drainage areas.
- Leachate Treatment Building – all lower level office spaces, restrooms, water drainage system and storage/equipment areas.
- Gas to Energy Building – central monitoring/control room, engine room and storage cabinets.
- Transfer Station Building – throughout entire building and lower levels.

\* max concentration of 60 ppm detected in bathroom of one of the scale booths, near area of cleaning supplies & candles. Opened door & re-monitored; concentration had decreased.

A. Deep  
Signature

# Hidden Valley Landfill Landfill Gas Monitoring of On-site Buildings

Date: 5/22/18  
Weather Conditions: sunny  
Instrument: MICROFLID  
Measured By: A. Deep & T. Remdahl

The atmosphere inside buildings at the landfill were monitored for possible intrusion of methane gas. Per WAC 173-351, concentrations of methane in on-site structures must not exceed 25% of the lower explosive limit (LEL). If off-site gas migration is suspected, concentrations of methane in off-site structures must not exceed 100 ppm methane.

The areas monitored included:

- The general overall work area
- Floor drains
- Underground conduit protrusions
- Closed areas where landfill gas could collect, such as under cupboards and inside closets

The gas detection instrument must be calibrated using calibration gas containing methane equal to 50 % LEL. Calibration must be performed before and after the survey is completed.

Checked boxes indicate that the survey revealed **no detectable methane**.

- Main Office - individual office spaces, storage areas and within open crawl-space area.
- Repair Shop – survey atmosphere conditions throughout (lower height levels).
- Pay/Scale Booth – interior of building.\*
- Recycle Building – throughout facility and water drainage areas.
- Leachate Treatment Building – all lower level office spaces, restrooms, water drainage system and storage/equipment areas.
- Gas to Energy Building – central monitoring/control room, engine room and storage cabinets.
- Transfer Station Building – throughout entire building and lower levels.

main office  
upwind - 0.2 ppm  
downwind - 0.3 ppm

Alex Deep  
Signature

\*Inbound scale house had slightly elevated readings (25-27 ppm), likely due to scented candles/scented oil diffusers & cleaning supplies.



# Hidden Valley Landfill

## Landfill Gas Monitoring of On-site Buildings

Date: 8/30/18  
Weather Conditions: OVERCAST  
Instrument: Micro FID  
Measured By: A. Deep

The atmosphere inside buildings at the landfill were monitored for possible intrusion of methane gas. Per WAC 173-351, concentrations of methane in on-site structures must not exceed 25% of the lower explosive limit (LEL). If off-site gas migration is suspected, concentrations of methane in off-site structures must not exceed 100 ppm methane.

The areas monitored included:

- The general overall work area
- Floor drains
- Underground conduit protrusions
- Closed areas where landfill gas could collect, such as under cupboards and inside closets

The gas detection instrument must be calibrated using calibration gas containing methane equal to 50 % LEL. Calibration must be performed before and after the survey is completed.

Checked boxes indicate that the survey revealed **no detectable methane**.

- Main Office - individual office spaces, storage areas and within open crawl-space area.
- Repair Shop - survey atmosphere conditions throughout (lower height levels).
- Pay/Scale Booth - interior of building. → MAX 7.2 ppm (cleaning supplies, essential oil wax diffuser)
- Recycle Building - throughout facility and water drainage areas.
- Leachate Treatment Building - all lower level office spaces, restrooms, water drainage system and storage/equipment areas.
- Gas to Energy Building - central monitoring/control room, engine room and storage cabinets.
- Transfer Station Building - throughout entire building and lower levels.

Background (Main Office)

upwind → 0.00 ppm  
downwind → 0.00 ppm

  
Signature

# Hidden Valley Landfill

## Landfill Gas Monitoring of On-site Buildings

Date: 11/28/18

Weather Conditions: Overcast

Instrument: Micro PID

Measured By: Travis Berndahl

The atmosphere inside buildings at the landfill were monitored for possible intrusion of methane gas. Per WAC 173-351, concentrations of methane in on-site structures must not exceed 25% of the lower explosive limit (LEL). If off-site gas migration is suspected, concentrations of methane in off-site structures must not exceed 100 ppm methane.

The areas monitored included:

- The general overall work area
- Floor drains
- Underground conduit protrusions
- Closed areas where landfill gas could collect, such as under cupboards and inside closets

The gas detection instrument must be calibrated using calibration gas containing methane equal to 50 % LEL. Calibration must be performed before and after the survey is completed.

Checked boxes indicate that the survey revealed **no detectable methane**.


- Main Office - individual office spaces, storage areas and within open crawl-space area.
- Repair Shop – survey atmosphere conditions throughout (lower height levels).
- Pay/Scale Booth – interior of building. → Max 3.2 ppm (cleaning supplies, essential oil wax diffuser)
- Recycle Building – throughout facility and water drainage areas.
- Leachate Treatment Building – all lower level office spaces, restrooms, water drainage system and storage/equipment areas.
- Gas to Energy Building – central monitoring/control room, engine room and storage cabinets.
- Transfer Station Building – throughout entire building and lower levels.

Background (Main Office)

Upwind → 0.00 ppm

Downwind ↔ 0.00 ppm

  
Signature



Appendix B  
LEACHATE TREATMENT &  
SIDE-SLOPE LINER SYSTEM DATA



**Table 1. 2018 Main Sump and Side-Slope Liner Area Performance Data  
Semi - Annual Monitoring Event No. 2 - August 2018  
Hidden Valley Landfill, Pierce County, Washington**

<b>Month</b>	<b>Main Sump Monthly Leachate Volume - Cell 1 (gallons)</b>	<b>Side-Slope Sump Monthly Leachate Volume - Cell 2 (gallons)</b>	<b>Side-Slope Sump Monthly Leakage Flow<sup>a</sup> - Cell 2 (gallons/month)</b>	<b>Monthly Rainfall (inches)</b>
January	28,676	4,628	0	11.30
February	14,327	0	1,764	4.40
March	222	0	666	3.00
April	0	0	0	7.00
May	36,902	8,515	1,256	2.60
June	11,471	772	0	1.20
July	0	10	0	0.60
August	0	0	0	0.20
September	0	0	0	2.65
October	2,508	78	0	6.95
November	0	0	0	7.30
December	31,351	0	0	13.60
Year to date:	125,457	14,003	3,686	60.80

Notes:

a = Leakage is fluid pumped from the leak detection sump as recorded by LRI staff.

# LEACHATE DAILY LOG #2

Month: January  
 Year: 2018

Leak Det  
 cell 2

Date	Time	INFLUENT FM 212	EFFLUENT FM 511	AC-HRS	D-AP	RAIN	LB LVL	GP HRS	S-SL	CELL 1	TS/GL	TRAN P	BLW A/B	E-PH	DAILY EFFLUENT
1	12	5629432	6368153	45070	73	0	1695	1780	107871	511267	70133	1467	23890	863	32586
2	12	5663651	6400740	45094	72	0	1570	1780	107811	513211	70144	1483	23915	862	32588
3	12	5646794	6433328	45118	72	0	1536	1781	107971	524846	70148	1486	23940	866	32588
4	12	5729711	6465915	45142	72	0	1357	1783	"	"	70217	1493	23966	851	32586
5	12	5763984	6498503	45166	72	.2	1376	1784	"	"	70265	1498	23991	863	32588
6	12	5796660	6531089	45190	70	.5	1388	11	"	"	70313	1442	24016	864	32590
7	12	5828050	6563682	45214	71	0	1412	11	"	"	70353	1512	24042	868	32586
8	12	5862250	6596267	45238	71	.1	1432	11	"	"	70408	1510	24067	866	32590
9	12	5895314	6628855	45262	OFF	.4	1450	1786	107871	524846	70551	1500	24092	871	32588
10	12	5929783	6661414	45286	73.4	.8	1447	1789	107871	524846	70705	1464	24110	873	32588
11	12	5959917	6694037	45310	71.4	.4	1469	1791	107871	524846	70823	1482	24143	886	32588
12	12	5994344	6726620	45334	72	1.3	1475	1792	110175	525155	71053	1426	24168	876	32588
13	12	6027872	6759208	45358	72	0	1501	1793	"	"	71190	1492	24194	876	32588
14	12	6061362	6791795	45382	72	0	1523	11	"	"	71199	1522	24219	874	32588
15	12	6095037	6824385	45406	72	0	1539	11	"	"	71235	1515	24244	871	32590
16	12	6128269	6856973	45430	72	.1	1558	1793	110175	525155	71243	1443	24264	868	32586
17	12	6159668	6889560	45454	72	.7	1568	1793	110175	525155	71261	1524	24295	867	32586
18	12	6194217	6922146	45478	74	1.5	1485	1793	112499	525155	71271	1486	24312	871	32588
19	12	6226264	6954734	45502	73	.4	1337	1794	11	533891	71398	1487	24345	875	32588
20	12	6260772	6987321	45526	74	.10	1360	1794	"	"	71475	1477	24352	871	32586
21	12	6293696	7019909	45550	74	.10	1384	1794	"	"	"	1516	24396	872	32590
22	12	6328557	7052497	45574	72	.20	1402	1794	"	"	71581	1475	24421	877	32586
23	12	6361356	7085086	45598	72.5	.6	1427	1795	112499	533891	71608	1503	24446	885	32586
24	12	6394824	7117471	45622	71.8	1.5	1443	1795	112499	533891	72665	1475	24472	874	32588
25	12	6428190	7150258	45646	71	.1	1458	11	"	"	72747	1491	24497	869	32590
26	12	6462307	7182847	45670	72	.2	1471	11	"	"	72782	1448	24522	864	32590
27	12	6496693	7215439	45694	73	.4	1492	11	"	"	72812	1568	24548	868	32586
28	12	6528793	7248025	45718	73	.1	1509	11	"	"	72844	1507	24573	858	32588
29	12	6563602	7280611	45741	73	0	1545	11	"	533898	73129	1517	24598	864	32588
30	12	6597166	7313199	45766	OFF	1.4	1582	1796	112499	535176	73141	14.67	24624	864	32588
31	12	6628580	7345788	45790	OFF	0	1594	1796	112499	536443	73176	1504	24649	864	32588

1797 4,628 28,676  
 163



# LEACHATE DAILY LOG #1

Month: January  
 Year: 2018

Date	Time	P-1A	P-1B	P-2A	P-2B	P-3A	P-3B	M/S/L/P	D/O2	D/S/L/P	P-4A	P-4B	P-5A	P-5B	O2/2PM	M. UPTH
1	12	1632	1554	21418	14774	20786	13189	23.7	52.05	1383	5329	5477	9173	8974	769	776
2	12	1632	1559	21429	14780	20786	13200	23.7	79.05	1385	5329	5479	9181	8974	781	758
3	12	1632	1561	21444	14782	20799	13203	23.0	255.16	1387.4	5329	5484	9181	8974	776	766
4	12	11	1564	11	14801	20810	13212	24	3.3.07	1390	11	5490	9198	811	776	767
5	12	11	1568	21461	14804	20814	13227	11	69.04	1392	11	5494	9206	911	778	759
6	12	1633	1572	21469	14817	20834	13227	11	2.0.05	1395	11	5498	9215	911	779	732
7	12	1638	11	21477	14828	20835	13243	11	58.05	1397	11	5503	9224	811	776	771
8	12	1643	11	21494	14833	20847	13250	11	6.8.35	1399	11	5509	9232	911	782	773
9	12	1649	1572	21495	14852	20860	13257	24	3.28/08	1402	5329	5514	9241	8974	7.81	7.67
10	12	1643	1572	21518	14852	20864	13271	24	4.10/07	1404.1	5329	5514	9250	8974	7.86	7.69
11	12	1656	1574	21519	14869	20883	13274	24	2.52/08	1406	5329	5523	9258	8974	7.84	7.65
12	12	11	1578	21534	14876	20885	13291	11	4.2.06	1409	11	5528	9267	911	782	749
13	12	11	1581	21545	14886	20899	13298	11	4.3.05	1411	11	5532	9275	811	781	775
14	12	11	1584	21552	14900	20910	13306	11	4.9.06	1414	11	5537	9284	911	779	782
15	12	11	1589	21570	14903	20914	13321	11	4.3.06	1416	11	5542	9293	911	779	785
16	12	1656	1595	21570	14923	20935	13321	24.4	3.72/10	1419.3	5329	5546	9301	8974	7.85	7.77
17	12	1661	1592	21590	14923	20935	13339	24.4	3.80/09	1421.7	5329	5551	9309	8974	7.05	7.83
18	12	1668	1595	21595	14939	20950	13345	24.4	2.96/06	1424	5329	5556	9317	8974	7.87	7.82
19	12	1672	11	21607	14947	20960	13353	11	3.8.05	1426	11	5561	9325	811	782	775
20	12	1676	11	21620	14955	20965	13369	11	1.3.06	1429	11	5568	9333	811	785	772
21	12	1678	11	21624	14971	20985	11	11	1.2.06	1432	11	5573	9341	811	782	792
22	12	1680	1596	21645	11	11	13389	11	68.06	1434	11	5579	9349	811	783	766
23	12	1680	1598	21646	14990	21001	13392	24.6	1.03/06	1437	5329	5584	9357	8974	7.82	7.55
24	12	1680	1599	21662	14995	21010	13402	24.6	1.35/14	1439	5329	5590	9366	8974	7.84	7.71
25	12	11	1601	21671	15006	21015	13416	11	2.3.06	1442	11	5595	9374	811	779	764
26	12	11	1603	21679	15019	21035	11	11	10.3.05	1444	11	5601	9382	811	775	777
27	12	11	1605	21696	15023	11	13436	11	10.5.05	1447	11	5607	9390	811	786	764
28	12	11	1606	11	15041	21051	13440	11	12.0.05	1449	11	5612	9398	811	784	790
29	12	11	1610	21717	15043	21061	13451	11	7.3.05	1452	11	5618	9406	811	779	775
30	12	1680	1616	21721	15058	21068	13464	24.9	9.88/05	1455	5329	5623	9414	8974	7.86	7.79
31	12	1680	1619	21732	15067	21086	13469	24.7	10.7.05	1455	5329	5628	9422	8974	7.85	7.83



S/S LEAK DET 1,764 2/16

LEACHATE DAILY LOG #2

Month: February  
Year: 2018

Leak Det  
Cell 2

Date	Time	INFLUENT FM 212	EFFLUENT FM 511	AC-HRS	D-AP	RAIN	LB LVL	GP HRS	S-SL	CELL	TSS/GL	TRAN P	BLW A/B	E-PH	DAILY EFFLUENT
1	12	6662220	7378378	45814	72	0	1418	1797	112499	539943	73197	1493	24674	867	32586
2	12	6695892	7410963	45837	72	0.6	1435	1798	11	11	73227	1500	24699	869	32590
3	12	6728986	7443550	45861	off	0.2	1468	11	11	11	73410	1510	24725	869	32588
4	12	6763029	7476138	45885	72	0.1	1492	1798	11	11	11	1508	24750	864	32586
5	12	6797460	7508726	45909	72	0.1	1508	1798	11	11	73487	1483	24775	864	32588
6	12	6830421	7541314	45933	72	0	1526	1798	112499	539943	73491	1487	24801	861	32588
7	12	6863167	7573901	45957	71.8	0	1541	1798	112499	539943	73595	1502	24826	861	32588
8	12	6899709	7606490	45981	72.2	0	1558	1798	112499	539943	73699	1526	24851	859	32586
9	12	6932353	7639077	46005	74	0	1573	1801	11	11	73705	1493	24877	864	32586
10	12	6964812	7671663	46029	72	0	1583	1803	11	11	73807	1472	24902	865	32586
11	12	7000250	7704300	46053	72	0	1605	11	11	11	11	1585	24928	860	32586
12	12	7032174	7736836	46077	72	0	1613	11	11	11	73872	1458	24952	860	32586
13	12	7067047	7769420	46101	73.1	0	1622	1806	112499	539943	73882	1500	24978	850	32588
14	12	7099522	7802006	46125	73	0.2	1648	1806	112499	539943	74404	1530	25003	863	32586
15	12	7133422	7834593	46149	72.6	0.15	1361	1806	112499	544281	75908	14170	25028	876	32588
16	12	7166280	7867182	46173	72	0.1	1192	1806	11	554270	76398	1529	25054	848	32586
17	12	7199227	7899769	46197	72	0.3	1237	11	11	11	77436	1533	25079	830	32588
18	12	7232814	7932355	46221	72	0.7	1284	11	114263	11	78090	1513	25104	849	32588
19	12	7266566	7964943	46245	72	0.1	1333	11	11	11	79203	1469	25130	854	32588
20	12	7302359	7997534	46269	72.9	0.4	1397	1809	114263	554270	79201	1514	25155	858	32588
21	12	7335155	8030120	46293	72.8	0.2	1422	1833	114263	554270	79252	1475	25180	851	32590
22	12	7370030	8062708	46317	72	0.2	1433	1837	11	11	11	1508	25205	859	32590
23	12	7403877	8095298	46341	72	0	1453	1841	11	11	79634	1493	25231	856	32584
24	12	7437780	8127884	46365	72	0.1	1473	1845	11	11	11	1554	25256	858	32586
25	12	7471030	8160469	46389	72	0.2	1490	11	11	11	80153	1557	25281	847	32584
26	12	7503381	8193055	46413	72	0.4	1504	1847	11	11	81272	1485	25307	870	32588
27	12	7537984	8225641	46437	74	0	1521	1850	114263	554270	81292	1534	25332	853	32588
28		7571223	8258229	46461	73.9	0	1536	1854	114263	554270	81393	1531	25357	855	32586
29								1857							
30															
31															

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Leak detect - 1764  
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\* S/S LEAK DET. 3/22 666 GAL

LEACHATE DAILY LOG #2

Month: MARCH  
Year: 2018

Log # 007  
Cell # 1

Date	Time	INFLUENT FM 212	EFFLUENT FM 511	AC-HRS	D-AP	RAIN	LB/LVL	GP-HRS	S-SL	CELL1	TS/GL	TRAN P4	BLW A/B	E-PH	DAILY EFFLUENT
1	12	7604502	8290816	46485	73	0	1554	1857	114263	554270	81447	1489	25383	857	32586
2	12	7637950	8323402	46509	74	.1	1572	1860	"	"	81522	1480	25408	861	32588
3	12	7672759	8355990	46533	73	.05	1585	1863	"	"	81781	1496	25433	867	32590
4	12	7705493	8388578	46557	73	0	1557	1866	"	554492	81938	1496	25458	863	32586
5	12	7739346	8421166	46581	74	.2	1570	1871	"	"	82210	1501	25481	869	32586
6	12	7774121	8453752	46605	74	.2	1581	1874	114263	554492	82350	1514	25509	869	32584
7	12	7808057	8486336	46629	73	0	1593	1880	114263	"	"	1529	"	863	32586
8	12	7842435	8518922	46653	73	0	1607	1880	114263	554492	82488	1552	25560	866	32586
9	12	7874916	8551510	46677	73	.1	1622	1883	"	"	82780	1479	25585	857	32586
10	12	7910015	8584096	46701	73	0	1640	1886	"	"	82821	1496	25610	866	32586
11	12	7943864	8616682	46725	71	0	1640	1888	"	"	"	1502	25636	850	32586
12	12	7976013	8649268	46754	72	0	1652	1890	"	"	82891	1522	25660	856	32586
13	12	801192	8681854	46777	72	0	1662	1893	114263	554492	82915	1568	25685	861	32588
14	12	8045053	8714440	46796	73	.8	1668	1896	114263	554492	83130	1514	25706	868	32586
15	12	8078233	8747028	46820	73	.2	1678	1902	114263	554492	83401	1735	25736	857	32590
16	12	8111346	8779616	46844	73	0	1683	1909	"	"	84041	1502	25761	859	32586
17	12	8146116	8812202	46868	OFF	0	1688	"	"	"	84073	1508	25786	863	32588
18	12	8180968	8844790	46892	72	0	1694	1913	"	"	"	1498	2582	866	32586
19	12	8214572	8877376	46916	72	.05	1699	1916	"	"	84168	1509	25837	867	32584
20	12	8249898	8909964	46940	72	0	1711	1917	114263	554492	84421	1516	25862	864	32586
21	12	8282815	8942548	46964	70	0	1722	1919	114263	554492	84650	1544	25887	863	32586
22	12	8317180	8975134	46988	67	.05	1730	1922	"	"	84844	1526	25913	866	32586
23	12	8352598	9007720	47012	OFF	.4	1736	1925	114929	"	85419	1520	25938	866	32586
24	12	8385914	9040308	47036	67	.05	1744	1931	"	"	85448	1535	25963	861	32588
25	12	8419342	9072894	47060	69	.4	1752	"	"	"	85923	1509	25989	861	32588
26	12	8454091	9106010	47084	69	0	1757	1934	"	"	"	1511	26014	867	32590
27	12	8486662	9138070	47107	68	.4	1767	1935	114929	554492	86204	1530	26059	864	32588
28	12	8521324	9170660	47131	65	.0	1775	1936	114929	554492	86278	1513	26059	860	32588
29	12	8555800	9203248	47155	69	0	1781	"	"	"	"	1520	26090	866	32588
30	12	8590050	9235838	47179	69	0	1790	"	"	"	"	1525	26115	871	32588
31	12	8624758	9268424	47204	69	0	1785	1939	114929	554492	86278	1506	26140	863	32586

3.0 666 222

Leak detect - 666

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# LEACHATE DAILY LOG #1

Month: MARCH  
 Year: 2018

Date	Time	P-1A	P-1B	P-2A	P-2B	P-3A	P-3B	M/SI/P	D/O2	D/SI/P	P-4A	P-4B	P-5A	P-5B	P-6A	P-6B
1	12	1727	1649	22039	15353	21361	13745	26.4	7.3	.04	5329	5783	94349	9214	776	757
2	12	"	1651	22050	15362	21379	13747	"	5.2	.04		5788		9223	776	768
3	12	"	1652	22056	15377	21386	13759	"	3.0	.04		5793		9232	775	746
4	12	"	1554	22075	"	21392	13771	"	10.2	.04		5799		9241	779	782
5	12	"	1656	"	15396	21411	"	"	12.2	.04		5805		9250	770	769
6	12	1727	1657	22092	15400	21411	13781	26.4	11.0	.04	5329	5811	94349	9258	776	750
7	12	1727	1659	22100	15413	21427	13794	26.4	10.9	.04	5329	5816	94349	9267	784	757
8	12	1727	1660	22105	15424	21436	13805	26.4	10.9	.05	5329	5821	94349	9276	775	769
9	12	"	1662	22125	15427	21440	13818	"	3.8	.04		5827		9285	774	767
10	12	"	1663	"	15447	21460	"	"	3.4			5832		9293	771	759
11	12	"	1666	22145	15448	21461	13837	"	3.5			5837		9302	784	763
12	12	1728	"	22151	15461	21474	13842	26.7	9.5			5842		9311	782	777
13	12	1730	1666	22160	15472	21486	13856	26.7	4.6		5329	5848	94349	9320	7.82	7.71
14	12	1731	1666	22176	15477	21488	13866	26.7	3.6		5329	5853	94349	9229	7.53	7.18
15	12	1733	1666	22176	15460	21507	13866	26.8	8.0		5329	5858	94349	9337	7.73	7.80
16	12	1735	"	22196	15496	21511	13881	"	6.9			5863		9346	777	763
17	12	1736	"	22201	15512	21522	13889	"	7.6			5868		9354	280	749
18	12	1739	"	22214	15520	21536	13898	2.7	7.5			5873		9363	783	774
19	12	1741	"	22226	15528	21540	13913	"	8.6			5878		9372	787	763
20	12	1743	1666	22232	15540	21561	13913	27.0	6.2		5329	5883	94349	9380	7.83	7.57
21	12	1746	1666	22252	15544	21561	13931	2.7	6.7		5329	5888	94349	9389	7.87	7.73
22	12	1747	"	22252	15563	21575	13937	"	5.9			5893		9398	778	755
23	12	1749	"	22269	15567	21586	13946	"	7.5			5899		9407	776	771
24	12	1750	1667	22277	15579	21590	13961	"	7.6			5904		9415	771	778
25	12	"	1668	22284	15591	21609	"	"	7.7			5909		9425	782	784
26	12	"	1670	22302	15594	21611	13978	"	1.9			5914		9433	780	763
27	12	1750	1672	22302	15612	21625	13984	27.4	8.2		5329	5919	94349	9447	7.85	7.44
28	12	1750	1674	22320	15615	21636	13992	27.4	7.1		5329	5925	94349	9450	7.81	7.65
29	12	"	1676	22327	15628	21639	14008	"	8.0			5930		9459	780	772
30	12	"	1678	22336	15639	21659	"	"	2.1			5936		9468	782	762
31	12	1750	1680	22353	15643	21661	14025	27.6	1.8		5329	5942	94349	9477	784	781



326 326  
183 146

### LEACHATE DAILY LOG #2

Month: APRIL  
Year: 2018

Leg K  
Det. pos.  
Cell 2

Date	Time	INFLUENT FM 212	EFFLUENT FM 511	AC-HRS	D-AP	RAIN	LB LVL	GP HRS	S-SL	CELL1	TS/GL	BLW A/B	E-PH	DAILY EFFLUENT
1	12	8658648	9301012	47228	69	0	1774	1939	114929	554192	86278	26166	865	32586
2	12	8693094	9333598	47252	69	0	1797	"	"	"	"	26191	864	32586
3	12	8727322	9366184	47275	70	0	1894	1939	114929	554492	86279	26216	869	32586
4	12	8760212	9398770	47299	70	0	1805	1942	114929	554492	86283	23032	862	32586
5	12	8792568	9431352	47323	70	0	1798	1942	114929	554492	86283	23957	869	32588
6	12	8827968	9463942	47347	69	0	1783	"	"	"	86306	23983	871	32586
7	12	8860832	9496526	47371	70	0	1796	"	"	"	"	24008	869	32586
8	12	8894952	9529116	47396	70	0	1797	"	"	"	"	24033	875	32586
9	12	8928188	9561700	47420	70	0	1804	"	"	"	"	24058	868	32586
10	12	8961670	9594286	47443	70	0	1906	1942	114929	554492	86306	24084	874	32586
11	12	8996088	9626872	47467	69	0	1930	1943	114929	554492	86308	24109	870	32586
12	12	9029470	9659458	47491	71	0	1914	1945	114929	554492	86308	24159	873	32586
13	12	9064230	9692044	47515	70	0	1947	1945	"	"	"	24160	870	32586
14	12	9097390	9724632	47539	70	0	1951	"	"	"	"	24185	868	32586
15	12	9130512	9757218	47563	70	0	1961	"	"	"	"	24210	867	32586
16	12	9164890	9789802	47587	70	0	1973	"	"	"	"	24236	867	32586
17	12	9200178	9822388	47611	71	0	2001	1945	"	"	"	24261	867	32586
18	12	9233544	9854974	47635	71	0	2005	"	"	"	"	24286	867	32586
19	12	9266952	9887562	47659	70	0	2007	1946	"	"	"	24311	865	32586
20	12	9298706	9920146	47683	70	0	2016	"	"	"	"	24337	868	32588
21	12	9334452	9952736	47707	70	0	2021	1948	"	"	"	24362	864	32588
22	12	9367976	9985324	47730	70	0	2047	1949	"	"	86311	24387	864	32588
23	12	9402624	17910	47754	72	0	2054	1953	"	"	"	24413	868	32586
24	12	9435096	50602	47778	71	0	2063	1988	"	"	"	24438	860	32586
25	12	9469240	83125	47804	off	0	2065	"	"	"	"	24463	865	32586
26	12	9503910	115669	47828	71	0	2052	"	"	"	"	24489	865	32586
27	12	9537938	148255	47852	71	0	2076	"	"	"	"	24514	862	32586
28	12	9570866	180842	47876	71	0	2060	"	"	"	"	24539	872	32586
29	12	9605732	213428	47900	70	0	2058	1988	"	"	"	24564	872	32584
30	12	9638440	246012	47923	70	0	2059	"	114929	554492	86314	24590	869	32584
31														

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17  
24  
2018





LEAK DET 5/1 1,256 GAL

LEACHATE DAILY LOG #2

Month: May 2018  
Year:

CELL 1  
LEAK

Date	Time	INFLUENT FM 212	EFFLUENT FM 511	AC-HRS	D-AP	RAIN	LB LVL	GP HRS	S-SL	CELL 1	TS/GI	BLW A/B	E-PH	DAILY EFFLUENT
1	12:00	9672928	278590	4747	72.3	1"	20.55	1988	11429	551492	86314	24615	8.14	32586
2	12:00	9705070	31183	4797	72.0	0	19.51	1988	12073	555388	86315	24640	8.71	32586
3	12:00	9739364	343770	4795	71.1	0	17.22	1988	12073	571267	86315	24665	8.77	32586
4	12	9773978	376357	48020	71.1	0	13.44	"	"	583221	"	24691	8.71	32586
5	12	9807246	408942	48044	72	0	12.65	"	"	591394	"	24716	8.56	32586
6	12	9842094	441529	48068	71	0	11.93	"	"	"	"	24741	8.58	32586
7	12:00	9874904	474114	48092	71.4	0	12.20	1988	12073	591394	86315	24767	8.63	32586
8	12:00	9909300	506700	48115	73.1	0	12.43	1988	124700	591394	86315	24792	8.14	32586
9	12:00	9942462	539287	48139	73.4	0	12.58	1988	124700	591394	86323	24817	8.61	32586
10	12:00	9977584	571873	48163	71.8	.5	12.70	1988	124700	591394	86323	24843	8.67	32586
11	12:00	10198	604410	48188	72.0	.8	12.86	1988	124700	591394	86323	24868	8.64	32586
12	12:00	42650	637046	48212	71.0	0	13.18	1988	124700	591394	86323	24893	8.71	32586
13	12:00	77611	669633	48235	71.6	0	13.13	1988	124700	591394	86323	24911	8.64	32586
14	12:00	110755	702221	48259	71.5	0	13.32	1988	124700	591394	86323	24933	8.52	32586
15	12:00	143835	734809	48283	71.0	0	13.47	1990	124700	591394	86325	24919	8.54	32586
16	12	176892	767394	48307	72.0	0	13.64	1990	124700	591394	86325	24944	8.63	32586
17	12	211817	799981	48332	72	0	13.54	"	"	"	"	25020	8.73	32586
18	12	245113	832566	48356	72	0	13.80	"	"	"	"	25045	8.74	32586
19	12	278503	865153	48380	71	0	15.03	"	"	"	"	25070	8.74	32586
20	12	311647	897740	48404	72	.3	14.14	"	"	"	"	25096	8.73	32586
21	12	343669	930327	48428	72	0	13.96	"	"	"	"	25121	8.74	32586
22	12:00	379782	962915	48451	71.8	0	11.29	1990	124700	591394	86325	25116	8.69	32586
23	12:00	412902	995506	48475	71.8	0		1990	124700	591394	86325	25171	8.68	32586
24	12	446611	1028094	48499	72	0	14.22	"	"	"	"	25197	8.75	32586
25	12	480082	1060683	48522	71	0	15.25	"	"	"	"	25222	8.74	32586
26	12	513284	1093271	48548	72	0	16.15	1994	11	"	"	25247	8.77	32586
27	12	546826	1125857	48572	72	0	16.41	"	"	"	"	25273	8.76	32586
28	12	580036	1158446	48595	72	0	17.18	1997	11	"	"	25298	8.72	32586
29	12:00	613863	1191032	48619	70.3	0	17.41	1996	124700	591394	86326	25308	8.70	32586
30	12:00	647258	1223618	48643	71.5	0	17.45	2000	124700	591394	86326	25348	8.74	32586
31	12:00	681197	1251207	48667	70.7	0	16.30	2000	124700	591394	86326	25374	8.71	32586

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2001 9771 36902

- 1,256 (Leak Detector)

8,515

# LEACHATE DAILY LOG #1

Month: May  
 Year: 2018

Date	Time	P-1A	P-1B	P-2A	P-2B	P-3A	P-3B	M/S/L/P	D/O2	D/S/L/P	P-4A	P-4B	P-5A	P-5B	Q/O2
1	12:00	1781	1713	22061	15949	21962	14311	30.6	9.22	1672	5329	6109	94349	9760	7.90
2	12:00	1785	1715	22080	15949	21976	14316	30.4	8.54	1474	5329	6114	943410	9769	7.84
3	12:00	1787	1713	22688	15968	21987	14321	30.4	12.95	1676	5329	6120	94349	9779	7.75
4	12	1788	"	22697	15973	"	14337	"	6.6	1678	"	6125	"	9788	7.68
5	12	1789	"	22706	15983	22002	14339	"	3.65	1680	"	6130	"	9797	7.83
6	12	1792	"	22713	15997	22012	"	"	2.46	1682	"	6135	"	9807	7.63
7	12:00	1797	1713	22731	15997	22016	14362	30.5	2.94	1685	5329	6140	94349	9816	7.74
8	12:00	1798	1715	22731	16017	22038	14362	20.8	5.60	1687	5329	6146	943410	9825	7.54
9	12:00	1798	1717	22748	16020	22037	14379	30.8	7.63	1690	5329	6151	94349	9835	7.85
10	12:00	1798	1719	22757	16032	22050	14386	30.8	10.27	1692	5329	6156	94349	9844	7.68
11	12:00	1798	1720	22764	16044	22062	14392	30.9	9.20	1693	5329	6161	94349	9853	7.95
12	12:00	1798	1722	22782	16045	22062	14410	31.2	9.44	1695	5329	6166	943410	9862	7.86
13	12:00	1798	1724	22782	16065	22082	14410	31.2	8.01	1696	5329	6172	94349	9872	7.49
14	12:00	1798	1725	22799	16068	22087	14423	31.2	9.87	1700	5329	6177	94349	9881	7.77
15	12:00	1798	1727	22807	16078	22094	14434	31.3	9.20	1703	5329	6182	943410	9890	7.57
16	12:00	1798	1729	22812	16092	22112	14435	31.3	9.51	1705	5329	6187	94349	9900	7.77
17	12	"	1732	22832	"	"	14454	"	2.25	1708	"	6192	"	9909	7.82
18	12	"	1734	"	16111	22128	14457	32	2.15	1710	"	6197	94389	9914	7.59
19	12	"	1736	22847	16116	22137	14467	"	2.16	1712	"	6202	94469	"	7.61
20	12	1800	"	22858	16125	22141	14481	"	4.11	1715	"	6208	94559	"	7.93
21	12	1802	"	22862	16140	22161	"	"	1.71	1717	"	6213	94648	"	7.58
22	12:00	1804	1736	22883	16140	22162	14499	32.2	8.00	1720	5329	6218	94729	9914	7.33
23	12:00	1806	1736	22883	16159	22176	14505	32.2	"	1722	5329	6224	94819	9914	7.55
24	12	1808	"	22898	16164	22187	14512	"	2.57	1725	"	6229	94908	"	7.55
25	12	1811	"	22908	16173	22189	14529	"	3.19	1727	"	6234	94989	"	7.50
26	12	1812	"	22913	16188	22208	"	"	3.12	1730	"	6239	95079	"	7.42
27	12	1815	"	22933	"	22213	14543	"	2.50	1732	"	6244	95168	"	7.49
28	12	1817	"	22934	16206	22222	14552	"	2.29	1735	"	6248	95249	"	7.57
29	12:00	1820	1736	22940	16212	22237	14555	32.4	1.65	1737	5329	6253	95339	9914	7.45
30	12:00	1821	1736	22959	16221	22237	14573	32.4	2.00	1740	5329	6257	95428	9914	7.34
31	12:00	1902	1736	22964	16235	22259	14576	32.5	2.60	1742	5329	6262	95509	9914	7.37

9559



# LEACHATE DAILY LOG #2

Month: June  
Year: 2018

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Cell 7  
Leak

Date	Time	INFLUENT FM 212	EFFLUENT FM 511	AC-HRS	D-AP	RAIN	LB LIV	GP HRS	SSI	CELLS	TSS/GAL	BLW A/B	E-PH	DAILY EFFLUENT
1	12	714802	1288793	48692	72	0	1615	2001	124700	591394	86326	25399	875	32588
2	12	748669	1321379	48716	71	0	1635	"	"	"	"	25424	877	32586
3	12	781745	1353600	48830	70	0	1713	2001	"	"	"	25450	863	32586
4	12	815534	1386556	48854	70	0	1683	2001	"	"	"	25475	875	32586
5	12:00	848993	1419143	48887	70.6	2	1685	2001	124700	591394	86326	25500	872	32586
6	12:00	882651	1451729	48811	70.2	0	227	2004	125472	595151	86340	25525	868	32586
7	12:00	915877	1484315	48835	70.3	0	1324	2004	125472	602315	86340	25551	868	32588
8	12	949139	1516903	48860	72	0	1352	2004	"	"	"	25602	873	32586
9	12	982142	1549492	48884	71	0.3	137	2004	"	"	"	25627	877	32588
10	12	1015408	1582079	48908	73	0.2	1346	2008	"	"	"	25652	871	32585
11	12	1050526	1614665	48932	72	0.1	1292	2008	"	"	"	25677	867	32583
12	12:00	1084347	1647252	48955	71.5	0	1334	2008	125472	602865	86340	25703	860	32586
13	12:00	1117282	1679841	48979	71.7	0	1396	2008	125472	602865	86340	25728	867	32588
14	12	1148945	1712427	49003	72	0	1361	2008	"	"	"	25752	861	32586
15	12	1183491	1745015	49027	71	0	1378	2008	"	"	"	25777	863	32588
16	12	1216180	1777601	49051	71	0	1396	2008	"	"	"	25803	864	32588
17	12	1249722	1810189	49075	71	0	1360	2013	"	"	"	25828	856	32586
18	12	1284037	1842777	49099	72	0	1372	2013	"	"	"	25853	850	32588
19	12:00	1317276	1875364	49122	70.0	0	1385	2013	125472	602865	86340	25871	853	32586
20	12:00	1351594	1907451	49146	71.1	0	1506	2013	125472	602865	86340	25904	852	32586
21	12	1382911	1940537	49171	71	0	1566	2013	"	"	"	25929	869	32586
22	12	1415025	1973123	49195	71	0	1274	2013	"	"	"	25954	876	32586
23	12	1448374	2005708	49219	71	0	1283	"	"	"	"	25980	873	32586
24	12	1481682	2038295	49243	71	0	1334	"	"	"	"	26005	872	32586
25	12	1515044	2070882	49267	71	0	1300	"	"	"	"	26030	878	32588
26	12:00	1548468	2103467	49290	71.2	0.4	1309	2013	125472	602865	86340	26054	874	32586
27	12:00	1582434	2136055	49314	71.5	0	1318	2013	125472	602865	86340	26081	879	32586
28	12:00	1615833	2168642	49338	72.0	0	1326	2013	125472	602865	86340	26106	878	32588
29	12	1648924	2201228	49352	72	0	1334	"	"	"	"	26132	875	32586
30	12	1682330	2233861	49386	71	0	1340	2016	125472	602865	86340	26132	875	32586
31	12							16						

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# LEACHATE DAILY LOG #1

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Month: June  
Year: 2018

Date	Time	P-1A	P-1B	P-2A	P-2B	P-3A	P-3B	M/S/L/P	D/O2	D/S/L/P	P-4A	P-4B	P-5A	P-5B	P-6A	P-6B
1	12	1821	1740	22984	16235	22262	14586	32	2.8	1745	5329	6267	9559	89914	775	724
2	12	11	1742	11	16254	22266	14600	11	3.1	1747		6271	9567	9	775	745
3	12	11	1744	22999	16259	22285	11	11	3.0	1749		6276	9576	9	780	747
4	12	11	1746	23009	16269	22287	14616	11	3.09	1752		6281	9585	8	780	748
5	12:00	1821	1750	23015	16285	22290	14623	32.7	4.52	1754	5329	6286	9593	99914	780	745
6	12:00	1821	1755	23035	16283	22312	14628	32.7	4.18	1757	5329	6291	9602	99914	781	737
7	12:00	1821	1751	23035	16303	22312	14644	32.7	5.69	1759	5329	6296	9610	99914	777	737
8	12	1823	1759	23050	16307	22329	14646	11	3.4	1761		6301	9619	9	783	739
9	12	1828	11	23060	16317	22337	14657	11	3.6	1763		6306	9628	8	783	736
10	12	1831	11	23065	16331	22342	14670	11	3.8	1766		6311	9636	9	784	750
11	12	1835	11	23085	16332	22362	11	11	3.21	1768		6316	9645	9	781	739
12	12:00	1840	1759	23085	16351	22362	14687	33.1	3.65	1771	5329	6321	9654	99914	782	743
13	12:00	1844	1759	23101	16355	22375	14694	33.1	1.50	1773	5329	6326	9662	99914	782	729
14	12	1845	1763	23110	16364	22387	14699	11	2.21	1776		6331	9671	8	782	741
15	12	11	1764	23115	16379	22388	14717	11	2.62	1778		6337	9679	9	780	750
16	12	11	1767	23134	11	22406	14717	11	2.95	1780		6342	9688	9	781	732
17	12	11	1768	23136	16397	22413	14729	11	2.0	1783		6348	9697	8	780	743
18	12	11	1770	23150	16404	22419	14741	11	2.89	1785		6353	9705	9	781	763
19	12:00	1845	1772	23161	16413	22439	14742	33.4	2.57	1788	5329	6358	9714	99914	779	734
20	12:00	1845	1774	23166	16429	22438	14761	33.4	1.52	1790	5329	6364	9722	99914	782	746
21	12	1845	1776	23184	16429	22452	14765	11	19.8	1793		6369	9731	9	784	761
22	12	11	1779	23186	16447	22463	14772	11	2.05	1795		6374	9740	8	786	756
23	12	11	1783	23199	16454	22464	14789	11	2.90	1797		6379	9748	9	786	754
24	12	1847	11	23211	16461	22484	14789	11	2.26	1800		6385	9757	9	779	754
25	12	1849	11	23214	16479	22488	14802	11	17.8	1802		6390	9766	8	788	763
26	12:00	1853	1783	22234	16479	22497	14812	33.7	0.92	1805	5329	6395	9774	99914	776	729
27	12:00	1857	1783	23237	16497	22513	14815	34.7	1.51	1807	5329	6401	9783	99914	785	754
28	12:00	1860	1783	23249	16505	22513	14834	34.7	1.95	1810	5329	6406	9791	99914	783	734
29	12	1861	11	23262	16512	22530	14836	11	3.26	1812		6411	9800	9	784	751
30	12	1863	1783	23264	16530	22538	14846	34.7	3.60	1815		6417	9809	8	783	753
31	12					53297							17	99914		

# LEACHATE DAILY LOG #2

125482  
-125472  
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Month: July  
Year: 2018

Cell 1  
Leak

Date	Time	Influent FM 212	Effluent FM 511	ACHRS	D-AP	RAIN	IB INV.	GP HRS	S-SL	CELL 1	TS/G/L	BLW A/B	E-PH	DAILY EFFLUENT
1	12	1715460	2266402	49411	72	0	1350	2016	125472	602865	87076	1543	882	32588
2	12	1748780	2298989	49435	72	0	1357	11	11	11	11	1537	879	32586
3	12:00	1781939	2331575	49458	71.5	0	1365	2016	125472	602865	87076	1542	874	32581
4	12:00	1815279	2354161	49482	71.6	0	1373	2016	125472	602865	87076	1555	867	32588
5	12	1848261	2396748	49506	71	0	1379	11	11	11	11	1531	865	32586
6	12	1881561	2429336	49580	71	0	1385	11	11	11	11	1523	866	32586
7	12	1914880	2461921	49554	71	0.6	1395	11	11	11	11	1530	870	32586
8	12	1948238	2494507	49578	71	0	1402	11	11	11	11	1544	864	32588
9	12	1981762	2527095	49602	71	0	1408	11	11	11	11	1522	862	32586
10	12:00	2015837	2559683	49626	70.8	0	1415	2016	125472	602865	87076	1530	869	32586
11	12:00	2049103	2592269	49650	72.3	0	1424	2016	125482	602865	87570	1549	861	32586
12	12	2082389	2624854	49674	71	0	1430	2016	11	11	118068	1537	870	32586
13	12	2116035	2657441	49698	71	0	1436	2017	11	11	149744	1537	851	32588
14	12	2149384	2690027	49722	72	0	1441	11	11	11	153064	1520	851	32588
15	12	2182938	2722615	49746	72	0	1448	11	11	11	174099	1540	851	32586
16	12	2214446	2755201	49770	71	0	1454	11	11	11	211162	1532	846	32586
17	12	2249788	2787788	49794	72	0	1461	11	11	11	237321	1529	837	32586
18	12	2281214	2820373	49818	72	0	1469	11	11	11	11	1526	851	32588
19	12	2315946	2852960	49842	72	0	1477	11	11	11	11	1535	840	32586
20	12	2349106	2885548	49866	71	0	1483	11	11	11	11	1547	850	32586
21	12	2382921	2918136	49890	72	0	1492	11	11	11	11	1541	842	32588
22	12	2414467	2950722	49913	71	0	1497	11	11	11	11	1530	842	32588
23	12	2449706	2983310	49937	72	0	1502	11	11	11	11	1535	830	32588
24	12:00	2480650	3015896	49960	73.0	0	1508	2017	125482	602865	237321	1528	830	32586
25	12:00	2513309	3048482	49984	73.1	0	1514	2017	125482	602865	237321	1533	832	32586
26	12:00	2547597	3081070	50008	72.4	0	1520	2017	125482	602865	237321	1539	826	32588
27	12	2582117	3116361	50032	72	0	1528	2019	11	11	11	1545	828	32588
28	12	2612888	3146247	50056	72	0	1535	11	11	11	11	1540	831	32588
29	12	2646083	3178835	50080	71	0	1540	11	11	11	11	1526	823	32586
30	12	2679316	3211422	50104	72	0	1546	11	11	11	11	1529	819	32586
31	12:00	2713995	3244008	50125	72.5	0.6	1553	2022	125482	602865	237321	1528	821	32588

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# LEACHATE DAILY LOG #1

Month: July  
 Year: 2018

Date	Time	P-1A	P-1B	P-2A	P-2B	P-3A	P-3B	M/S/L/P	D/OZ	D/S/L/P	P-4A	P-4B	P-5A	P-5B	788	760
1	12	1866	1783	23284	16530	22543	14859	34	312	1817	5329	6422	98179	9914	788	760
2	12	1867	1784	23287	16547	22562	14876	11	249	1819	11	6427	9826	811	788	756
3	12:00	1868	1785	23299	16555	22583	14876	34.8	314	1822	5329	6432	98349	9914	783	750
4	12:00	1868	1786	23312	16562	22575	14883	34.6	2.29	1824	5329	6438	98439	9914		
5	12	1868	1787	23314	16580	22588	14889	11	349	1827		6443	9852	8	789	758
6	12	1868	1788	23334	16580	11	14906	35	311	1829		6448	9860	9	791	752
7	12	1868	1789	23338	16597	22607	14907	11	2.21	1831		6454	9869	8	794	761
8	12	1868	1790	23349	16606	22613	14919	11	1.98	1834		6459	9877	9	790	757
9	12	1868	1791	23363	16612	22620	14930	11	3.61	1836		6465	9886	9	788	762
10	12:00	1868	1792	23364	16631	22638	14931	35.0	2.08	1839	5329	6469	9895	9914	774	741
11	12:00	1868	1793	23384	16631	22638	14950	35.0	3.55	1841	5329	6475	9903	9914	782	755
12	12	1868	1794	23388	16647	22653	14954	11	1.49	1844		6480	9912	8	785	746
13	12	1868	1795	23400	16656	22664	14963	11	2.28	1846		6485	9920	9	784	747
14	12	1868	1796	23414	16663	22668	14978	11	2.40	1849		6490	9929	9	787	748
15	12	1869	1806	23415	16682	22687	14987	11	1.82	1851		6496	9938	8	788	759
16	12	1871	1807	23434	16687	11	14994	11	3.40	1853		6501	9946	9	792	758
17	12	1873	1808	23439	16698	22702	15002	11	2.35	1856		6506	9955	9	786	749
18	12	1875	1809	23449	16707	22714	15007	11	3.61	1858		6511	9964	8	789	758
19	12	1878	1810	23464	16713	22715	15025	11	1.9	1861		6517	9972	9	784	746
20	12	1879	1811	23465	16732	22734	15039	11	1.8	1863		6522	9981	8	787	755
21	12	1882	1812	23485	16732	11	22739	35.7	2.47	1866		6528	9989	9	789	747
22	12	1884	1813	23489	16747	22747	15049	11	1.47	1868		6533	9998	9	784	745
23	12	1886	1814	23497	16757	22748	15065	11	2.99	1870		6537	10007	8	789	749
24	12:00	1888	1815	23515	16759	22766	15065	35.8	1.84	1873	5329	6542	10015	9914	780	737
25	12:00	1889	1816	23515	16777	22772	15076	35.8	1.13	1875	5329	6546	10024	9914	783	733
26	12:00	1891	1817	23529	16783	22778	15089	35.8		1877	5329	6552	10032	9914	781	735
27	12	1892	1818	23540	16793	22797	15090	36	2.38	1880		6557	10042	10	786	733
28	12	1892	1819	23542	16808	11	15105	11	3.11	1882		6561	10050	8	790	747
29	12	1892	1820	23562	16808	11	22809	11	2.49	1884		6567	10058	8	788	751
30	12	1892	1821	23565	16825	22822	15118	11	2.66	1887		6572	10067	8	785	743
31	12:00	1892	1822	23578	16833	22822	15136	36	1.00	1889	5329	6577	10075	9914	784	750



# LEACHATE DAILY LOG #2

Month: August  
 Year: 2018

Date	Time	Influent FM 212	Effluent FM 511	ACHRS	D-AP	RAIN	B-LVL	GP HRS	S-SL	CELL	TS/GI	TRANP	BLW A/B	E-PH	DAILY EFFLUENT
1	12:00	2745890	3276595	50148	72.7	0	1561	2022	125482	602865	237321	1530	26932	8.44	32588
2	12:00	2779104	3309183	50172	72.3	0	1566	2022	125482	602865	237321	1527	26915	8.38	32588
3	17	2812276	3341771	50196	72.0	0	1572	"	"	"	"	1541	26990	8.45	32586
4	12	2845675	3374357	50220	72.0	0	1579	"	"	"	"	1544	27016	8.41	32586
5	12	2878934	3406943	50244	72.0	0	1584	"	"	"	"	1536	27041	8.33	32586
6	12	2912054	3439529	50268	72.0	0	1588	"	"	"	"	1518	27066	8.26	32586
7	12:00	2947035	3472116	50292	70.2	0	1594	2022	125482	602865	237321	1540	27076	8.25	32588
8	12:00	2978379	3504702	50316	72.0	0	1600	2022	125482	602865	237321	1540	27117	8.27	32588
9	12	3011895	3537289	50340	71.0	0	1604	"	"	"	"	1519	27142	8.16	32588
10	12	3045707	3569749	50364	71.0	0	1611	"	"	"	"	1549	27168	8.21	32588
11	12	3081061	3602466	50388	71.0	0	1617	"	"	"	"	1520	27193	8.35	32588
12	12	3114551	3635055	50412	70.2	0	1622	"	"	"	"	1535	27218	8.46	32588
13	12	3148069	3667643	50436	72.0	0	1630	"	"	"	"	1546	27244	8.47	32588
14	12:00	3181494	3700232	50460	70.6	0	1634	2022	125482	602865	237321	1545	27269	8.41	32588
15	12:00	3214508	3732820	50484	71.3	0	1639	2023	125482	602865	237321	1533	27294	8.31	32588
16	12	3247642	3765408	50508	70.0	0	1643	"	"	"	"	1516	27319	8.30	32588
17	12	3281113	3797993	50532	70.0	0	1650	"	"	"	"	1519	27344	8.37	32588
18	12	3314959	3830582	50556	70.0	0	1656	"	"	"	"	1538	27370	8.40	32588
19	12	3349191	3863170	50580	71.0	0	1662	"	"	"	"	1547	27395	8.33	32588
20	12	3382371	3895760	50604	70.0	0	1667	"	"	"	"	1547	27421	8.35	32588
21	12:00	3415844	3928347	50628	71.0	0	1671	2031	125482	602865	237321	1532	27446	8.34	32588
22	12:00	3449238	3960934	50652	69.3	0	1678	2031	125482	602865	237321	1552	27471	8.32	32588
23	12:00	3480445	3993525	50676	71.6	0	1683	2031	125482	602865	237321	1529	27493	8.40	32588
24	12:00	3515084	4026111	50700	69.7	0	1690	2031	125482	602865	237321	1538	27509	8.42	32588
25	12:00	3547107	4058697	50724	69.5	0	1695	2031	125482	602865	237321	1550	27528	8.45	32588
26	12:00	3590586	4091286	50748	71.1	0	1724	2033	125482	602865	237321	1543	27572	8.44	32590
27	12:00	3615740	4123875	50772	70.0	0	1724	2033	125482	602865	237321	1541	27598	8.46	32590
28	12:00	3640070	4156467	50796	69.7	0	1734	2033	125482	602865	237321	1552	27623	8.41	32588
29	12:00	3660409	4189056	50820	69.7	0	1741	2033	125482	602865	237321	1556	27648	8.31	32590
30	12:00	3712694	4221643	50844	69.8	0	1744	2033	125482	602865	237321	1535	27673	8.34	32590
31	12:00	3741009	4254233	50868	70.8	0	1764	2033	125482	602865	237321	1537	27694	8.38	32588

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# LEACHATE DAILY LOG #1

Month: August

Year: 2018

Date	Time	P-1A	P-1B	P-2A	P-2B	P-3A	P-3B	M/S/L/P	D/O2	D/S/L/P	P-VA	P-AB	P-SE	P-27.1	P-27.2	
1	12:00	1892	1810	23590	16839	22840	15136	36	1.05	1891	5329	6581	10084	9914	780	7.36
2	12:00	1892	1820	23591	16858	22847	15148	36.2	1.01	1894	5329	6587	10092	9914	776	7.36
3	12	"	1822	23611	"	22854	15160	"	3.31	1896	"	6592	10101	"	790	7.48
4	12	"	1823	23616	16874	22872	"	"	2.91	1899	"	6597	10110	"	791	7.48
5	12	"	1825	23626	16884	"	15178	36.5	3.32	1901	"	6602	10118	"	787	7.54
6	12	"	1827	23641	16889	22886	15184	"	2.97	1904	"	6608	10127	"	791	7.59
7	12:00	1892	1829	23649	16909	22897	15192	36.5	2.16	1906	5329	6613	10136	9914	777	7.38
8	12:00	1893	1830	23661	16909	22899	15207	36.6	"	1908	5329	6618	10144	9914	781	7.38
9	12	1896	"	23666	16924	22919	"	"	1.38	1911	"	6624	10153	"	781	7.47
10	12	1898	"	23676	16934	22922	15222	"	1.98	1913	"	6629	10161	"	785	7.36
11	12	1900	"	23691	16940	22933	15231	"	1.22	1916	"	6635	10170	"	783	7.40
12	12	1902	"	23693	16959	22947	15236	"	2.77	1918	"	6640	10179	"	786	7.50
13	12	1904	"	23713	"	22997	"	"	1.19	1921	"	6645	10187	"	784	7.47
14	12:00	1905	1830	23717	16976	22965	15255	36.7	2.06	1923	5329	6650	10194	9914	782	7.39
15	12:00	1908	1830	23728	16985	22972	15266	36.7	2.16	1925	5329	6658	10205	9914	780	7.136
16	12	1910	"	23742	16991	22978	15278	"	1.62	1928	"	6660	10213	"	785	7.41
17	12	1912	"	23743	17010	22997	"	"	1.73	1930	"	6665	10222	"	783	7.42
18	12	1914	"	23763	17010	"	15296	"	1.76	1933	"	6671	10231	"	785	7.17
19	12	1915	1831	23767	17027	23011	15302	"	1.83	1935	"	6676	10239	"	784	7.49
20	12	"	1833	23779	17035	23022	15309	37.1	1.97	1938	"	6681	10248	"	788	7.52
21	12:00	1915	1835	23792	17042	23024	15326	37.1	1.58	1940	5329	6686	10257	9914	779	7.40
22	12:00	1915	1837	23793	17061	23042	15326	37.1	1.64	1942	5329	6691	10265	9914	783	7.38
23	12:00	1915	1839	23812	17061	23047	15338	37.2	1.96	1945	5329	6696	10274	9914	776	7.25
24	12:00	1915	1841	23818	17076	23057	15349	37.2	1.72	1947	5329	6702	10282	9914	777	7.34
25	12:06	1915	1843	23828	17086	23072	15351	37.2	1.44	1949	5329	6706	10291	9914	786	7.36
26	12:00	1915	1845	23843	17091	23072	15370	37.3	1.67	1952	5329	6712	10300	9914	778	7.40
27	12:00	1915	1847	23845	17111	23090	15373	37.3	1.82	1954	5329	6717	10308	9914	783	7.37
28	12:00	1915	1849	23864	17111	23077	15383	37.3	1.76	1957	5329	6722	10317	9914	786	7.27
29	12:00	1915	1851	23868	17127	23102	15397	37.5	2.17	1958	5329	6727	10325	9914	788	7.55
30	12:00	1915	1853	23879	17134	23121	15397	37.5	1.48	1962	5329	6731	10332	9914	786	7.39
31	12:00	1917	1853	23893	17143	23122	15413	37.5	1.72	1964	5329	6736	10340	9914	783	7.37

# LEACHATE DAILY LOG #2

Month: September  
 Year: 1988

Date	Time	INFLUENT FM 212	EFFLUENT FM 511	AC HRS	D-AP	RAIN	LB LVL	GP HRS	S-SL	CELES	TS/GC	TRAMP	BLW A/B	E-PH	DAILY EFFLUENT
1	12:00	3780229	4286822	50802	69	0	1760	2033	125482	602865	237321	1539	27724	8.40	32588
2	12:00	3812344	4319411	50916	70	0	1754	2033	125482	602865	237321	1542	27749	8.38	32588
3	12:00	3845851	4352001	50940	70	0	1760	2033	125482	602865	237321	1538	27775	8.33	32588
4	12:00	3877337	4384584	50964	71	0	1746	2033	125482	602865	237321	1534	27800	8.35	32588
5	12:00	3909400	4417773	50988	71	0	1772	2033	125482	602865	237321	1555	27815	8.35	32588
6	12:00	3943737	4449759	51012	70	0	1775	2033	125482	602865	237321	1537	27856	8.24	32588
7	12:00	3975093	4482347	51036	70	0	1780	2033	125482	602865	237321	1523	27901	8.28	32588
8	12:00	4007585	4514935	51060	71	0	1784	2033	125482	602865	237321	1510	27924	8.33	32588
9	12:00	4040844	4547520	51084	70	0	1789	2033	125482	602865	237321	1510	27947	8.34	32588
10	12:00	4071827	4580105	51108	71	0	1795	2033	125482	602865	237321	1544	27977	8.40	32588
11	12:00	4105375	4612695	51132	71	0	1810	2033	125482	602865	237321	1555	27984	8.43	32588
12	12:00	4138720	4645283	51156	71	0	1802	2033	125482	602865	237321	1552	28028	8.50	32588
13	12	4169784	4677900	51180	69	0	1811	2045	11	11	11	1552	28053	8.49	32588
14	12	4202566	4710458	51204	69	0	1816	11	11	11	1556	28076	8.41	32588	
15	12	4235573	4743049	51228	68	0	1822	2047	11	11	11	1558	28101	8.43	32588
16	12	4268454	4775635	51252	68	0	1826	11	11	11	1540	28126	8.43	32588	
17	12	4301314	4808224	51276	69	0	1832	11	11	11	1550	28152	8.41	32588	
18	12:00	4331815	4840809	51298	67	0	1836	2047	125482	602865	237321	1552	28178	8.40	32588
19	12:00	4365566	4873398	51322	69	0	1842	2048	125482	602865	237321	1555	28202	8.40	32588
20	12:00	4399317	4905987	51346	69	0	1847	2048	125482	602865	237321	1555	28227	8.34	32588
21	12	4429697	4938575	51370	69	0	1872	11	11	11	1549	28253	8.29	32588	
22	12	4461318	4971162	51394	69	0	1876	2054	11	11	11	1544	28278	8.32	32588
23	12	4494279	5003750	51418	69	0	1877	11	11	11	1542	28303	8.35	32588	
24	12	4527713	5036335	51442	69	0	1888	11	11	11	1557	28328	8.45	32588	
25	12:00	4561773	5068924	51465	71	0	1895	2054	125482	602865	237321	1548	28354	8.49	32588
26	12:00	4594549	5101512	51489	70	0	1899	2054	125482	602865	237321	1548	28379	8.44	32588
27	12:00	4627555	5134100	51513	67	0	1894	2054	125482	602865	237321	1556	28404	8.35	32588
28	12	4659970	5166685	51537	67	0	1898	2054	11	11	11	1553	28430	8.38	32588
29	12	4691128	5199267	51561	67	0	1897	2055	11	11	11	1553	28455	8.32	32588
30	12	4726385	5231854	51585	67	0	1917	2055	11	11	11	1553	28480	8.32	32588
31	12			2658											

2.65



# LEACHATE DAILY LOG #1

49 43

Month: September  
 Year: 2018

Date	Time	P-1A	P-1B	P-2A	P-2B	P-3A	P-3B	M/S/L/P	D/O2	D/S/L/P	P-4A	P-4B	P-5A	P-5B	P-6A	P-6B
1	12:00	1919	1853	23896	17162	23135	15420	37.7	2.00	1967	5329	6741	10347	9914	7.29	7.37
2	12:00	1921	1853	23916	17162	23147	15427	37.7	1.89	1969	5329	6745	10355	9914	7.82	7.36
3	12:00	1923	1853	23915	17180	23146	15444	37.7	1.71	1972	5329	6750	10342	9914	7.72	7.40
4	12:00	1925	1853	23922	17187	23166	15444	37.7	1.65	1974	5329	6754	10370	9914	7.87	7.48
5	12:00	1927	1853	23944	17195	23172	15451	37.7	1.77	1974	5329	6758	10378	9914	7.83	7.29
6	12:00	1929	1853	23948	17212	23180	15467	37.7	1.47	1979	5329	6763	10381	9914	7.86	7.46
7	12:00	1931	1853	23969	17213	23197	15470	37.8	1.92	1981	5329	6767	10396	9914	7.88	7.42
8	12:00	1933	1853	23969	17233	23197	15487	37.8	2.05	1983	5329	6772	10405	9914	7.91	7.52
9	12:00	1935	1853	23989	17238	23215	15491	37.8	2.34	1986	5329	6776	10413	9914	7.85	7.41
10	12:00	1937	1853	23995	17253	23222	15503	38.1	2.21	1986	5329	6781	10422	9914	7.83	7.41
11	12:00	1938	1853	24008	17263	23232	15515	38.1	1.89	1992	5329	6786	10431	9914	7.88	7.39
12	12:00	1938	1855	24020	17275	23247	15521	38.1	2.13	1995	5329	6790	10439	9914	7.90	7.38
13	12	1938	1857	24028	17288	23250	15538	11	1.9	1997	5329	6795	10408	9914	7.84	7.35
14	12	11	1859	24045	17292	23270	11	11	1.9	2000	5329	6799	10457	9914	7.87	7.42
15	12	11	1863	11	17313	23272	15554	11	1.5	2002	5329	6804	10461	9919	7.87	7.35
16	12	11	1868	24066	11	23283	15562	11	1.3	2005	5329	6809	10457	9914	7.86	7.41
17	12	11	1872	24070	17330	23297	15567	11	1.1	2007	5329	6814	10457	9914	7.85	7.40
18	12:00	1938	1876	24080	17339	23297	15585	38.3	2.11	2009	5329	6818	10411	9915	7.87	7.50
19	12:00	1941	1876	24081	17346	23317	15585	38.5	1.97	2012	5329	6823	10411	9915	7.85	7.39
20	12:00	1942	1878	24059	17344	23313	15597	38.5	2.22	2014	5329	6827	10411	9914	7.85	7.42
21	12	11	1880	24119	11	23330	15608	11	2.06	2017	5329	6832	10411	9914	7.82	7.42
22	12	11	1882	24121	17381	23342	11	11	1.15	2019	5329	6837	10411	9914	7.85	7.42
23	12	11	1883	24134	17389	11	15627	38.6	3.12	2021	5329	6842	10411	9988	7.87	7.42
24	12	11	1886	24146	17399	23363	15632	11	1.55	2024	5329	6846	10411	9996	6.70	7.64
25	12:00	1942	1888	24152	17414	23373	15640	38.8	1.95	2024	5329	6851	10411	10006	6.76	7.47
26	12:00	1942	1889	24172	17415	23374	15655	38.8	1.26	2029	5329	6856	10411	10014	6.74	7.36
27	12:00	1942	1891	24172	17435	23393	15655	38.9	1.68	2031	5329	6860	10411	10023	6.77	7.24
28	12	11	1893	24187	17440	23398	15669	39	1.12	2034	5329	6865	10031	9	6.75	7.20
29	12	11	1894	24197	17449	23405	15679	11	1.6	2036	5329	6871	10040	9	7.81	7.53
30	12	11	1896	24202	17465	23423	15680	11	1.4	2038	5329	6875	10049	8	7.78	7.42
31														10057		

# LEACHATE DAILY LOG #2

125560  
125482  
605373  
602865  
2503

OCTOBER  
2018

Month:  
Year:

Date	Time	INFLUENT FM 212	EFFLUENT FM 511	AC-HRS	D-AP	RAIN	UR-LVL	GP-HRS	S-SI	CELL	TS/G	TRAN P	BLW A/B	E-PH	DAILY EFFLUENT
1	12:00	4759659	5764440	21609	68.8	0	1915	2058	125482	602865	23729	1549	28480	8.33	32584
2	12:00	4791259	5297024	51632	69.0	.4	1912	2058	125482	602865	23724	1552	26498	8.40	32584
3	12:00	4823315	5319408	51656	66.8	0	1909	2058	125482	602865	23724	1520	26521	8.53	32588
4	12:00	4857449	5362193	51679	68.9	0	1922	2058	125482	602865	23729	1548	28556	8.25	32584
5	12:00	4890913	5394779	51703	66.9	1.4	1941	2058	125488	602865	23724	1554	28581	8.25	32588
6	12:00	4922392	5427365	51727	66.4	.2	1945	2058	125488	602865	23724	1523	28607	8.26	32584
7	12:00	4956266	5459951	51751	66.9	.2	1947	2058	125488	602865	23724	1551	28613	8.29	32584
8	12:00	4990310	5492539	51775	67.1	.6	1968	2058	125488	602865	23724	1574	28657	8.31	32590
9	12:00	5021367	5525123	51799	67.8	.5	1969	2070	125488	602865	23724	1661	28703	8.18	32590
10	12:00	5056069	5557708	51823	70.7	.6	1971	2081	125488	602865	23724	1650	28708	8.19	32588
11	12	5085437	5590295	51847	71	0	1977	2088	"	"	"	1545	28733	8.5	32588
12	12	5117712	5622888	51871	71	0	1981	2089	125488	602865	23724	1546	28759	8.11	32588
13	12	5149987	5655478	51895	71	0	1993	2095	"	"	"	1533	28784	8.33	32588
14	12	5179057	5688062	51919	70	0	1994	2097	"	"	"	1541	28809	8.29	32588
15	12	5210131	5720650	51943	70	0	2001	2104	"	"	"	1542	28834	8.27	32588
16	12:00	5239406	5753237	51966	69.9	0	2002	2104	125488	602865	23724	1556	28860	8.11	32588
17	12:00	5267114	5785826	51989	70.2	0	1950	2105	125488	605357	23715	1564	28885	8.16	32588
18	12:00	5297451	5818414	52013	72.1	0	1960	2111	125488	605357	23715	1544	28909	8.12	32584
19	12	5327069	5851001	52037	70	0	1974	2118	125560	605373	"	1556	28935	8.18	32588
20	12	5356820	5883601	52061	70	0	1983	2119	"	"	"	1565	28961	8.20	32588
21	12	5386278	5916175	52085	71	0	1991	2125	"	"	"	1568	28986	8.16	32588
22	12	5414297	5948764	52109	70	0	1991	2127	"	"	"	1562	29012	8.26	32584
23	12:00	5445157	5981350	52132	79.2	0	2003	2133	125560	605373	23715	1548	29030	8.21	32588
24	12:00	5474869	6013936	52156	77.2	0.2	1996	2135	125560	605373	23715	1549	29061	8.26	32588
25	12	5503164	6046523	52180	78	.05	2011	2142	"	"	"	1556	29087	8.20	32590
26	12	5533008	6079110	52204	78	.6	2019	2144	"	"	"	1594	29112	8.18	32588
27	12	5561790	6111697	52228	65	.3	2022	2150	"	"	"	1532	29138	8.13	32588
28	12	5591814	6144283	52252	65	.8	2021	2151	"	"	"	1562	29163	8.24	32590
29	12	5620439	6176876	52276	65	1.3	2023	2153	"	"	"	1536	29188	8.24	32588
30	12	5650016	6209464	52300	65	.3	2043	2158	"	"	"	1554	29214	8.26	32588
31	12	5679163	6242052	52324	65	.1	2059	2160	125560	605373	23715	1580	29239	8.25	32588

6.95  
2167  
2.508  
2.8  
2.508



# LEACHATE DAILY LOG #1

Month: OCTOBER  
 Year: 2018

Date	Time	P-1A	P-1B	P-2A	P-2B	P-3A	P-3B	M/S/L/P	D/O/P	D/S/L/P	P-4A	P-4B	P-5A	P-5B	P-6A	P-6B	P-7A	P-7B	
1	12:00	1944	1896	24222	17465	23423	15698	39.2	1.1	2041	5329	6881	10461	100579	7.87	7.87	100579	7.87	7.87
2	12:00	1947	1896	24222	17484	23436	15762	39.2	1.5	2043	5329	6886	10461	100609	7.87	7.87	100609	7.87	7.87
3	12:00	1949	1896	24235	17490	23448	15708	39.2	3.47	2045	5329	6891	10461	100658	7.86	7.86	100658	7.86	7.86
4	12:00	1952	1896	24247	17499	23460	15726	39.2	1.21	2048	5329	6896	10461	100839	7.88	7.88	100839	7.88	7.88
5	12:00	1954	1806	24251	17515	23467	15726	39.3	1.08	2050	5329	6901	10461	100929	7.84	7.84	100929	7.84	7.84
6	12:00	1957	1896	24270	17515	23473	15751	39.3	1.8	2052	5329	6905	10461	101018	7.87	7.87	101018	7.87	7.87
7	12:00	1961	1896	24273	17533	23478	15749	39.3	1.24	2054	5329	6909	10461	101099	7.87	7.87	101099	7.87	7.87
8	12:00	1965	1896	24285	17541	23497	15749	39.3	1.14	2057	5329	6914	10461	101189	7.76	7.76	101189	7.76	7.76
9	12:00	1969	1897	24298	17547	23497	15766	39.6	1.86	2059	5329	6918	10461	101269	7.86	7.86	101269	7.86	7.86
10	12:00	1965	1894	24299	17566	23509	15773	39.6	1.25	2062	5329	6922	10461	101358	7.79	7.79	101358	7.79	7.79
11	12	1965	1900	24317	17566	23522	15776	39.6	1.7	2064	5329	6926	10461	10143	7.84	7.84	10143	7.84	7.84
12	12	11	1903	24323	17579	11	15793	11	1.9	2066	11	6929	11	10152	7.83	7.83	10152	7.83	7.83
13	12	11	1905	24330	17591	23537	15796	11	1.5	2068	11	6933	11	10161	7.83	7.83	10161	7.83	7.83
14	12	11	1907	24348	11	23547	15802	11	1.6	2070	11	6937	11	10169	7.85	7.85	10169	7.85	7.85
15	12	11	1908	11	17610	11	15818	11	1.3	2072	11	6941	11	10177	7.86	7.86	10177	7.86	7.86
16	12:00	1965	1910	24359	17617	25563	15820	39.3	2.08	2074	5329	6944	10461	10186	7.87	7.87	10186	7.87	7.87
17	12:00	1965	1911	24373	17619	23572	15825	39.8	2.04	2076	5329	6947	10461	10194	7.85	7.85	10194	7.85	7.85
18	12	11	1965	24373	17627	23572	15841	39.8	1.88	2079	5329	6950	10461	10203	7.88	7.88	10203	7.88	7.88
19	12	11	1915	24386	17642	23587	15843	11	2.10	2081	11	6953	11	10212	7.86	7.86	10212	7.86	7.86
20	12	11	1917	24399	17647	23597	15850	11	1.6	2083	11	6957	11	10220	7.82	7.82	10220	7.82	7.82
21	12	11	1919	11	17665	11	15866	40	2.2	2085	11	6961	11	10229	7.94	7.94	10229	7.94	7.94
22	12	1966	1920	24413	17667	23612	15867	11	2	2087	11	6964	11	10237	7.84	7.84	10237	7.84	7.84
23	12:00	1968	1920	24424	17675	23622	15874	40	2.1	2089	5329	6968	10461	10246	7.90	7.90	10246	7.90	7.90
24	12:00	1970	1920	24445	17692	23623	15890	40	1.34	2091	5329	6972	10461	10255	7.85	7.85	10255	7.85	7.85
25	12	1972	11	24442	17692	23639	15890	11	1.6	2093	11	6975	11	10263	7.86	7.86	10263	7.86	7.86
26	12	1973	11	24449	17703	23647	15899	11	2.8	2096	11	6979	11	10271	7.88	7.88	10271	7.88	7.88
27	12	1975	11	24452	17717	23648	15914	11	2.1	2098	11	6983	11	10279	7.90	7.90	10279	7.90	7.90
28	12	1977	11	24470	11	23665	11	11	2.1	2100	11	6987	11	10287	7.87	7.87	10287	7.87	7.87
29	12	1979	11	24474	17731	23672	15924	11	2.8	2102	11	6990	11	10295	7.86	7.86	10295	7.86	7.86
30	12	1981	11	24481	17743	23675	15938	11	2.2	2104	11	6994	11	10303	7.87	7.87	10303	7.87	7.87
31	12	1983	1920	24499	17743	23693	15938	40	2.9	2106	5329	6998	10461	103119	7.85	7.85	103119	7.85	7.85

10319

# LEACHATE DAILY LOG #2

Month: NOVEMBER  
Year: 2018

Date	Time	INFLUENT FM 212	EFFLUENT FM 511	AC-HRS	D-AP	RAIN	LR LVL	GP-HRS	S-SI	CELL#	TS/GI	TRAMP	BLW/A/B	E-PH	DAILY EFFLUENT
1	12	5708370	6274642	52348	65	.2	2041	2167	125560	605373	23775	1554	29264	829	32588
2	12	5738205	6307230	52372	65	.05	2047	2173	"	"	"	1598	29289	835	32588
3	12	5768552	6339818	52396	70	.6	2068	2174	"	"	"	1551	29315	827	32588
4	12	5797326	6372407	52426	68	.3	2072	2180	"	"	"	1595	29340	824	32588
5	12	5827110	6404996	52450	68	.3	2082	2181	"	"	"	1553	29366	827	32588
6	12:00	5854087	6437589	52474	67	.1	2100	2188	125560	605373	23775	1547	29392	822	32588
7	12:00	5882277	6476169	52493	60	.0	2107	2189	125560	605373	23775	1542	29417	835	32588
8	12	5914969	6502749	52517	69	0	2112	2190	"	"	"	1543	29442	820	32588
9	12	5943916	6535310	52541	69	0	2111	2198	"	"	"	1593	29468	829	32588
10	12	5973233	6568050	52565	69	.1	2114	2214	"	"	"	1561	29493	827	32588
11	12	6003638	6600639	52589	69	0	2114	2216	"	"	"	1560	29518	830	32588
12	12	6032077	6633227	52613	69	0	2125	2217	"	"	"	1562	29543	830	32588
13	12:00	6062519	6666009	52636	69	0	2133	2223	125560	605373	23775	1567	29568	842	32588
14	12:00	6091139	6698405	52661	69	0.2	2148	2224	125560	605373	23775	1569	29594	824	32588
15	12:00	6122060	6730992	52684	69	0.2	2158	2229	125560	605373	23775	1563	29619	825	32588
16	12:00	6151488	6763582	52709	68.5	0.0	2158	2236	125560	605373	23800	1571	29645	824	32588
17	12:00	6180817	6796168	52732	68.1	0.1	2169	2240	125560	605373	23844	1547	29670	824	32588
18	12:00	6212420	6828758	52756	68.1	0.0	2177	2241	125560	605373	23844	1566	29695	828	32588
19	12:00	6250963	6861342	52780	66.5	0.0	2185	2242	125560	605373	23844	1556	29720	832	32588
20	12:00	6272170	6893933	52804	67.7	0.0	2185	2243	125560	605373	23844	1585	29746	831	32588
21	12:00	6301165	6926521	52828	66.1	0.0	2193	2244	125560	605373	23844	1550	29771	833	32588
22	12:00	6330770	6959110	52852	66.2	0.2	2203	2249	125560	605373	23844	1572	29796	834	32588
23	12:00	6360463	6991699	52876	68.4	1.8	2204	2249	125560	605373	23844	1546	29822	841	32588
24	12:00	6391325	7024288	52900	68.5	0.2	2207	2251	125560	605373	23844	1503	29847	837	32588
25	12:00	6420383	7056875	52924	68.4	0.2	2228	2252	125560	605373	23844	1563	29872	838	32588
26	12:00	6450308	7089463	52948	68.0	0.2	2233	2253	125560	605373	23844	1584	29898	833	32588
27	12:00	6481659	7122053	52972	69.1	1.4	2204	2254	125560	605373	23844	1609	29923	835	32588
28	12:00	6512289	7154640	52996	70.4			2255	125560	605373	23844		29948	831	32588
29	12	6545377	7187228	53020	70	.6	2248	2256	"	"	"	1573	29974	833	32588
30	12	6578204	7219816	53044	70	.05	2245	2257	"	"	"	1551	29999	825	32588
31	12			2259											

7.30



# LEACHATE DAILY LOG #1

Month: NOVEMBER  
 Year: 2018

Date	Time	P-1A	P-1B	P-2A	P-2B	P-3A	P-3B	W/S/P	D/02	D/S/P	P-4A	P-4B	P-5A	P-5B	786	744
1	12	1985	1920	24499	17761	23697	15950	40	2.8	2109	5329	7002	10461	10319	786	744
2	12	1987	11	24511	17768	23703	15961	11	2.3	2111		7007		10327	783	748
3	12	1989	11	24524	17774	23721	11	11	2.5	2113		7011		10335	787	749
4	12	11	1922	11	17792	23722	15977	11	2.4	2115		7016		10343	788	750
5	12	11	1924	24542	17793	23732	15982	11	2.9	2117		7022		10351	781	743
6	12:00	1989	1926	24550	17803	23747	15982	40.4	2.5	2120	5329	7027	10411	10359	785	749
7	12:00	1989	1928	24554	17818	23747	16005	40.5	2.7	2122	5329	7033	10411	10367	784	749
8	12	11	1930	24571	11	23761	16009	11	2.5	2124		7039		10375	789	753
9	12	11	1932	24575	17833	23773	16014	11	3.0	2126		7044		10383	787	729
10	12	11	1934	24582	17844	11	16031	11	3.1	2129		7050		10391	785	756
11	12	11	1936	24600	17845	23790	16033	11	2.8	2131		7056		10399	787	752
12	12	11	1938	11	17863	23798	16042	11	3	2133		7061		10407	782	742
13	12:00	1989	1940	24613	17869	23801	16056	40.6	3.2	2136	5329	7067	10411	10416	783	749
14	12:00	1989	1942	24625	17874	23819	16056	40.9	3.5	2138	5329	7071	10411	10424	783	752
15	12:00	1990	1943	24625	17891	23823	16070	40.9	3.7	2140	5329	7077	10411	10432	785	751
16	12:00	1992	1943	24643	17894	23820	16086	40.9	3.6	2142	5329	7082	10411	10440	784	748
17	12:00	1994	1943	24651	17907	23848	16081	40.9	3.86	2145	5329	7088	10411	10448	779	755
18	12:00	1996	1943	24656	17919	23848	16098	41.0	3.96	2147	5329	7093	10411	10456	789	746
19	12:00	1998	1943	24673	17919	23859	16104	41.0	2.85	2149	5329	7096	10411	10464	786	759
20	12:00	2000	1943	24676	17934	23873	16106	41.0	3.47	2151	5329	7100	10411	10471	789	753
21	12:00	2002	1943	24684	17945	23873	16123	41.0	3.48	2153	5329	7105	10411	10479	787	749
22	12:00	2004	1943	24701	17946	23887	16128	41.3	2.80	2155	5329	7110	10411	10488	787	755
23	12:00	2006	1943	24701	17958	23889	16128	41.3	1.21	2157	5329	7112	10411	10495	782	747
24	12:00	2009	1943	24709	17976	23894	16146	41.3	3.06	2159	5329	7117	10411	10502	786	753
25	12:00	2012	1943	24725	17976	23910	16151	41.3	3.21	2162	5329	7121	10411	10510	787	731
26	12:00	2012	1944	24724	17985	23924	16153	41.5	2.41	2163	5329	7125	10411	10517	786	753
27	12:00	2012	1948	24733	17995	23924	16171	41.5	1.85	2166	5329	7131	10411	10525	784	726
28	12:00	2012	1951	24752	17998	23938	16175	41.5	3.34	2168	5329	7134	10411	10532	788	747
29	12	11	1953	11	18019	23949	16184	11	2.56	2171		7140		10540	783	740
30	12	11	1954	24768	18020	23950	16199	41.6	2.58	2173		7143		10547	789	756
31	12										5329		10461	10555		

# LEACHATE DAILY LOG #2

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223  
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Month: December  
Year: 2018

Date	Time	Influent FM 202	Effluent FM 511	AC HRS	D-AR	RAIN	DB ELEV	GP HRS	S-SL	CELL#	TS/GL	TRAMP	BLW A/B	E-PH	DAILY EFFLUENT
1	12	66105	7252406	53068	70	.2	2248	2259	125560	605373	23943	1562	30024	824	32588
2	12	66443	7284994	53092	69	.05	2254	2260	"	"	"	1548	30049	832	32588
3	12	6676303	7317580	53116	69	0	2275	2261	"	"	"	1547	30075	831	32590
4	12	6710024	7350171	53140	69	0	2301	2263	"	"	239637	1574	30160	834	32590
5	12	6742013	7382059	53164	69	0	2308	2264	"	"	"	1566	30125	841	32588
6	12	6774398	7415475	53188	off	0	2313	2265	"	"	"	1555	30151	839	32588
7	12	6804688	7447455	53212	70	0	2198	2266	"	611866	23891	1556	30176	834	32588
8	12	6836894	7480433	53236	70	0	2196	2270	"	"	"	1548	26242	836	32532
9	12	6870446	7513410	53260	70	.5	2214	2271	"	"	"	1596	26268	851	32588
10	12	6904222	7545393	53284	70	1.0	2212	2272	"	"	"	1553	26293	845	32588
11	12:00	6938646	7578333	53307	70	3.4	2208	2279	125560	611866	23891	1226	26318	851	32588
12	12:00	6971379	7616333	53331	68.7	0.4	2155	2280	125560	615988	23981	1505	26343	842	32588
13	12:00	7004145	7648333	53355	69.4	0.1	2112	2281	125560	619524	23981	1587	26369	836	32588
14	12	7037335	7680333	53379	70	0.1	2121	2283	"	"	"	1614	26394	830	32590
15	12	7071333	7708333	53403	70	.05	2130	2286	"	"	"	1505	26419	833	32590
16	12	7103977	7741174	53427	70	.2	2125	2288	"	"	"	1603	26445	834	32588
17	12	7138926	7773763	53451	70	.4	2148	2295	"	"	"	1533	26470	834	32580
18	12:00	7172929	7806351	53475	69.7	2.8	2166	2294	125560	619524	24076	1518	26495	838	32588
19	12:00	7205042	7838940	53499	65.5	1.2	2172	2302	125560	619524	24187	1530	26520	842	32588
20	12:00	7238496	7871522	53523	65.4	.4	2178	2303	125560	619524	24187	1623	26546	844	32588
21	12	7272409	7904117	53547	off	0	2151	2309	"	621536	24247	1531	26571	836	32588
22	12	7306412	7936702	53571	69	.3	2112	2310	"	623568	24247	1566	26596	838	32588
23	12	7340666	7969293	53595	70	.7	2122	2316	"	"	"	1563	26622	838	32588
24	12	7373285	8001881	53619	70	0.1	2136	2318	"	"	"	1566	26647	836	32588
25	12:00	7416654	8034470	53642	69.5	0.0	2145	2318	125560	623568	24247	1547	26672	836	32588
26	12:00	7449558	8067656	53666	70.2	.3	2082	2319	125560	628030	24305	1420	26697	851	32588
27	12	7474819	8099645	53690	71	0	2019	2325	"	631719	"	1528	26722	841	32588
28	12	7508363	8132234	53714	70	.2	1975	2332	"	634649	"	1571	26748	840	32588
29	12	7541789	8164821	53738	70	.7	1949	2333	"	636724	"	1551	26773	844	32590
30	12	7574720	8197411	53762	71	0	1962	2335	"	"	"	1548	26798	837	32590
31	12	7608252	8229999	53783	off	0	1976	2341	125560	636724	24305	1538	26824	840	32588

0 31351  
636724  
605373  
31351

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# LEACHATE DAILY LOG #1

388  
304

Month: December  
Year: 2018

Date	Time	P-1A	P-1B	P-2A	P-2B	P-3A	P-3B	M/S/P	D/P2	D/SUF	P-4A	P-4B	P-5A	P-5B	P-6A	P-6B
1	12	2012	1955	24777	18028	23966	16199	41.6	2.43	2175	5329	7147	10461	10555	787	757
2	12	11	1958	24781	18046	23974	16211	"	2.22	2178		7152		10562	783	743
3	12	11	1962	24801	11	23981	16223	"	3.0	2180		7156		10570	783	737
4	12	11	1966	24802	18065	23999	16225	44	2.9	2183		7162		10577	787	741
5	12	2017	1967	24814	18071	11	16243	"	2.6	2185		7167		10585	785	736
6	12	2024	11	24827	18080	24016	16246	11	2.0	2188		7171		10592	788	738
7	12	2029	11	24829	18096	24024	16256	11	2.1	2188		7177		10600	786	726
8	12	2035	11	24850	11	24029	16270	11	2.5	2190		7179		10607	789	741
9	12	2036	1971	24852	18114	24049	16270	11	2.5	2193				10615	781	738
10	12	11	1977	24867	18121	24050	16288	11	2.3	2195				10622	784	736
11	12:00	2036	1983	24878	18132	24064	16294	44.1	2.4	2199		7179	10461	10630	787	746
12	12:00	2036	1967	24883	18147	24075	16302	44.2	2.7	2201		7179	10461	10638	784	749
13	12:00	2036	1989	24902	18147	24077	16317	44.2	2.8	2206		7179	10461	10645	787	746
14	12	2037	1990	24903	18166	24096	11	11	2.3	2209				10653	789	744
15	12	2039	11	24916	18172	24100	16331	11	2.5	2211				10660	789	747
16	12	2043	11	24928	18180	24108	16341	44.5	2.8	2213				10668	786	741
17	12	2048	11	24932	18197	24125	16344	11	2.5	2215				10675	787	744
18	12:00	2051	1990	24952	18197	24125	16362	44.5	3.5	2218		7179	10461	10683	787	748
19	12:00	2054	1990	24954	18215	24142	16365	44.5	2.7	2220		7179	10461	10691	788	748
20	12:00	2057	1990	24967	18225	24150	16376	44.7	2.9	2225		7179	10461	10698	787	745
21	12	2060	1991	24979	18230	24155	16389	11	2.4	2227				10706	789	746
22	12	11	1996	24980	18248	24169	16393	11	2.9	11				10713	792	753
23	12	11	2000	25001	11	24187	16394	11	2.3	2230				10721	782	743
24	12	11	2004	25004	18264	24195	16406	11	2.3	2232				10728	782	744
25	12:00	2066	2009	25011	18273	24196	16420	44.9	2.8	2234		7179	10461	10736	788	755
26	12:00	2066	2014	25027	18275	24211	16420	44.9	2.7	2236		7179	10461	10743	783	743
27	12	2063	11	25029	18291	24220	16431	11	2.9	2238				10751	785	744
28	12	2067	11	25042	18298	24225	16445	45.2	2.2	2241				10758	782	746
29	12	2071	11	25055	18306	24245	11	11	2.9	2243				10766	784	740
30	12	2074	11	25056	18324	11	16463	11	2.8	2245				10774	786	737
31	12	2077	2014	25075	18324	24257	16470	45.2	2.5	2247		7179	10461	10781	785	744

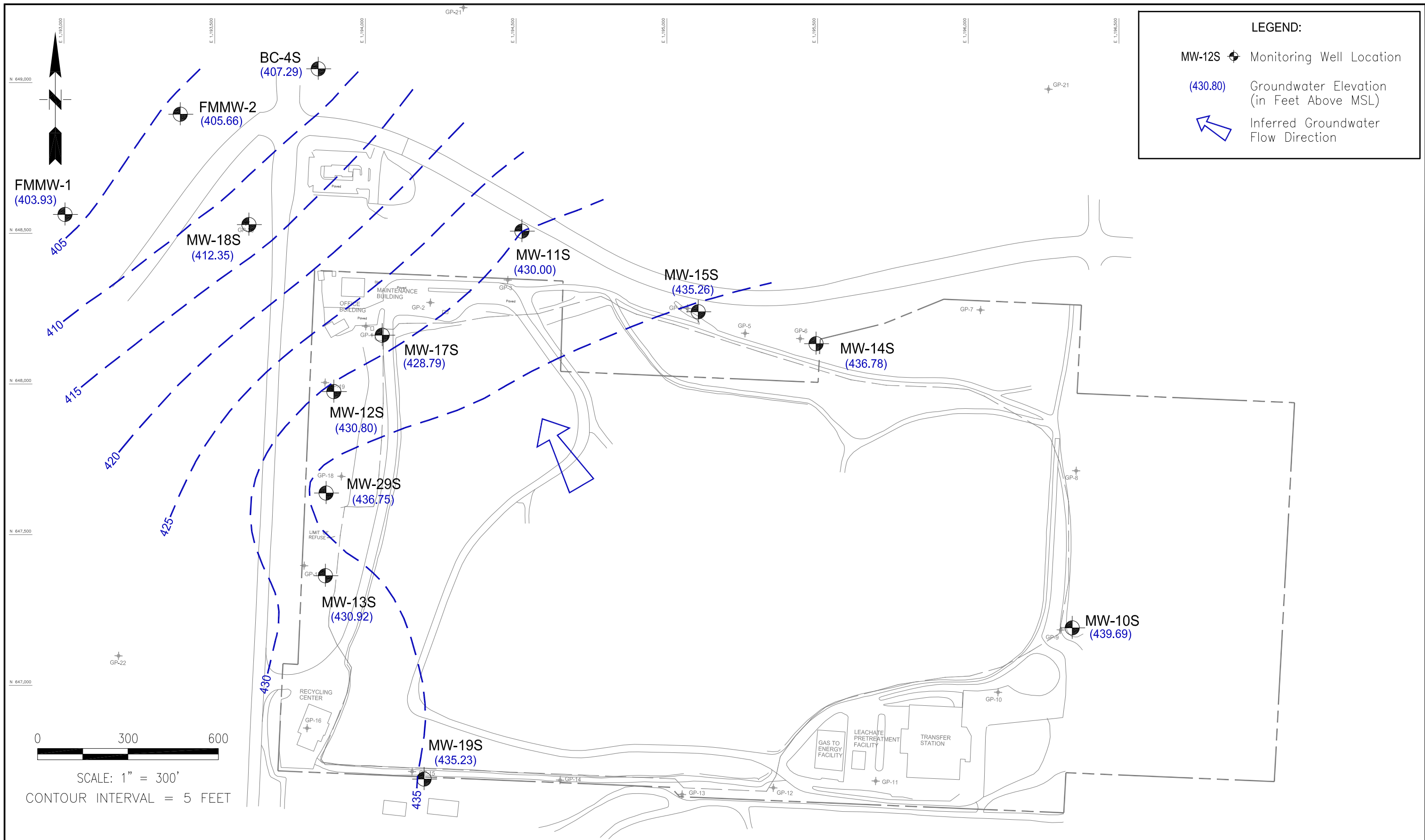




Appendix C  
WATER LEVEL DATABASE







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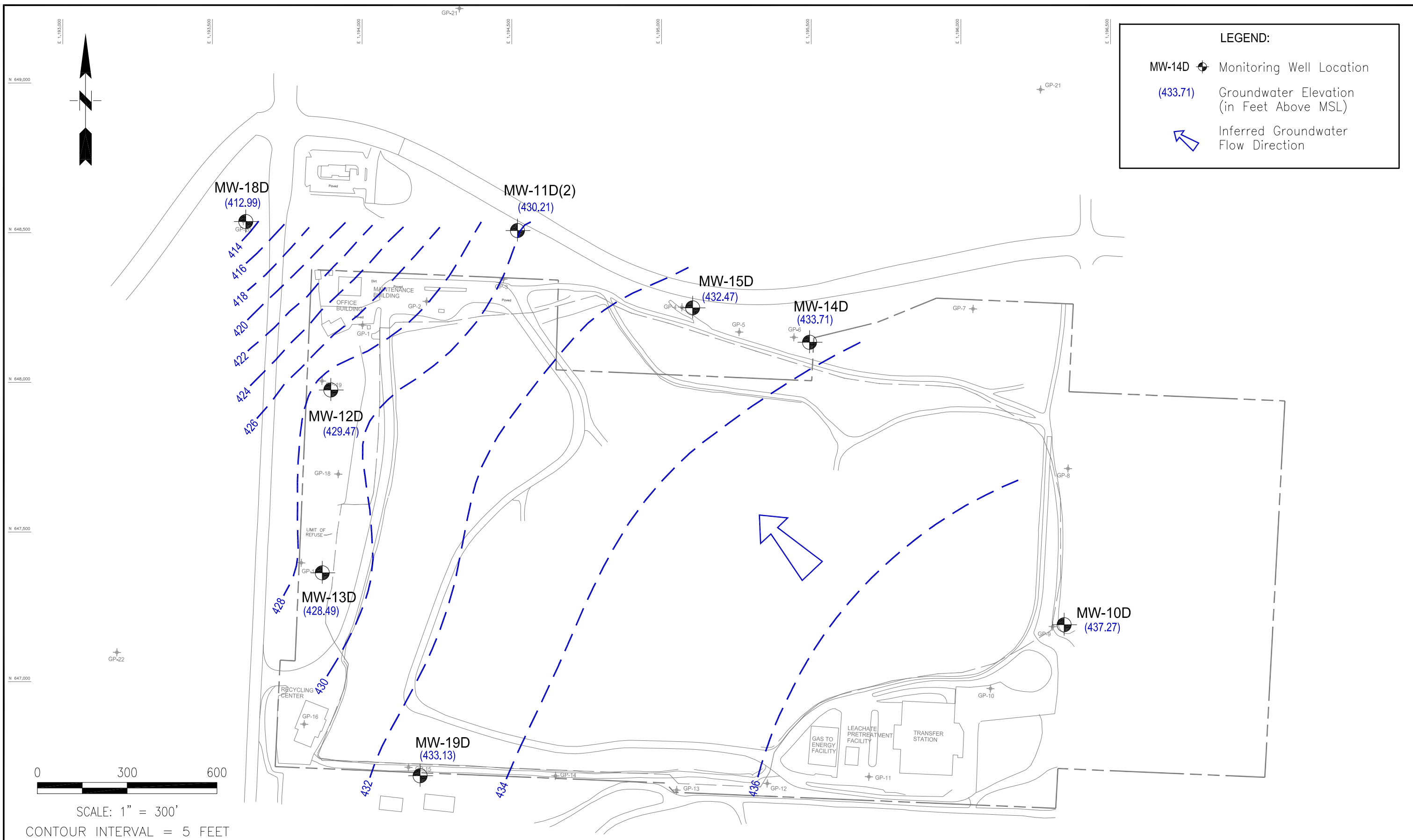
PROJECT NO.	04218002.03	DES BY	SG
SCALE	AS SHOWN	CHK BY	KGL
CAD FILE	FIGURE 1	APP BY	KGL

SHALLOW PERCHED AQUIFER  
 WATER LEVEL MAP  
 JANUARY 12, 2018  
 HIDDEN VALLEY LANDFILL  
 PIERCE COUNTY, WASHINGTON

DATE	MARCH 2019
FIGURE	1

**LEGEND:**

- MW-14D  Monitoring Well Location
- (433.71) Groundwater Elevation (in Feet Above MSL)
-  Inferred Groundwater Flow Direction

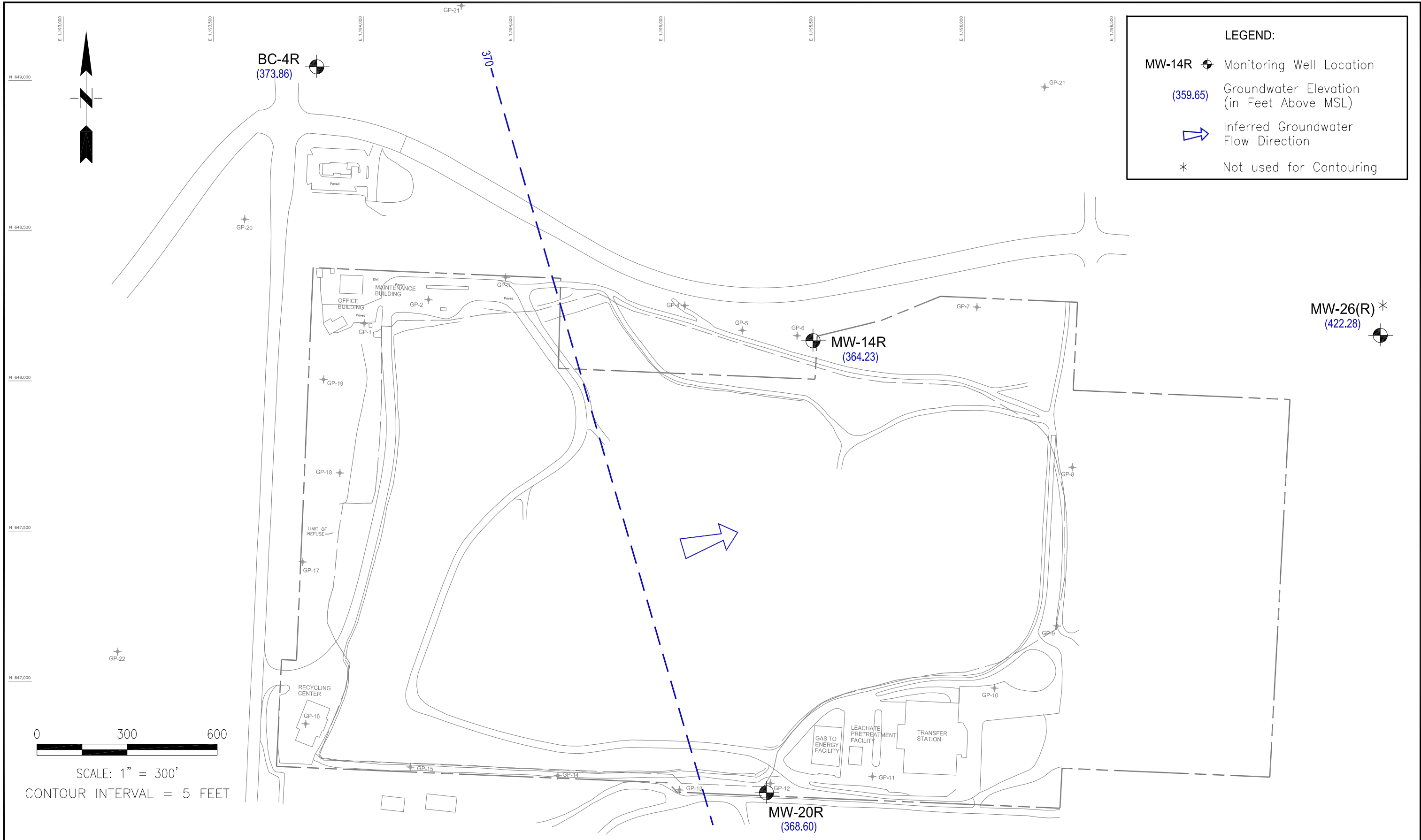


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PROJECT NO.	04218002.03	DES BY	SG
SCALE	AS SHOWN	CHK BY	KGL
CAD FILE	FIGURE 2	APP BY	KGL

UPPER REGIONAL AQUIFER  
 WATER LEVEL MAP  
 JANUARY 12, 2018  
 HIDDEN VALLEY LANDFILL  
 PIERCE COUNTY, WASHINGTON

DATE	MARCH 2019
FIGURE	2

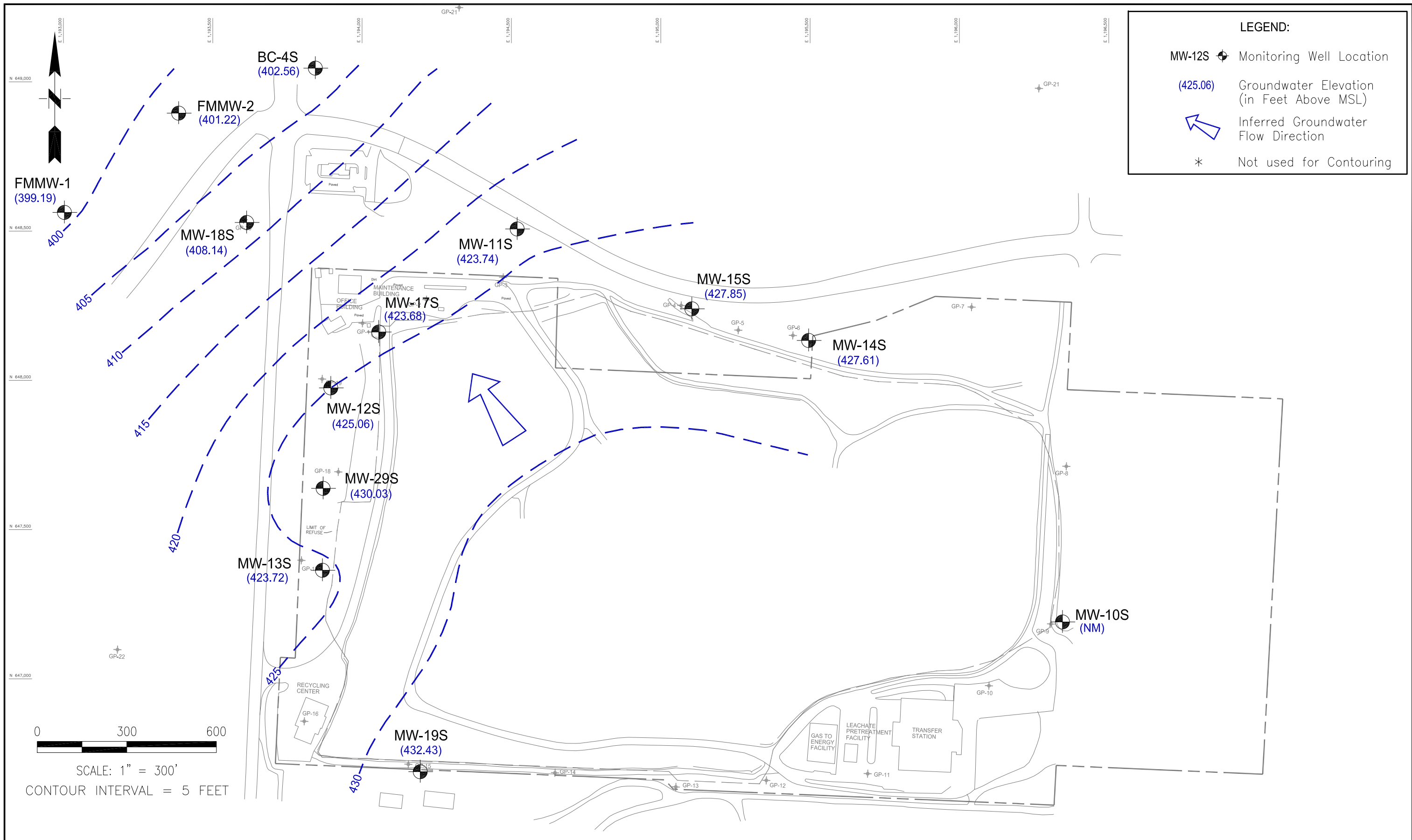


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PROJECT NO.	04218002.03	DES BY	SG
SCALE	AS SHOWN	CHK BY	KGL
CAD FILE	FIGURE 3	APP BY	KGL

LOWER REGIONAL AQUIFER  
 WATER LEVEL MAP  
 JANUARY 12, 2018  
 HIDDEN VALLEY LANDFILL  
 PIERCE COUNTY, WASHINGTON

DATE  
 AUGUST 2018  
 FIGURE  
 3



**SCS ENGINEERS**  
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PROJECT NO. 04218002.03  
 SCALE AS SHOWN  
 CAD FILE FIGURE 1

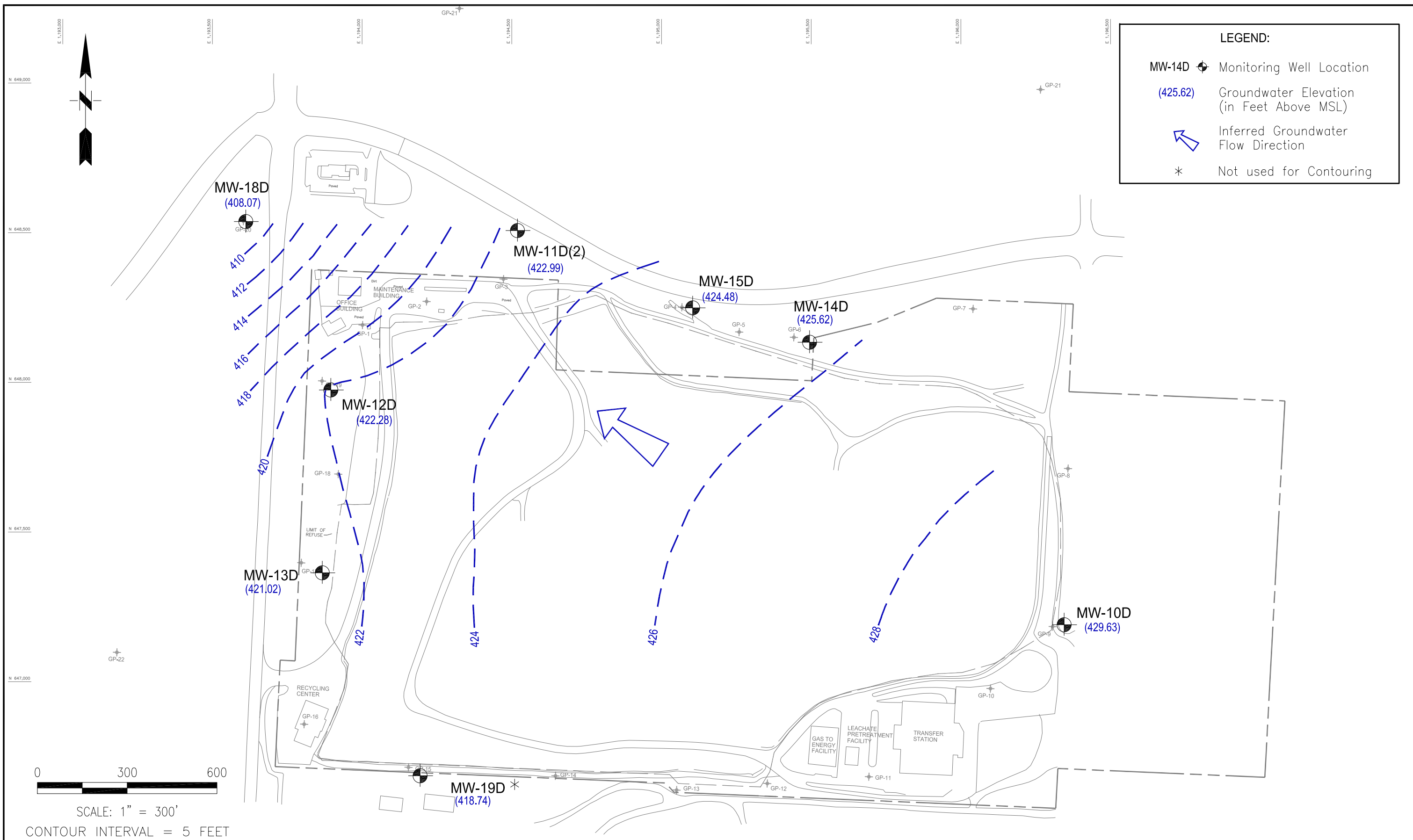
DES BY SG  
 CHK BY KGL  
 APP BY KGL

SHALLOW PERCHED AQUIFER  
 WATER LEVEL MAP  
 AUGUST 29, 2018  
 HIDDEN VALLEY LANDFILL  
 PIERCE COUNTY, WASHINGTON

DATE MARCH 2019  
 FIGURE 1

**LEGEND:**

- MW-14D  Monitoring Well Location
- (425.62) Groundwater Elevation (in Feet Above MSL)
-  Inferred Groundwater Flow Direction
- \* Not used for Contouring



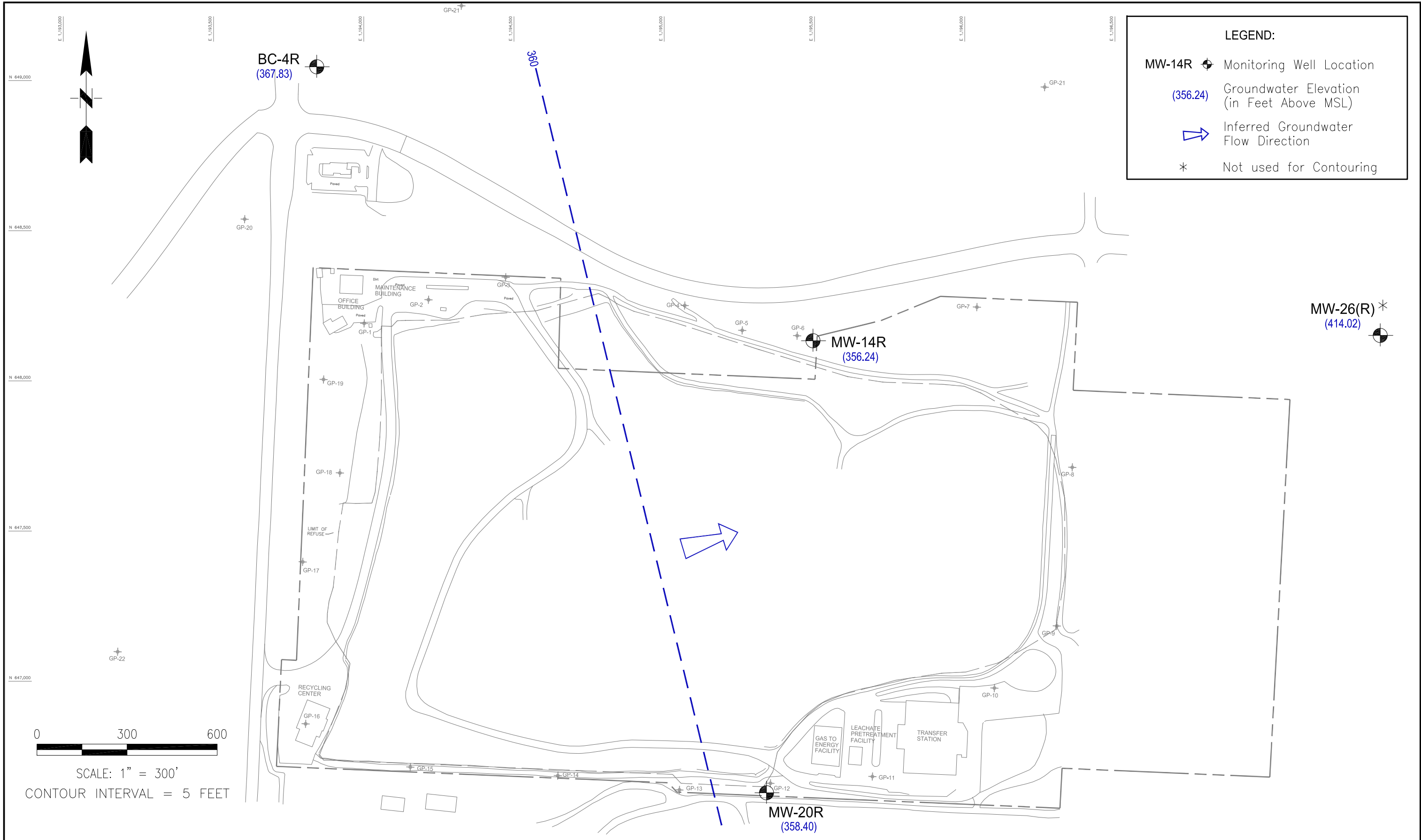
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PROJECT NO.	04218002.03	DES BY	SG
SCALE	AS SHOWN	CHK BY	KGL
CAD FILE	FIGURE 2	APP BY	KGL

UPPER REGIONAL AQUIFER  
 WATER LEVEL MAP  
 AUGUST 29, 2018  
 HIDDEN VALLEY LANDFILL  
 PIERCE COUNTY, WASHINGTON

DATE	MARCH 2019
FIGURE	2





**SCS ENGINEERS**  
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PROJECT NO.	04218002.03	DES BY	SG
SCALE	AS SHOWN	CHK BY	KGL
CAD FILE	FIGURE 3	APP BY	KGL

LOWER REGIONAL AQUIFER  
 WATER LEVEL MAP  
 AUGUST 29, 2018  
 HIDDEN VALLEY LANDFILL  
 PIERCE COUNTY, WASHINGTON

DATE  
 DECEMBER 2018  
 FIGURE  
**3**

**Water Level Measurements  
2018 Annual Monitoring Report  
Hidden Valley Landfill, Pierce County, Washington**

WELL	TOC ELEV	01/15/88	02/23/88	02/24/88	04/26/88	05/24/88	06/24/88	07/18/88	07/19/88	07/20/88	07/21/88	08/30/88	08/31/88	09/15/88	09/16/88	10/25/88	12/01/88	12/02/88
MW-10S	463.65	427.99	427.49		435.51	436.45	436.11	435.06				432.25		430.78		428.08	433.69	
MW-10D	464.09		425.36		431.46	431.95	392.59	367.17				376.81		426.94		402.14	355.13	
MW-11S	520.03			DRY	425.79	426.18	425.77				424.54				DRY			424.29
MW-11D	520.10			421.19	425.61	425.97					424.33			420.74		419.81		
MW-11D(2)	519.53																	
MW-12S	493.41		DRY		430.70	DRY				426.74						DRY		
MW-12D	493.49	419.44	420.09		423.68	424.91	425.17	423.32		423.32		421.11	420.34		419.18		422.21	
MW-13S	452.26			425.74	428.20	428.68	428.16			426.35				423.78		422.97	425.86	
MW-13D	450.19			419.37	423.79	424.16				422.53						418.84		
MW-14S	481.30		DRY		430.41	430.68	430.30	428.90				426.40	425.74		DRY	428.70		
MW-14D	481.39	421.74	422.74		427.75	427.06	427.31	426.19				423.86	423.24		421.71	424.80		
MW-14R	480.26				366.46	366.73		365.84								363.73		
MW-15S	506.78				434.88			433.45								429.85		
MW-15D	509.09				433.89			432.30								427.97		
MW-16S	480.27				427.52			425.92								421.67		
MW-16D	480.73				425.67			423.45								419.52		
MW-17S	555.97				425.63					424.67								
MW-18S	541.43				408.30						407.39	405.64		405.06		404.71		406.31
MW-18D	541.79				409.22						408.40					405.70		
MW-19S	489.23				433.87			432.93								430.71		
MW-19D	489.35				426.18			423.41								419.75		
MW-20R	472.90				364.52			375.01								372.19		
MW-22U	549.17																	
MW-22L	548.95																	
MW-23S	448.34																	
MW-23D	448.25																	
MW-25S	527.80																	
MW-25D	527.52																	
MW-26R	485.40																	
MW-27S	531.81																	
MW-27D	531.92																	
MW-28S	466.87																	
MW-29S	450.65																	
BC-4S	530.25			402.57	404.81											401.39		
BC-4R	530.31			369.76	372.49											369.53		
FMMW-1	546.03																	
FMMW-2	539.96																	

Notes: Water level elevations have been recalculated based on the most recent TOC survey data from 5/23/2018  
 Before June 1996 well elevations were: MW-11s 501.48; MW-11d 501.45; MW-15s 490.53; MW-15d 490.61  
 Between June 1996 and March 2001 well elevations were: MW-11s 512.13; MW-11d 512.06  
 Before October 30, 1999 well elevations were: MW-27s 531.81; MW-27d 531.92  
 Before January 21, 2000 well elevations were: MW-10s 455.45; MW-10d 456.19  
 Before May 18, 2001 well elevations were: MW-23s 449.92; MW-23d 449.96  
 Before September 2000, well elevations were: BC-4S 524.35; BC-4D 524.46  
 Before November 19, 2004 well elevations were: MW-25S 526.54; MW-25D 526.66  
 Before August 2005 well elevations were: MW-18S 546.88; MW-18D 546.01, new elevations are field measurements, not survey results

**Water Level Measurements  
2018 Annual Monitoring Report  
Hidden Valley Landfill, Pierce County, Washington**

WELL	12/22/88	01/24/89	03/02/89	03/04/89	03/15/89	03/16/89	04/25/89	05/25/89	06/29/89	06/30/89	07/17/89	07/18/89	07/19/89	09/05/89	10/04/89	10/25/89	10/26/89	10/27/89
MW-10S	433.08	436.08	437.65		439.78	444.69	442.91	439.43		437.98			434.41	431.97	430.18			
MW-10D	402.27	411.63	433.30		435.47	439.85	437.76	378.37		433.58			429.64	427.73	426.55			
MW-11S		426.22		427.72	429.47		433.99	432.61	429.97			428.69		DRY			DRY	
MW-11D	423.94	426.01					432.89					428.44		422.09			420.66	
MW-11D(2)																		
MW-12S		429.12			432.40		435.70		426.49				430.70	DRY	DRY		DRY	
MW-12D	422.64	424.81	426.19		428.15		432.31	430.73					426.59	422.79	421.18		420.19	
MW-13S	425.31	426.79	427.60		429.80		433.86	432.25				428.93		425.85	424.80		423.97	
MW-13D		424.01					431.35					425.74						419.47
MW-14S	428.52	430.77				435.12	440.67	438.50	427.68		433.31			428.31	426.46		DRY	
MW-14D	425.37	427.88		432.55		431.50	435.81	434.01		429.72								
MW-14R		366.28					372.16					364.64					422.88	
MW-15S		435.45			439.55		444.45				433.20			432.70	430.99		364.72	
MW-15D		434.02					442.04				440.28						429.04	
MW-16S		427.90					439.37					431.22						
MW-16D		425.63					433.43					427.26						
MW-17S		426.57			430.41		434.25					428.32						
MW-18S	407.54	409.61	410.66		411.67		415.44	414.91						424.52	422.55		421.10	
MW-18D		409.45					415.40						411.65	409.71	407.44			406.72
MW-19S		436.49					440.89						411.27					406.52
MW-19D		425.40					432.12					435.90						430.30
MW-20R		374.97					381.08					427.43						421.47
MW-22U													368.86				372.97	
MW-22L																		
MW-23S																		
MW-23D																		
MW-25S																		
MW-25D																		
MW-26R																		
MW-27S																		
MW-27D																		
MW-28S																		
MW-29S																		
BC-4S		405.40					410.52						406.99					402.69
BC-4R		372.43					378.09						373.42					370.77
FMMW-1																		
FMMW-2																		



**Water Level Measurements  
2018 Annual Monitoring Report  
Hidden Valley Landfill, Pierce County, Washington**

WELL	11/15/89	12/18/89	01/03/90	01/15/90	01/24/90	01/29/90	02/12/90	02/27/90	03/12/90	03/26/90	04/09/90	04/23/90	05/07/90	05/21/90	06/04/90	06/18/90	07/02/90	07/24/90
MW-10S	431.26	433.16	432.26	438.75		441.97	446.08	446.31	445.70	444.75	443.92	443.16	441.82	441.60	428.93	440.13	438.59	
MW-10D						437.98			440.70		438.94		437.09		436.54		434.42	
MW-11S	DRY	424.47	423.74	429.85		431.41	434.50	434.84	434.48	433.69	432.93	432.37	431.41	430.86	431.12	430.41	429.03	
MW-11D						431.12					432.74						428.71	
MW-11D(2)																		
MW-12S	DRY	DRY	DRY	432.03	432.47	434.06	436.63	436.56	436.49	436.21	435.43	434.69	434.37	433.42	433.16	433.26	432.36	429.79
MW-12D						430.27					431.76						427.49	
MW-13S	424.84	425.82	425.20	431.30	431.35	432.74	435.61	435.88	435.26	434.52	433.96	433.13	432.79	432.66	432.52	431.72	430.31	
MW-13D						429.55					431.67						426.69	
MW-14S	426.60	428.64	428.30	435.36	437.46	438.16	441.65	442.87	442.05	440.82	439.77	438.86	437.36	436.35	436.89	435.77	434.06	
MW-14D						434.36					435.09						430.58	
MW-14R						369.69					370.84						359.37	
MW-15S	430.87	433.52	432.92	439.33		441.55	444.99	445.75	445.29	444.27	443.34	440.67	441.40	440.78	441.07	440.06	438.31	
MW-15D						439.68					441.13						436.56	
MW-16S						436.38					433.05						427.06	
MW-16D						431.37					432.43						428.09	
MW-17S	420.88	423.72	424.11	435.97	430.63	431.91	434.87	435.24	435.00	434.62	433.92	433.20	432.87	431.99	431.43	431.68	430.95	429.57
MW-18S	406.20	408.28	408.21	410.13	411.08	413.05	415.35	417.08	415.99	415.40	414.93	414.76	415.23	413.51	DRY	412.89	411.58	
MW-18D	406.58	408.06	407.80	411.82		413.51	415.87	417.18	416.45	416.64	416.10	415.27	414.92	414.15	413.38	413.49	411.40	
MW-19S						440.26					440.23						436.63	
MW-19D						431.91					432.10						428.23	
MW-20R						378.07					378.69						363.88	
MW-22U	DRY	DRY	DRY	DRY	DRY	DRY	412.95	413.80	413.48	413.29	412.72	412.22	412.00	411.97	DRY	411.97	411.72	
MW-22L	403.71	405.26	415.09	408.07	408.95	410.00	412.41	413.72	413.53	413.48	412.86	412.13	411.63	410.89	410.09	409.83	408.31	
MW-23S						432.63					432.47						429.61	
MW-23D						427.92					428.61						424.96	
MW-25S						404.32					407.69						402.12	
MW-25D						407.37					410.27						405.81	
MW-26R																		
MW-27S																		
MW-27D																		
MW-28S																		
MW-29S																		
BC-4S						408.09					410.27						407.19	
BC-4R						375.40					378.36						372.06	
FMMW-1																		
FMMW-2																		

**Water Level Measurements  
2018 Annual Monitoring Report  
Hidden Valley Landfill, Pierce County, Washington**

WELL	09/04/90	10/01/90	10/22/90	11/26/90	12/17/90	01/29/91	02/25/91	03/26/91	04/29/91	06/28/91	07/29/91	01/20/92	04/14/92	07/14/92	10/19/92	03/22/93	06/02/93	09/07/93
MW-10S	436.17	428.80	433.53		439.17	440.15	444.80	436.70	447.78	446.84	438.68	432.83	436.97	433.79	DRY	430.85	436.53	433.09
MW-10D	431.39	435.02			437.29	437.29			442.81	437.36	434.56	427.69	432.27	428.65	424.38	427.04	432.03	429.14
MW-11S	426.00	424.17	422.26	431.14	430.37	430.17	433.68	434.81	435.71	431.78	429.42	422.87	426.32	423.19	DRY	423.72	420.86	416.65
MW-11D		423.92				431.15			435.59		429.14	422.51	426.17	423.14	418.40	423.64	420.67	416.54
MW-11D(2)																		
MW-12S				429.56	432.71	432.50	434.23	436.28	433.82	433.55	431.51	DRY	428.20	DRY	420.20	DRY	428.81	
MW-12D	424.53		421.83			430.54			435.37		427.75	420.98	424.69	421.69	417.89	420.99	424.36	421.85
MW-13S	428.13	427.11	426.90	432.48	431.58	433.78	435.88	427.04	437.99	434.28	432.08	422.68	425.92	422.65	419.36	421.21	425.53	423.10
MW-13D		422.38				427.89			434.54		427.32	420.04	423.65	420.40	417.03	418.81	423.27	420.83
MW-14S	430.42	428.38	427.82		435.80	423.70	450.65	442.30	443.74	437.77	434.36	427.40	431.92	427.62	DRY	426.78	431.72	427.51
MW-14D		425.55				436.69			439.25	433.66	430.74	423.86	428.14	424.30	420.96	423.18	427.96	425.05
MW-14R		363.08				370.91			373.66		361.62	364.60	364.86	358.84	360.16	362.71	362.30	358.60
MW-15S	434.98					441.09			446.38		438.90	431.90	435.92	432.28	428.17	431.18	435.83	
MW-15D						439.86			445.39		436.94	429.68	434.16	430.27	427.00	429.23	433.97	431.16
MW-16S						434.89												
MW-16D				405.49		431.36												
MW-17S	426.39	424.45				431.78			435.41		430.09	422.87	426.60	414.25	418.39	422.29	426.97	423.71
MW-18S	409.74	408.54	407.49		412.41		414.91	406.79	416.45	414.35	412.49	DRY	DRY	DRY	405.65	407.73	410.17	407.86
MW-18D	409.50	408.20							418.17	414.57	412.38	407.40	409.40		405.10	406.55	409.25	407.36
MW-19S									441.19		439.72	430.81	433.21	429.48	426.94	430.33	433.11	429.57
MW-19D									435.06		427.93	419.81	424.24	420.27	417.06	419.08	422.80	424.91
MW-20R		369.09				379.40			380.21		365.60	375.48	370.85	362.62	366.69	368.84	369.37	365.39
MW-22U	406.57								405.03		412.08	411.93	411.91	411.93	411.88	411.84	411.83	412.14
MW-22L	406.35					DRY			414.00		409.21	404.77	406.38	404.59	402.60	403.90	406.22	404.37
MW-23S		426.73				431.73			429.94		430.28	426.11	427.38	425.59	422.09	426.54	427.46	425.22
MW-23D						428.00			431.86		425.43	419.36	422.39	419.50	416.24	419.16	422.21	419.55
MW-25S		399.24				404.54			412.34		403.25	399.17	399.99	398.66	397.72	398.29	400.04	398.53
MW-25D						406.91			414.08		406.76	401.69	403.37	401.33	399.65	400.76	403.36	401.38
MW-26R												422.00	425.83	422.23	418.86	420.86	422.78	421.87
MW-27S												418.61	423.23	418.89	416.24	417.80	423.19	418.84
MW-27D												419.12	423.47	419.53	416.07	418.44	423.34	419.84
MW-28S																		
MW-29S																		
BC-4S									412.92			404.26	405.62		401.42	403.22	405.48	403.55
BC-4R									369.92			371.19	372.58		367.63	369.43	370.85	367.88
FMMW-1																		
FMMW-2																		

**Water Level Measurements  
2018 Annual Monitoring Report  
Hidden Valley Landfill, Pierce County, Washington**

WELL	12/07/93	03/14/94	06/07/94	09/19/94	12/05/94	03/18/95	06/19/95	09/19/95	12/13/95	03/19/96	06/12/96	09/03/96	12/10/96	12/11/96	03/25/97	06/09/97	09/08/97	12/15/97
MW-10S	428.36	431.34	431.20	DRY	429.46	441.64	438.30	431.80	436.63	447.59	444.28	437.45		439.64	449.09	442.97	436.79	435.67
MW-10D	425.87	428.13	427.47	423.19	425.96	439.10	434.93	427.99	434.00	443.71	440.91	433.94		437.40	445.78	439.58	433.06	430.81
MW-11S	413.86	418.23	415.97	410.81	418.15	425.46	422.10	416.95	423.30	425.09	433.07	418.00	421.34		426.98	422.22	415.98	416.46
MW-11D	413.73	418.04	415.82	410.72	417.88	425.31	421.97	416.80	423.04	424.99	432.96	417.86	420.13		426.88	422.05	416.82	416.32
MW-11D(2)																		
MW-12S						433.68					434.71	429.84			437.34			
MW-12D	419.07	421.66	420.32	416.75	420.01	431.55					433.34	426.50			437.39			
MW-13S		422.94	421.57	417.93	421.36	432.58	428.50	422.16	428.51	436.95	434.49	427.68	431.04		438.43	432.99	427.01	425.97
MW-13D	418.06	420.63	419.29	415.67	419.11	430.31	426.23	419.83	426.15	434.60	432.21	425.37	428.74		436.15	430.68	424.67	423.64
MW-14S	426.08	428.35	427.13	DRY	427.58	438.29	434.01	427.21	433.13	443.69	440.55	432.84	436.27		444.90	439.06	431.67	430.40
MW-14D	422.15	424.83	423.61	419.92	422.81	435.55	431.09	424.20	430.69	440.23	437.81	430.29	433.90		442.24	436.05	429.20	427.72
MW-14R	361.51	362.38	361.06	357.66	360.04	369.03			373.23						375.79	372.77		
MW-15S	429.53	432.99	431.53	427.68	431.88	441.83					435.80	437.13			443.20			
MW-15D	428.24	430.93	429.70	425.96	429.06	441.57					435.82	436.07			437.95			
MW-16S																		
MW-16D																		
MW-17S	419.98	424.98	422.77	417.32	423.64	432.07	429.51	424.07	429.79	435.17	433.27	428.57	431.06		435.77	432.27	427.54	443.32
MW-18S	406.42	409.63	408.23	406.13	408.77	414.75					DRY	411.34			417.05		Dry	Dry
MW-18D	405.61	407.57	406.75	404.65	406.57	414.93	411.50	407.06	411.03	418.79	416.81	411.26		413.20	420.04	415.78	410.33	419.67
MW-19S	427.31	430.70	429.14	425.62	430.65	438.17					439.08	433.57			442.25			
MW-19D	421.33	421.95	427.06	415.64	419.40	433.82					434.31	425.87			438.09			
MW-20R	368.45	368.69	367.69	362.64	367.32	377.03				380.52					378.13			
MW-22U	411.88	411.89	411.88	411.82	411.79	412.33									414.90			
MW-22L	402.97	404.85	404.08	402.33	403.97	411.50					413.54	408.28			416.49		407.10	
MW-23S	423.01	426.11	424.79	420.91	426.02	430.94	427.78	424.75	429.37	433.76	431.80	427.50		427.10	434.60	431.35	427.15	427.01
MW-23D	417.14	419.74	418.50	414.73	418.86	427.76					429.71	423.78			433.41		423.11	422.29
MW-25S	397.87	399.47	397.06	397.58	399.71	407.39			401.96		410.74	402.43			415.13		401.39	
MW-25D	399.88	401.89	400.91	399.23	401.32	409.70	405.91	401.29	405.30		412.72	404.96			416.69	411.61	404.92	403.70
MW-26R	419.26	422.32	420.88	417.12	420.20	432.36				437.94					440.28			
MW-27S	416.44	419.39	417.93	415.62	417.69	430.84					433.34	426.05			436.35			
MW-27D	416.84	419.92	418.69	415.20	417.89	430.78					433.07	425.86			437.98			
MW-28S																		
MW-29S																		
BC-4S	401.78	404.02	403.19	401.20	403.03	409.91					411.41	406.50			414.11			
BC-4R	363.21	369.45	368.53	366.36	367.47	376.58					379.59	371.70			383.77			
FMMWV-1																		
FMMWV-2																		

**Water Level Measurements  
2018 Annual Monitoring Report  
Hidden Valley Landfill, Pierce County, Washington**

WELL	03/16/98	06/24/98	09/16/98	12/21/98	04/09/99	06/07/99	09/13/99	12/13/99	03/15/00	06/09/00	09/12/00	01/18/01	03/22/01	04/19/01	07/12/01	10/23/01	01/18/02	04/25/02
MW-10S	440.78	437.25	431.48	437.27	445.95	440.31	435.19	434.31		440.42	435.67	432.45	431.01	425.45	431.63	423.52	439.17	442.23
MW-10D	437.93	433.36	427.15	435.30	442.33	437.10	430.29	434.84	440.17	436.95	430.43	427.59	427.74	428.48	427.12	423.01	436.72	439.20
MW-11S	421.38	417.61	412.58	419.42	424.49	420.04	415.65	419.32	426.93	430.10	425.18	423.31	422.18	423.76	421.93	417.39	430.10	432.17
MW-11D	421.15	417.45	412.44	419.28	424.37	419.89	414.90	418.47	426.93	429.89	425.04		422.04	423.61	421.81	417.27	430.09	431.83
MW-11D(2)										429.56	423.62	420.78	420.74	421.20	419.95	416.88	429.34	431.79
MW-12S		429.29			435.33	431.44		430.79	434.01	431.25	426.60	425.03	422.96	425.45	423.41	420.29	431.59	433.23
MW-12D		425.59			434.42	429.79	422.90	427.02	431.88	429.10	422.96	421.40	420.59	420.86	419.64	429.00	431.22	
MW-13S	431.71	427.02	421.48	429.57	435.58	430.64	424.91	428.75	433.31	430.57	424.79	424.61	422.47	422.62	421.31	418.10	430.75	433.31
MW-13D	429.34	424.95	419.15	427.22	433.26	428.29	422.33	426.31	431.85	428.27	422.28	420.49	419.90	420.14	418.87	415.61	428.24	430.53
MW-14S	437.04	432.10	426.30	433.69	441.91	435.91	429.07	434.18	439.91	435.75	429.25	427.50	426.42	427.71	426.08	421.59	434.95	438.12
MW-14D	434.40	429.59	423.29	432.17	438.94	434.07	425.40	431.11	436.38	433.32	426.41	423.89	423.79	424.29	422.99	419.77	432.94	435.47
MW-14R	372.26	369.06		367.76	377.41	370.78	360.18	366.72	373.26	369.79	363.33	363.66	355.02	354.67	347.91	349.36	356.05	360.45
MW-15S		432.05			440.66		429.24		438.60	435.06	429.30	427.51	426.67	427.73	426.51	422.67	434.67	437.38
MW-15D		525.26			434.75		422.30		432.11									
MW-16S																		
MW-16D																		
MW-17S	431.32	428.09	422.98	429.24	433.80	430.05	425.35	429.33	431.15	429.69	425.37	423.40	422.04	423.42	422.02	416.65	430.07	431.67
MW-18S	413.60	410.54		411.66	415.75	Dry	Dry	411.57	414.46	412.01	408.68	407.31	406.81	407.32	406.76	405.96	412.66	415.75
MW-18D	413.87	410.23	406.46	411.19	417.79	413.48	408.16	410.66	414.97	412.70	402.50	406.50	406.15	406.54	405.88	404.23	412.10	413.09
MW-19S		433.09			439.81		430.75		438.94	435.83	430.90	430.18	428.56	430.05	429.11	425.58	436.50	437.98
MW-19D		424.16			434.11		422.40		432.29	429.88	422.20		422.66	420.01	421.57	415.96	431.30	430.96
MW-20R	378.75	372.68			381.44				381.10	375.78	370.29	369.65	362.53	361.24	352.45	356.57	364.32	366.91
MW-22U		411.85			411.80	413.46	411.87	411.99	412.12	411.74	411.90		418.36		411.77	411.76	411.83	411.96
MW-22L		407.00			407.54	414.42	410.03	405.15	411.50	409.30	405.12		403.23	405.73	403.00	401.82	408.55	411.22
MW-23S	430.92	427.28	424.07	428.77	432.50	427.83	426.17	429.15	431.62	428.74	426.10	425.11	424.28	424.38	424.02	420.01	429.36	430.66
MW-23D	427.46	423.22		425.09		425.35			428.71	426.04	420.98		418.31	418.24	417.24	414.80	425.84	428.05
MW-25S		401.46			403.13	412.72	399.65	402.07	408.62	405.62	399.66	399.04	398.49	399.12	398.45	397.69	403.93	408.25
MW-25D	408.83	404.80	401.02	405.80	414.14	408.78	402.74	405.09	410.31	408.06	402.82		399.04	401.61	400.66	399.30	406.84	410.29
MW-26R	432.28			429.90	437.08				434.06	431.10	424.12	421.55	421.99	422.69	420.95	417.75	429.98	432.67
MW-27S		425.22			435.18				431.83	429.31	421.77		417.86	418.95	417.81	415.59	427.92	431.41
MW-27D		425.02			434.74				431.95	428.99	422.76		418.61	419.53	418.49	415.18	428.07	431.16
MW-28S										427.07	423.74						427.42	428.56
MW-29S																		
BC-4S		405.49		406.29						403.69			401.45	401.93	401.47	400.20	407.13	409.31
BC-4R		374.77		373.33						371.04			367.95	368.07	364.84	363.38	370.31	374.56
FMMW-1									407.92	405.10	400.56	398.73	398.55	398.58	398.47	397.64	403.73	407.47
FMMW-2									408.76	406.32	402.23	400.31	399.91	400.06	401.36	398.86	404.44	408.36

**Water Level Measurements  
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WELL	07/25/02	10/24/02	01/30/03	04/24/03	07/24/03	10/30/03	01/22/04	04/15/04	06/29/04	10/21/04	01/27/05	02/23/05	04/21/05	07/22/05	10/17/05	01/18/06	04/14/06	08/08/06
MW-10S	436.36	428.62	434.14	437.02	432.12	430.00	436.15	436.45	427.28	429.79	435.10		436.46	434.32	429.41	444.27	441.85	435.00
MW-10D	432.24	426.28	430.90	434.22	427.80	426.68	432.72	433.60	425.35	426.94	431.09		432.97	429.89	426.03	440.71	439.08	430.14
MW-11S	426.78	420.53	428.84	428.03	422.55	421.79	427.33	427.08	420.71	421.04	425.46		426.52	424.67	420.06	433.68	436.78	424.48
MW-11D	426.64	420.42	428.52	427.87	422.42	421.65	427.21	426.96			425.30		426.39	424.52	419.94	433.49	431.63	424.31
MW-11D(2)	425.18	418.99	424.21	426.49	420.52	419.89	425.73	426.53	418.92	419.64	423.73		425.50	423.03	418.94	432.78	431.98	423.00
MW-12S	428.31	421.60	427.04	429.03	423.70	422.50	428.57	430.59	421.86	422.26			425.18	422.61	418.71	432.21	431.33	422.49
MW-12D	424.74	419.39	423.79	426.11	420.21	419.65	425.21	426.18	418.64	419.23	423.64		426.81	424.09	420.26	433.60	432.49	423.56
MW-13S	427.32	421.47	425.91	427.95	422.13	421.67	427.09	427.90	420.05	421.03	425.31		424.45	421.74	417.90	431.29	430.22	421.17
MW-13D	424.31	418.43	424.83	426.44	419.37	419.06	424.52	425.45	417.54	418.56	422.89		430.61	428.35	424.54	440.16	438.40	428.34
MW-14S	430.93	424.61	430.26	432.49	426.20	426.05	431.21	431.37	424.80	426.11	429.13		428.78	426.05	422.06	436.34	435.52	426.06
MW-14D	428.36	422.06	426.69	429.99	423.64	423.07	429.00	426.58	421.87	423.18	427.02		363.06	357.84	357.48	363.43	368.93	354.35
MW-14R	351.96	353.91	355.58	359.54	350.75	355.08	358.99	361.73	351.70	356.38	359.06		430.68	428.55	424.52	438.93	437.03	428.45
MW-15S	431.04	424.71	429.65	432.01	426.45	426.06	431.16	431.42	424.61	425.36	429.20		427.70	424.99	428.06	435.20	434.37	424.99
MW-15D						421.96	427.82	435.91	427.84	429.30	425.98							
MW-16S																		
MW-16D																		
MW-17S	426.99	420.72	425.82	427.66	422.66	421.41	427.12	427.16	420.54	420.09	425.40		426.31	424.73	419.85	433.02	431.26	424.50
MW-18S	409.91	406.09	408.46	410.59	406.96	406.48	410.32	410.37	406.55	406.30		408.71	409.30	408.77		406.65	413.69	408.66
MW-18D	409.59	405.40	407.86	410.22	406.37	405.75	409.47	410.12	405.59	405.65		407.66	408.89	407.74		408.59	415.38	408.36
MW-19S	432.27	426.67	432.01	433.63	428.20	428.66	433.43	433.46	426.37	427.51			433.20	430.65	426.66	440.41	437.51	430.22
MW-19D	424.14	421.14	426.65	426.35	420.05	419.38	425.40	429.24	420.90	420.51	427.08		428.40	423.04	419.84	434.97	432.75	421.86
MW-20R	356.37	359.61	360.63	365.21	354.47	360.08	365.13	367.55	355.13	362.77	364.70		370.57	368.57	363.35	368.45	375.02	356.82
MW-22U	411.88	411.85	411.83	411.83	411.83	411.79	411.80	411.80	411.76	411.78			411.73	411.70	411.67	412.56	411.93	411.91
MW-22L	406.28	402.64	404.48	406.85	403.30	402.91	406.07	401.68	402.77	402.72			405.32	404.56	402.55	411.24	411.55	404.83
MW-23S	426.72	421.88	426.86	427.36	423.52	423.38	427.33	426.98	421.90	423.12	426.42		427.22	426.81		434.54	431.58	426.99
MW-23D	422.13	417.02	421.05	423.50	418.02	417.75	422.92	423.21	416.77	417.47	420.82		422.38	421.50		431.53	429.77	421.75
MW-25S	401.21	397.96	400.43	401.87	398.56	398.62	401.25	401.40			400.23		400.86	398.32	396.69	407.84	407.33	398.24
MW-25D	404.55	400.28	402.89	405.11	401.15	400.71	404.54	404.80			401.62		402.57	400.62	398.08	408.45	408.77	400.76
MW-26R	425.45	419.58	424.06	427.10	420.61	419.98	425.63	426.18	418.09	419.08	423.19		424.52	421.75	417.85	431.23	430.74	421.10
MW-27S	424.01	416.90	421.45	425.44	418.43	417.81	424.31	424.72	416.86	417.50	421.54		423.09	421.01	416.89	431.74	431.41	421.17
MW-27D	424.05	417.41	421.92	425.55	419.02	418.27	424.47	425.08	417.15	418.02	422.11		423.70	421.51	417.15	431.58	431.22	421.57
MW-28S	424.95	422.18		425.82	422.21		424.25	425.50			421.63		423.30			430.34	428.30	423.12
MW-29S																		
BC-4S	404.61	400.65	402.68	405.28	401.47	401.10	404.44	403.99	400.77	400.63	402.62		403.22	403.20	400.60	409.55	409.78	403.19
BC-4R	368.66	366.63	367.72	371.20	365.66	366.17	369.82	372.04	365.20	365.88	368.95		370.99	369.51	366.70	373.71	377.99	368.21
FMMWV-1	401.78	398.13	398.73	402.24	398.64	397.93	400.72	402.36	398.28	398.71	402.32		399.21	399.73	397.98	406.40	408.16	399.81
FMMWV-2	403.02	399.45	400.31	403.76	400.21	399.26	402.38	403.85	399.63	399.17	400.25		401.03	401.85	399.35	407.58	408.85	401.85

**Water Level Measurements  
2018 Annual Monitoring Report  
Hidden Valley Landfill, Pierce County, Washington**

WELL	10/26/06	01/18/07	04/26/07	07/19/07	10/11/07	01/24/08	04/17/08	07/10/08	10/23/08	01/12/09	04/16/09	07/09/09	10/29/09	01/28/10	04/08/10	07/15/10	10/14/10	01/06/11
MW-10S	430.65	445.84	441.84	436.42	434.09	438.52	439.06	435.30	427.47	439.23	439.29	436.11	431.99	439.51	440.01	438.29		
MW-10D	426.93	442.71	440.22	432.35	429.07	435.33	436.09	430.75	425.34	435.82	436.77	432.37	427.71	436.80	438.48	435.20	435.20	436.53
MW-11S	420.35	434.55	432.19	426.15	422.82	428.96	429.15	424.76	419.60	430.66	429.49	426.04	422.29	425.43	429.99	428.23	423.92	429.58
MW-11D	420.26	434.82	432.17	426.01	422.69	429.12	428.99	424.64	419.47	430.50	429.37	425.91	422.17	429.43	429.83	428.52	423.78	429.11
MW-11D(2)	419.75	435.30	433.01	425.14	421.51	428.15	428.91	423.73	418.67	428.94	429.62	425.34	420.91	429.12	429.91	427.95	422.26	429.12
MW-12S	420.98	435.58	433.23	427.50		429.92	430.25	425.31		431.79	430.56			429.59	431.04	451.41		430.30
MW-12D	419.45	434.39	432.19	424.62	420.97	427.20	428.04	422.89	418.35	428.33	428.91	424.88	420.51	428.57	429.75	427.29	421.86	428.50
MW-13S	420.94	435.56	433.30	425.89	422.45	428.39	429.25	423.95	419.79	429.85	430.20	426.04	422.13	430.37	430.58	428.51	423.45	429.52
MW-13D	418.60	433.27	431.02	423.52	420.18	426.21	426.83	421.64	417.44	427.49	427.83	423.72	419.75	427.98	428.17	426.13	420.98	427.46
MW-14S	424.75	441.87	438.87	430.27	427.83	433.49	434.33	428.61		434.77	434.64	430.10	426.97	434.69	435.61	433.28	427.99	434.64
MW-14D	422.76	438.82	436.67	428.35	424.53	431.30	432.18	426.51	421.62	431.64	432.86	428.37	423.72	432.61	433.26	431.32	425.92	432.11
MW-14R	357.85	369.11	367.45	355.73	359.17	363.20	366.05	359.64	357.00	362.03	367.99	359.40	357.76	363.32	366.15	360.15	361.90	363.18
MW-15S	424.76	440.45	437.94	430.25	426.86	433.22	433.94	428.71	423.98	434.51	434.18	430.13	426.53	434.26	434.93	432.81	428.07	434.10
MW-15D	421.67	437.59	435.47	427.28	423.34	430.20	430.59	425.36	420.50	430.68	431.77	427.37	422.64	431.48	432.07	430.04	424.85	431.28
MW-16S																		
MW-16D																		
MW-17S	418.19	433.88	431.56	425.98	421.39	428.05	428.67	424.72		430.02	428.83	425.86	421.78	428.94	429.17	427.67	423.81	428.68
MW-18S	406.66	407.83	405.69	401.26	398.83	411.62	412.01	408.80	406.19	412.64	412.16	409.66	406.78	412.45	412.56	411.17	408.03	412.11
MW-18D	406.02	410.91	409.21	402.82	400.04	411.68	412.48	408.41	405.56	412.15	412.72	409.78	406.62	412.66	413.29	411.92	407.67	412.41
MW-19S	426.73	440.99	437.84	431.44	429.21	434.92	434.86	430.35	426.01	438.07	435.64	431.65	429.13	435.98	436.05	433.72	430.19	435.62
MW-19D	419.91	435.18	434.36	424.07	422.16	429.12	426.49	422.98	420.36	430.23	431.24	427.82	423.51	434.04	435.20	428.82	417.93	429.56
MW-20R	363.82	375.66	373.17	358.22	363.32	366.81	370.42	363.76	360.73	367.37	375.67	364.27	362.02	367.50	370.52	363.31	368.98	368.50
MW-22U	411.92	414.00	412.37	406.46	411.91	411.88	411.93	411.89	411.90	411.88	411.86	411.88	411.87	411.74	411.71	411.80	411.72	411.77
MW-22L	402.81	414.01	412.41	411.72	403.58	407.72	408.72	404.94	402.54	408.27	408.85	406.15	403.30	408.76	409.44	408.07	404.21	408.59
MW-23S	423.52	434.74	432.07	428.03	426.22	428.13	427.94	425.67	421.36	432.59	430.26	427.99	424.66	430.57	427.64	429.01	426.85	428.60
MW-23D	418.56	432.41	430.17	423.10	420.33	424.12	425.12	419.94	415.95	427.22	427.34	423.39	418.20	427.19	430.65	425.72	421.05	425.28
MW-25S	396.69	410.92	408.72	399.75	397.52	402.59	404.10	399.63	397.85	403.98	402.73	399.34	398.60	402.62	403.99	402.02	398.86	403.64
MW-25D	398.27	411.43	409.96	402.42	399.38	404.63	406.01	401.67	398.85	405.31	405.16	402.10	399.77	404.93	406.04	404.43	399.05	400.66
MW-26R	419.62	435.55	432.87	423.86	423.86	426.24	427.52	421.36	416.46	425.40	427.56	422.47	417.58	426.06	426.79		420.03	424.74
MW-27S	417.03	434.62	432.82	423.82	419.02	426.60	428.13	421.57	416.64	426.62	427.87	423.46	418.19	427.68	428.89	426.90	420.24	427.77
MW-27D	417.67	434.38	432.58	424.02	419.79	426.33	427.98	422.01	416.76	426.75	428.09	423.75	418.77	427.73	428.97	426.83	420.75	427.81
MW-28S		430.59	428.57	423.37	422.21	426.60	426.59	422.20		428.75	426.91	423.73		427.12	427.21	426.05	422.12	426.83
MW-29S																		
BC-4S	400.99	412.43	409.27	404.68	401.77	406.16	407.06	403.08	400.54	406.51	406.51	404.51	401.07	407.25	407.78	406.54	402.76	406.84
BC-4R	367.40	378.61	378.85	369.47	368.79	372.50	374.21	369.50	366.23	370.58	374.48	370.17	367.12			371.53		
FMMW-1	398.21	410.93	410.47	402.08	398.60	402.94	404.47	399.89	398.07	401.39	404.20	402.00	398.45	411.88	404.93	403.71	398.97	403.89
FMMW-2	399.52	411.56	409.80	403.38	400.15	404.58	405.94	399.41	403.08	405.81	403.27	399.92	398.05	406.45	405.32	400.93	400.93	405.54




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WELL	04/21/11	07/07/11	10/27/11	01/26/12	04/27/12	07/19/12	10/11/12	01/17/13	04/23/13	07/25/13	10/10/13	01/06/14	04/09/14	07/07/14	10/29/14	01/15/15	04/20/15	07/28/15	
MW-10S				NW															
MW-10D	441.99	438.29	430.48	433.04	438.69	435.288	428.738	436.36	438.09	432.23	433.33	431.84	441.79	435.56	430.11	435.54	436.08	428.64	428.64
MW-11S	443.53	430.58	424.03	427.67	430.80	427.895	422.825	429.61	430.48	426.04	427.12	425.22	433.16	428.73	424.18	428.02	428.93	422.84	422.84
MW-11D		430.41	423.90	427.46	430.60	427.702	422.702	429.39	431.15	425.90	426.54	425.00	429.95	424.84	419.19	422.65	428.70	422.74	422.74
MW-11D(2)	434.73	431.83	423.03	426.03	431.27	427.771	421.641	429.38	430.58	425.10	426.28	423.92	433.89	428.78	422.93	426.58	428.94	421.78	421.78
MW-12S	434.21	431.52		428.74	431.74	429.336	427.856	430.61	431.20		433.19		434.91			428.91	430.18	423.89	423.89
MW-12D	434.49	430.32	423.03	425.72	430.71	427.566	420.876	428.54	429.68	424.40	426.15	424.48	434.52	428.31	422.59	426.02	428.22	421.19	421.19
MW-13S	434.56	431.36	424.72	427.35	431.83	429.185	422.225	429.65	430.71	425.51	427.26	426.06	434.71	428.74	424.39	429.81	429.99	422.56	422.56
MW-13D	432.17	428.90	422.32	424.94	430.04	426.69	419.84	427.23	428.44	423.15	424.94	423.59	432.40	426.59	421.99	427.09	427.46	420.19	420.19
MW-14S	440.84	436.68	428.10	432.29	436.60	432.818	426.558	434.75	436.19	430.41	431.40	429.25	440.20	434.01	428.64	433.52	434.06	426.59	426.59
MW-14D	438.44	434.77	426.13	429.13	434.84	431.59	424.39	432.76	434.39	428.22	429.09	427.49	437.99	432.14	425.94	431.39	432.57	424.64	424.64
MW-14R	366.10	366.13	359.81	360.76	366.15	358.954	354.814	362.35	365.14	353.64	359.94	364.62	369.01	358.48	357.45	363.58	367.26	353.71	353.71
MW-15S	439.58	436.01	428.26	431.88	435.90	432.59	426.79	434.35	435.67	430.51	432.28	429.28	439.47	433.68	428.35	433.24	433.73	426.76	426.76
MW-15D	437.2	434		427.69	433.74	430.59	423.13	431.65	432.69	427.17	428.09	426.83	436.69	431.09	424.84	430.74	431.22	423.52	423.52
MW-16S																	480.27		
MW-16D																	480.73		
MW-17S	432.474	429.724	423.924	426.83	429.94	427.524	422.974	428.97	429.62	425.87	426.76	424.97	432.14	428.19	423.27	428.32	428.32	422.89	422.89
MW-18S	415.396	412.986	408.116	409.86	413.18	410.896	407.716	412.46	412.44	407.58	411.58	409.12	416.43	411.60	407.83	414.83	411.79	407.61	407.61
MW-18D	417.46	414.90	407.94	410.13	414.13	411.755	407.375	412.92	413.47	407.74	411.68	409.08	417.47	413.02	407.87	411.39	412.91	407.55	407.55
MW-19S	439.15	436.16	430.48	434.77	437.11	432.652	428.832	435.92	436.36	431.90	434.01	431.93	440.32	436.91	430.03	436.81	435.88	428.73	428.73
MW-19D	437.87	427.50	428.50	429.82	436.00	432.35	416.63	430.69	435.35		421.32	426.40	439.32	437.32	417.39	434.97	424.45	417.12	417.12
MW-20R	367.73	369.97	363.65	363.94	368.94	363.629	356.649	367.05	368.59	354.75	361.65	371.65	372.63	360.95	362.79	368.15	370.70	357.13	357.13
MW-22U		411.84	411.83	411.80	411.78	411.838	413.968	411.92	410.77	405.65	418.81	407.67	414.82	410.16	403.62	411.81	411.84	411.84	411.84
MW-22L		411.18	404.57	406.30	410.28	408.076	404.056	409.10	409.45	404.32	408.86	404.73	413.40	408.95	402.35	410.29	409.16	404.13	404.13
MW-23S	433.36	430.65	427.04	428.54	429.91	427.39	424.23	448.34		426.52	427.77	426.28	427.29	427.45		428.10	424.24	424.24	424.24
MW-23D	431.53	431.51	421.34	423.14	426.84	423.84	419.35	426.05	426.45	421.45	423.18	422.05	430.98	424.81	420.99	427.52	425.60	419.15	419.15
MW-25S	410.32	406.94	397.98	401.60	406.43	403.1	398.56	404.35	405.68	400.97	401.44	399.76	408.85	405.19	399.10	403.28	404.56	398.59	398.59
MW-25D	411.06	408.46	400.34	403.42	407.77	405.22	400.45	406.21	407.27	403.32	403.66	402.27	410.54	408.36	401.15	405.15	406.34	400.50	400.50
MW-26R		426.90	417.95	419.88	425.70	422	415.4	425.20		418.82	419.09	418.39	427.32	357.75		360.40	361.98	352.63	352.63
MW-27S	434.21	430.81	420.43	424.02	430.11	426.56	418.93	428.23	429.31	423.86	422.84	424.21	433.28	429.46	421.79	429.16	428.21	419.19	419.19
MW-27D	433.82	430.84	421.07	424.15	430.02	426.79	419.64	428.23	429.02	423.92	424.08	424.12	433.00	428.92	421.85	428.93	428.07	419.91	419.91
MW-28S	429.44	427.4	422.19	424.67	427.77	NW	422.07	421.75			424.77					426.37	422.17		
MW-29S																			
BC-4S	411.756	409.246	402.646	404.19	408.30	406.246	402.26	407.28	407.45	404.75	406.19	402.82	411.49	408.37	397.25	409.48	407.25	402.05	402.05
BC-4R				370.41	375.16	386.882	385.60	372.66	374.31				377.96	389.91		372.61	375.23	390.99	390.99
FMMW-1	410.683	407.633	399.073	408.23	406.28	403.673	399.033	404.37	405.73	402.38	400.13	400.41	409.73	405.28	398.81	403.45	404.67	398.88	398.88
FMMW-2	411.75	408.31	401.01	394.17	407.21	405.287	400.867	406.027	406.087	403.59	402.14	402.26	410.36	406.46	400.49	405.11	406.14	400.64	400.64

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WELL	10/15/15	01/14/16	04/21/16	07/07/16	10/13/16	01/19/17	07/14/17	01/12/18	08/29/18
MW-10S						438.60	438.38	439.69	*
MW-10D	425.87	440.99	441.21	434.09	428.38	435.82	436.39	437.27	429.63
MW-11S		432.63	432.38	426.81	421.95	428.59	429.09	430.00	423.74
MW-11D	419.50	432.49	432.23	426.68	421.85	423.87	424.41	429.74	423.39
MW-11D(2)	419.43	434.08	434.53	426.99	421.38	428.64	429.71	430.21	422.99
MW-12S	420.36	433.47	433.09	428.11	422.61	429.88	429.69	430.80	425.06
MW-12D	419.06	433.27	433.08	426.27	421.18	428.03	429.09	429.47	422.28
MW-13S	420.69	433.86	434.01	427.72	422.19	429.61	429.87	430.92	423.72
MW-13D	418.51	431.52	431.67	425.14	419.94	427.24	427.51	428.49	421.02
MW-14S		439.78	439.07	431.41	428.95	435.92	434.23	436.78	427.61
MW-14D	422.29	437.49	437.96	429.98	424.56	432.11	433.02	433.71	425.62
MW-14R	356.41	367.43	370.08	361.66	357.41	363.07	361.57	364.23	356.24
MW-15S	424.13	438.50	438.08	431.26	425.81	432.17	433.77	435.26	427.85
MW-15D	421.22	436.22	436.74	429.26	423.32	430.06	431.88	432.47	424.48
MW-16S									
MW-16D									
MW-17S	419.36	431.47	431.13	426.26	421.39	427.17	428.07	428.79	423.68
MW-18S	406.26	414.98	414.43	410.10	407.05	410.91	411.52	412.35	408.14
MW-18D	405.85	416.58	417.24	411.20	406.88	411.58	413.46	412.99	408.07
MW-19S	426.51	439.11	437.80	432.26	428.69	434.19	433.55	435.23	432.43
MW-19D	423.85	429.35	431.52	430.22	425.80	424.01	430.65	433.13	418.74
MW-20R	360.70	372.00	375.97	364.95	360.42	367.14	364.08	368.60	358.40
MW-22U	411.85	412.67	412.59	411.88	411.83	411.81	411.85	411.83	411.89
MW-22L	402.75	412.50	413.46	407.69	403.53	407.67	409.97	409.47	404.66
MW-23S		431.34	430.21	426.61	423.47	428.87	427.49		
MW-23D	416.35	429.00	433.87	423.03	417.92	426.80	426.79		
MW-25S	397.52	409.97	411.10	402.60	397.97	402.46	406.00		
MW-25D	398.73	410.44	411.85	404.79	399.68	404.88	407.47		
MW-26R	354.20	368.00	372.30	398.40	357.60	364.89	362.69	422.28	414.02
MW-27S	416.61	433.21	433.70	425.59	418.07	427.13	429.09		
MW-27D	416.92	433.20	433.70	425.65	419.19	427.19	428.99		
MW-28S	422.17	428.97	428.38	423.79	421.70	426.51	426.21		
MW-29S								436.75	430.03
BC-4S	400.65	410.54	416.06	405.55	401.20	405.84	407.63	407.29	402.56
BC-4R	389.65	376.57		372.19	368.11		373.76	373.86	367.83
FMMW-1	398.01	409.03	409.90	402.92	398.38	402.88	405.85	403.93	399.19
FMMW-2	399.30	409.77	410.57	404.42	399.83	404.40	406.67	405.66	401.22



Appendix D  
GROUNDWATER MONITORING DATA



**Table 2. Water Level Elevations - August 29, 2018  
Semi - Annual Monitoring Event No. 2 - August 2018  
Hidden Valley Landfill, Pierce County, Washington**

Location	Well Casing Elevation	Depth to Water (FT)	Water Level Elevation
<b>Shallow Perched Aquifer</b>			
MW-10S	463.65	*	*
MW-11S	520.03	96.29	423.74
MW-12S	493.41	68.35	425.06
MW-13S	452.26	28.54	423.72
MW-14S	481.30	53.69	427.61
MW-15S	506.78	78.93	427.85
MW-17S	555.97	132.29	423.68
MW-18S	541.43	133.29	408.14
MW-19S	489.23	56.80	432.43
MW-29S	450.65	20.62	430.03
FMMW-1	546.03	146.84	399.19
FMMW-2	539.96	138.74	401.22
BC-4S	530.25	127.69	402.56
<b>Upper Regional Aquifer</b>			
MW-10D	464.09	34.46	429.63
MW-11D	520.10	96.71	423.39
MW-11D(2)	519.53	96.54	422.99
MW-12D	493.49	71.21	422.28
MW-13D	450.19	29.17	421.02
MW-14D	481.39	55.77	425.62
MW-15D	509.09	84.61	424.48
MW-18D	541.79	133.72	408.07
MW-19D	489.35	70.61	418.74
MW-22U	549.17	137.28	411.89
<b>Lower Regional Aquifer</b>			
MW-14R	480.26	124.02	356.24
MW-20R	472.90	114.50	358.40
MW-22L	548.95	144.29	404.66
MW-26R	485.40	71.38	414.02
BC-4R	530.31	162.48	367.83

Updated well casing elevation with survey data from 5/23/2018

\* = Well Casing Elevation unavailable at this time

**Table 3. Field Parameters**  
**Semi - Annual Monitoring Event No. 2 - August 2018**  
**Hidden Valley Landfill, Pierce County, Washington**

Location	Sample Number	Date	Method	pH	Specific Conductivity	Temperature
Units				(SU)	( $\mu$ S/cm)	( $^{\circ}$ C)
HVL Cleanup Level				—	700	—
WAC 173-200 Criteria				6.5-8.5	700 <sup>b</sup>	—
<b>Shallow Perched Aquifer</b>						
(BG) MW-10S	HVL-082818-12	8/28/18	DP	<b>6.28</b>	247	13.41
MW-11S	HVL-082718-01	8/27/18	DP	<b>5.92</b>	254	14.95
MW-12S	HVL-082818-15	8/28/18	DB	<b>6.36</b>	340	18.70
MW-13S	HVL-082818-16	8/28/18	DP	<b>6.11</b>	304	17.21
MW-14S	HVL-082818-08	8/28/18	DP	<b>6.11</b>	295	13.60
MW-15S	HVL-082718-04	8/27/18	DP	<b>6.17</b>	282	15.08
MW-17S	HVL-082718-03	8/27/18	DP	<b>6.29</b>	393	19.69
MW-18S	HVL-082918-20	8/29/18	DP	<b>6.10</b>	326	16.72
MW-29S	HVL-082918-21	8/29/18	DP	<b>6.27</b>	370	17.67
FMMW-1	HVL-082818-07	8/28/18	DP	<b>6.32</b>	278	15.90
FMMW-2	HVL-082818-09	8/28/18	DP	<b>6.19</b>	317	18.50
<b>Upper Regional Aquifer</b>						
(BG) MW-10D	HVL-082818-14	8/28/18	DP	<b>6.36</b>	242	13.02
MW-11D(2)	HVL-082718-02	8/27/18	DP	6.63	215	14.80
MW-12D	HVL-082818-17	8/28/18	DP	6.89	275	17.00
MW-13D	HVL-082818-18	8/28/18	DP	<b>6.29</b>	333	19.99
MW-14D	HVL-082818-10	8/28/18	DP	<b>6.31</b>	250	12.70
MW-15D	HVL-082718-05	8/27/18	DP	6.62	270	14.39
MW-18D	HVL-082918-19	8/29/18	DP	6.54	261	16.26
<b>Lower Regional Aquifer</b>						
MW-14R	HVL-082718-06	8/27/18	DP	6.77	107	13.40
MW-20R	HVL-082818-13	8/28/18	DP	7.17	98	11.20
MW-26R	HVL-082818-11	8/28/18	DP	7.33	193	11.90

**Notes:**

- $\mu$ S/cm = microsiemens per centimeter
- $^{\circ}$ C = degrees Celsius
- BG = Background
- DP = dedicated bladder-pump
- DB = disposable bailer
- b = Secondary Drinking Water Standard
- indicates not analyzed or not applicable



**Table 4. Inorganic Parameters**  
**Semi - Annual Monitoring Event No. 2 - August 2018**  
**Hidden Valley Landfill, Pierce County, Washington**

Location	Alkalinity, Total	Ammonia	Chloride	Nitrate	Nitrate/ Nitrite	Sulfate	Total Dissolved Solids	Total Organic Carbon	Total Suspended Solids
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MRL	5.0	0.1	0.2-1.2	0.2	0.1	0.2-0.25	10	1.0	4.0
HVL Cleanup Level	—	—	250	10	10	250	500	—	—
WAC 173-200 Criteria	—	—	250 <sup>b</sup>	10 <sup>a</sup>	10 <sup>a</sup>	250 <sup>b</sup>	500 <sup>b</sup>	—	—
<b>Shallow Perched Aquifer</b>									
(BG)									
MW-10S	99	*	6.0	0.48	—	13	140	1.1	*
MW-11S	85	*	14	0.67	—	11	170	1.3	*
MW-12S	140	2.9	11	1.4 H	1.0	0.8	210	2.2	17
MW-13S	110	*	11	*	—	22	190	1.2	*
MW-14S	110	0.5	21	*	—	7.0	170	2.2	*
MW-15S	98	3.2	16	*	—	10	170	2.0	*
MW-17S	160	3.8	13	*	—	2.0	220	1.9	*
MW-18S	130	*	14	0.28	—	4.0	210	1.5	*
MW-29S	140	*	15	*	—	16	250	1.5	*
FMWV-1	98	*	14	1.6	—	16	170	*	*
FMWV-2	120	*	15	1.7	—	5.4	200	1.5	*
<b>Upper Regional Aquifer</b>									
(BG)									
MW-10D	96	*	5.9	0.56	—	13	160	1.1	*
MW-11D(2)	80	*	5.8	1.7	—	9.6	130	*	*
MW-12D	120	*	8.4	1.3 H	1.5	7.6	180	*	*
MW-13D	130	*	12	0.24	—	19	98	1.1	*
MW-14D	90	3.9	9.0	* H	*	13	150	1.6	*
MW-15D	110	*	8.5	0.82	—	10	170	*	*
MW-18D	100	*	7.4	1.6	—	7.8	190	*	*
<b>Lower Regional Aquifer</b>									
MW-14R	45	*	1.6	*	—	3.6	110	*	*
MW-20R	44	*	1.7	*	—	3.1	92	*	*
MW-26R	84	*	4.5	*	—	8.0	140	*	*

**Notes:**

- Nitrate Method 300.00 hold times expired on samples from MW-12S, MW-12D, and MW-14D. Method 353.2 performed to extend hold time.
- Parameter concentrations that are greater than cleanup levels are shown in **bold**
- mg/L = milligrams per liter
- \* indicates not reported at or above the MRL (Method Reporting Limit)
- indicates not analyzed or not applicable
- a = Primary Drinking Water Standard
- b = Secondary Drinking Water Standard
- BG = Background/upgradient wells
- H = Sample was prepped or analyzed beyond specified holding time

**Table 5. Dissolved Metals**  
**Semi - Annual Monitoring Event No. 2 - August 2018**  
**Hidden Valley Landfill, Pierce County, Washington**

<b>Location</b>	<b>Iron</b>	<b>Manganese</b>	<b>Calcium</b>	<b>Magnesium</b>	<b>Potassium</b>	<b>Sodium</b>
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MRL	0.18	0.001	0.2	0.1	2.0	1.0
HVL Cleanup Level	0.30	0.05	—	—	—	—
WAC 173-200 Criteria	0.30 <sup>b</sup>	0.05 <sup>b</sup>	—	—	—	—
<b>Shallow Perched Aquifer</b>						
(BG) MW-10S	*	*	29	8.5	*	7.7
MW-11S	*	0.0058	20	5.8	6.7	17
MW-12S	*	<b>0.84</b>	26	7.4	13	22
MW-13S	*	0.0074	27	7.3	5.0	20
MW-14S	*	<b>0.24</b>	29	8.4	4.3	13
MW-15S	*	<b>0.83</b>	20	5.7	8.6	15
MW-17S	*	<b>0.82</b>	27	8.6	15	23
MW-18S	*	*	25	7.9	9.4	24
MW-29S	<b>0.5</b>	<b>1.2</b>	29	8.5	4.2	29
FMMW-1	*	*	24	6.3	4.3	22
FMMW-2	*	0.043	26	7.8	11	22
<b>Upper Regional Aquifer</b>						
(BG) MW-10D	*	*	28	8.8	2.1	7.7
MW-11D(2)	*	*	20	8.4	2.4	7.4
MW-12D	*	*	25	9.9	3.1	17
MW-13D	*	*	32	11	4.5	19
MW-14D	<b>2.7</b>	<b>1.1</b>	17	5.2	7.3	12
MW-15D	*	0.023	22	8.8	2.7	16
MW-18D	*	*	23	9.9	3.3	13
<b>Lower Regional Aquifer</b>						
MW-14R	*	<b>0.19</b>	8.1	4.5	2.1	5.0
MW-20R	*	*	8.1	4.0	2.2	5.5
MW-26R	<b>0.6</b>	<b>0.39</b>	21	8.9	2.5	6.2

Notes:

- Parameter concentrations that are greater than site cleanup levels or WAC 173-200 criteria are shown in **bold**
- Analyses performed by TestAmerica in Denver, Colorado
- b = Secondary Drinking Water Standard (concentrations measured as total metals)
- mg/L = milligrams per liter
- \* indicates not reported at or above the MRL (Method Reporting Limit)
- indicates not analyzed or not applicable
- BG = Background

**Table 6. Volatile Organic Compounds  
Semi - Annual Monitoring Event No. 2 - August 2018  
Hidden Valley Landfill, Pierce County, Washington**

<b>Location</b>	<b>Acetone</b>	<b>Tetrachloroethene</b>
Units	µg/L	µg/L
MRL	10	0.5
HVL Cleanup Level	—	—
WAC 173-200 Criteria	—	0.80
<b>Shallow Perched Aquifer</b>		
(BG) MW-10S	*	*
MW-11S	*	*
MW-12S	*	*
MW-13S	*	*
MW-14S	*	*
MW-15S	*	*
MW-17S	*	*
MW-18S	12	*
MW-29S	*	*
FMMW-1	*	*
FMMW-2	*	*
<b>Upper Regional Aquifer</b>		
(BG) MW-10D	*	*
MW-11D(2)	*	<b>0.86</b>
MW-12D	*	*
MW-13D	*	*
MW-14D	*	*
MW-15D	*	*
MW-18D	*	*
<b>Lower Regional Aquifer</b>		
MW-14R	18	*
MW-20R	*	*
MW-26R	27	*
<b>Quality Control Samples</b>		
Field Blank	*	*

Notes:

Volatile organic compounds not listed were not present at concentrations exceeding the MRL

BG = Background

µg/L = micrograms per liter

\* = not reported at or above the MRL (Method Reporting Limit)

— = not analyzed or not applicable

**Table 7. Duplicate Sample Evaluation  
Semi - Annual Monitoring Event No. 2 - August 2018  
Hidden Valley Landfill, Pierce County, Washington**

<b>Parameter</b>	<b>MRL</b>	<b>MW-29S</b>	<b>MW-29S (Duplicate)</b>	<b>RPD (%)</b>
<b>Dissolved Metals (mg/L)</b>				
Calcium	0.2	29	29	0.0
Iron	0.18	0.50	0.49	1.3
Magnesium	0.1	8.5	8.8	2.3
Manganese	0.001	1.2	1.2	0.0
Potassium	2.0	4.2	4.3	1.6
Sodium	1.0	29	30	2.3
<b>Inorganic Parameters (mg/L)</b>				
Alkalinity	5.0	140	140	0.0
Chloride	0.3	15	15	0.0
Sulfate	0.2	16	16	0.0
Total Dissolved Solids	10	250	250	0.0
Total Organic Carbon	1.0	1.5	1.7	8.5

**Notes:**

Analysis performed by TestAmerica, Arvada, Colorado

Analytes not listed were not present at concentrations exceeding the MRL

RPD = relative percent difference

mg/L = milligrams per liter

**Table 8. Water Supply Wells  
Semi - Annual Monitoring Event No. 2 - August 2018  
Hidden Valley Landfill, Pierce County, Washington**

Parameter	Units	MRL	Corliss	Paul Bunyan
<b>Field Parameters</b>				
pH	SU	—	7.07	6.43
Specific Conductivity	µS/cm	—	241	301
Temperature	°C	—	16.25	14.13
<b>Volatile Organic Compounds</b>				
No VOCs detected	µg/L	—	*	*
<b>Metals (total)</b>				
Arsenic	mg/L	0.005	*	*
Iron	mg/L	0.18	*	*
Manganese	mg/L	0.001	*	*
Zinc	mg/L	0.01	*	*
<b>Inorganic Parameters</b>				
Chloride	mg/L	0.3	5.6	6.4
Nitrate	mg/L	0.2	1.4	2.3
Sulfate	mg/L	0.2	11	11
<b>Other</b>				
Color	PCU	5.0	5.0	5.0

**Notes:**

- Analyses performed by TestAmerica in Denver, Colorado.
- Analytes not listed were not present at concentrations exceeding the MRL.
- Color reported in color units
- µg/L = micrograms per liter
- mg/L = milligrams per liter
- PCU = platinum-cobalt units
- \* = not reported at or above the MRL (Method Reporting Limit)
- SU = Standard Units
- µS/cm = microsiemens per centimeter
- °C = degrees Celsius
- = Not Applicable

**Table 9. Cation-Anion Balance**  
**Semi - Annual Monitoring Event No. 2 - August 2018**  
**Hidden Valley Landfill, Pierce County, Washington**

Cations	mg/L				meq/L				% of Total					
	Ca	Mg	K	Na	Total	Ca	Mg	K	Na	Total	Ca	Na+K	Cl	Mg
MW-10S	29	8.5	2.0	7.7	47.20	1.45	0.70	0.05	0.33	2.53	1.5	57	28	28
MW-11S	20	5.8	6.7	17	49.50	1.00	0.48	0.17	0.74	2.39	38	42	20	20
MW-12S	26	7.4	1.3	22	68.40	1.30	0.61	0.33	0.96	3.20	40	41	19	19
MW-13S	27	7.3	5.0	20	59.30	1.35	0.60	0.13	0.87	2.95	34	46	20	20
MW-14S	29	8.4	4.3	13	54.70	1.45	0.69	0.11	0.57	2.81	24	51	25	25
MW-15S	20	5.7	8.6	15	49.30	1.00	0.47	0.22	0.65	2.34	37	43	20	20
MW-17S	27	8.6	1.5	23	73.60	1.35	0.71	0.38	1.00	3.44	40	39	21	21
MW-18S	25	7.9	9.4	24	66.30	1.25	0.65	0.24	1.04	3.18	40	39	20	20
MW-29S	29	8.5	4.2	29	70.70	1.45	0.70	0.11	1.26	3.52	39	41	20	20
FMWV-1	24	6.3	4.3	22	56.60	1.20	0.52	0.11	0.96	2.78	38	43	19	19
FMWV-2	26	7.8	1.1	22	66.80	1.30	0.64	0.28	0.96	3.18	39	41	20	20
MW-10D	28	8.8	2.1	7.7	46.60	1.40	0.72	0.05	0.33	2.51	15	56	29	29
MW-11D(2)	20	8.4	2.4	7.4	38.20	1.00	0.69	0.06	0.32	2.07	18	48	33	33
MW-12D	25	9.9	3.1	17	55.00	1.25	0.81	0.08	0.74	2.88	28	43	28	28
MW-13D	32	11	4.5	19	66.50	1.60	0.91	0.12	0.83	3.44	27	46	26	26
MW-14D	17	5.2	7.3	12	41.50	0.85	0.43	0.19	0.52	1.99	36	43	22	22
MW-15D	22	8.8	2.7	16	49.50	1.10	0.72	0.07	0.70	2.59	30	42	28	28
MW-18D	23	9.9	3.3	13	49.20	1.15	0.81	0.08	0.57	2.61	25	44	31	31
MW-14R	8.1	4.5	2.1	5.0	19.70	0.40	0.37	0.05	0.22	1.05	26	39	35	35
MW-20R	8.1	4.0	2.2	5.5	19.80	0.40	0.33	0.06	0.24	1.03	29	39	32	32
MW-26R	21	8.9	2.5	6.2	38.60	1.05	0.73	0.06	0.27	2.11	16	50	35	35

Anions	mg/L				meq/L				% of Total				Total Ions (meq/L)	Cation - Anion Balance	Applicable Ratio (%)	Ratio Exceedance	
	Alk	Cl	NO <sub>3</sub>	SO <sub>4</sub>	Total	Alk	Cl	NO <sub>3</sub>	SO <sub>4</sub>	Total	Alk	Cl					SO <sub>4</sub>
MW-10S	118.8	6.0	0.48	13	138.28	1.95	0.17	0.01	0.27	2.40	7	81	11	4.93	2.78	10	-
MW-11S	102	1.4	0.67	11	127.67	1.67	0.39	0.01	0.23	2.31	17	73	10	4.69	1.69	10	-
MW-12S	168	11	1.0	0.81	180.81	2.76	0.31	0.02	0.02	3.10	10	89	1	6.29	1.55	5	-
MW-13S	132	11	0.2	22	165.20	2.16	0.31	0.00	0.46	2.94	11	74	16	5.88	0.17	5	-
MW-14S	132	21	0.2	7.0	160.20	2.16	0.59	0.00	0.15	2.91	20	74	5	5.72	1.61	5	-
MW-15S	117.6	16	0.2	10	143.80	1.93	0.45	0.00	0.21	2.59	17	74	8	4.93	5.10	10	-
MW-17S	192	13	0.2	2.0	207.20	3.15	0.37	0.00	0.04	3.56	10	88	1	7.00	1.72	5	-
MW-18S	156	1.4	0.28	4.0	174.28	2.56	0.39	0.00	0.08	3.04	13	84	3	6.22	2.27	5	-
MW-29S	168	1.5	0.2	16	199.20	2.76	0.42	0.00	0.33	3.51	12	78	9	7.03	0.02	5	-
FMWV-1	176	1.4	1.6	16	149.20	1.93	0.39	0.03	0.33	2.68	15	72	12	5.47	1.85	5	-
FMWV-2	144	1.5	1.7	5.4	166.10	2.36	0.42	0.03	0.11	2.92	14	81	4	6.10	4.16	5	-
MW-10D	115.2	5.9	0.56	13	134.66	1.89	0.17	0.01	0.27	2.34	7	81	12	4.85	3.61	10	-
MW-11D(2)	96	5.8	1.7	9.6	113.10	1.57	0.16	0.03	0.20	1.97	8	80	10	4.04	2.67	10	-
MW-12D	144	8.4	1.5	7.6	161.50	2.36	0.24	0.02	0.16	2.78	9	85	6	5.66	1.77	5	-
MW-13D	156	12	0.24	19	187.24	2.56	0.34	0.00	0.40	3.30	10	78	12	6.74	2.20	5	-
MW-14D	108	9.0	0.2	13	130.20	1.77	0.25	0.00	0.27	2.30	11	77	12	4.28	7.32	10	-
MW-15D	132	8.5	0.82	10	151.32	2.16	0.24	0.01	0.21	2.63	9	82	8	5.21	0.74	5	-
MW-18D	120	7.4	1.6	7.8	136.80	1.97	0.21	0.03	0.16	2.36	9	83	7	4.98	4.98	10	-
MW-14R	54	1.6	0.2	3.6	59.40	0.89	0.05	0.00	0.07	1.01	4	88	7	2.05	1.80	10	-
MW-20R	52.8	1.7	0.2	3.1	57.80	0.87	0.05	0.00	0.06	0.98	5	88	7	2.01	2.36	10	-
MW-26R	100.8	4.5	0.2	8.0	113.50	1.65	0.13	0.00	0.17	1.95	7	85	9	4.06	4.05	10	-

Notes:  
Method 353.2 Nitrate/Nitrite combined data used for MW12S, MW-12D, and MWV 14D  
mg/L = milligrams per liter  
meq/L = milliequivalents per liter  
Total alkalinity concentration, reported as calcium carbonate (CaCO<sub>3</sub>), is converted to the bicarbonate (HCO<sub>3</sub><sup>-</sup>) ion by multiplying by a factor of 1.2.  
Cation / anion balance equation is the equivalent percent difference in cations minus anions divided by the sum of cations and anions [(cations-anions)/(cations+anions)\*100].  
— = not applicable or not performed  
The MRL was used for analytes that were non-detect  
A 10% difference threshold is used if the total cation-anion sums are < 5.0 meq/liter.  
A 5% difference threshold is used if the total cation-anion sums are > or = to 5.0 meq/liter.



**Table 2. Water Level Elevations - January 12, 2018  
Semi - Annual Monitoring Event No. 1 - January 2018  
Hidden Valley Landfill, Pierce County, Washington**

Location	Well Casing Elevation	Depth to Water (FT)	Water Level Elevation
<b>Shallow Perched Aquifer</b>			
MW-10S	463.65	23.96	439.69
MW-11S	520.03	90.03	430.00
MW-12S	493.41	62.61	430.80
MW-13S	452.26	21.34	430.92
MW-14S	481.30	44.52	436.78
MW-15S	506.78	71.52	435.26
MW-17S	555.97	127.18	428.79
MW-18S	541.43	129.08	412.35
MW-19S	489.23	54.00	435.23
MW-29S	450.65	13.90	436.75
FMMW-1	546.03	142.10	403.93
FMMW-2	539.96	134.30	405.66
BC-4S	530.25	122.96	407.29
<b>Upper Regional Aquifer</b>			
MW-10D	464.09	26.82	437.27
MW-11D	520.10	90.36	429.74
MW-11D(2)	519.53	89.32	430.21
MW-12D	493.49	64.02	429.47
MW-13D	450.19	21.70	428.49
MW-14D	481.39	47.68	433.71
MW-15D	509.09	76.62	432.47
MW-18D	541.79	128.80	412.99
MW-19D	489.35	56.22	433.13
MW-22U	549.17	137.34	411.83
<b>Lower Regional Aquifer</b>			
MW-14R	480.26	116.03	364.23
MW-20R	472.90	104.30	368.60
MW-22L	548.95	139.48	409.47
MW-26R	485.40	63.12	422.28
BC-4R	530.31	156.45	373.86

Updated well casing elevation with survey data from 5/23/2018

\* = Well Casing Elevation unavailable at this time

**Table 3. Field Parameters**  
**Semi - Annual Monitoring Event No. 1 - January 2018**  
**Hidden Valley Landfill, Pierce County, Washington**

Location	Sample Number	Date	Method	pH	Specific Conductivity	Temperature
Units				(SU)	( $\mu$ S/cm)	( $^{\circ}$ C)
HVL Cleanup Level				—	700	—
WAC 173-200 Criteria				—	700 <sup>b</sup>	—
<b>Shallow Perched Aquifer</b>						
(BG) MW-10S	HVL-010818-05	1/8/18	DP	6.61	291	11.80
MW-11S	HVL-010918-15	1/9/18	DP	5.84	277	14.27
MW-12S	HVL-010918-14	1/9/18	DB	5.74	331	14.91
MW-13S	HVL-010818-09	1/8/18	DP	6.39	293	16.81
MW-14S	HVL-010818-01	1/8/18	DP	6.04	128	11.95
MW-15S	HVL-010818-04	1/8/18	DP	6.15	273	14.05
MW-17S	HVL-010818-12	1/8/18	DP	6.09	434	18.16
MW-18S	HVL-011018-20	1/10/18	DP	6.23	421	15.34
MW-29S	HVL-011118-22	1/11/18	DP	6.36	317	14.20
FMMW-1	HVL-011018-17	1/10/18	DP	6.30	312	12.71
FMMW-2	HVL-011018-18	1/10/18	DP	6.07	378	13.57
<b>Upper Regional Aquifer</b>						
(BG) MW-10D	HVL-010818-07	1/8/18	DP	6.54	222	12.38
MW-11D(2)	HVL-011018-21	1/10/18	DP	6.80	221	13.11
MW-12D	HVL-010918-13	1/9/18	DP	6.73	287	16.24
MW-13D	HVL-010818-11	1/8/18	DP	6.60	337	16.18
MW-14D	HVL-010818-03	1/8/18	DP	6.43	247	12.10
MW-15D	HVL-010818-06	1/8/18	DP	6.75	262	13.29
MW-18D	HVL-011018-19	1/10/18	DP	6.77	265	13.76
<b>Lower Regional Aquifer</b>						
MW-14R	HVL-010818-02	1/8/18	DP	7.15	104	11.18
MW-20R	HVL-010818-10	1/8/18	DP	7.22	100	10.71
MW-26R	HVL-010818-08	1/8/18	DP	7.36	201	11.20

**Notes:**

- $\mu$ S/cm = microsiemens per centimeter
- $^{\circ}$ C = degrees Celsius
- BG = Background
- DP = dedicated bladder-pump
- DB = disposable bailer
- b = Secondary Drinking Water Standard
- indicates not analyzed or not applicable

**Table 4. Inorganic Parameters**  
**Semi - Annual Monitoring Event No. 1 - January 2018**  
**Hidden Valley Landfill, Pierce County, Washington**

Location	Alkalinity, Bicarbonate	Alkalinity, Total	Ammonia	Chloride	Nitrate	Nitrate plus Nitrite	Sulfate	Total Dissolved Solids	Total Organic Carbon	Total Suspended Solids
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MRL	5.0	5.0	0.1	0.2	0.2-0.21	0.1	0.2-0.25	10	1.0	4.0
HVL Cleanup Level	—	—	—	250	10	10	250	500	—	—
WAC 173-200 Criteria	—	—	—	250 <sup>b</sup>	10 <sup>a</sup>	10 <sup>a</sup>	250 <sup>b</sup>	500 <sup>b</sup>	—	—
<b>Shallow Perched Aquifer</b>										
(BG)										
MW-10S	120	120	*	6.6	0.76	—	8.9	160	1.1	*
MW-11S	74	74	*	16	5.4 <b>H</b>	5.9	11	170	1.2	*
MW-12S	45	45	1.4	14	<b>19 H</b>	<b>20</b>	2.9	230	2.0	4.0
MW-13S	100	100	*	10	1.8	—	12	180	1.2	*
MW-14S	42	42	0.27	4.4	1.0	—	5.4	83	1.8	*
MW-15S	90	90	2.7	17	0.91	—	8.4	150	1.9	*
MW-17S	120	120	3.1	20	<b>12</b>	—	4.6	250	1.8	*
MW-18S	120	120	*	17	<b>10 H</b>	<b>12</b>	4.5	260	1.5	*
MW-29S	110	110	*	13	<b>1.0 H</b>	—	10	180	1.7	*
FMMW-1	100	100	*	15	3.0	—	8.2	190	1.3	*
FMMW-2	92	92	*	19	9.8	—	11	230	1.3	*
<b>Upper Regional Aquifer</b>										
(BG)										
MW-10D	79	79	*	4.9	2.3	—	8.6	140	*	*
MW-11D(2)	78	78	*	5.8	1.6	—	8.7	140	*	*
MW-12D	110	110	*	8.1	<b>1.5 H</b>	1.5	6.7	170	*	*
MW-13D	120	120	*	12	1.2	—	12	200	1.1	*
MW-14D	83	83	3.7	11	*	—	11	140	1.8	*
MW-15D	100	100	*	8.5	0.82	—	9.6	170	*	*
MW-18D	100	100	*	7.4	1.5	—	6.7	160	*	*
<b>Lower Regional Aquifer</b>										
MW-14R	44	44	*	1.7	*	—	3.4	86	*	*
MW-20R	43	43	*	1.7	*	—	3.0	87	*	*
MW-26R	81	81	*	4.5	*	—	9.2	130	*	*

**Notes:**  
Nitrate Method 300.00 hold times expired on samples from MW-11S, MW-12S, MW-12D, MW-18S, and MW-29S. Method 353.2 performed to extend hold time (except for MW-29S).  
Parameter concentrations that are greater than cleanup levels are shown in **bold**  
mg/L = milligrams per liter  
\* indicates not reported at or above the MRL (Method Reporting Limit)  
— indicates not analyzed or not applicable  
a = Primary Drinking Water Standard  
b = Secondary Drinking Water Standard  
BG = Background/upgradient wells  
H = Sample was prepped or analyzed beyond specified holding time

**Table 5. Dissolved Metals**  
**Semi - Annual Monitoring Event No. 1 - January 2018**  
**Hidden Valley Landfill, Pierce County, Washington**

<b>Location</b>	<b>Iron</b>	<b>Manganese</b>	<b>Calcium</b>	<b>Magnesium</b>	<b>Potassium</b>	<b>Sodium</b>
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MRL	0.18	0.001	0.2	0.1	2.0	1.0
HVL Cleanup Level	0.30	0.05	—	—	—	—
WAC 173-200 Criteria	0.30 <sup>b</sup>	0.05 <sup>b</sup>	—	—	—	—
<b>Shallow Perched Aquifer</b>						
(BG) MW-10S	*	*	30	9.7	*	9.1
MW-11S	*	*	22	6.7	5.6	18
MW-12S	*	<b>0.43</b>	20	5.8	10	18
MW-13S	*	*	24	6.8	4.8	24
MW-14S	*	<b>0.10</b>	10	3.4	2.5	5.9
MW-15S	*	<b>0.85</b>	19	5.8	9.2	15
MW-17S	*	<b>0.82</b>	27	9.0	14	27
MW-18S	*	*	32	10	8.5	26
MW-29S	0.29	<b>0.98</b>	24	7.6	2.9	25
FMMW-1	*	*	23	6.7	3.3	23
FMMW-2	*	0.01	27	8.7	9.6	22
<b>Upper Regional Aquifer</b>						
(BG) MW-10D	*	*	21	7.5	*	6.8
MW-11D(2)	*	*	19	8.6	*	7.5
MW-12D	*	*	24	9.8	2.3	16
MW-13D	*	*	30	11	3.9	19
MW-14D	<b>2.2</b>	<b>1.0</b>	15	4.8	7.0	11
MW-15D	*	<b>0.06</b>	21	8.4	2.4	17
MW-18D	*	*	24	9.9	2.6	12
<b>Lower Regional Aquifer</b>						
MW-14R	*	<b>0.18</b>	7.8	4.5	*	5.2
MW-20R	*	*	7.3	3.7	*	5.4
MW-26R	<b>0.64</b>	<b>0.38</b>	18	8.0	*	6.0

**Notes:**

- Parameter concentrations that are greater than site cleanup levels or WAC 173-200 criteria are shown in **bold**
- Analyses performed by TestAmerica in Denver, Colorado
- b = Secondary Drinking Water Standard (concentrations measured as total metals)
- mg/L = milligrams per liter
- \* indicates not reported at or above the MRL (Method Reporting Limit)
- indicates not analyzed or not applicable
- BG = Background

**Table 6. Volatile Organic Compounds  
Semi - Annual Monitoring Event No. 1 - January 2018  
Hidden Valley Landfill, Pierce County, Washington**

<b>Location</b>	<b>Acetone</b>	<b>Chloromethane</b>	<b>Tetrachloroethene</b>
Units	µg/L	µg/L	µg/L
MRL		0.5	0.5
HVL Cleanup Level	—	—	—
WAC 173-200 Criteria	—	—	0.80
<b>Shallow Perched Aquifer</b>			
(BG) MW-10S	*	*	*
MW-11S	*	*	*
MW-12S	*	*	*
MW-13S	*	*	*
MW-14S	*	0.53 B	*
MW-15S	*	*	*
MW-17S	*	*	*
MW-18S	*	*	*
MW-29S	*	*	*
FMMW-1	*	*	*
FMMW-2	*	*	*
<b>Upper Regional Aquifer</b>			
(BG) MW-10D	*	*	*
MW-11D(2)	*	*	0.80
MW-12D	*	*	*
MW-13D	*	0.52 B	*
MW-14D	*	*	*
MW-15D	*	*	*
MW-18D	*	*	*
<b>Lower Regional Aquifer</b>			
MW-14R	*	*	*
MW-20R	*	*	*
MW-26R	*	*	*
<b>Quality Control Samples</b>			
Field Blank	14	0.62	*

Notes:

Volatile organic compounds not listed were not present at concentrations exceeding the MRL

BG = Background

µg/L = micrograms per liter

\* = not reported at or above the MRL (Method Reporting Limit)

B = analyte was detected in an associated QC sample

— = not analyzed or not applicable

**Table 7. Duplicate Sample Evaluation  
Semi - Annual Monitoring Event No. 1 - January 2018  
Hidden Valley Landfill, Pierce County, Washington**

<b>Parameter</b>	<b>MRL</b>	<b>MW-11D(2)</b>	<b>MW-11D(2) - DUP</b>	<b>RPD (%)</b>
<b>Volatile Organic Compunds (µg/L)</b>				
Tetrachloroethene	0.5	0.80	0.80	0.0
<b>Dissolved Metals (mg/L)</b>				
Calcium	0.2	19	20	5.1
Magnesium	0.1	8.6	8.7	1.2
Sodium	1.0	7.5	8.0	6.5
<b>Inorganic Parameters (mg/L)</b>				
Alkalinity	5.0	78	78	0.0
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	5.0	78	78	0.0
Chloride	0.2	5.8	5.9	1.7
Nitrate	0.2	1.6	1.6	0.0
Sulfate	0.25	8.7	8.6	1.2
Total Dissolved Solids	10	140	130	7.4

Analysis performed by TestAmerica, Arvada, Colorado

Analytes not listed were not present at concentrations exceeding the MRL

RPD = relative percent difference

µg/L = micrograms per liter

mg/L = milligrams per liter



**Table 8. Water Supply Wells  
Semi - Annual Monitoring Event No. 1 - January 2018  
Hidden Valley Landfill, Pierce County, Washington**

Parameter	Units	MRL	Corliss	Paul Bunyan
<b>Field Parameters</b>				
pH	SU	—	6.61	7.05
Specific Conductivity	µS/cm	—	225	296
Temperature	°C	—	10.2	9.8
<b>Volatile Organic Compounds</b>				
Acetone	µg/L	—	11.0 B	*
<b>Metals (total)</b>				
Arsenic	mg/L	0.005	*	*
Iron	mg/L	0.180	*	*
Manganese	mg/L	1.0	0.0013	0.0064
Zinc	mg/L	0.010	0.021	0.014
<b>Inorganic Parameters</b>				
Ammonia	mg/L	0.1	*	*
Chloride	mg/L	0.2	5.2	6.1
Nitrate as N	mg/L	0.2	1.7 H	2.5 H
Nitrite as N	mg/L	0.5	* H	* H
Sulfate	mg/L	0.2	9.2	9.9
Chemical Oxygen Demand	mg/L	5.0	*	*
Total Organic Carbon	mg/L	1.0	*	*
<b>Other</b>				
Color	PCU	5.0	* H	* H

**Notes:**

- Analyses performed by TestAmerica in Denver, Colorado.
- Analytes not listed were not present at concentrations exceeding the MRL.
- Color reported in color units
- µg/L = micrograms per liter
- mg/L = milligrams per liter
- PCU = platinum-cobalt units
- \* = not reported at or above the MRL (Method Reporting Limit)
- SU = Standard Units
- µS/cm = microsiemens per centimeter
- °C = degrees Celsius
- H = Sample was prepared or analyzed beyond specified holding time
- B = analyte was detected in an associated Trip Blank
- = Not Applicable

**Table 9. Cation-Anion Balance**  
**Semi - Annual Monitoring Event No. 1 - January 2018**  
**Hidden Valley Landfill, Pierce County, Washington**

Cations	mg/L				meq/L				% of Total				
	Ca	Mg	K	Na	Total	Ca	Mg	K	Na	Total	Na+K	Ca	Mg
MW-10S	30	9.7	2.0	9.1	50.80	1.50	0.80	0.05	0.40	2.74	1.6	55	29
MW-11S	22	6.7	5.6	18	52.30	1.10	0.55	0.14	0.78	2.58	36	43	21
MW-12S	20	5.8	10	18	53.80	1.00	0.48	0.26	0.78	2.51	40	41	19
MW-13S	24	6.8	4.8	24	59.60	1.20	0.56	0.12	1.04	2.92	40	41	19
MW-14S	10	3.4	2.5	5.9	21.80	0.50	0.28	0.06	0.26	1.10	29	45	25
MW-15S	19	5.8	9.2	15	49.00	0.95	0.48	0.24	0.65	2.31	38	41	21
MW-17S	27	9.0	1.4	27	77.00	1.35	0.74	0.36	1.17	3.62	42	37	20
MW-18S	32	10.0	8.5	26	76.50	1.60	0.82	0.22	1.13	3.77	36	42	22
MW-29S	24	7.6	2.9	25	59.50	1.20	0.63	0.07	1.09	2.98	39	40	21
FMWV-1	23	6.7	3.3	23	56.00	1.15	0.55	0.08	1.00	2.78	39	41	20
FMWV-2	27	8.7	9.6	22	67.30	1.35	0.72	0.25	0.96	3.27	37	41	22
MW-10D	21	7.5	2.0	6.8	37.30	1.05	0.62	0.05	0.30	2.01	17	52	31
MW-11D(2)	19	8.6	2.0	7.5	37.10	0.95	0.71	0.05	0.33	2.03	19	47	35
MW-12D	24	9.8	2.3	16	52.10	1.20	0.81	0.06	0.70	2.76	27	43	29
MW-13D	30	11.0	3.9	19	63.90	1.50	0.91	0.10	0.83	3.33	28	45	27
MW-14D	15	4.8	7.0	11	37.80	0.75	0.40	0.18	0.48	1.80	37	42	22
MW-15D	21	8.4	2.4	17	48.80	1.05	0.69	0.06	0.74	2.54	32	41	27
MW-18D	24	9.9	2.6	12	48.50	1.20	0.81	0.07	0.52	2.60	23	46	31
MW-14R	7.8	4.5	2.0	5.2	19.50	0.39	0.37	0.05	0.23	1.04	27	38	36
MW-20R	7.3	3.7	2.0	5.4	18.40	0.36	0.30	0.05	0.23	0.95	30	38	32
MW-26R	18	8.0	2.0	6.0	34.00	0.90	0.66	0.05	0.26	1.87	17	48	35

Anions	mg/L				meq/L				Total Ions (meq/L)	Cation - Anion Balance	Applicable Ratio (%)	Ratio Exceedance				
	Alk	Cl	NO <sub>3</sub>	SO <sub>4</sub>	Total	Alk	Cl	NO <sub>3</sub>					SO <sub>4</sub>			
MW-10S	144	6.6	0.76	8.9	160.26	2.36	0.19	0.01	0.19	2.75	7	86	7	5.49	0.05	-
MW-11S	88.8	1.6	5.9	11	121.70	1.46	0.45	0.09	0.23	2.23	20	65	10	4.81	7.16	-
MW-12S	54	1.4	2.0	2.9	90.90	0.89	0.39	0.32	0.06	1.66	24	53	4	4.18	20.39	Exceeds
MW-13S	120	10	1.8	12	143.80	1.97	0.28	0.03	0.25	2.53	11	78	10	5.45	7.25	Exceeds
MW-14S	50.4	4.4	1.0	5.4	61.20	0.83	0.12	0.02	0.11	1.08	11	77	10	2.18	0.94	-
MW-15S	108	17	0.91	8.4	134.31	1.77	0.48	0.01	0.17	2.44	20	73	7	4.75	2.66	-
MW-17S	144	20	1.2	4.6	180.60	2.36	0.56	0.19	0.10	3.21	18	73	3	6.84	5.95	Exceeds
MW-18S	144	17	1.2	4.5	177.50	2.36	0.48	0.19	0.09	3.13	15	76	3	6.90	9.29	Exceeds
MW-29S	132	1.5	1.0	10	156.00	2.16	0.37	0.02	0.21	2.76	13	79	8	5.74	3.99	-
FMWV-1	120	1.5	3.0	8.2	146.20	1.97	0.42	0.05	0.17	2.61	16	75	7	5.39	3.23	-
FMWV-2	110.4	1.9	9.8	11	150.20	1.81	0.54	0.16	0.23	2.73	20	66	8	6.00	8.89	Exceeds
MW-10D	94.8	4.9	2.3	8.6	110.60	1.55	0.14	0.04	0.18	1.91	7	81	9	3.92	2.64	-
MW-11D(2)	93.6	5.8	1.6	8.7	109.70	1.54	0.16	0.03	0.18	1.91	9	81	9	3.94	3.25	-
MW-12D	132	8.1	1.5	6.7	148.30	2.16	0.23	0.02	0.14	2.56	9	85	5	5.32	3.81	-
MW-13D	144	1.2	1.2	1.2	169.20	2.36	0.34	0.02	0.25	2.97	11	80	8	6.30	5.71	Exceeds
MW-14D	99.6	11	0.2	11	121.80	1.63	0.31	0.00	0.23	2.18	14	75	11	3.98	9.41	-
MW-15D	120	8.5	0.82	9.6	138.92	1.97	0.24	0.01	0.20	2.42	10	81	8	4.96	2.41	-
MW-18D	120	7.4	1.5	6.7	135.60	1.97	0.21	0.02	0.14	2.34	9	84	6	4.94	5.28	-
MW-14R	52.8	1.7	0.2	3.4	58.10	0.85	0.05	0.00	0.07	0.99	5	88	7	2.02	2.43	-
MW-20R	51.6	1.7	0.2	3.0	56.50	0.85	0.05	0.00	0.06	0.96	5	88	7	1.91	0.26	-
MW-26R	97.2	4.5	0.2	9.2	111.10	1.59	0.13	0.00	0.19	1.92	7	83	10	3.78	1.24	-

Method 353.2 Nitrate/Nitrite combined data used for MW-11S, MW-12S, MW-12D, and MW-18S.  
mg/L = milligrams per liter

meq/L = milliequivalents per liter

Total alkalinity concentration, reported as calcium carbonate (CaCO<sub>3</sub>), is converted to the bicarbonate (HCO<sub>3</sub><sup>-</sup>) ion by multiplying by a factor of 1.2.

Cation / anion balance equation is the equivalent percent difference in cations minus anions divided by the sum of cations and anions [(cations-anions)/(cations+anions)\*100].

— = not applicable or not performed

The MRL was used for analytes that were non-detect

A 10% difference threshold is used if the total cation-anion sums are < 5.0 meq/liter.

A 5% difference threshold is used if the total cation-anion sums are > or = to 5.0 meq/liter.

**Table 10. Leachate Monitoring Results  
Semi - Annual Monitoring Event No. 1 - January 2018  
Hidden Valley Landfill, Pierce County, Washington**

Parameters	MRL	Leachate-East Area	Leachate-Side Slope	Leak Detection-Side Slope	Hydraulic Gradient Control System
<b>Volatile Organics (µg/L)</b>					
2-Hexanone	5.0	*	*	27	*
Acetone	10.0	260	44	25	*
Benzene	0.5-0.64	*	2.0	0.98	*
Carbon disulfide	1.8	*	4.2	*	*
cis-1,2-Dichloroethene	0.5-0.6	*	3.2	8.7	*
Ethylbenzene	1.0	3.5	*	*	*
m-Xylene & p-Xylene	1.4	15	*	*	*
o-Xylene	0.76	6.2	*	*	*
Styrene	0.68	2.7	*	*	*
Toluene	0.5-0.68	25	2.3	1.1	*
<b>Total Metals (mg/L)</b>					
Antimony	0.002	0.021	0.030	0.086	0.0027
Arsenic	0.005	0.055	0.13	0.11	*
Barium	0.005	0.96	0.30	0.28	0.079
Cadmium	0.005	0.006	*	*	*
Calcium	0.2	390	15	12	120
Chromium	0.005	0.110	0.037	0.028	*
Cobalt	0.01	0.031	0.015	0.033	0.010
Copper	0.01	0.80	0.051	0.081	1.2
Iron	0.18	58	2.4	2.2	3.4
Lead	0.002	0.220	0.0048	0.0053	0.240
Magnesium	0.1	20	21	16	28
Manganese	0.005	1.5	0.12	0.11	3.9
Nickel	0.02	0.15	0.34	0.24	0.076
Potassium	2.0	120	450	440	4.1
Selenium	0.005	0.0052	0.010	0.012	*
Sodium	1.0	780	5,400	5,700	26
Vanadium	0.01	0.089	0.092	0.096	*
Zinc	0.02	2.7	0.054	0.035	4.1
<b>Inorganic Parameters (mg/L)</b>					
Alkalinity	5	760	5,700	6,700	390
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	5	760	5,700	6,700	390
Ammonia	0.1-1.1	43	540	460	*
Chloride	0.2-4	770	5,100	5,700	7.7
Nitrate as N	0.21	* H	* H	6.3	0.6 H
Nitrate plus Nitrite	0.1	0.24	0.57	—	0.82
Sulfate	0.2-10	470	150	140	8.8
Total Dissolved Solids	10-47	4,600	16,000	9,800	450
Total Organic Carbon	4.7	1,200	720	780	3.2
Total Suspended Solids	4-18	1,100	35	6.8	12
<b>Field Parameters</b>					
Dissolved Oxygen	—	0.70	0.22	2.92	4.08
Oxidation Reduction Potential	—	-241.2	-284.8	145.3	-139.1
pH	—	7.34	8.51	8.45	7.13
Specific Conductivity	—	6,450	23,761	25,040	859
Temperature	—	17.31	13.27	25.01	15.29
Turbidity	—	>1000	21.60	18.22	21.30

**Notes:**

Analyses performed by TestAmerica, Arvada, Colorado

Volatile organic compounds not listed were not present at concentrations exceeding the MRL

µg/L = micrograms per liter

mg/L = milligrams per liter

µS = microsiemens

°C = degrees celcius


(>) = greater than

— = not applicable or not analyzed

\* = not reported at or above the MRL (Method Reporting Limit)

H = Sample was prepped or analyzed beyond specified holding time

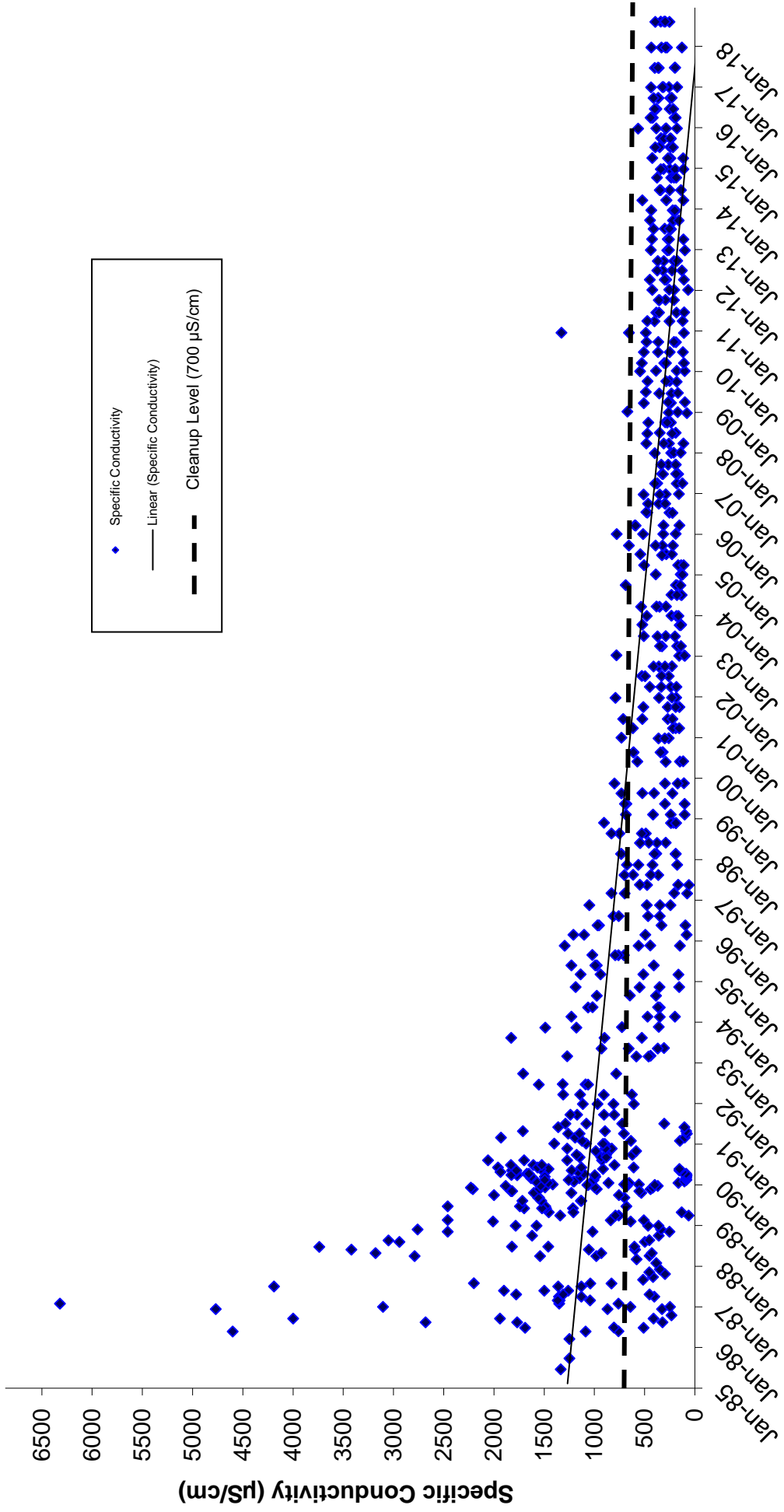




Appendix E  
TIME SERIES PLOTS

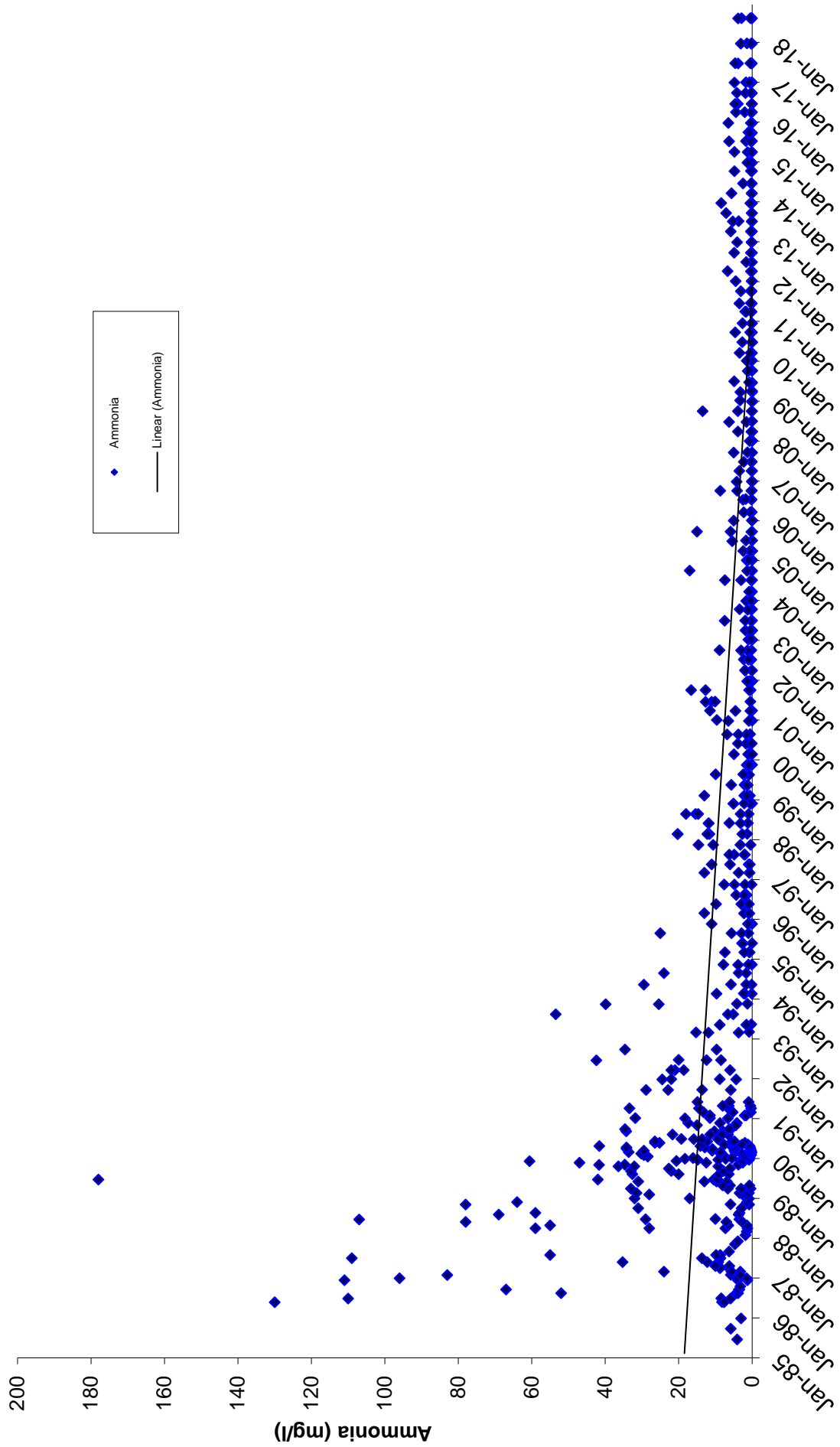


**Figure 1**  
**Specific Conductivity**  
 Shallow Perched Aquifer, Hidden Valley Landfill  
 Wells MW-11S, MW-13S, MW-14S, and MW-17S

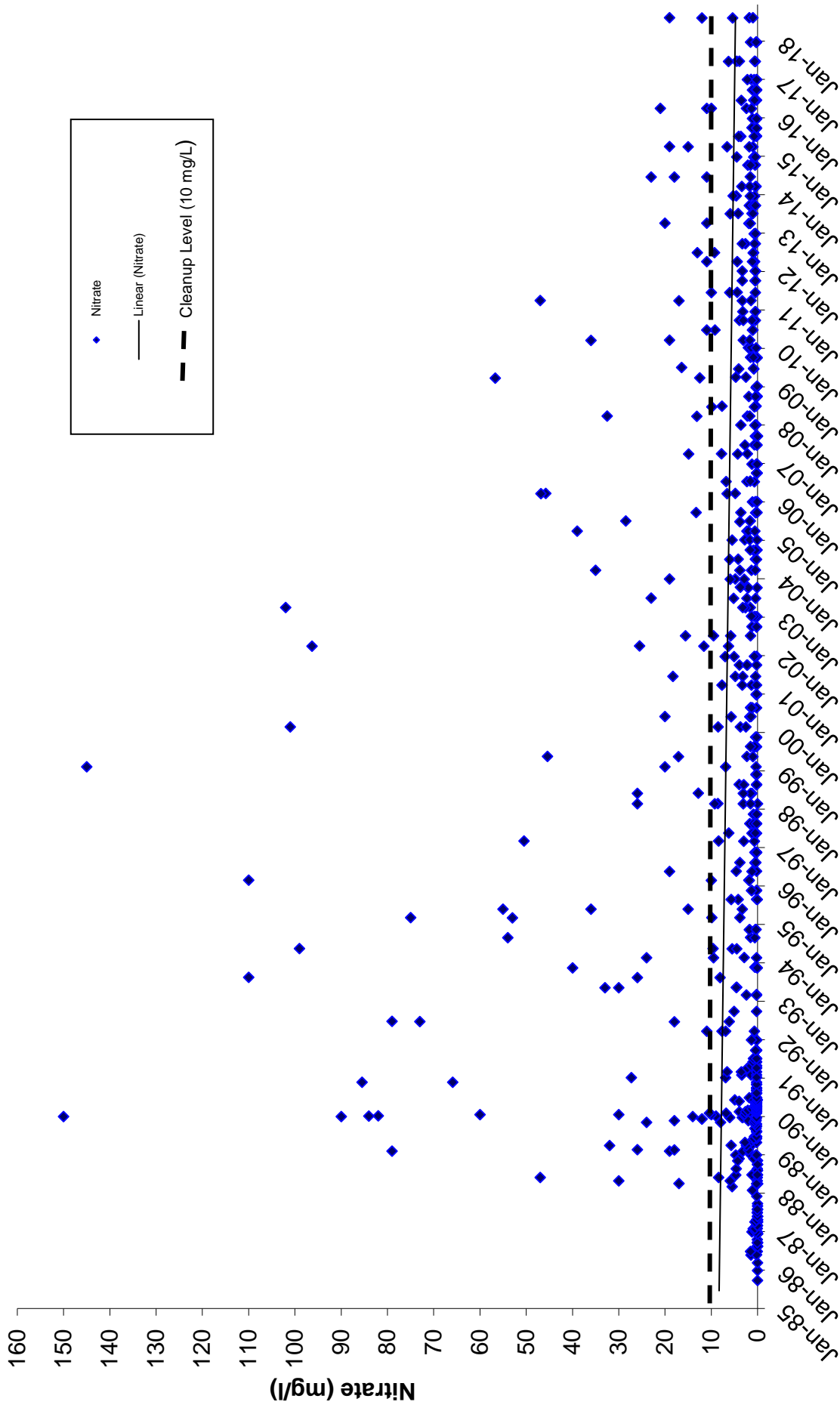




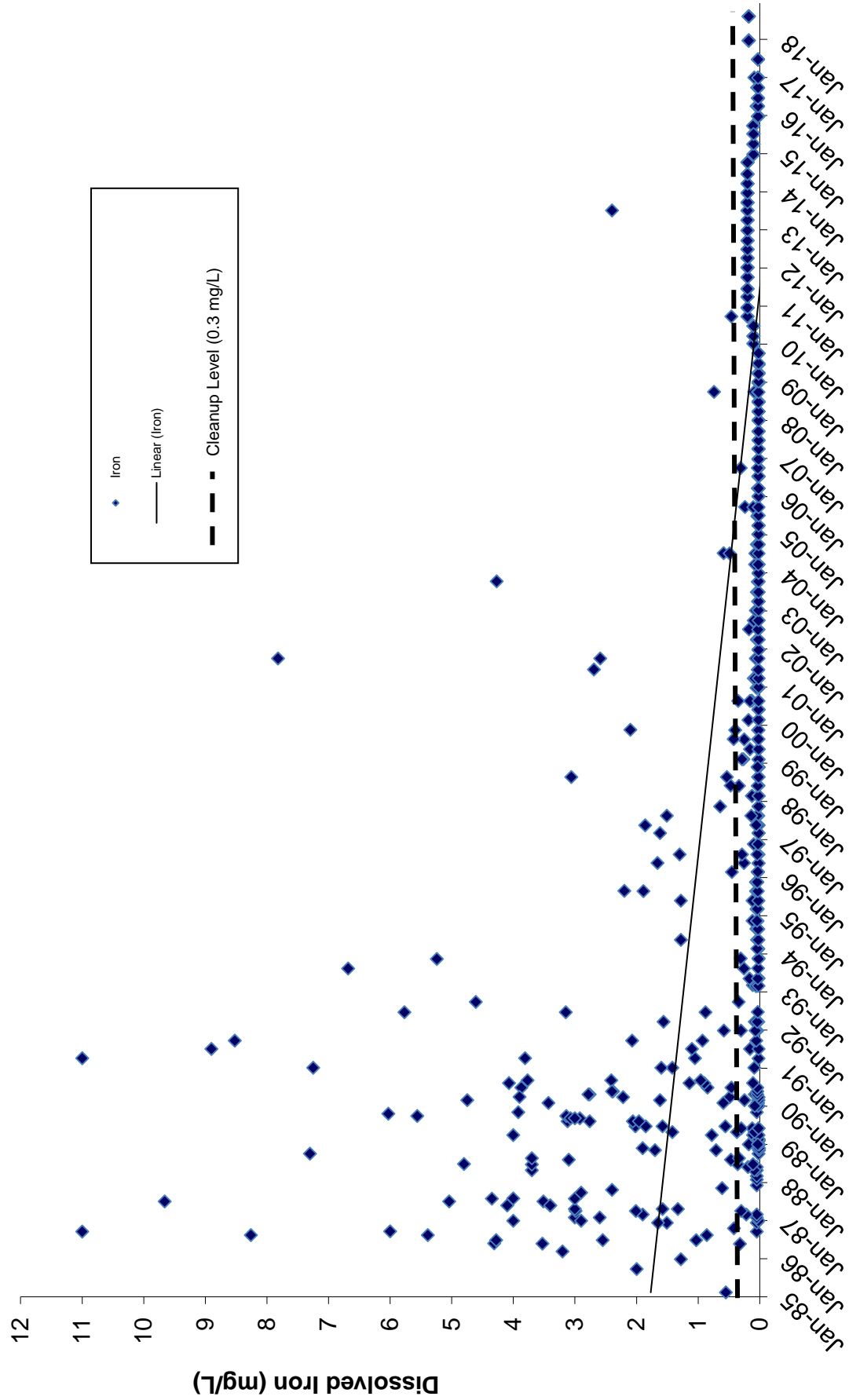
**Figure 2**  
**Ammonia**  
Shallow Perched Aquifer, Hidden Valley Landfill  
Wells MW-11S, MW-13S, MW-14S, and MW-17S



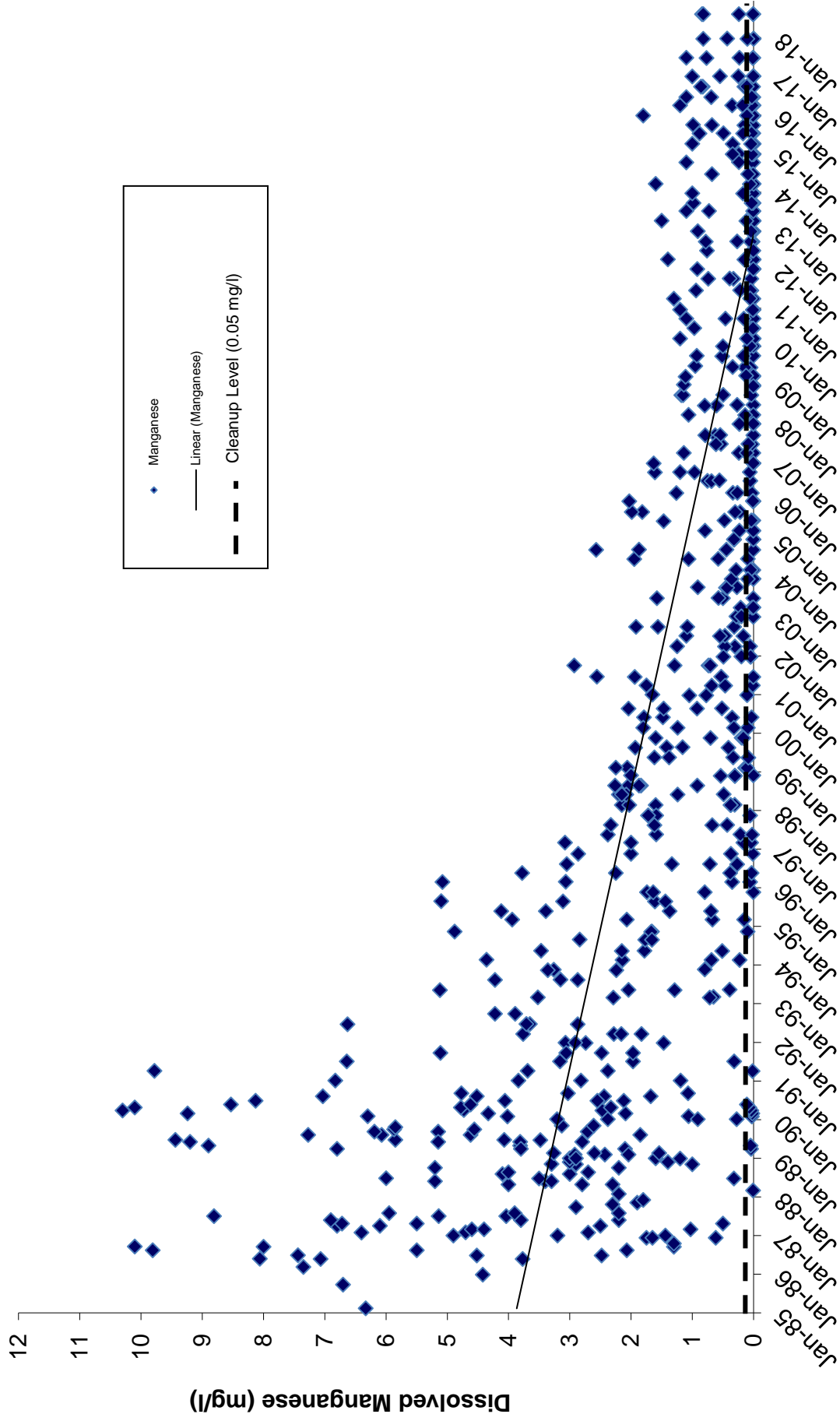
**Figure 3**  
**Nitrate**  
 Shallow Perched Aquifer, Hidden Valley Landfill  
 Wells MW-11S, MW-13S, MW-14S, and MW-17S



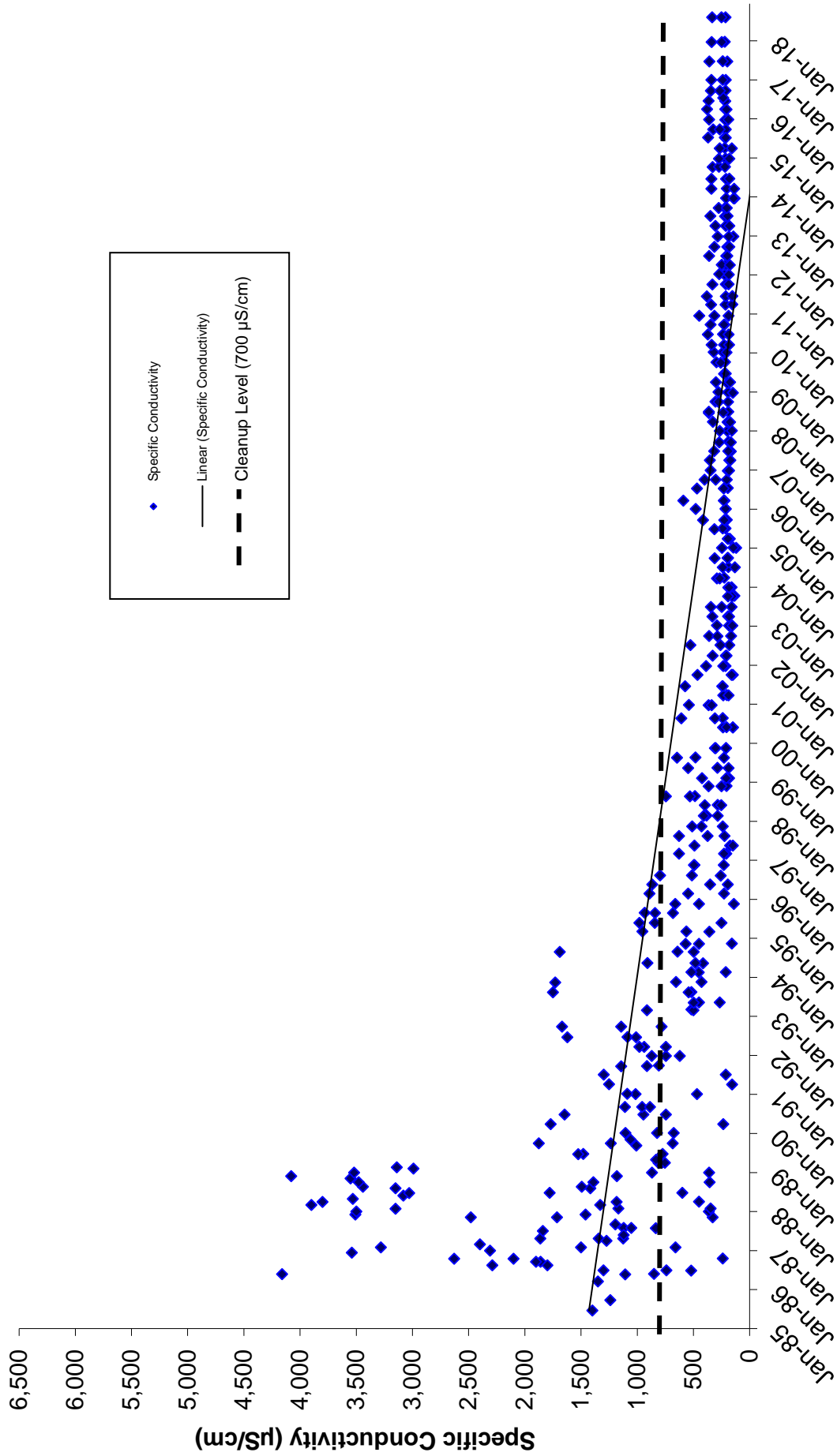
**Figure 4**  
**Dissolved Iron**  
Shallow Perched Aquifer, Hidden Valley Landfill  
Wells MW-11S, MW-13S, MW-14S, and MW-17S



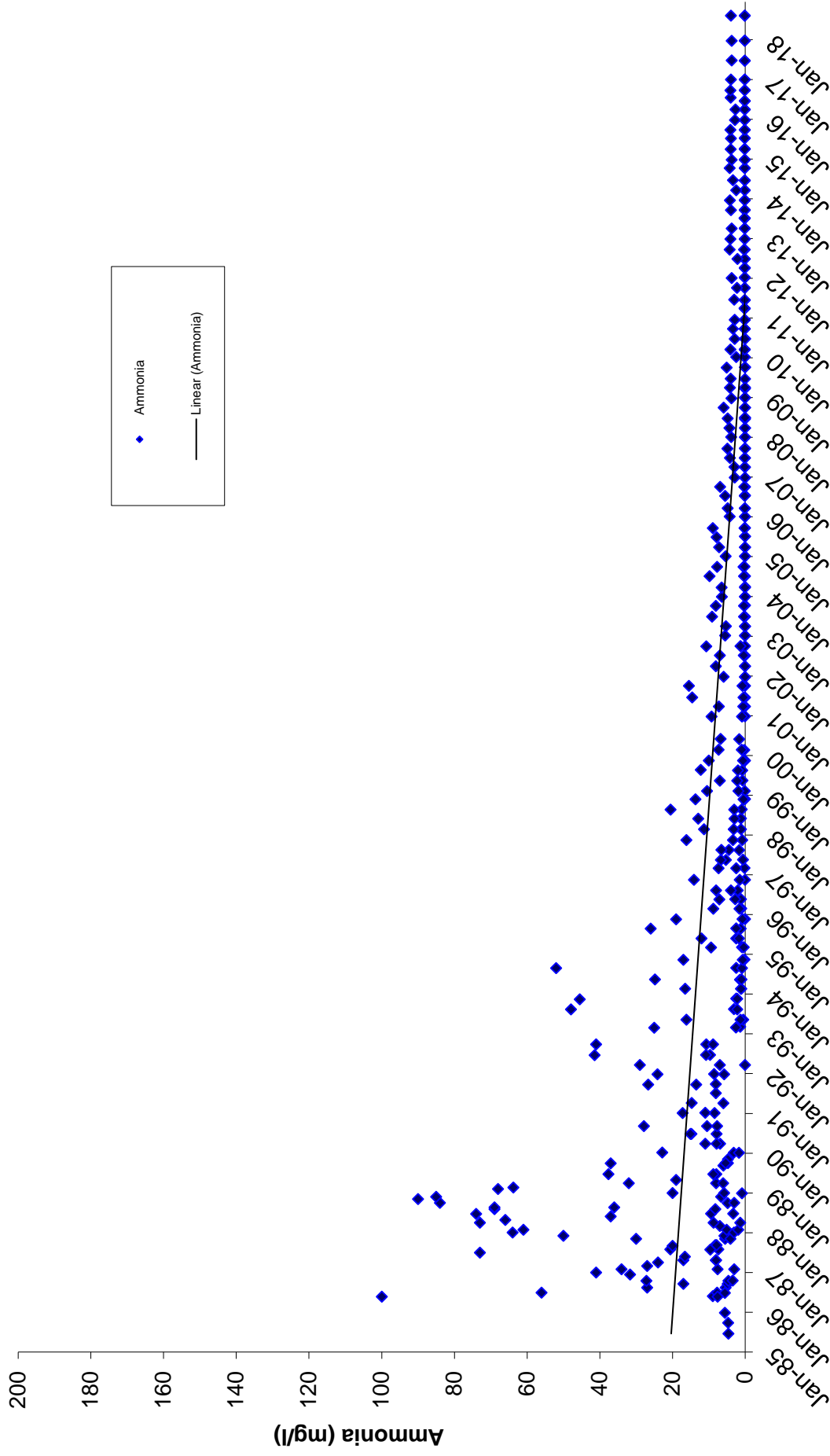
**Figure 5**  
**Dissolved Manganese**  
Shallow Perched Aquifer, Hidden Valley Landfill  
Wells MW-11S, MW-13S, MW-14S, and MW-17S



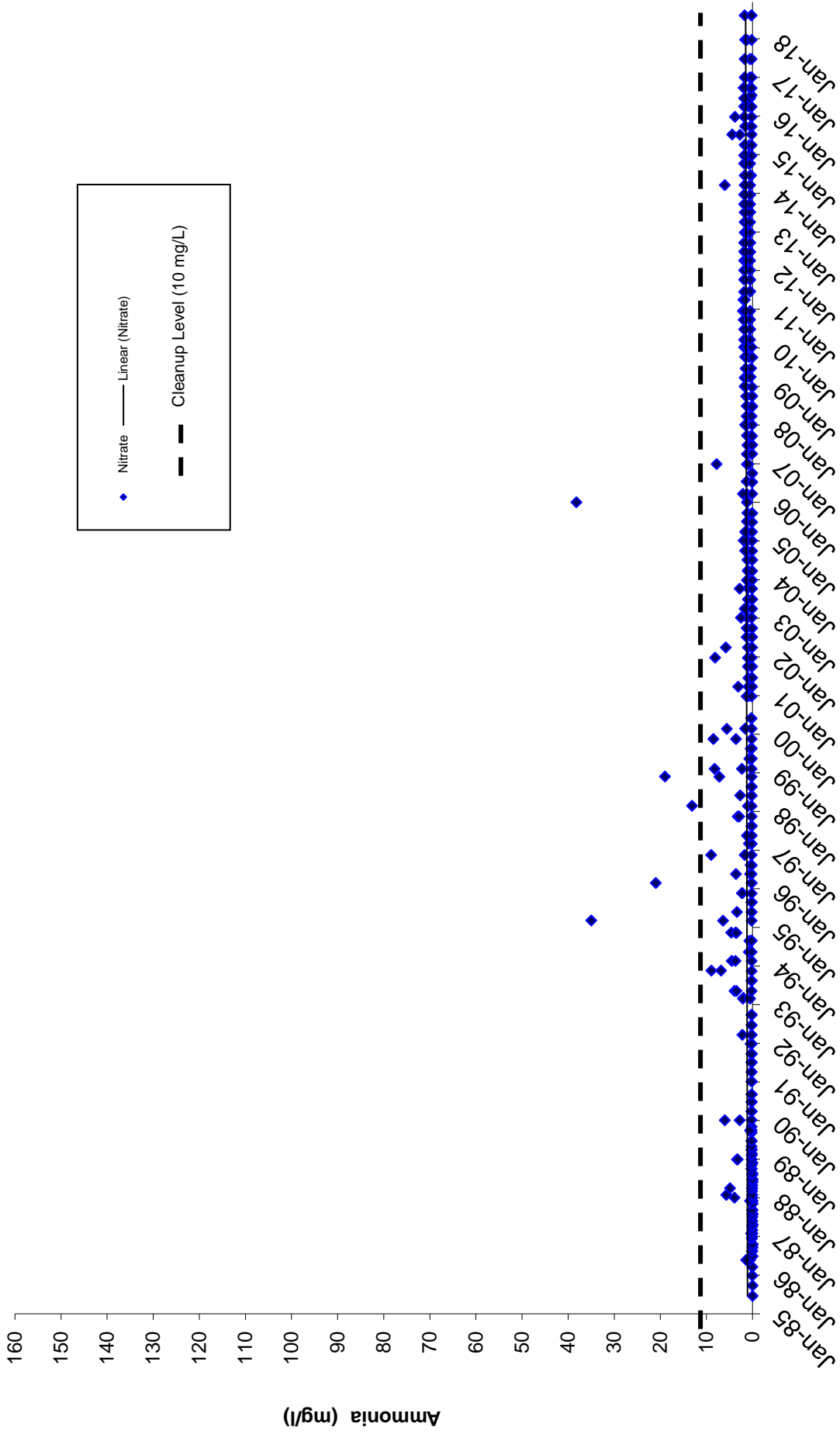
**Figure 6**  
**Specific Conductivity**  
 Upper Regional Aquifer, Hidden Valley Landfill  
 Wells MW-11D(2), MW-13D, and MW-14D



**Figure 7**  
**Ammonia**  
 Upper Regional Aquifer, Hidden Valley Landfill  
 Wells MW-11D(2), MW-13D, and MW-14D

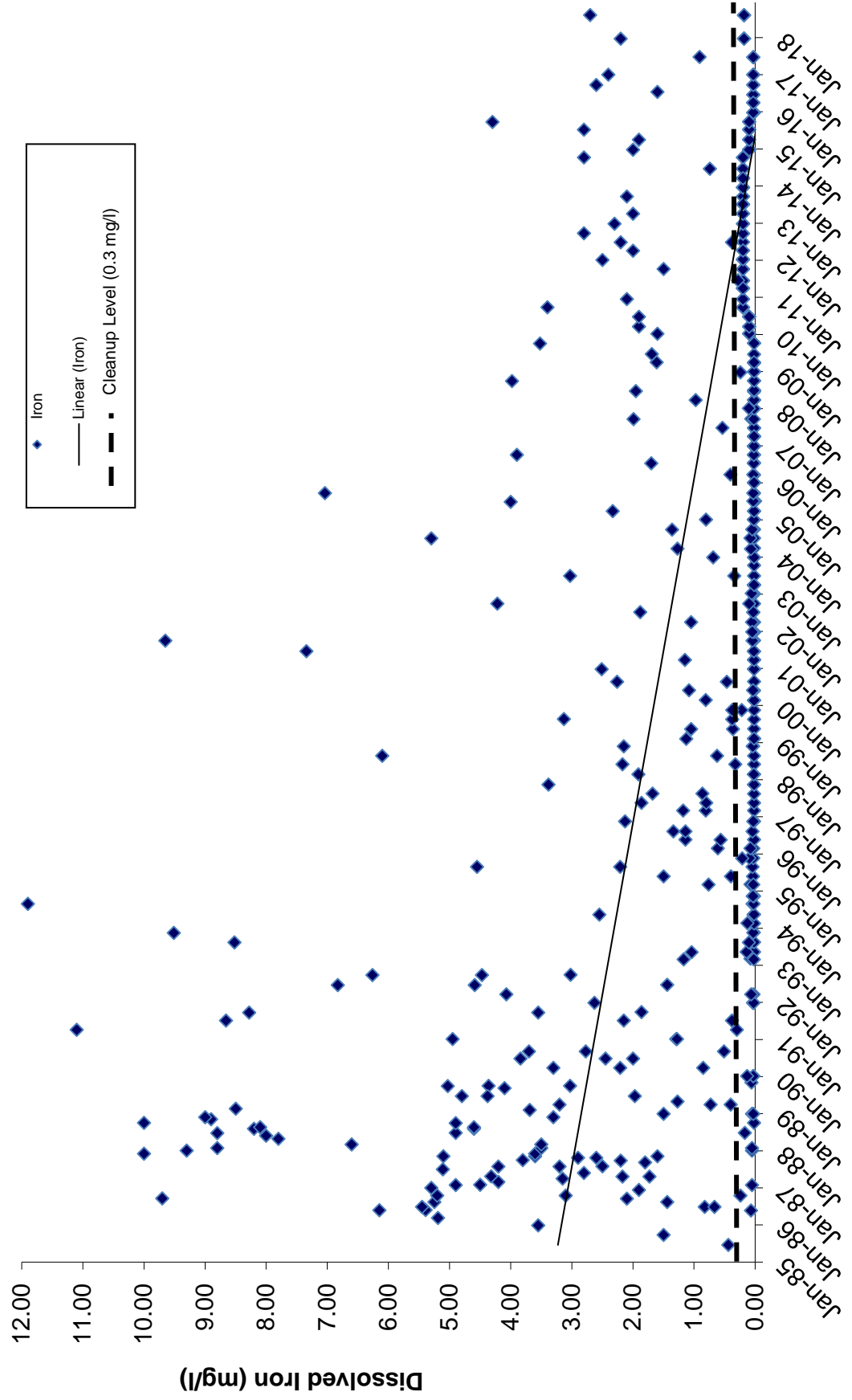


**Figure 8**  
**Nitrate**  
 Upper Regional Aquifer, Hidden Valley Landfill  
 Wells MW-11D(2), MW-13D, and MW-14D

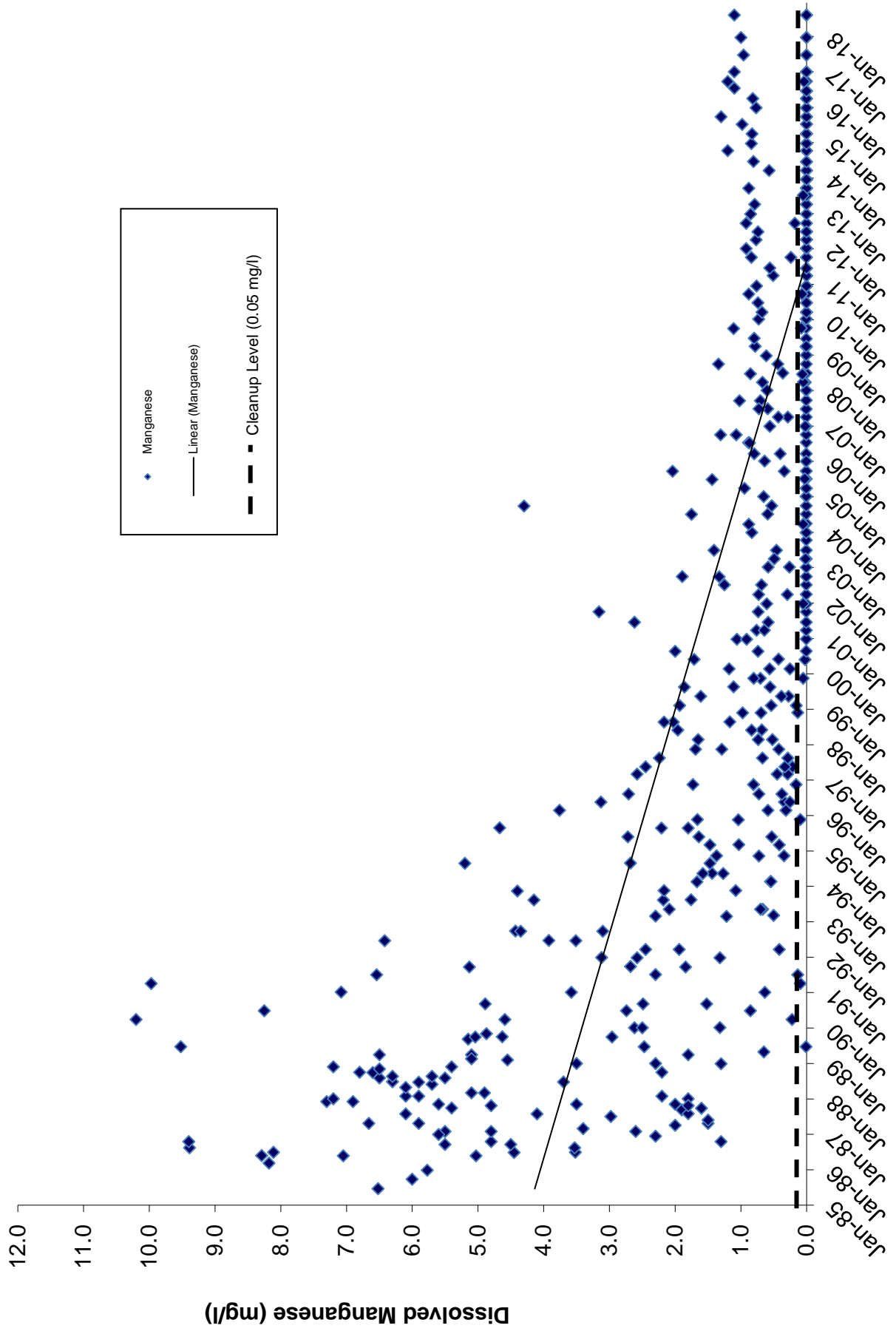





**Figure 9**  
**Dissolved Iron**  
Upper Regional Aquifer, Hidden Valley Landfill  
Wells MW-11D(2), MW-13D, and MW-14D



**Figure 10**  
**Dissolved Manganese**  
Upper Regional Aquifer, Hidden Valley Landfill  
Wells MW-11D(2), MW-13D, and MW-14D

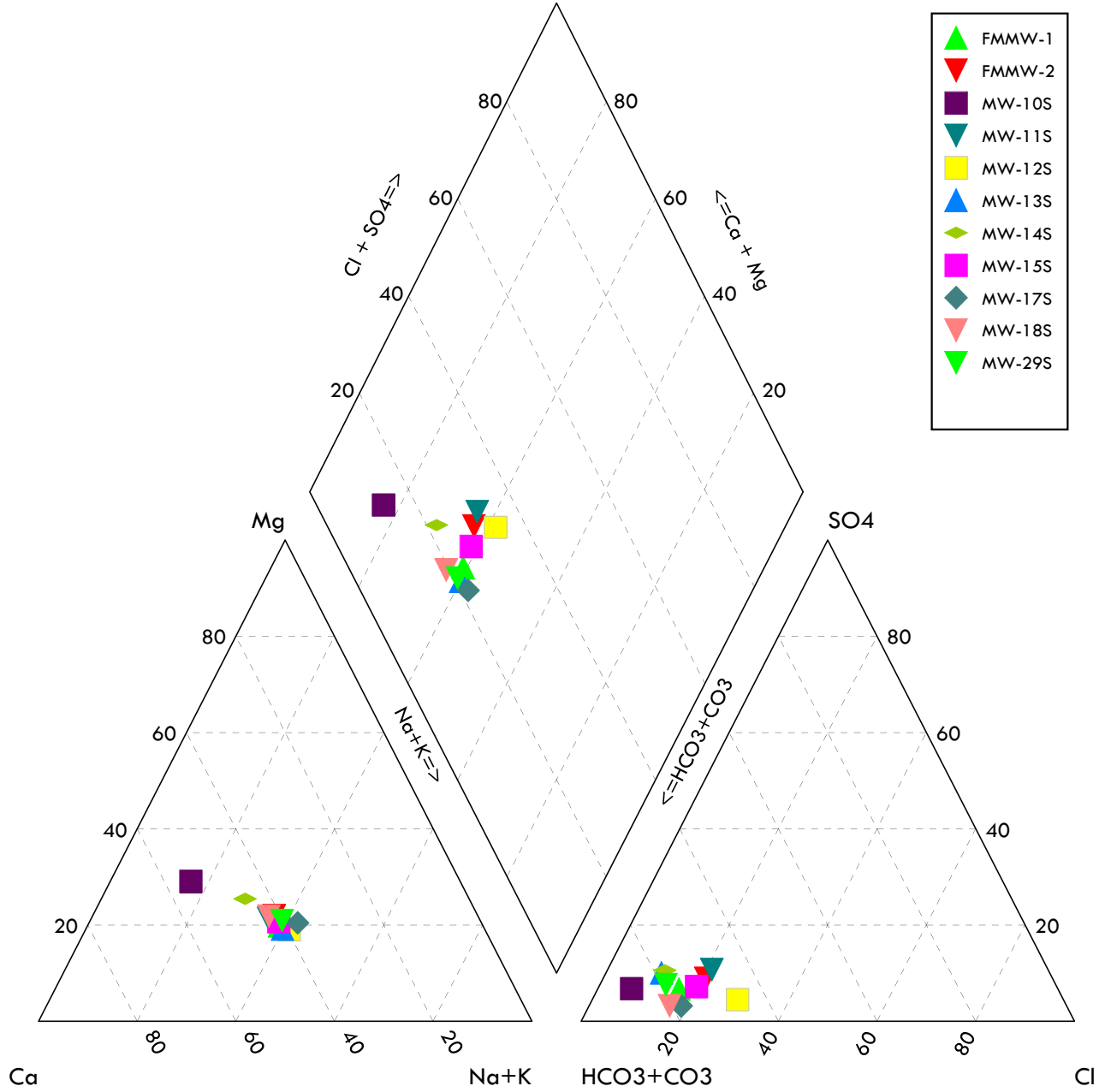




Appendix F  
TRILINEAR DIAGRAMS



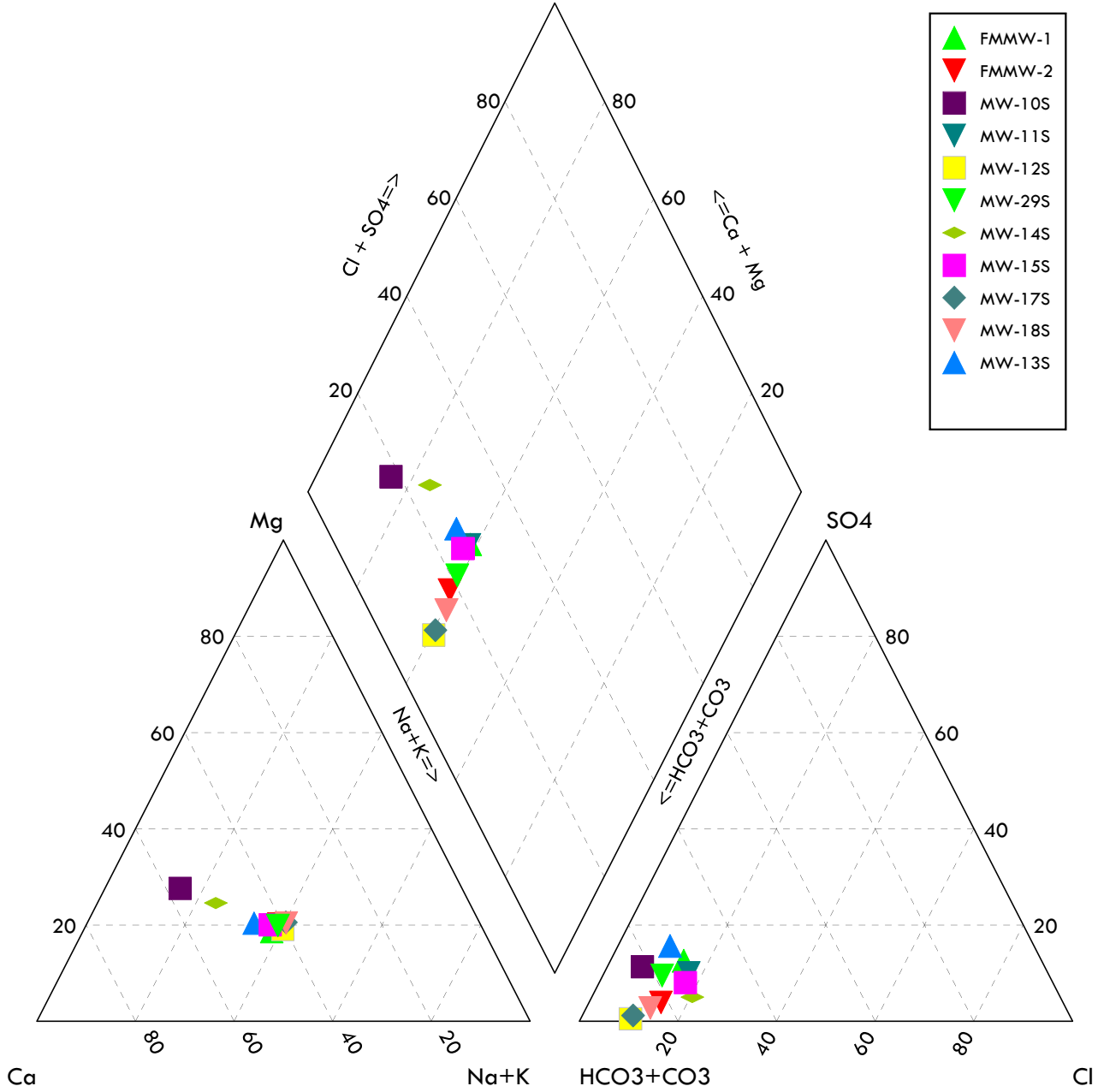
### Shallow Aquifer - Semi-annual Event No. 1



DESCRIPTION: Trilinear Diagram: Shallow Aquifer, Semi-annual Event No. 1 - 2018

	PROJECT: Hidden Valley Landfill	PROJECT NO: 04218002.03
	CLIENT: LRI Hidden Valley	DATE: May 2018

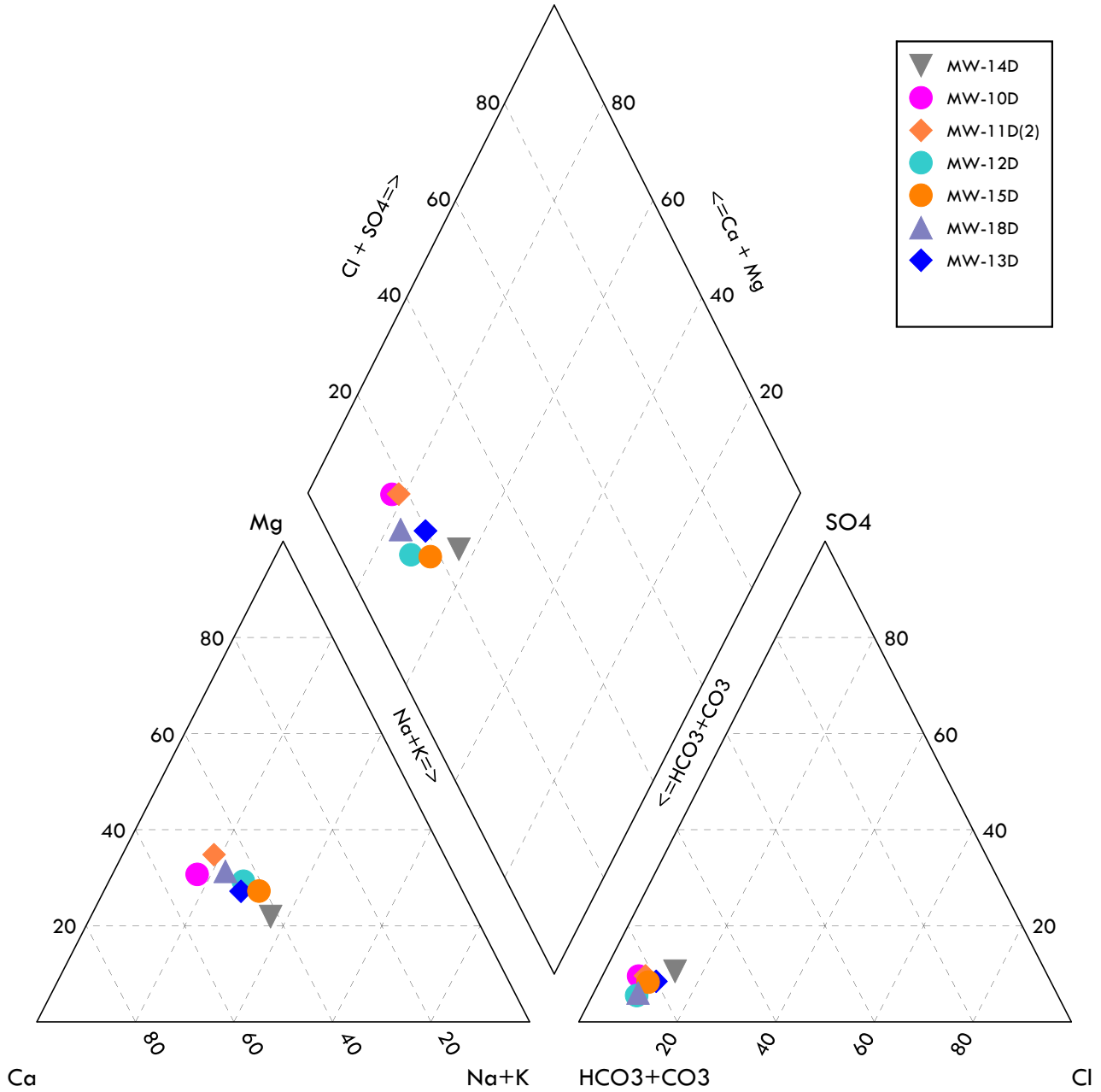
### Hidden Valley Shallow Aquifer - Semi-annual Event No. 2



DESCRIPTION: Trilinear Diagram: Shallow Aquifer, Semi-annual Event No. 2 - 2018

	PROJECT: Hidden Valley Landfill	PROJECT NO: 04218002.03
	CLIENT: LRI Hidden Valley	DATE: December 2018

### Upper Regional Aquifer - Semi-annual Event No. 1



DESCRIPTION: Trilinear Diagram: Upper Regional Aquifer, Semi-annual Event No. 1 - 2018

PROJECT: Hidden Valley Landfill

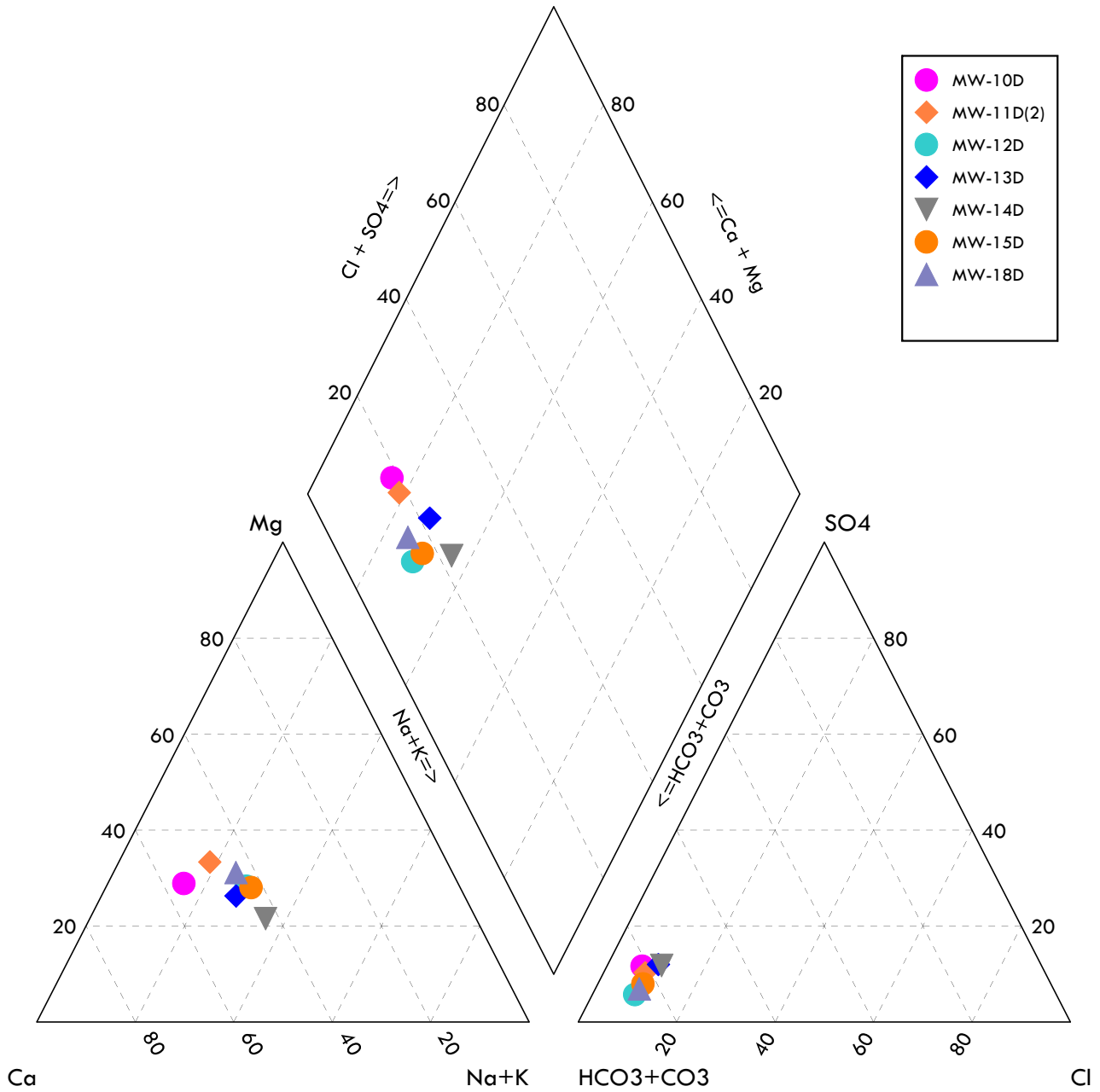
PROJECT NO: 04218002.03

CLIENT: LRI Hidden Valley

DATE: May 2018



### Hidden Valley Upper Regional Aquifer - Semi-annual Event No. 2



DESCRIPTION: Trilinear Diagram: Upper Regional Aquifer, Semi-annual Event No. 2 - 2018

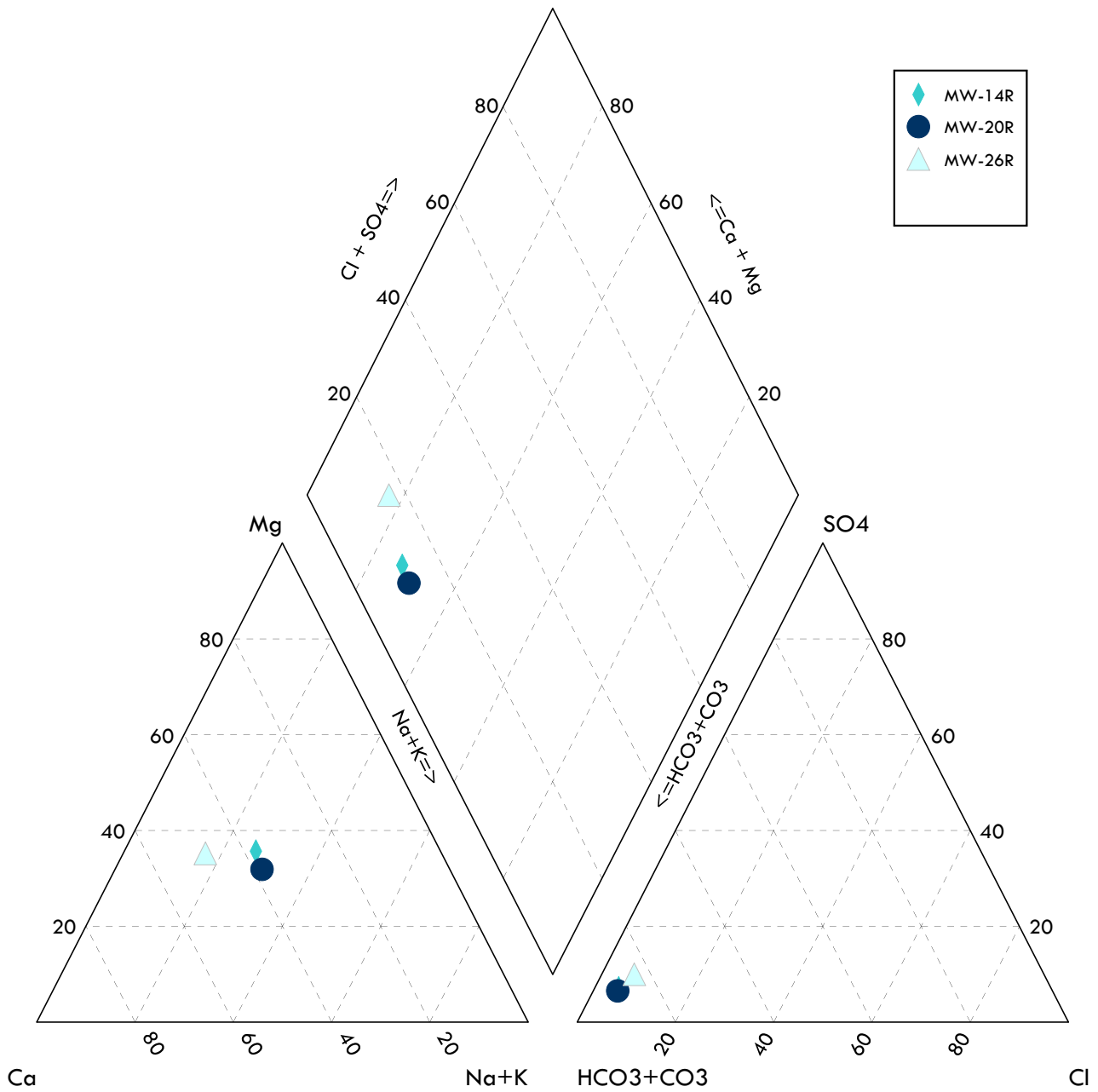
PROJECT: Hidden Valley Landfill

PROJECT NO: 04218002.03

CLIENT: LRI Hidden Valley

DATE: December 2018

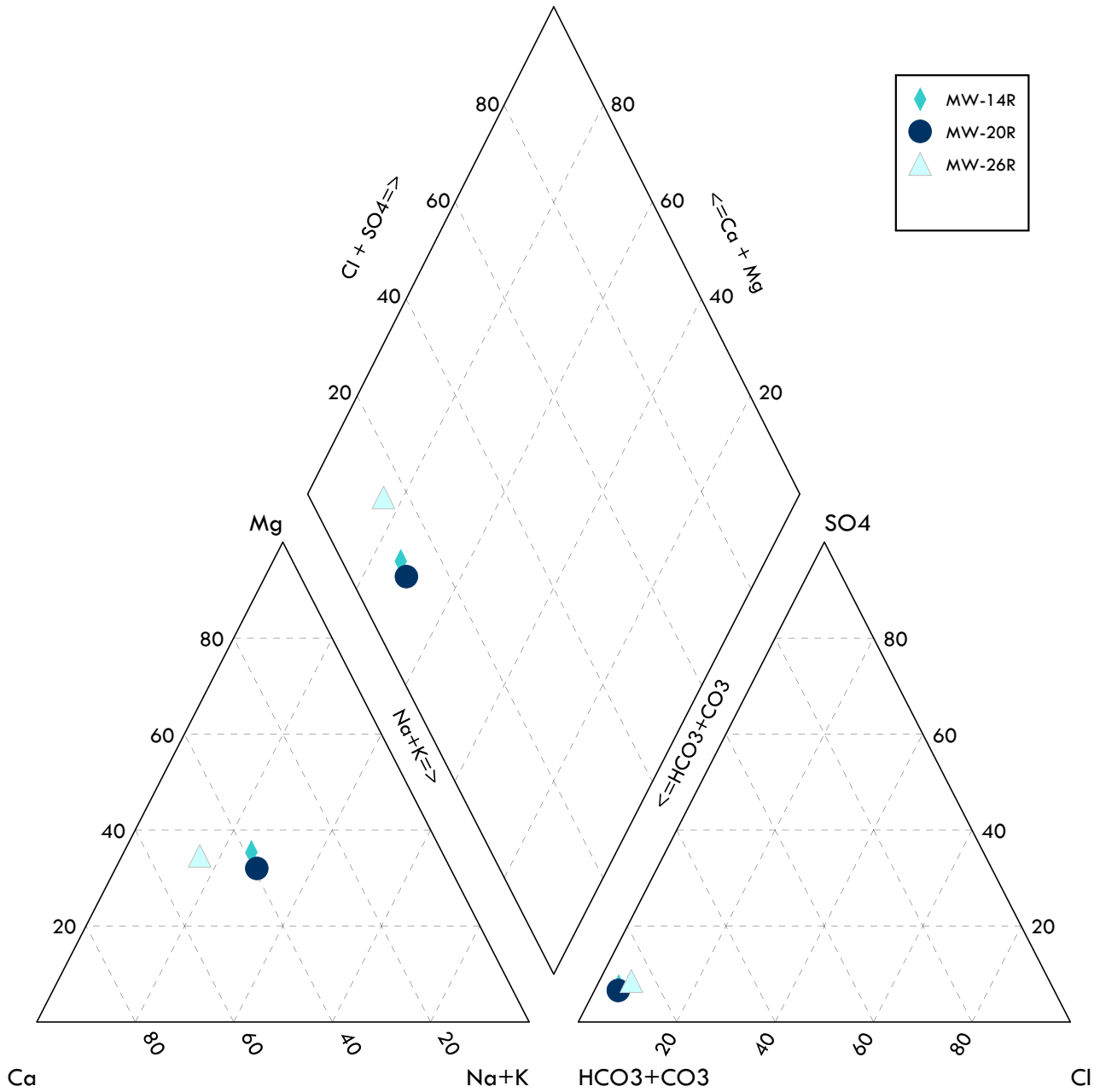
Lower Regional Aquifer - Semi-annual Event No. 1



DESCRIPTION: Trilinear Diagram: Lower Regional Aquifer, Semi-annual Event No. 1 - 2018

	PROJECT: Hidden Valley Landfill	PROJECT NO: 04218002.03
	CLIENT: LRI Hidden Valley	DATE: May 2018

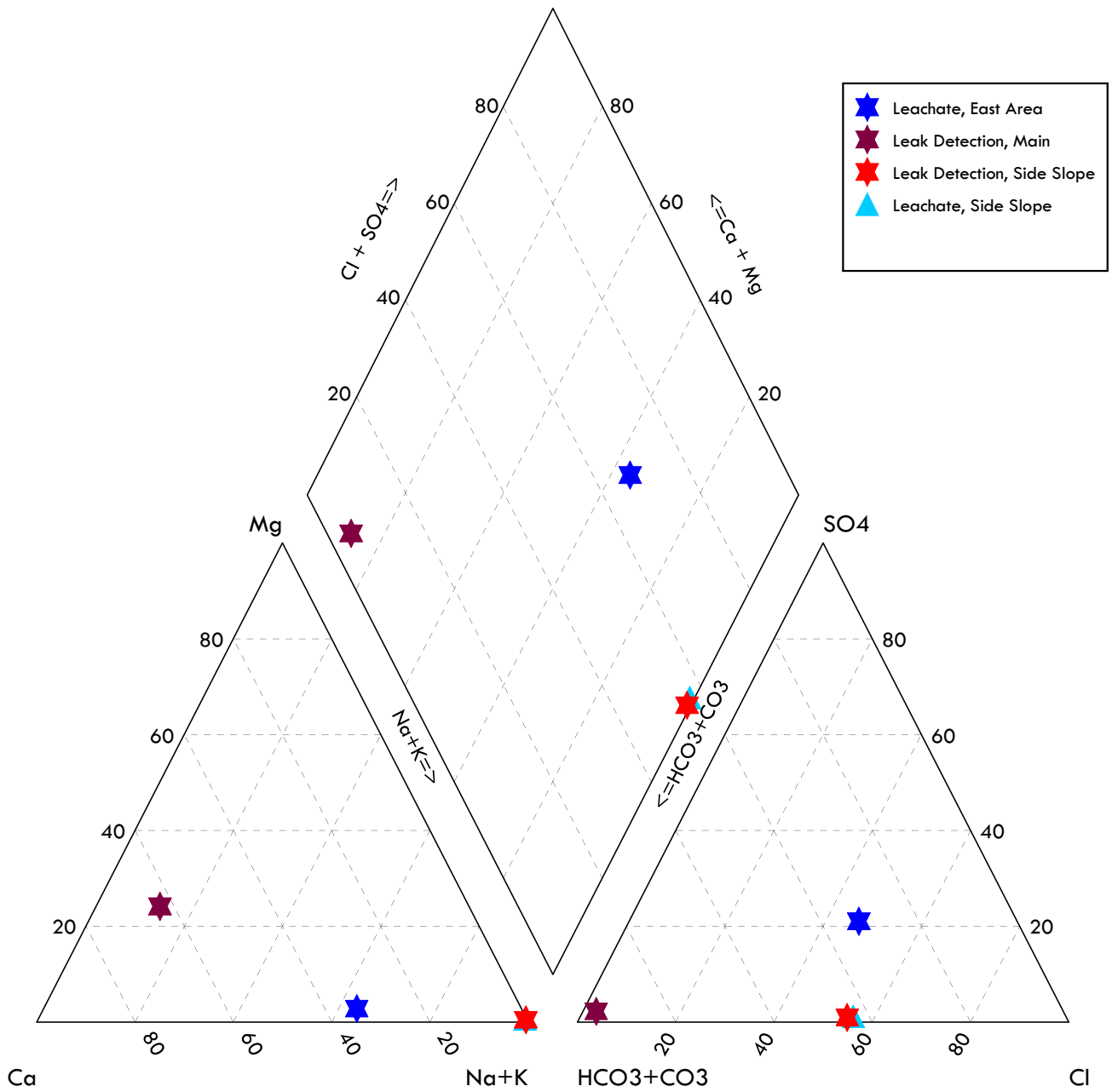
### Hidden Valley Lower Regional Aquifer - Semi-annual Event No. 2



DESCRIPTION: Trilinear Diagram: Lower Regional Aquifer, Semi-annual Event No. 2 - 2018

	PROJECT: Hidden Valley Landfill	PROJECT NO: 04218002.03
	CLIENT: LRI Hidden Valley	DATE: December 2018

### Leachate and Leak Detection Locations - Semi-annual Event No. 1



DESCRIPTION: Trilinear Diagram: Leachate and Leak Detection, Semi-annual Event No. 1 - 2018


PROJECT: Hidden Valley Landfill

PROJECT NO: 04218002.03

CLIENT: LRI Hidden Valley

DATE: May 2018





Appendix G  
STATISTICAL CALCULATIONS





**Statistical Summary of Groundwater Data - Inorganics**  
**2018 Annual Monitoring Report**  
**Hidden Valley Landfill, Pierce County, Washington**

Monitoring Well	Date	Specific Conductance		Alkalinity		Chloride		Ammonia		Nitrate		Sulfate		TDS		TOC	
		Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.
MW-10D	1/6/2014	100	100	65	65	8.6	8.6	0.1 L	0.05	0.8 H	0.8	13	13	120	120	1 L	0.5
MW-10D	4/7/2014	152	152	65	65	7.0	7.0	0.1 L	0.05	0.97	0.97	9.3	9.3	110	110	1 L	0.5
MW-10D	7/10/2014	210	210	83	83	5.5	5.5	0.1 L	0.05	1.8 J	1.8	8.1	8.1	140	140	1 L	0.5
MW-10D	10/29/2014	160	160	74	74	6.3	6.3	0.1 L	0.05	0.69	0.69	7.8	7.8	120	120	1 L	0.5
MW-10D	1/12/2015	195	195	88	88	5.9	5.9	0.1 L	0.05	1.8	1.8	7.5	7.5	140	140	1 L	0.5
MW-10D	4/20/2015	180.9	180.9	89	89	5.2	5.2	0.1 L	0.05	2.2	2.2	7.6	7.6	140	140	1 L	0.5
MW-10D	7/30/2015	195	195	67	67	6.7	6.7	0.1 L	0.05	0.79	0.79	11	11	120	120	1 L	0.5
MW-10D	10/13/2015	210	210	94	94	6.2	6.2	0.1 L	0.05	2.2	2.2	8.1	8.1	140	140	1 L	0.5
MW-10D	1/13/2016	226	226	93	93	5.9	5.9	0.38	0.38	2.1	2.1	7.9	7.9	150	150	1 L	0.5
MW-10D	4/19/2016	229	229	92	92	6.6	6.6	0.1 L	0.05	2.1	2.1	10	10	150	150	1 L	0.5
MW-10D	7/5/2016	231	231	87	87	8.0	8.0	0.1 L	0.05	0.99	0.99	14	14	130	130	1.1	1.1
MW-10D	10/10/2016	243	243	96	96	7.3	7.3	0.1 L	0.05	0.66	0.66	13.0	13.0	140	140	1	1
MW-10D	1/18/2017	217	217	84	84	5.6	5.6	0.1 L	0.05	1.7	1.7	11	11	140	140	1 L	0.5
MW-10D	7/13/2017	214	214	76	76	5.2	5.2	0.1 L	0.05	1.3	1.3	12	12	140	140	1 L	0.5
MW-10D	1/8/2018	222	222	79	79	4.9	4.9	0.1 L	0.05	2.3	2.3	8.6	8.6	140	140	1 L	0.5
MW-10D	8/28/2018	242	242	96	96	5.9	5.9	0.1 L	0.05	0.56	0.56	13	13	160	160	1.1	1.1
No. Analyzed		16		16		16		16		16		16		16		16	
No. Detect		16		16		16		1		16		16		16		3	
Minimum conc.		100		65		4.9		0.050		0.56		7.5		110		0.5	
Maximum conc.		243		96		8.6		0.38		2.3		14		160		1.1	
Average conc.		202		83		6.3		0.071		1.4		10.1		136		0.6	
Distribution		Neither		Lognormal		Lognormal		NC		Lognormal		Lognormal		Neither		NC	
UCL 95		243*		96*		8.19		NC		2.3*		1.4*		160*		NC	

**Statistical Summary of Groundwater Data - Inorganics**  
**2018 Annual Monitoring Report**  
**Hidden Valley Landfill, Pierce County, Washington**

Monitoring Well	Date	Specific Conductance		Alkalinity		Chloride		Ammonia		Nitrate		Sulfate		TDS		TOC	
		Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.
<b>MW-105</b>																	
MW-105	1/6/2014	160	160	65	65	9.4	9.4	0.1 L	0.05	0.82 H	0.82	12.0	12.0	120	120	2.0 L	1.0
MW-105	4/7/2014	145	145	55	55	8.8	8.8	0.1 L	0.05	1.2	1.2	9.7	9.7	99	99	1.0	1.0
MW-105	7/10/2014	160	160	62	62	6.3	6.3	0.1 L	0.05	0.59 J	0.59	8.7	8.7	100	100	1.0 L	0.5
MW-105	10/29/2014	166	166	76	76	6.0	6.0	0.1 L	0.05	0.81	0.81	7.2	7.2	110	110	1.0 L	0.5
MW-105	1/12/2015	173	173	70	70	8.3	8.3	0.1 L	0.05	1	1	9.7	9.7	110	110	1.0 L	0.5
MW-105	4/20/2015	147	147	68	68	6.4	6.4	0.1 L	0.05	1	1	11	11	110	110	1.0	1.0
MW-105	7/30/2015	195	195	70	70	6.8	6.8	0.1 L	0.05	0.79	0.79	11	11	120	120	1.0 L	0.5
MW-105	10/13/2015	214	214	88	88	8.6	8.6	0.1 L	0.05	1.4	1.4	10	10.0	130	130	1.4	1.4
MW-105	1/13/2016	243	243	91	91	13	13.0	0.1 L	0.05	1.5	1.5	12	12.0	140	140	1.1	1.1
MW-105	4/18/2016	236	236	87	87	9.0	9.0	0.1 L	0.05	1.1	1.1	14	14	130	130	1.4	1.4
MW-105	7/5/2016	235	235	88	88	8.0	8.0	0.1 L	0.05	0.75	0.75	15	15	130	130	1.2	1.2
MW-105	10/10/2016	254	254	100	100	7.8	7.8	0.1 L	0.05	0.8	0.8	12	12	150	150	1.1	1.1
MW-105	1/18/2017	245	245	92	92	7.9	7.9	0.1 L	0.05	1.1	1.1	15	15	150	150	1.2	1.2
MW-105	7/13/2017	225	225	83	83	5.7	5.7	0.1 L	0.05	0.46	0.46	14	14	140	140	1.4	1.4
MW-105	1/8/2018	291	291	120	120	6.6	6.6	0.1 L	0.05	0.76	0.76	8.9	8.9	160	160	1.1	1.1
MW-105	8/28/2018	247	247	99	99	6.0	6.0	0.1 L	0.05	0.48	0.48	13	13	140	140	1.1	1.1
No. Analyzed		16		16		16		16		16		16		16		16	
No. Detect		16		16		16		0		16		16		16		11	
Minimum conc.		145		55		5.7		0		0.46		7.2		99		0.5	
Maximum conc.		291		120		13.0		0.05		1.5		15.0		160		1.4	
Average conc.		209		82		7.8		0.05		0.9		11.5		127		1.0	
Distribution		Lognormal		Lognormal		Lognormal		NC		Lognormal		Lognormal		Lognormal		Neither	
UCL 95		291*		115.18		11.21		NC		1.5*		15.0*		160*		1.4*	

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Monitoring Well	Date	Specific Conductance		Alkalinity		Chloride		Ammonia		Nitrate		Sulfate		TDS		TOC	
		Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.
MW-11D(2)	1/8/2014	210	210	99	99	6.2	6.2	0.1 L	0.05	1.8	1.8	6.9	6.9	140	140	1 L	0.5
MW-11D(2)	4/8/2014	204	204	94	94	6.8	6.8	0.1 L	0.05	1.7	1.7	7.0	7.0	150	150	1 L	0.5
MW-11D(2)	7/8/2014	210	210	85	85	6.5	6.5	0.1 L	0.05	1.7 J	1.7	6.9	6.9	140	140	1 L	0.5
MW-11D(2)	10/27/2014	329	329	88	88	6.5	6.5	0.1 L	0.05	1.8	1.8	7.7	7.7	140	140	1 L	0.5
MW-11D(2)	1/14/2015	214	214	100	100	7.2	7.2	0.1 L	0.05	1.8	1.8	7.1	7.1	140	140	1 L	0.5
MW-11D(2)	4/23/2015	221	221	90	90	6	6	0.1 L	0.05	1.7	1.7	7.7	7.7	140	140	1 L	0.5
MW-11D(2)	7/29/2015	220	220	89	89	6.2	6.2	0.1 L	0.05	1.8	1.8	7.8	7.8	130	130	1 L	0.5
MW-11D(2)	10/14/2015	211	211	91	91	6.9	6.9	0.1 L	0.05	1.6	1.6	8.5	8.5	140	140	1 L	0.5
MW-11D(2)	1/11/2016	216	216	87	87	5.4	5.4	0.1 L	0.05	1.8	1.8	7.8	7.8	260	260	1 L	0.5
MW-11D(2)	4/19/2016	217	217	86	86	6.2	6.2	0.1 L	0.05	1.8	1.8	8.0	8.0	140	140	1 L	0.5
MW-11D(2)	7/5/2016	217	217	85	85	6	6	0.1 L	0.05	1.8	1.8	7.9	7.9	130	130	1 L	0.5
MW-11D(2)	10/12/2016	214	214	86	86	6.2	6.2	0.1 L	0.05	1.9	1.9	8.0	8.0	140	140	1 L	0.5
MW-11D(2)	1/19/2017	213	213	85	85	6.1	6.1	0.1 L	0.05	1.7	1.7	8.2	8.2	130	130	1 L	0.5
MW-11D(2)	7/11/2017	199	199	82	82	7.2	7.2	0.1 L	0.05	1.7	1.7	8.3	8.3	140	140	1 L	0.5
MW-11D(2)	1/10/2018	221	221	78	78	5.8	5.8	0.1 L	0.05	1.6	1.6	8.7	8.7	140	140	1 L	0.5
MW-11D(2)	8/27/2018	215	215	80	80	5.8	5.8	0.1 L	0.05	1.7	1.7	9.6	9.6	130	130	1 L	0.5
No. Analyzed		16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
No. Detect		16	16	16	16	16	16	0	0	15	15	16	16	16	16	0	0
Minimum conc.		199	199	78	78	5.4	5.4	0	0.05	1.6	1.6	6.9	6.9	130	130	0	0.5
Maximum conc.		329	329	100	100	7.2	7.2	0.05	0.05	1.9	1.9	9.6	9.6	260	260	1 L	0.5
Average conc.		221	221	88	88	6.3	6.3	0.05	0.05	1.7	1.7	7.9	7.9	146	146	Neither	0.5
Distribution		Neither	Neither	Lognormal	Lognormal	Lognormal	Lognormal	NC	NC	Neither	Neither	Lognormal	Lognormal	Neither	Neither	Neither	NC
UCL 95		329*	329*	98.73	98.73	7.2*	7.2*	NC	NC	1.9*	1.9*	9.2	9.2	260*	260*	NC	NC

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Monitoring Well	Date	Specific Conductance		Alkalinity		Chloride		Ammonia		Nitrate		Sulfate		TDS		TOC	
		Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.
<b>MW-11S</b>																	
MW-11S	1/8/2014	221	221	69	69	15	15	0.1 L	0.05	3.4	3.4	12	12	150	150	1.1	1.1
MW-11S	4/8/2014	283	283	57	57	17	17	0.1 L	0.05	11	11	19	19	210	210	1.2	1.2
MW-11S	7/8/2014	250	250	67	67	20	20	0.29	0.29	2.1 J	2.1	15	15	170	170	1.2	1.2
MW-11S	10/27/2014	236	236	65	65	21	21	0.1 L	0.05	4.5	4.5	11	11	170	170	1 L	0.5
MW-11S	1/14/2015	251	251	66	66	15	15	0.1 L	0.05	6.6	6.6	15	15	170	170	1 L	0.5
MW-11S	4/21/2015	262	262	78	78	13	13	0.1 L	0.05	3.6	3.6	16	16	170	170	1.2	1.2
MW-11S	7/29/2015	246	246	89	89	14	14	0.1 L	0.05	0.87	0.87	11	11	150	150	1 L	0.5
MW-11S	10/14/2015	238	238	95	95	15	15	0.1 L	0.05	0.2 L	0.2	11	11	150	150	1.2	1.2
MW-11S	1/11/2016	293	293	69	69	15	15	0.1 L	0.05	11	11	16	16	200	200	1.4	1.4
MW-11S	4/19/2016	204	204	53	53	12	12	0.1 L	0.05	3.5	3.5	14	14	130	130	1.5	1.5
MW-11S	7/5/2016	250	250	73	73	19	19	0.1 L	0.05	1.1	1.1	13	13	150	150	1.2	1.2
MW-11S	10/12/2016	245	245	78	78	19	19	0.1 L	0.05	0.8	0.8	12.0	12.0	150	150	1.0	1.0
MW-11S	1/18/2017	257	257	70	70	16	16	0.1 L	0.05	4.5	4.5	12	12	160	160	1.1	1.1
MW-11S	7/11/2017	201	201	65	65	13	13	0.17	0.17	1.5	1.5	13	13	160	160	1	1.0
MW-11S	1/9/2018	277	277	74	74	16	16	0.1 L	0.05	5.4 H	5.4	11	11	170	170	1.2	1.2
MW-11S	8/27/2018	254	254	85	85	14	14	0.1 L	0.05	0.7	0.67	11.0	11.0	170	170	1.3	1.3
No. Analyzed		16		16		16		16		16		16		16		16	
No. Detect		16		16		16		2		15		16		16		13	
Minimum conc.		201		53		12.0		0.05		0.1		11.0		130		0.5	
Maximum conc.		293		95		21.0		0.29		11.0		19.0		210		1.5	
Average conc. Distribution		248		72		15.9		0.07		3.8		13.3		164		1.1	
UCL 95		293*		92.96		20.88		NC		Lognormal		Lognormal		Neither		Neither	
								NC		11.0*		17.80		210*		1.5*	

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Monitoring Well	Date	Specific Conductance		Alkalinity		Chloride		Ammonia		Nitrate		Sulfate		TDS		TOC	
		Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.
<b>MW-125</b>																	
MW-125	1/15/2015	312	312	54	54	18.0	18.0	0.76	0.76	1.5	1.5	6.6	6.6	220	220	1.8	1.8
MW-125	4/20/2015	243	243	130	130	13.0	13.0	1.2	1.2	0.2 L	0.2 L	1.6	1.6	180	180	3.1	3.1
MW-125	7/31/2015	346	346	130	130	14.0	14.0	1.7	1.7	1.2	1.2	1.8	1.8	200	200	2.4	2.4
MW-125	10/19/2015	337	337	150	150	13.0	13.0	1.0	1.0	1.1	1.1	4.0	4.0	210	210	2.4	2.4
MW-125	1/14/2016	284	284	110	110	20.0	20.0	0.05	0.05	2.4	2.4	4.2	4.2	200	200	2.5	2.5
MW-125	4/19/2016	428	428	170	170	28.0	28.0	2.0	2.0	0.2 L	0.2 L	1.2	1.2	240	240	4.6	4.6
MW-125	7/6/2016	384	384	160	160	20.0	20.0	3.9	3.9	0.2 L	0.2 L	0.66	0.66	210	210	3.3	3.3
MW-125	10/12/2016	362	362	150	150	20.0	20.0	1.8	1.8	1.4	1.4	2.1	2.1	210	210	2.1	2.1
MW-125	1/19/2017	313	313	100	100	14.0	14.0	1.7	1.7	6.3	6.3	3.7	3.7	210	210	2.3	2.3
MW-125	7/10/2017	398	398	160	160	23.0	23.0	3.8	3.8	0.2 L	0.2 L	0.63	0.63	230	230	3.8	3.8
MW-125	1/9/2018	331	331	45	45	14.0	14.0	1.4	1.4	19H	19H	2.9	2.9	230	230	2.0	2.0
MW-125	8/28/2018	340	340	140	140	11.0	11.0	2.9	2.9	1.4H	1.4H	0.81	0.81	210	210	2.2	2.2
No. Analyzed		12		12		12		12		12		12		12		12	
No. Detect		12		12		12		11		8		12		12		12	
Minimum conc.		243		45		11.0		0.05		0.1		0.63		180		1.8	
Maximum conc.		428		170		28.0		3.90		19.0		6.6		240		4.6	
Average conc.		340		125		17.3		1.85		4.0		2.5		213		2.7	
Distribution		Lognormal		Neither		Lognormal		Normal		Lognormal		Lognormal		Lognormal		Lognormal	
UCL 95		428*		170*		27.62		3.90*		19.0*		6.6*		240*		4.32	
<b>MW-12D</b>																	
MW-12D	1/7/2014	310	310	150	150	10	10	0.1 L	0.05	1.1	1.1	5.7	5.7	200	200	1 L	0.5
MW-12D	7/11/2014	270	270	120	120	9	9	0.1 L	0.05	1.4J	1.4	6.0	6.0	180	180	1 L	0.5
MW-12D	10/30/2014	294	294	150	150	13.0	13.0	0.1 L	0.05	1.1	1.1	6.0	6.0	190	190	1 L	0.5
MW-12D	1/13/2015	289	289	150	150	13.0	13.0	0.1 L	0.05	1.2	1.2	5.9	5.9	200	200	1 L	0.5
MW-12D	4/20/2015	244	244	130	130	9.3	9.3	0.1 L	0.05	1.3	1.3	6.4	6.4	190	190	1 L	0.5
MW-12D	7/31/2015	315	315	130	130	9.2	9.2	0.1 L	0.05	1.1	1.1	6.2	6.2	190	190	1 L	0.5
MW-12D	10/19/2015	316	316	140	140	9.3	9.3	0.1 L	0.05	1.1	1.1	6.1	6.1	210	210	1 L	0.5
MW-12D	1/14/2016	297	297	140	140	9.4	9.4	0.1 L	0.05	1.4	1.4	6.5	6.5	190	190	1 L	0.5
MW-12D	4/19/2016	278	278	120	120	8.3	8.3	0.1 L	0.05	1.6	1.6	6.9	6.9	230	230	1 L	0.5
MW-12D	7/6/2016	282	282	120	120	7.4	7.4	0.1 L	0.05	1.6	1.6	7.0	7.0	170	170	1 L	0.5
MW-12D	10/12/2016	293	293	130	130	9.2	9.2	0.1 L	0.05	1.3	1.3	6.4	6.4	180	180	1 L	0.5
MW-12D	1/19/2017	284	284	120	120	8.1	8.1	0.1 L	0.05	1.4	1.4	6.8	6.8	170	170	1 L	0.5
MW-12D	7/10/2017	266	266	110	110	7.7	7.7	0.1 L	0.05	1.5	1.5	6.8	6.8	170	170	1 L	0.5
MW-12D	1/9/2018	287	287	110	110	8.1	8.1	0.1 L	0.05	1.5H	1.5H	6.7	6.7	170	170	1 L	0.5
MW-12D	8/28/2018	275	275	120	120	8.4	8.4	0.1 L	0.05	1.3H	1.3H	7.6	7.6	180	180	1 L	0.5
No. Analyzed		15		15		15		15		15		15		15		15	
No. Detect		15		15		15		0		15		15		15		0	
Minimum conc.		244		110		7.4		0.05		1.1		5.7		170		0.5	
Maximum conc.		316		150		13.0		0.05		1.6		7.6		230		0.5	
Average conc.		287		129		9.3		0.05		1.3		6.5		188		0.5	
Distribution		Lognormal		Lognormal		Neither		NC		Lognormal		Lognormal		Lognormal		NC	
UCL 95		316*		150*		13.0*		NC		1.6*		7.38		219.39		NC	

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		Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.
<b>MW-13D</b>																	
MW-13D	1/6/2014	133	133	140	140	10.0	10.0	0.1 L	0.05	0.52 H	18	18	220	220	220	2 L	1
MW-13D	4/7/2014	340	340	140	140	17.0	17.0	0.1 L	0.05	6.0	16	16	240	240	240	1 L	0.5
MW-13D	7/8/2014	340	340	140	140	21.0	21.0	0.1 L	0.05	0.33 J	14	14	240	240	240	1 L	1.1
MW-13D	10/29/2014	272	272	120	120	9.9	9.9	0.1 L	0.05	0.83	12	12	180	180	180	1 L	0.5
MW-13D	1/12/2015	272	272	120	120	12.0	12.0	0.1 L	0.05	0.78	12	12	180	180	180	1 L	0.5
MW-13D	4/20/2015	266	266	130	130	12.0	12.0	0.1 L	0.05	0.73	15	15	210	210	210	1	1
MW-13D	7/30/2015	370	370	142	142	13.0	13.0	0.1 L	0.05	0.21	19	19	220	220	220	1.3	1.3
MW-13D	10/14/2015	324	324	140	140	11.0	11.0	0.1 L	0.05	0.43	18	18	200	200	200	1.1	1.1
MW-13D	1/13/2016	360	360	140	140	14.0	14.0	0.1 L	0.05	3.8	16	16	230	230	230	1 L	0.5
MW-13D	4/19/2016	379	379	150	150	17.0	17.0	0.1 L	0.05	0.84	15	15	230	230	230	1.2	1.2
MW-13D	7/6/2016	366	366	150	150	15.0	15.0	0.1 L	0.05	0.54	12	12	220	220	220	1 L	0.5
MW-13D	10/10/2016	345	345	150	150	14.0	14.0	0.1 L	0.05	0.58	14	14	200	200	200	1.0 L	0.5
MW-13D	1/18/2017	341	341	140	140	12.0	12.0	0.1 L	0.05	0.57	16	16	200	200	200	1.1	1.1
MW-13D	7/10/2017	358	358	150	150	15.0	15.0	0.1 L	0.05	0.57	10	10	220	220	220	1.3	1.3
MW-13D	1/8/2018	337	337	120	120	12.0	12.0	0.1 L	0.05	1.2	12	12	200	200	200	1.1	1.1
MW-13D	8/28/2018	333	333	130	130	12.0	12.0	0.1 L	0.05	0.24	19	19	98	98	98	1.1	1.1
No. Analyzed		16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
No. Detect		16	16	16	16	16	16	0	0	16	16	16	16	16	16	9	9
Minimum conc.		133	133	120	120	9.9	9.9	0.05	0.05	0.21	10.0	10.0	98	98	98	0.5	0.5
Maximum conc.		379	379	150	150	21.0	21.0	0.05	0.05	6.0	19.0	19.0	240	240	240	1.3	1.3
Average conc.		321	321	138	138	13.6	13.6	0.05	0.05	1.1	14.9	14.9	206	206	206	0.9	0.9
Distribution		Neither	Neither	Neither	Neither	Lognormal	Lognormal	NC	NC	Neither	Lognormal	Lognormal	Neither	Neither	Neither	Neither	Neither
UCL 95		379*	379*	150*	150*	19.04	19.04	NC	NC	6.0*	19.0*	19.0*	240*	240*	240*	1.3*	1.3*

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		Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.
<b>MW-135</b>																	
MW-135	1/6/2014	190	190	120	120	9.7	9.7	0.1 L	0.05	0.33 H	0.33	20.0	20.0	210	210	2.3	2.3
MW-135	4/9/2014	286	286	58	58	20	20	0.1 L	0.05	18	18	19.0	19.0	230	230	1.1	1.1
MW-135	7/8/2014	340	340	130	130	22	22	0.1 L	0.05	0.5 L	0.3	16.0	16.0	230	230	1.6	1.6
MW-135	10/29/2014	209	209	99	99	7.1	7.1	0.1 L	0.05	0.8	0.8	8.4	8.4	150	150	1.0 L	0.5
MW-135	1/13/2015	195	195	89	89	8.8	8.8	0.1 L	0.05	1	1	11.0	11.0	140	140	1.0 L	0.5
MW-135	4/20/2015	268	268	120	120	1.4	1.4	0.1 L	0.05	0.27	0.27	20.0	20.0	200	200	1.2	1.2
MW-135	7/30/2015	352	352	160	160	13	13	0.1 L	0.05	0.2 L	0.1	22.0	22.0	220	220	1.3	1.3
MW-135	10/14/2015	308	308	140	140	9.7	9.7	0.1 L	0.05	0.2 L	0.1	19.0	19.0	190	190	1.2	1.2
MW-135	1/13/2016	383	383	110	110	16	16	0.1 L	0.05	10.0	10	17.0	17.0	250	250	1.0	1.0
MW-135	4/19/2016	420	420	140	140	28	28	0.1 L	0.05	0.65	0.65	19.0	19.0	240	240	1.7	1.7
MW-135	7/6/2016	383	383	150	150	20	20	0.1	0.1	0.2 L	0.1	8.8	8.8	210	210	1.6	1.6
MW-135	10/11/2016	366	366	150	150	18.0	18	0.1 L	0.05	0.2 L	0.1	16.0	16.0	220	220	1.2	1.2
MW-135	1/18/2017	323	323	130	130	12	12	0.1 L	0.05	0.5	0.46	17.0	17.0	190	190	1.2	1.2
MW-135	7/10/2017	359	359	140	140	18	18	0.11	0.11	0.2 L	0.1	6.4	6.4	230	230	2.1	2.1
MW-135	1/8/2018	293	293	100	100	10	10	0.1 L	0.05	1.8	1.8	12.0	12.0	180	180	1.2	1.2
MW-135	8/28/2018	304	304	110	110	11	11	0.1 L	0.05	0.2 L	0.1	22.0	22.0	190	190	1.2	1.2
No. Analyzed		16		16		16		16		9		16		16		16	
No. Detect		16		16		16		2		9		16		16		14	
Minimum conc.		190		58		7.1		0.05		0.1		6.4		140		0.5	
Maximum conc.		420		160		28.0		0.11		18.0		22.0		250		2.3	
Average conc.		311		122		14.8		0.06		2.1		15.9		205		1.3	
Distribution		Lognormal		Normal		Lognormal		NC		Neither		Normal		Lognormal		Normal	
UCL 95		420*		160*		27.04		NC		18.0*		22.0*		250*		2.17	

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		Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.
<b>MW-14D</b>																	
MW-14D	1/6/2014	142	142	88	88	10	10	4.2	4.2	0.1	0.1	11.0	11.0	150	150	1.7	1.7
MW-14D	4/7/2014	139	139	58	58	8.7	8.7	2.5	2.5	0.25	0.25	8.9	8.9	100	100	1.4	1.4
MW-14D	7/10/2014	180	180	63	63	7.8	7.8	3.4	3.4	0.25	0.25	11.0	11.0	120	120	1.3	1.3
MW-14D	10/29/2014	218	218	76	76	16	16	4.3	4.3	0.25	0.25	12.0	12.0	150	150	1.3	1.3
MW-14D	1/12/2015	181	181	70	70	11	11	3.7	3.7	0.10	0.10	9.8	9.8	120	120	1.5	1.5
MW-14D	4/20/2015	159	159	72	72	7.7	7.7	4	4	0.2	0.2	11.0	11.0	110	110	1.7	1.7
MW-14D	7/27/2015	212	212	75	75	9.7	9.7	3.9	3.9	0.2	0.2	12.0	12.0	140	140	1.3	1.3
MW-14D	10/13/2015	265	265	100	100	1.5	1.5	4.1	4.1	0.10	0.10	10.0	10.0	150	150	1.9	1.9
MW-14D	1/13/2016	190	190	72	72	8.1	8.1	2.8	2.8	0.2	0.2	8.4	8.4	110	110	1.5	1.5
MW-14D	4/18/2016	206	206	76	76	9.6	9.6	2.7	2.7	0.2	0.2	11.0	11.0	120	120	1.6	1.6
MW-14D	8/4/2016	235	235	95	95	10	10	4.0	4.0	0.10	0.10	13.0	13.0	140	140	2.0	2.0
MW-14D	10/10/2016	264	264	91	91	1.5	1.5	4.1	4.1	0.2	0.2	12.0	12.0	140	140	1.5	1.5
MW-14D	1/18/2017	238	238	88	88	10	10	3.9	3.9	0.10	0.10	11.0	11.0	140	140	1.8	1.8
MW-14D	7/12/2017	238	238	84	84	8.3	8.3	3.7	3.7	0.2	0.2	10.0	10.0	130	130	1.7	1.7
MW-14D	1/8/2018	247	247	83	83	11	11	3.7	3.7	0.10	0.10	11.0	11.0	140	140	1.8	1.8
MW-14D	8/28/2018	250	250	90	90	9	9	3.9	3.9	0.2	0.2	13.0	13.0	150	150	1.6	1.6
No. Analyzed		16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
No. Detect		16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Minimum conc.		139	139	58	58	7.7	7.7	2.5	2.5	0.1	0.1	8.4	8.4	100	100	1.3	1.3
Maximum conc.		265	265	100	100	16	16	4.3	4.3	0.25	0.25	13.0	13.0	150	150	2.0	2.0
Average conc.		210	210	80	80	10	10	3.7	3.7	0.1	0.1	11	11	132	132	1.6	1.6
Distribution		Lognormal	Lognormal	Neither	Neither	Neither	Neither	Neither	Neither	NC	NC	Lognormal	Lognormal	Normal	Normal	Lognormal	Lognormal
UCL 95		265*	265*	100*	100*	16*	16*	4.3*	4.3*	NC	NC	13.0*	13.0*	150*	150*	2.0*	2.0*
<b>MW-14R</b>																	
MW-14R	1/7/2014	98	98	47	47	1.7	1.7	0.1	0.1	0.05	0.05	3.6	3.6	95	95	1	1
MW-14R	7/11/2014	100	100	45	45	1.7	1.7	0.1	0.1	0.05	0.05	3.6	3.6	99	99	1	1
MW-14R	10/28/2014	92	92	47	47	2.1	2.1	0.1	0.1	0.05	0.05	3.6	3.6	97	97	1	1
MW-14R	1/13/2015	92	92	49	49	2.2	2.2	0.1	0.1	0.05	0.05	3.6	3.6	94	94	1	1
MW-14R	4/22/2015	106	106	47	47	1.8	1.8	0.1	0.1	0.05	0.05	3.6	3.6	99	99	1	1
MW-14R	7/30/2015	105	105	46	46	1.7	1.7	0.1	0.1	0.05	0.05	3.6	3.6	100	100	1	1
MW-14R	10/13/2015	102	102	50	50	1.7	1.7	0.1	0.1	0.05	0.05	3.9	3.9	95	95	1	1
MW-14R	1/12/2016	103	103	56	56	1.8	1.8	0.1	0.1	0.05	0.05	3.5	3.5	94	94	1	1
MW-14R	4/18/2016	106	106	47	47	1.7	1.7	0.1	0.1	0.05	0.05	3.6	3.6	96	96	1	1
MW-14R	7/6/2016	103	103	47	47	1.7	1.7	0.1	0.1	0.05	0.05	3.7	3.7	89	89	1	1
MW-14R	10/12/2016	104	104	47	47	1.8	1.8	0.1	0.1	0.05	0.05	3.6	3.6	96	96	1	1
MW-14R	1/18/2017	105	105	47	47	1.6	1.6	0.1	0.1	0.05	0.05	3.6	3.6	91	91	1	1
MW-14R	7/11/2017	99	99	46	46	2.0	2.0	0.1	0.1	0.05	0.05	3.4	3.4	100	100	1	1
MW-14R	1/8/2018	104	104	44	44	1.7	1.7	0.1	0.1	0.05	0.05	3.4	3.4	86	86	1	1
MW-14R	8/27/2018	107	107	45	45	1.6	1.6	0.1	0.1	0.05	0.05	3.6	3.6	110	110	1	1
No. Analyzed		15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
No. Detect		15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Minimum conc.		92	92	44	44	1.6	1.6	0.05	0.05	0.1	0.1	3.4	3.4	86	86	0	0
Maximum conc.		107	107	56	56	2.2	2.2	0.05	0.05	0.3	0.3	3.9	3.9	110	110	0.5	0.5
Average conc.		102	102	47	47	1.8	1.8	0.05	0.05	0.1	0.1	3.6	3.6	96	96	0.5	0.5
Distribution		Neither	Neither	Neither	Neither	Neither	Neither	NC	NC	NC	NC	Neither	Neither	Lognormal	Lognormal	NC	NC
UCL 95		107*	107*	56*	56*	2.2*	2.2*	NC	NC	NC	NC	3.9*	3.9*	106.24	106.24	NC	NC



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		Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.
<b>MW-14S</b>																	
MW-14S	1/6/2014	200	200	86	86	16	16	0.51	0.51	0.2 L	0.1	8.8	8.8	150	150	2.0	2.0
MW-14S	4/7/2014	114	114	39	39	7.1	7.1	0.18	0.18	1.6	1.6	7.7	7.7	83	83	1.3	1.3
MW-14S	7/9/2014	140	140	43	43	8.8	8.8	0.20	0.20	0.56 J	0.56	9.5	9.5	98	98	1.1	1.1
MW-14S	10/29/2014	185	185	63	63	12	12	0.35	0.35	0.78	0.78	7.1	7.1	120	120	2	2
MW-14S	1/12/2015	115	115	41	41	4.9	4.9	0.1 L	0.1 L	1.8	1.8	6.1	6.1	85	85	1.3	1.3
MW-14S	4/20/2015	117	117	49	49	7.4	7.4	0.05	0.05	0.74	0.74	9.3	9.3	89	89	1.5	1.5
MW-14S	7/27/2015	217	217	74	74	17	17	0.35	0.35	0.2 L	0.1	8.2	8.2	130	130	1.5	1.5
MW-14S	10/15/2015	246	246	96	96	22	22	0.78	0.78	0.2 L	0.1	7.7	7.7	160	160	2.0	2.0
MW-14S	1/13/2016	178	178	64	64	8.2	8.2	0.36	0.36	1.3	1.3	7.4	7.4	110	110	1.5	1.5
MW-14S	4/18/2016	192	192	63	63	9.8	9.8	0.28	0.28	0.86	0.86	11	11	120	120	1.7	1.7
MW-14S	7/6/2016	216	216	70	70	13	13	0.1 L	0.1 L	0.42	0.42	14	14	130	130	1.3	1.3
MW-14S	10/14/2016	231	231	74	74	14	14	0.27	0.27	2.2	2.2	8.2	8.2	140	140	2.2	2.2
MW-14S	1/18/2017	176	176	62	62	7.7	7.7	0.75	0.75	0.64	0.64	8.9	8.9	110	110	1.6	1.6
MW-14S	7/12/2017	196	196	67	67	6.8	6.8	0.46	0.46	0.34	0.34	11	11	110	110	1.7	1.7
MW-14S	1/8/2018	128	128	42	42	4.4	4.4	0.27	0.27	1.0	1.0	5.4	5.4	83	83	1.8	1.8
MW-14S	8/28/2018	295	295	110	110	21	21	0.50	0.50	0.1	0.1	7	7	170	170	2.2	2.2
No. Analyzed		16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
No. Detect		16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Minimum conc.		114	114	39	39	4.4	4.4	0.05	0.05	0.1	0.1	5.4	5.4	83	83	1.1	1.1
Maximum conc.		295	295	110	110	22.0	22.0	0.78	0.78	2.2	2.2	14.0	14.0	170	170	2.2	2.2
Average conc.		184	184	65	65	11.3	11.3	0.338	0.338	0.8	0.8	8.6	8.6	118	118	1.7	1.7
Distribution		Lognormal	Lognormal	Lognormal	Lognormal	Lognormal	Lognormal	Normal	Normal	Lognormal	Lognormal	Lognormal	Lognormal	Lognormal	Lognormal	Lognormal	Lognormal
UCL 95		295*	295*	107.46	107.46	22.0*	22.0*	0.73	0.73	2.2*	2.2*	12.59	12.59	170*	170*	2.2*	2.2*
<b>MW-15D</b>																	
MW-15D	1/7/2014	272	272	120	120	8.8	8.8	0.1 L	0.05	0.79 H	0.79	9.2	9.2	180	180	1 L	0.5
MW-15D	7/9/2014	270	270	140	140	11.0	11.0	0.1	0.1	0.52 J	0.52	9.5	9.5	180	180	1.2	1.2
MW-15D	10/28/2014	291	291	140	140	13.0	13.0	0.1 L	0.05	0.53	0.53	9.3	9.3	200	200	1 L	0.5
MW-15D	1/13/2015	281	281	140	140	12.0	12.0	0.1 L	0.05	0.5	0.5	9.6	9.6	190	190	1 L	0.5
MW-15D	4/21/2015	296	296	130	130	9.5	9.5	0.1 L	0.05	0.55	0.55	10	10	180	180	1.2	1.2
MW-15D	7/27/2015	282	282	120	120	10.0	10.0	0.1 L	0.05	0.65	0.65	9.7	9.7	180	180	1 L	0.5
MW-15D	1/13/2016	294	294	130	130	9.7	9.7	0.1 L	0.05	0.58	0.58	10	10	170	170	1.1	1.1
MW-15D	4/18/2016	266	266	110	110	8.1	8.1	0.1 L	0.05	1.0	1.0	9.6	9.6	160	160	1 L	0.5
MW-15D	7/6/2016	266	266	110	110	8.8	8.8	0.1 L	0.05	0.94	0.94	9.9	9.9	160	160	1 L	0.5
MW-15D	10/10/2016	291	291	120	120	9.9	9.9	0.1 L	0.05	0.8	0.8	8.6	8.6	160	160	1 L	0.5
MW-15D	1/17/2017	277	277	120	120	8.7	8.7	0.1 L	0.05	0.83	0.83	10	10	380	380	1 L	0.5
MW-15D	7/11/2017	237	237	110	110	8.4	8.4	0.1 L	0.05	0.98	0.98	9.3	9.3	180	180	1.0 L	0.5
MW-15D	1/8/2018	262	262	100	100	8.5	8.5	0.1 L	0.05	0.82	0.82	9.6	9.6	170	170	1 L	0.5
MW-15D	8/27/2018	270	270	110	110	8.5	8.5	0.1 L	0.05	0.82	0.82	10	10	170	170	1.0 L	0.5
No. Analyzed		15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
No. Detect		15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Minimum conc.		237	237	100	100	8.1	8.1	0.05	0.05	0.50	0.50	8.6	8.6	160	160	0.5	0.5
Maximum conc.		296	296	140	140	13.0	13.0	0.10	0.10	1.0	1.0	10.0	10.0	380	380	1.2	1.2
Average conc.		276	276	121	121	9.7	9.7	0.05	0.05	0.73	0.73	9.6	9.6	189	189	0.6	0.6
Distribution		Lognormal	Lognormal	Lognormal	Lognormal	Lognormal	Lognormal	NC	NC	Lognormal	Lognormal	Neither	Neither	Neither	Neither	Neither	NC
UCL 95		296*	296*	140*	140*	12.28	12.28	NC	NC	1.0*	1.0*	10.0*	10.0*	380*	380*	NC	NC

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Monitoring Well	Date	Specific Conductance		Alkalinity		Chloride		Ammonia		Nitrate		Sulfate		TDS		TOC	
		Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.
MW-155	1/7/2014	257	257	100	100	14	14	4.3	4.3	0.2 L	0.1	11.0	11.0	160	160	1.7	1.7
MW-155	7/9/2014	230	230	67	67	20	20	2.9	2.9	0.5 L	0.25	9.9	9.9	140	140	1.8	1.8
MW-155	10/28/2014	271	271	81	81	17	17	3.9	3.9	6.1	6.1	8.8	8.8	170	170	1.9	1.9
MW-155	1/13/2015	232	232	86	86	15	15	3.0	3.0	2.5	2.5	9.3	9.3	150	150	1.4	1.4
MW-155	4/21/2015	240	240	88	88	13	13	3.6	3.6	0.2 L	0.1	9.4	9.4	140	140	1.9	1.9
MW-155	7/27/2015	252	252	94	94	15	15	4.4	4.4	0.2 L	0.1	8.3	8.3	150	150	1.6	1.6
MW-155	10/13/2015	297	297	150	150	16	16	4.7	4.7	0.2 L	0.1	7.3	7.3	160	160	2.1	2.1
MW-155	1/13/2016	235	235	85	85	10	10	3.3	3.3	1.1	1.1	8.4	8.4	130	130	1.6	1.6
MW-155	4/18/2016	259	259	95	95	12	12	2.9	2.9	0.42	0.42	10	10	150	150	1.6	1.6
MW-155	7/6/2016	273	273	91	91	17	17	3.4	3.4	0.2 L	0.1	11	11	140	140	1.8	1.8
MW-155	10/10/2016	270	270	89	89	19	19	2.8	2.8	0.2 L	0.1	11	11	150	150	1.7	1.7
MW-155	1/17/2017	279	279	100	100	14	14	3.5	3.5	0.2 L	0.1	11	11	160	160	1.6	1.6
MW-155	7/10/2017	264	264	96	96	12	12	2.7	2.7	0.2 L	0.1	11	11	160	160	1.6	1.6
MW-155	1/8/2018	273	273	90	90	17	17	2.7	2.7	0.91	0.91	8.4	8.4	150	150	1.9	1.9
MW-155	8/27/2018	282	282	98	98	16	16	3.2	3.2	0.2 L	0.1	10	10	170	170	2.0	2.0
No. Analyzed		15		15		15		15		15		15		15		15	
No. Detect		15		15		15		15		5		15		15		15	
Minimum conc.			230		67		10.0		2.7		0.1		7.3		130		1.4
Maximum conc.			297		150		20.0		4.7		6.1		11.0		170		2.1
Average conc.			261		94		15.1		3.4		0.8		9.7		152		1.7
Distribution			Lognormal		Neither		Lognormal		Lognormal		NC		Lognormal		Lognormal		Lognormal
UCL 95			297*		150*		20.0*		4.65		NC		11.0*		170*		2.1
MW-175	1/9/2014	434	434	200	200	13	13	8.4	8.4	1.7	1.7	4.4	4.4	240	240	2.1	2.1
MW-175	4/8/2014	523	523	140	140	27	27	5.6	5.6	23	23	10	10	350	350	2.0	2.0
MW-175	7/8/2014	350	350	120	120	23	23	2.5	2.5	1.5 J	1.5	8.2	8.2	220	220	1.8	1.8
MW-175	10/28/2014	377	377	170	170	20	20	4.8	4.8	0.25	0.25	4.1	4.1	230	230	2.4	2.4
MW-175	1/13/2015	340	340	79	79	17	17	1.3	1.3	19	19	4.9	4.9	260	260	1.4	1.4
MW-175	4/23/2015	424	424	160	160	18	18	4.8	4.8	4.1	4.1	5.4	5.4	240	240	1.9	1.9
MW-175	7/27/2015	395	395	180	180	14	14	6.3	6.3	0.2 L	0.1	2.9	2.9	230	230	1.7	1.7
MW-175	10/15/2015	404	404	200	200	13	13	10	10.0	0.2 L	0.1	1.5	1.5	220	220	2.2	2.2
MW-175	1/12/2016	564	564	150	150	23	23	6.5	6.5	21	21	7.7	7.7	340	340	2.0	2.0
MW-175	4/19/2016	442	442	190	190	26	26	4.4	4.4	0.66	0.66	5.7	5.7	240	240	2.7	2.7
MW-175	7/6/2016	400	400	160	160	21	21	4.6	4.6	0.2 L	0.1	4.8	4.8	220	220	2.1	2.1
MW-175	10/13/2016	411	411	170	170	22	22	4.2	4.2	0.2 L	0.1	4.7	4.7	250	250	2.0	2.0
MW-175	1/17/2017	435	435	170	170	17	17	4.8	4.8	3.9	3.9	4.4	4.4	230	230	2.0	2.0
MW-175	7/11/2017	367	367	150	150	24	24	4.6	4.6	0.31	0.31	5.2	5.2	220	220	2.0	2.0
MW-175	1/8/2018	434	434	120	120	20	20	3.1	3.1	12	12	4.6	4.6	250	250	1.8	1.8
MW-175	8/27/2018	393	393	160	160	13	13	3.8	3.8	0.2 L	0.1	2.0	2.0	220	220	1.9	1.9
No. Analyzed		16		16		16		16		16		16		16		16	
No. Detect		16		16		16		16		10		16		16		16	
Minimum conc.			340		79		13.0		1.30		0.1		1.5		220		1.4
Maximum conc.			564		200		27.0		10.0		23.0		10.0		350		2.7
Average conc.			418		157		19.4		4.98		5.5		5.0		248		2.0
Distribution			Lognormal		Normal		Lognormal		Lognormal		Lognormal		Lognormal		Neither		Lognormal
UCL 95			524.78		200*		27.0*		10.0*		23.0*		10.0*		350*		2.57

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Monitoring Well	Date	Specific Conductance		Alkalinity		Chloride		Ammonia		Nitrate		Sulfate		TDS		TOC	
		Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.
MW-18D																	
MW-18D	1/9/2014	268	268	120	120	8.4	8.4	0.1 L	0.05	1.7	1.7	5.4	180	180	180	1 L	0.5
MW-18D	7/9/2014	260	260	110	110	9.6	9.6	0.1 L	0.05	1.6 J	1.6	5.5	170	170	170	1 L	0.5
MW-18D	10/27/2014	247	247	110	110	9.2	9.2	0.1 L	0.05	1.7	1.7	5.8	180	180	180	1 L	0.5
MW-18D	1/14/2015	263	263	120	120	9.6	9.6	0.1 L	0.05	1.6	1.6	5.5	170	170	170	1 L	0.5
MW-18D	4/23/2015	274	274	120	120	8.9	8.9	0.1 L	0.05	1.5	1.5	6.0	170	170	170	1 L	0.5
MW-18D	7/29/2015	274	274	120	120	8.9	8.9	0.1 L	0.05	1.6	1.6	6.3	170	170	170	1 L	0.5
MW-18D	10/16/2015	263	263	110	110	9.6	9.6	0.1 L	0.05	1.6	1.6	6.8	170	170	170	1 L	0.5
MW-18D	1/11/2016	260	260	120	120	7.6	7.6	0.1 L	0.05	1.6	1.6	6.5	170	170	170	1 L	0.5
MW-18D	4/19/2016	269	269	120	120	8.2	8.2	0.1 L	0.05	1.7	1.7	6.6	170	170	170	1 L	0.5
MW-18D	7/6/2016	269	269	110	110	7.7	7.7	0.1 L	0.05	1.6	1.6	6.7	170	170	170	1 L	0.5
MW-18D	10/11/2016	262	262	110	110	8.1	8.1	0.1 L	0.05	1.6	1.6	6.5	170	170	170	1 L	0.5
MW-18D	1/17/2017	260	260	110	110	7.2	7.2	0.1 L	0.05	1.7	1.7	6.7	170	170	170	1 L	0.5
MW-18D	7/13/2017	273	273	110	110	7.4	7.4	0.1 L	0.05	1.6	1.6	6.5	170	170	170	1 L	0.5
MW-18D	1/10/2018	265	265	100	100	7.4	7.4	0.1 L	0.05	1.5	1.5	6.7	160	160	160	1 L	0.5
MW-18D	8/29/2018	261	261	100	100	7.4	7.4	0.1 L	0.05	1.6	1.6	7.8	190	190	190	1 L	0.5
No. Analyzed		15		15		15		15		15		15		15		15	
No. Detect		15		15		15		0		15		15		15		0	
Minimum conc.			247		100		7.2		0.05		1.5		5.4		160		0.5
Maximum conc.			274		120		9.6		0.05		1.7		7.8		190		0.5
Average conc.			265		113		8.3		0.05		1.6		6.4		172		0.5
Distribution			Lognormal		Neither		Lognormal		NC		Neither		Lognormal		Neither		NC
UCL 95			274*		120*		9.6*		NC		1.7*		7.56		190*		NC
MW-18S																	
MW-18S	1/9/2014	327	327	130	130	12	12	0.1 L	0.05	5 H	5	5.2	220	220	220	1.1	1.1
MW-18S	7/9/2014	310	310	120	120	20	20	0.1 L	0.05	0.84 J	0.84	6.2	210	210	210	1.4	1.4
MW-18S	10/27/2014	295	295	130	130	17	17	0.1 L	0.05	0.2	0.2	4.5	190	190	190	1.1	1.1
MW-18S	1/14/2015	371	371	130	130	15	15	0.1 L	0.05	9.20	9.2	6.3	240	240	240	1.1	1.1
MW-18S	4/23/2015	334	334	120	120	14	14	0.1 L	0.05	4.00	4	7.8	200	200	200	1.5	1.5
MW-18S	7/29/2015	315	315	140	140	14	14	0.1 L	0.05	0.36	0.36	5.3	190	190	190	1.6	1.6
MW-18S	10/16/2015	317	317	140	140	15	15	0.1 L	0.05	0.3	0.34	4.2	200	200	200	1.7	1.7
MW-18S	1/11/2016	410	410	120	120	17	17	0.1 L	0.05	11	11	10	260	260	260	1.4	1.4
MW-18S	4/19/2016	360	360	140	140	26	26	0.1 L	0.05	0.55	0.55	4.8	210	210	210	2.1	2.1
MW-18S	7/6/2016	343	343	140	140	22	22	0.1 L	0.05	0.2 L	0.1	4.6	200	200	200	1.6	1.6
MW-18S	10/11/2016	337	337	140	140	21	21	0.1 L	0.05	0.2 L	0.1	3.4	210	210	210	1.4	1.4
MW-18S	1/17/2017	395	395	130	130	15	15	0.1 L	0.05	11	11	4.9	230	230	230	1.4	1.4
MW-18S	7/13/2017	365	365	130	130	24	24	0.1 L	0.05	0.49	0.49	3.5	200	200	200	1.9	1.9
MW-18S	1/10/2018	421	421	120	120	17	17	0.1 L	0.05	10 H	10	4.5	260	260	260	1.5	1.5
MW-18S	8/29/2018	326	326	130	130	14	14	0.1 L	0.05	0.28	0.28	4.0	210	210	210	1.5	1.5
No. Analyzed		15		15		15		15		15		15		15		15	
No. Detect		15		15		15		0		13		15		15		15	
Minimum conc.			295		120		12.0		0.05		0.1		3.4		190		1.1
Maximum conc.			421		140		26.0		0.05		11.0		10.0		260		2.1
Average conc.			348		131		17.5		0.05		3.6		5.3		215		1.5
Distribution			Lognormal		Neither		Lognormal		NC		Lognormal		Lognormal		Neither		Lognormal
UCL 95			417.35		140*		25.55		NC		11.0*		8.48		260*		2.04

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Monitoring Well	Date	Specific Conductance		Alkalinity		Chloride		Ammonia		Nitrate		Sulfate		TDS		TOC	
		Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.
MW-20R	1/10/2014	97	97	48	48	1.8	1.8	0.1 L	0.05	0.2 L	0.1	3.0	3.0	91	91	1 L	0.5
MW-20R	7/11/2014	99	99	44	44	1.7	1.7	0.1 L	0.05	0.5 L	0.25	2.9	2.9	200	200	1 L	0.5
MW-20R	10/30/2014	91	91	46	46	2.0	2.0	0.1 L	0.05	0.5 L	0.25	3.0	3.0	94	94	1 L	0.5
MW-20R	1/12/2015	90	90	45	45	2.0	2.0	0.1 L	0.05	0.2 L	0.1	2.9	2.9	89	89	1 L	0.5
MW-20R	4/23/2015	100	100	47	47	1.8	1.8	0.1 L	0.05	0.2 L	0.1	3.0	3.0	90	90	1 L	0.5
MW-20R	7/28/2015	100	100	47	47	1.8	1.8	0.1 L	0.05	0.2 L	0.1	3.1	3.1	85	85	1 L	0.5
MW-20R	10/14/2015	97	97	48	48	1.7	1.7	0.1 L	0.05	0.2 L	0.1	3.2	3.2	85	85	1 L	0.5
MW-20R	1/12/2016	94	94	46	46	1.6	1.6	0.1 L	0.05	0.2 L	0.1	3.0	3.0	88	88	1 L	0.5
MW-20R	4/19/2016	102	102	48	48	1.8	1.8	0.1 L	0.05	0.2 L	0.1	3.1	3.1	97	97	1 L	0.5
MW-20R	7/6/2016	100	100	46	46	1.7	1.7	0.1 L	0.05	0.2 L	0.1	3.1	3.1	79	79	1 L	0.5
MW-20R	10/13/2016	100	100	47	47	1.7	1.7	0.1 L	0.05	0.2 L	0.1	2.8	2.8	100	100	1 L	0.5
MW-20R	1/18/2017	100	100	46	46	1.6	1.6	0.1 L	0.05	0.2 L	0.1	3.1	3.1	85	85	1 L	0.5
MW-20R	7/12/2017	105	105	44	44	1.7	1.7	0.1 L	0.05	0.2 L	0.1	2.9	2.9	86	86	1 L	0.5
MW-20R	1/8/2018	100	100	43	43	1.7	1.7	0.1 L	0.05	0.2 L	0.1	3.0	3.0	87	87	1 L	0.5
MW-20R	8/28/2018	98	98	44	44	1.7	1.7	0.1 L	0.05	0.2 L	0.1	3.1	3.1	92	92	1 L	0.5
No. Analyzed		15	15	15	15	1.5	1.5	15	0	15	0	15	15	15	15	15	15
No. Detect		15	15	15	15	1.5	1.5	0	0	0	0	15	15	15	15	0	0
Minimum conc.			90		43		1.6		0.05		0.1		2.8		79		0.5
Maximum conc.			105		48		2.0		0.05		0.3		3.2		200		0.5
Average conc.			98		46		1.8		0.05		0.1		3.0		97		0.5
Distribution			Neither		Lognormal		Neither		NC		NC		Lognormal		Neither		NC
UCL 95			105*		48*		2.0*		NC		NC		3.2*		200*		NC
MW-26R	1/10/2014	141	141	66	66	3.9	3.9	0.10 L	0.05	0.2 L	0.1	7.9	7.9	110	110	1 L	0.5
MW-26R	7/10/2014	160	160	69	69	3.9	3.9	0.10 L	0.05	0.5 L	0.25	8.5	8.5	120	120	1 L	0.5
MW-26R	10/30/2014	156	156	75	75	4.6	4.6	0.10 L	0.05	0.5 L	0.25	9.3	9.3	140	140	1 L	0.5
MW-26R	1/12/2015	167	167	78	78	4.7	4.7	0.10 L	0.05	0.2 L	0.1	9.0	9.0	120	120	1 L	0.5
MW-26R	4/23/2015	189	189	82	82	4.5	4.5	0.10 L	0.05	0.2 L	0.1	9.4	9.4	120	120	1 L	0.5
MW-26R	7/31/2015	186	186	75	75	4.4	4.4	0.10 L	0.05	0.2 L	0.1	8.9	8.9	120	120	1 L	0.5
MW-26R	10/14/2015	183	183	82	82	4.4	4.4	0.10 L	0.05	0.2 L	0.1	10	10	130	130	1 L	0.5
MW-26R	1/12/2016	193	193	85	85	4.4	4.4	0.10 L	0.05	0.2 L	0.1	9.7	9.7	130	130	1 L	0.5
MW-26R	4/19/2016	197	197	87	87	4.6	4.6	0.10 L	0.05	0.2 L	0.1	9.9	9.9	130	130	1 L	0.5
MW-26R	7/6/2016	195	195	84	84	4.6	4.6	0.10 L	0.05	0.2 L	0.1	9.2	9.2	120	120	1 L	0.5
MW-26R	10/12/2016	191	191	91	91	4.5	4.5	0.10 L	0.05	0.2 L	0.1	8.8	8.8	110	110	1 L	0.5
MW-26R	1/18/2017	199	199	85	85	4.4	4.4	0.10 L	0.05	0.2 L	0.1	9.9	9.9	130	130	1 L	0.5
MW-26R	7/11/2017	184	184	84	84	4.8	4.8	0.10 L	0.05	0.2 L	0.1	8.9	8.9	150	150	1 L	0.5
MW-26R	1/8/2018	201	201	81	81	4.5	4.5	0.10 L	0.05	0.2 L	0.1	9.2	9.2	130	130	1 L	0.5
MW-26R	8/28/2018	193	193	84	84	4.5	4.5	0.10 L	0.05	0.2 L	0.1	8.0	8.0	140	140	1 L	0.5
No. Analyzed		15	15	15	15	1.5	1.5	15	0	15	0	15	15	15	15	15	15
No. Detect		15	15	15	15	1.5	1.5	0	0	0	0	15	15	15	15	0	0
Minimum conc.			141		66		3.9		0.05		0.10		7.9		110		0.5
Maximum conc.			201		91		4.8		0.05		0.25		10.0		150		0.5
Average conc.			182		81		4.4		0.05		0.12		9.1		127		0.5
Distribution			Neither		Lognormal		Neither		NC		NC		Lognormal		Lognormal		NC
UCL 95			201*		91*		4.8*		NC		NC		10.0*		147.45		NC

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Monitoring Well	Date	Specific Conductance		Alkalinity		Chloride		Ammonia		Nitrate		Sulfate		TDS		TOC	
		Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.
FMMW-1	1/8/2014	270	110	11	11	0.1 L	0.05	1.1 H	1.1	15	15	180	180	1.1	1.1	1.1	1.1
FMMW-1	4/8/2014	229	90	11	11	0.1 L	0.05	1.7	1.7	15	15	170	170	1.0	1.0	1.0	1.0
FMMW-1	7/9/2014	300	100	21	21	0.1 L	0.05	3.1 J	3.1	13	13	200	200	1.0 L	1.0 L	0.5	0.5
FMMW-1	10/27/2014	293	100	23	23	0.1 L	0.05	2.5	2.5	17	17	200	200	1.0 L	1.0 L	0.5	0.5
FMMW-1	1/14/2015	293	110	18	18	0.1 L	0.05	2.1	2.1	15	15	180	180	1.0 L	1.0 L	0.5	0.5
FMMW-1	4/22/2015	271	98	12	12	0.1 L	0.05	1.5	1.5	15	15	170	170	1.1	1.1	1.1	1.1
FMMW-1	7/29/2015	276	140	13	13	0.1 L	0.05	1.2	1.2	16	16	170	170	1.0 L	1.0 L	0.5	0.5
FMMW-1	10/16/2015	278	110	15	15	0.1 L	0.05	0.85	0.85	17	17	180	180	1.2	1.2	1.2	1.2
FMMW-1	1/11/2016	257	95	8.3	8.3	0.1 L	0.05	2.0	2.0	15	15	170	170	1.1	1.1	1.1	1.1
FMMW-1	4/20/2016	330	110	20	20	0.1 L	0.05	2.9	2.9	11	11	190	190	1.2	1.2	1.2	1.2
FMMW-1	7/5/2016	331	120	22	22	0.1 L	0.05	1.7	1.7	12	12	210	210	1.0 L	1.0 L	0.5	0.5
FMMW-1	10/11/2016	320	110	22	22	0.1 L	0.05	1.3	1.3	12	12	240	240	1 L	1 L	0.5	0.5
FMMW-1	1/18/2017	299	110	14	14	0.1 L	0.05	1.9	1.9	11	11	180	180	1.1	1.1	1.1	1.1
FMMW-1	7/12/2017	341	110	21	21	0.1 L	0.05	1.4	1.4	8.0	8.0	190	190	1.4	1.4	1.4	1.4
FMMW-1	1/10/2018	312	100	15	15	0.1 L	0.05	3.0	3.0	8.2	8.2	190	190	1.3	1.3	1.3	1.3
FMMW-1	8/28/2018	278	98	14	14	0.1 L	0.05	1.6	1.6	16	16	170	170	1 L	1 L	0.5	0.5
No. Analyzed		16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
No. Detect		16	16	16	16	0	0.05	16	16	16	16	16	16	16	16	16	16
Minimum conc.		229	90	8.3	8.3		0.05	0.85	0.85	8.0	8.0	170	170	0.5	0.5	0.5	0.5
Maximum conc.		341	140	23	23		0.05	3.1	3.1	17	17	240	240	1.4	1.4	1.4	1.4
Average conc.		292	107	16.3	16.3		0.05	1.9	1.9	13.5	13.5	187	187	0.9	0.9	0.9	0.9
Distribution		Lognormal	Neither	Lognormal	Lognormal	NC	NC	Lognormal	Lognormal	Normal	Normal	Neither	Neither	Neither	Neither	Neither	Neither
UCL 95		341*	140*	23*	23*	NC	NC	3.1*	3.1*	17*	17*	240*	240*	1.4*	1.4*	1.4*	1.4*

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Monitoring Well	Date	Specific Conductance		Alkalinity		Chloride		Ammonia		Nitrate		Sulfate		TDS		TOC	
		Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.
<b>FMMW-2</b>																	
FMMW-2	1/8/2014	345	345	140	140	14	14	0.31	0.31	5.2 H	5.2	5.9	5.9	240	240	1.6	1.6
FMMW-2	4/8/2014	467	467	150	150	21	21	0.10 L	0.05	15.0	15.0	19	19	330	330	1.5	1.5
FMMW-2	7/9/2014	300	300	110	110	20	20	0.11	0.11	0.84 J	0.8	12	12	210	210	1.3	1.3
FMMW-2	10/28/2014	344	344	130	130	22	22	0.33	0.33	5.1	5.1	6.1	6.1	230	230	1.4	1.4
FMMW-2	1/14/2015	403	403	100	100	19	19	0.28	0.28	1.6	1.6	10	10	260	260	1.1	1.1
FMMW-2	4/22/2015	321	321	110	110	15	15	0.14	0.14	3.9	3.9	8.6	8.6	200	200	1.5	1.5
FMMW-2	7/29/2015	350	350	140	140	15	15	0.14	0.14	2.8	2.8	4.6	4.6	220	220	1.4	1.4
FMMW-2	10/16/2015	359	359	140	140	16	16	0.15	0.15	4.5	4.5	5.4	5.4	220	220	1.7	1.7
FMMW-2	1/11/2016	501	501	110	110	15	15	0.1 L	0.05	2.2	2.2	20	20	330	330	1.4	1.4
FMMW-2	4/20/2016	336	336	110	110	23	23	0.1 L	0.05	1.3	1.3	14	14	190	190	1.8	1.8
FMMW-2	7/5/2016	300	300	100	100	19	19	0.1 L	0.05	1.5	1.5	13	13	200	200	1.3	1.3
FMMW-2	10/11/2016	362	362	130	130	22	22	0.11	0.11	3.9	3.9	5.7	5.7	230	230	1.5	1.5
FMMW-2	1/18/2017	351	351	96	96	17	17	0.1 L	0.05	9.6	9.6	9	9	230	230	1.3	1.3
FMMW-2	7/12/2017	309	309	100	100	17	17	0.1 L	0.05	1.6	1.6	13	13	190	190	1.7	1.7
FMMW-2	1/10/2018	378	378	92	92	19	19	0.1 L	0.05	9.8	9.8	11	11	230	230	1.3	1.3
FMMW-2	8/28/2018	317	317	120	120	15	15	0.1 L	0.05	1.7	1.7	5.4	5.4	200	200	1.5	1.5
No. Analyzed		16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
No. Detect		16	16	16	16	16	16	8	8	16	16	16	16	16	16	16	16
Minimum conc.			300		92		14		0.05		0.84		4.6		190		1.1
Maximum conc.			501		150		23		0.33		22.0		20.0		330		1.8
Average conc.			359		117		18.1		0.12		6.5		10.2		232		1.5
Distribution			Neither		Lognormal		Lognormal		Neither		Lognormal		Lognormal		Neither		Lognormal
UCL 95			501*		150*		23*		0.33*		22.0*		20.0*		330*		1.8*

Notes:  
No data available for MW-125 in 2014  
**Bold** indicates UCL 95 is greater than Cleanup Level.  
J indicates  
H indicates  
L indicates below the given method reporting limit (MRL).  
ND indicates not detected.  
NC indicates not calculated due to less than 50 percent detection frequency.  
\* UCL represents maximum concentration detected because the calculated value was greater than the data sample range or the distribution was neither lognormal nor normal.  
Statistical calculations use one half the MRL for non-detected parameters.

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Monitoring Well	Date	Iron		Manganese	
		Result	Conc.	Result	Conc.
<b>MW-10D</b>					
MW-10D	01/06/14	0.100 L	0.050	0.001	0.0010
MW-10D	04/07/14	0.100 L	0.050	0.001 L	0.0005
MW-10D	07/10/14	0.100 L	0.050	0.001 L	0.0005
MW-10D	10/29/14	0.100 L	0.050	0.001 L	0.0005
MW-10D	01/12/15	0.100 L	0.050	0.001 L	0.0005
MW-10D	04/20/15	0.100 L	0.050	0.001 L	0.0005
MW-10D	07/30/15	0.100 L	0.050	0.001 L	0.0005
MW-10D	10/13/15	0.100 L	0.050	0.001 L	0.0005
MW-10D	01/13/16	0.029	0.029	0.001 L	0.0005
MW-10D	04/19/16	0.029 L	0.015	0.001 L	0.0005
MW-10D	07/05/16	0.029 L	0.015	0.001 L	0.0005
MW-10D	10/10/16	0.030 L	0.015	0.001 L	0.0005
MW-10D	01/18/17	0.030 L	0.015	0.001 L	0.0005
MW-10D	07/13/17	0.180 L	0.090	0.001 L	0.0005
MW-10D	01/08/18	0.180 L	0.090	0.001 L	0.0005
MW-10D	08/28/18	0.180 L	0.090	0.001 L	0.0005
No. Analyzed		16		16	
No. Detect		1		1	
Minimum conc.			0.015		0.0005
Maximum conc.			0.090		0.001
Average conc.			0.047		0.00053
Distribution			NC		NC
UCL 95			NC		NC
<b>MW-10S</b>					
MW-10S	01/06/14	0.100	0.100	0.0010 L	0.0005
MW-10S	04/07/14	0.100 L	0.050	0.001 L	0.0005
MW-10S	07/10/14	0.100 L	0.050	0.001 L	0.0005
MW-10S	10/29/14	0.100 L	0.050	0.001 L	0.0005
MW-10S	01/12/15	0.100 L	0.050	0.001 L	0.0005
MW-10S	04/20/15	0.100 L	0.050	0.001 L	0.0005
MW-10S	07/30/15	0.100 L	0.050	0.001 L	0.0005
MW-10S	10/13/15	0.100 L	0.050	0.001 L	0.0005
MW-10S	01/13/16	0.029 L	0.015	0.001 L	0.0005
MW-10S	04/18/16	0.029 L	0.015	0.001 L	0.0005
MW-10S	07/05/16	0.029 L	0.015	0.001 L	0.0005
MW-10S	10/10/16	0.030 L	0.015	0.001 L	0.0005
MW-10S	01/18/17	0.030 L	0.015	0.001 L	0.0005
MW-10S	07/13/17	0.180 L	0.090	0.001 L	0.0005
MW-10S	01/08/18	0.180 L	0.090	0.001 L	0.0005
MW-10S	08/28/18	0.180 L	0.090	0.001 L	0.0005
No. Analyzed		16		16	
No. Detect		1		0	
Minimum conc.			0.015		0.0005
Maximum conc.			0.100		0.0005
Average conc.			0.050		0.0005
Distribution			NC		NC
UCL 95			NC		NC

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Monitoring Well	Date	Iron		Manganese	
		Result	Conc.	Result	Conc.
<b>MW-11D(2)</b>					
MW-11D(2)	01/08/14	0.100 L	0.050	0.001 L	0.0005
MW-11D(2)	04/08/14	0.100 L	0.050	0.001 L	0.0005
MW-11D(2)	07/08/14	0.100 L	0.050	0.001 L	0.0005
MW-11D(2)	10/27/14	0.100 L	0.050	0.001 L	0.0005
MW-11D(2)	01/14/15	0.100 L	0.050	0.001 L	0.0005
MW-11D(2)	04/23/15	0.100 L	0.050	0.001 L	0.0005
MW-11D(2)	07/29/15	0.100 L	0.050	0.001 L	0.0005
MW-11D(2)	10/14/15	0.100 L	0.050	0.001 L	0.0005
MW-11D(2)	01/11/16	0.029 L	0.015	0.001 L	0.0005
MW-11D(2)	04/19/16	0.029 L	0.015	0.001 L	0.0005
MW-11D(2)	07/05/16	0.029 L	0.015	0.001 L	0.0005
MW-11D(2)	10/12/16	0.030 L	0.015	0.001 L	0.0005
MW-11D(2)	01/19/17	0.030 L	0.015	0.001 L	0.0005
MW-11D(2)	07/11/17	0.180 L	0.090	0.001 L	0.0005
MW-11D(2)	01/10/18	0.180 L	0.090	0.001 L	0.0005
MW-11D(2)	08/27/18	0.180 L	0.090	0.001 L	0.0005
No. Analyzed		16		16	
No. Detect		0		0	
Minimum conc.			0.015		0.0005
Maximum conc.			0.090		0.0005
Average conc.			0.046		0.0005
Distribution			NC		NC
UCL 95			NC		NC
<b>MW-11S</b>					
MW-11S	01/08/14	0.100 L	0.050	0.001 L	0.0005
MW-11S	04/08/14	0.100 L	0.050	0.001	0.0013
MW-11S	07/08/14	0.100 L	0.050	0.021	0.0210
MW-11S	10/27/14	0.100 L	0.050	0.008	0.0079
MW-11S	01/14/15	0.100 L	0.050	0.001 L	0.0005
MW-11S	04/21/15	0.100 L	0.050	0.001	0.0012
MW-11S	07/29/15	0.100 L	0.050	0.003	0.0025
MW-11S	10/14/15	0.100 L	0.050	0.003	0.0028
MW-11S	01/11/16	0.029 L	0.015	0.001 L	0.0005
MW-11S	04/19/16	0.029 L	0.015	0.001	0.0014
MW-11S	07/05/16	0.029 L	0.015	0.003	0.0032
MW-11S	10/12/16	0.030 L	0.015	0.007	0.0072
MW-11S	01/18/17	0.030 L	0.015	0.001 L	0.0005
MW-11S	07/11/17	0.180 L	0.090	0.004	0.0035
MW-11S	01/09/18	0.180 L	0.090	0.001 L	0.0005
MW-11S	08/27/18	0.180 L	0.090	0.006	0.0058
No. Analyzed		16		16	
No. Detect		0		11	
Minimum conc.			0.015		0.0005
Maximum conc.			0.090		0.021
Average conc.			0.046		0.004
Distribution			NC		Lognormal
UCL 95			NC		0.020



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Monitoring Well	Date	Iron		Manganese	
		Result	Conc.	Result	Conc.
<b>MW-12D</b>					
MW-12D	01/07/14	0.100 L	0.050	0.001 L	0.0005
MW-12D	07/11/14	0.100 L	0.050	0.001 L	0.0005
MW-12D	10/30/14	0.100 L	0.050	0.001 L	0.0005
MW-12D	01/13/15	0.100 L	0.050	0.001 L	0.0005
MW-12D	04/20/15	0.100 L	0.050	0.001 L	0.0005
MW-12D	07/31/15	0.100 L	0.050	0.001 L	0.0005
MW-12D	10/19/15	0.100 L	0.050	0.001 L	0.0005
MW-12D	01/14/16	0.029 L	0.015	0.001 L	0.0005
MW-12D	04/19/16	0.029 L	0.015	0.001 L	0.0005
MW-12D	07/06/16	0.029 L	0.015	0.001 L	0.0005
MW-12D	10/12/16	0.030 L	0.015	0.001 L	0.0005
MW-12D	01/19/17	0.030 L	0.015	0.001 L	0.0005
MW-12D	07/10/17	0.180 L	0.090	0.001 L	0.0005
MW-12D	01/09/18	0.180 L	0.090	0.001 L	0.0005
MW-12D	08/28/18	0.180 L	0.090	0.001 L	0.0005
No. Analyzed		15		15	
No. Detect		0		0	
Minimum conc.			0.015		0.0005
Maximum conc.			0.090		0.0005
Average conc.			0.046		0.0005
Distribution			NC		NC
UCL 95			NC		NC
<b>MW-12S</b>					
MW-12S	01/15/15	0.100 L	0.050	0.240	0.240
MW-12S	04/20/15	0.100 L	0.050	0.340	0.340
MW-12S	07/31/15	0.100 L	0.050	0.511	0.511
MW-12S	10/19/15	0.100 L	0.050	0.990	0.990
MW-12S	01/14/16	0.029 L	0.015	0.016	0.016
MW-12S	04/19/16	0.029 L	0.015	0.350	0.350
MW-12S	07/06/16	0.029 L	0.015	0.690	0.690
MW-12S	10/12/16	0.030 L	0.015	0.830	0.830
MW-12S	01/19/17	0.030 L	0.015	0.550	0.550
MW-12S	07/10/17	0.180 L	0.090	0.770	0.770
MW-12S	01/09/18	0.180 L	0.090	0.430	0.430
MW-12S	08/28/18	0.180 L	0.090	0.840	0.840
No. Analyzed		12		12	
No. Detect		0		12	
Minimum conc.			0.015		0.016
Maximum conc.			0.090		0.990
Average conc.			0.045		0.546
Distribution			NC		Normal
UCL 95			NC		<b>0.990*</b>

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Monitoring Well	Date	Iron		Manganese	
		Result	Conc.	Result	Conc.
<b>MW-13D</b>					
MW-13D	01/06/14	0.100 L	0.050	0.001 L	0.0005
MW-13D	04/07/14	0.100 L	0.050	0.001 L	0.001
MW-13D	07/08/14	0.100 L	0.050	0.001 L	0.0005
MW-13D	10/29/14	0.100 L	0.050	0.001 L	0.001
MW-13D	01/12/15	0.100 L	0.050	0.001 L	0.0005
MW-13D	04/20/15	0.100 L	0.050	0.001 L	0.0005
MW-13D	07/30/15	0.100 L	0.050	0.001 L	0.0005
MW-13D	10/14/15	0.100 L	0.050	0.001 L	0.0005
MW-13D	01/13/16	0.020 L	0.010	0.001 L	0.0005
MW-13D	04/19/16	0.029 L	0.015	0.001 L	0.0005
MW-13D	07/06/16	0.029 L	0.015	0.001 L	0.0005
MW-13D	10/10/16	0.030 L	0.015	0.039	0.0390
MW-13D	01/18/17	0.030 L	0.015	0.001 L	0.0005
MW-13D	07/10/17	0.180 L	0.090	0.001 L	0.0005
MW-13D	01/08/18	0.180 L	0.090	0.001 L	0.0005
MW-13D	08/28/18	0.180 L	0.090	0.001 L	0.0005
No. Analyzed		16		16	
No. Detect		0		1	
Minimum conc.			0.010		0.0005
Maximum conc.			0.090		0.0390
Average conc.			0.046		0.0029
Distribution			NC		NC
UCL 95			NC		NC
<b>MW-13S</b>					
MW-13S	01/06/14	0.100 L	0.050	0.007	0.007
MW-13S	04/09/14	0.100 L	0.050	0.002	0.002
MW-13S	07/08/14	0.100 L	0.050	0.007	0.007
MW-13S	10/29/14	0.100 L	0.050	0.012	0.012
MW-13S	01/13/15	0.100 L	0.050	0.001	0.001
MW-13S	04/20/15	0.100 L	0.050	0.001 L	0.001
MW-13S	07/30/15	0.100 L	0.050	0.034	0.034
MW-13S	10/14/15	0.100 L	0.050	0.190	0.190
MW-13S	01/13/16	0.020 L	0.010	0.008	0.008
MW-13S	04/19/16	0.054	0.054	0.024	0.024
MW-13S	07/06/16	0.029 L	0.015	0.051	0.051
MW-13S	10/11/16	0.030 L	0.015	0.150	0.150
MW-13S	01/18/17	0.030 L	0.015	0.003	0.003
MW-13S	07/10/17	0.180 L	0.090	0.013	0.013
MW-13S	01/08/18	0.180 L	0.090	0.001 L	0.001
MW-13S	08/28/18	0.180 L	0.090	0.007	0.007
No. Analyzed		16		16	
No. Detect		1		14	
Minimum conc.			0.010		0.0005
Maximum conc.			0.090		0.190
Average conc.			0.049		0.032
Distribution			NC		Lognormal
UCL 95			NC		<b>0.190</b>

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Monitoring Well	Date	Iron		Manganese	
		Result	Conc.	Result	Conc.
<b>MW-14D</b>					
MW-14D	01/06/14	3.300	3.300	1.000	1.000
MW-14D	04/07/14	0.100 L	0.050	0.570	0.570
MW-14D	07/10/14	0.740	0.740	0.810	0.810
MW-14D	10/29/14	2.800	2.800	1.200	1.200
MW-14D	01/12/15	2.000	2.000	0.840	0.840
MW-14D	04/20/15	1.900	1.900	0.830	0.830
MW-14D	07/27/15	2.800	2.800	0.980	0.980
MW-14D	10/13/15	4.300	4.300	1.300	1.300
MW-14D	01/13/16	0.029 L	0.015	0.770	0.770
MW-14D	04/18/16	0.029 L	0.015	0.820	0.820
MW-14D	08/04/16	1.600	1.600	1.100	1.100
MW-14D	10/10/16	2.600	2.600	1.200	1.200
MW-14D	01/18/17	2.400	2.400	1.100	1.100
MW-14D	07/12/17	0.910	0.910	0.960	0.960
MW-14D	01/08/18	2.200	2.200	1.000	1.000
MW-14D	08/28/18	2.700	2.700	1.100	1.100
No. Analyzed		16		16	
No. Detect		13		16	
Minimum conc.			0.0145		0.570
Maximum conc.			4.300		1.300
Average conc.			1.896		0.974
Distribution			Normal		Lognormal
UCL 95			4.11		1.300*
<b>MW-14S</b>					
MW-14S	01/06/14	0.100 L	0.050	0.1700	0.1700
MW-14S	04/07/14	0.100 L	0.050	0.063	0.0630
MW-14S	07/09/14	0.100 L	0.050	0.097	0.0970
MW-14S	10/29/14	0.100 L	0.050	0.240	0.2400
MW-14S	01/12/15	0.100 L	0.050	0.028	0.0280
MW-14S	04/20/15	0.100 L	0.050	0.042	0.0420
MW-14S	07/27/15	0.100 L	0.050	0.170	0.1700
MW-14S	10/15/15	0.110	0.110	0.680	0.6800
MW-14S	01/13/16	0.029 L	0.015	0.110	0.1100
MW-14S	04/18/16	0.029 L	0.015	0.180	0.1800
MW-14S	07/06/16	0.029 L	0.015	0.029	0.0290
MW-14S	10/14/16	0.043	0.043	0.110	0.1100
MW-14S	01/18/17	0.088	0.088	0.250	0.2500
MW-14S	07/12/17	0.180 L	0.090	0.240	0.2400
MW-14S	01/08/18	0.180 L	0.090	0.100	0.1000
MW-14S	08/28/18	0.180 L	0.090	0.240	0.2400
No. Analyzed		16		16	
No. Detect		3		16	
Minimum conc.			0.015		0.028
Maximum conc.			0.110		0.680
Average conc.			0.057		0.172
Distribution			NC		Lognormal
UCL 95			NC		0.570

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Monitoring Well	Date	Iron		Manganese	
		Result	Conc.	Result	Conc.
<b>MW-14R</b>					
MW-14R	01/07/14	0.100 L	0.050	0.001 L	0.0005
MW-14R	07/11/14	0.100 L	0.050	0.001	0.0014
MW-14R	10/28/14	0.100 L	0.050	0.001 L	0.0005
MW-14R	01/13/15	0.100 L	0.050	0.0010 L	0.0005
MW-14R	04/22/15	0.100 L	0.050	0.001	0.0011
MW-14R	07/30/15	0.100 L	0.050	0.170	0.1700
MW-14R	10/13/15	0.100 L	0.050	0.2000	0.200
MW-14R	01/12/16	0.045	0.045	0.2000	0.2000
MW-14R	04/18/16	0.059	0.059	0.2000	0.2000
MW-14R	07/06/16	0.045	0.045	0.1800	0.1800
MW-14R	10/12/16	0.063	0.063	0.1900	0.1900
MW-14R	01/18/17	0.059	0.059	0.1800	0.1800
MW-14R	07/11/17	0.180 L	0.090	0.4200	0.4200
MW-14R	01/08/18	0.180 L	0.090	0.1800	0.1800
MW-14R	08/27/18	0.180 L	0.090	0.1900	0.1900
No. Analyzed		15		15	
No. Detect		5		12	
Minimum conc.			0.045		0.0005
Maximum conc.			0.090		0.420
Average conc.			0.059		0.141
Distribution			NC		Neither
UCL 95			NC		<b>0.420*</b>
<b>MW-15D</b>					
MW-15D	01/07/14	0.100 L	0.050	0.001 L	0.0005
MW-15D	07/09/14	0.100 L	0.050	0.300	0.3000
MW-15D	10/28/14	0.100 L	0.050	0.220	0.2200
MW-15D	01/13/15	0.100 L	0.050	0.260	0.2600
MW-15D	04/21/15	0.100 L	0.050	0.280	0.2800
MW-15D	07/27/15	0.100 L	0.050	0.087	0.0870
MW-15D	10/13/15	0.100 L	0.050	0.028	0.0280
MW-15D	01/13/16	0.029 L	0.015	0.190	0.1900
MW-15D	04/18/16	0.029 L	0.015	0.006	0.0060
MW-15D	07/06/16	0.029 L	0.015	0.096	0.0960
MW-15D	10/10/16	0.030 L	0.015	0.007	0.0072
MW-15D	01/17/17	0.030 L	0.015	0.088	0.0880
MW-15D	07/11/17	0.180 L	0.090	0.083	0.0830
MW-15D	01/08/18	0.180 L	0.090	0.064	0.0640
MW-15D	08/27/18	0.180 L	0.090	0.023	0.0230
No. Analyzed		15		15	
No. Detect		0		14	
Minimum conc.			0.015		0.0005
Maximum conc.			0.090		0.300
Average conc.			0.046		0.116
Distribution			NC		Neither
UCL 95			NC		<b>0.300*</b>

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Monitoring Well	Date	Iron		Manganese	
		Result	Conc.	Result	Conc.
<b>MW-15S</b>					
MW-15S	01/07/14	0.100 L	0.050	0.880	0.8800
MW-15S	07/09/14	0.100 L	0.050	0.640	0.6400
MW-15S	10/28/14	0.100 L	0.050	0.870	0.8700
MW-15S	01/13/15	0.100 L	0.050	0.780	0.7800
MW-15S	04/21/15	0.100 L	0.050	0.610	0.6100
MW-15S	07/27/15	0.120	0.120	0.870	0.8700
MW-15S	10/13/15	0.100 L	0.050	1.100	1.1000
MW-15S	01/13/16	0.029 L	0.015	0.670	0.6700
MW-15S	04/18/16	0.029	0.029	0.740	0.7400
MW-15S	07/06/16	0.054	0.054	0.810	0.8100
MW-15S	10/10/16	0.100	0.100	0.880	0.8800
MW-15S	01/17/17	0.030 L	0.015	0.930	0.9300
MW-15S	07/10/17	0.180 L	0.090	0.640	0.6400
MW-15S	01/08/18	0.180 L	0.090	0.850	0.8500
MW-15S	08/27/18	0.180 L	0.090	0.830	0.8300
No. Analyzed		15		15	
No. Detect		4		15	
Minimum conc.			0.015		0.610
Maximum conc.			0.120		1.100
Average conc.			0.060		0.807
Distribution			NC		Lognormal
UCL 95			NC		<b>1.060</b>
<b>MW-17S</b>					
MW-17S	01/09/14	0.100 L	0.050	1.000	1.0000
MW-17S	04/08/14	0.100 L	0.050	1.600	1.6000
MW-17S	07/08/14	0.100 L	0.050	0.680	0.6800
MW-17S	10/28/14	0.100 L	0.050	1.100	1.1000
MW-17S	01/13/15	0.100 L	0.050	0.340	0.3400
MW-17S	04/23/15	0.100 L	0.050	1.000	1.0000
MW-17S	07/27/15	0.100 L	0.050	0.906	0.9060
MW-17S	10/15/15	0.100 L	0.050	1.100	1.1000
MW-17S	01/12/16	0.029 L	0.015	1.800	1.8000
MW-17S	04/19/16	0.029 L	0.015	1.200	1.2000
MW-17S	07/06/16	0.029 L	0.015	1.100	1.1000
MW-17S	10/13/16	0.030 L	0.015	0.860	0.8600
MW-17S	01/17/17	0.030 L	0.015	1.000	1.0000
MW-17S	07/11/17	0.180 L	0.090	1.100	1.1000
MW-17S	01/08/18	0.180 L	0.090	0.820	0.8200
MW-17S	08/27/18	0.180 L	0.090	0.820	0.8200
No. Analyzed		16		16	
No. Detect		0		16	
Minimum conc.			0.015		0.340
Maximum conc.			0.090		1.800
Average conc.			0.046		1.027
Distribution			NC		Normal
UCL 95			NC		<b>1.640</b>

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Monitoring Well	Date	Iron		Manganese	
		Result	Conc.	Result	Conc.
<b>MW-18D</b>					
MW-18D	01/09/14	0.100 L	0.050	0.001 L	0.0005
MW-18D	07/09/14	0.100 L	0.050	0.001 L	0.0005
MW-18D	10/27/14	0.100 L	0.050	0.001 L	0.0005
MW-18D	01/14/15	0.100 L	0.050	0.001 L	0.0005
MW-18D	04/23/15	0.100 L	0.050	0.002	0.0019
MW-18D	07/29/15	0.100 L	0.050	0.001 L	0.0005
MW-18D	10/16/15	0.280	0.280	0.0010 L	0.0005
MW-18D	01/11/16	0.029 L	0.015	0.001 L	0.0005
MW-18D	04/19/16	0.029 L	0.015	0.001 L	0.0005
MW-18D	07/06/16	0.029 L	0.015	0.001 L	0.0005
MW-18D	10/11/16	0.030 L	0.015	0.001 L	0.0005
MW-18D	01/17/17	0.056	0.056	0.001 L	0.0005
MW-18D	07/13/17	0.180 L	0.090	0.001 L	0.0005
MW-18D	01/10/18	0.180 L	0.090	0.001 L	0.0005
MW-18D	08/29/18	0.180 L	0.090	0.001 L	0.0005
No. Analyzed		15		15	
No. Detect		2		1	
Minimum conc.			0.015		0.0005
Maximum conc.			0.280		0.0019
Average conc.			0.064		0.0006
Distribution			NC		NC
UCL 95			NC		NC
<b>MW-18S</b>					
MW-18S	01/09/14	0.100 L	0.050	0.0010 L	0.0005
MW-18S	07/09/14	0.100 L	0.050	0.0010 L	0.0005
MW-18S	10/27/14	0.100 L	0.050	0.0013 L	0.0007
MW-18S	01/14/15	0.100 L	0.050	0.0013 L	0.0007
MW-18S	04/23/15	0.100 L	0.050	0.0013 L	0.0007
MW-18S	07/29/15	0.100 L	0.050	0.0013 L	0.0007
MW-18S	10/16/15	0.100 L	0.050	0.0013 L	0.0007
MW-18S	01/11/16	0.029 L	0.015	0.0010 L	0.0005
MW-18S	04/19/16	0.029 L	0.015	0.0010 L	0.0005
MW-18S	07/06/16	0.029 L	0.015	0.0014	0.0014
MW-18S	10/11/16	0.030 L	0.015	0.0056	0.0056
MW-18S	01/17/17	0.034	0.034	0.0010 L	0.0005
MW-18S	07/13/17	0.180 L	0.090	0.0010 L	0.0005
MW-18S	01/10/18	0.180 L	0.090	0.0010 L	0.0005
MW-18S	08/29/18	0.180 L	0.090	0.0010 L	0.0005
No. Analyzed		15		15	
No. Detect		1		2	
Minimum conc.			0.015		0.0005
Maximum conc.			0.090		0.0056
Average conc.			0.048		0.0010
Distribution			NC		NC
UCL 95			NC		NC

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Monitoring Well	Date	Iron		Manganese	
		Result	Conc.	Result	Conc.
<b>MW-20R</b>					
MW-20R	01/10/14	0.100 L	0.050	0.001	0.0014
MW-20R	07/11/14	0.100 L	0.050	0.001 L	0.0005
MW-20R	10/30/14	0.100 L	0.050	0.001 L	0.0005
MW-20R	01/12/15	0.100 L	0.050	0.001 L	0.0005
MW-20R	04/23/15	0.370	0.370	0.001 L	0.0005
MW-20R	07/28/15	0.100 L	0.050	0.042	0.0417
MW-20R	10/14/15	0.100 L	0.050	0.026	0.0260
MW-20R	01/12/16	0.029 L	0.015	0.001 L	0.0005
MW-20R	04/19/16	0.029 L	0.015	0.001 L	0.0005
MW-20R	07/06/16	0.029 L	0.015	0.001 L	0.0005
MW-20R	10/13/16	0.030 L	0.015	0.001	0.0010
MW-20R	01/18/17	0.030 L	0.015	0.001 L	0.0005
MW-20R	07/12/17	0.180 L	0.090	0.001 L	0.0005
MW-20R	01/08/18	0.180 L	0.090	0.001 L	0.0005
MW-20R	08/28/18	0.180 L	0.090	0.001 L	0.0005
No. Analyzed		15		15	
No. Detect		1		4	
Minimum conc.			0.015		0.0005
Maximum conc.			0.370		0.0417
Average conc.			0.068		0.005
Distribution			NC		NC
UCL 95			NC		NC
<b>MW-26R</b>					
MW-26R	01/10/14	0.840	0.840	0.250	0.2500
MW-26R	07/10/14	0.620	0.620	0.340	0.3400
MW-26R	10/30/14	0.680	0.680	0.370	0.3700
MW-26R	01/12/15	0.610	0.610	0.380	0.3800
MW-26R	04/23/15	0.650	0.650	0.400	0.4000
MW-26R	07/31/15	0.570	0.570	0.370	0.3700
MW-26R	10/14/15	0.630	0.630	1.000	1.0000
MW-26R	01/12/16	0.680	0.680	0.400	0.4000
MW-26R	04/19/16	0.660	0.660	0.380	0.3800
MW-26R	07/06/16	0.700	0.700	0.370	0.3700
MW-26R	10/12/16	0.690	0.690	0.400	0.4000
MW-26R	01/18/17	0.600	0.600	0.380	0.3800
MW-26R	07/11/17	0.690	0.690	0.200	0.2000
MW-26R	01/08/18	0.640	0.640	0.380	0.3800
MW-26R	08/28/18	0.600	0.600	0.390	0.3900
No. Analyzed		15		15	
No. Detect		15		15	
Minimum conc.			0.570		0.200
Maximum conc.			0.840		1.000
Average conc.			0.657		0.401
Distribution			Neither		Neither
UCL 95			<b>0.840*</b>		<b>1.000*</b>

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Monitoring Well	Date	Iron		Manganese	
		Result	Conc.	Result	Conc.
<b>FMMW-1</b>					
FMMW-1	01/08/14	0.100 L	0.050	0.001 L	0.0005
FMMW-1	04/08/14	0.100 L	0.050	0.001 L	0.0005
FMMW-1	07/09/14	0.100 L	0.050	0.001 L	0.0005
FMMW-1	10/27/14	0.100 L	0.050	0.001 L	0.0005
FMMW-1	01/14/15	0.100 L	0.050	0.001 L	0.0005
FMMW-1	04/22/15	0.100 L	0.050	0.001 L	0.0005
FMMW-1	07/29/15	0.100 L	0.050	0.001 L	0.0005
FMMW-1	10/16/15	0.230	0.230	0.001 L	0.0005
FMMW-1	01/11/16	0.029 L	0.015	0.001 L	0.0005
FMMW-1	04/20/16	0.029 L	0.015	0.001 L	0.0005
FMMW-1	07/05/16	0.029 L	0.015	0.001 L	0.0005
FMMW-1	10/11/16	0.030 L	0.015	0.001 L	0.0005
FMMW-1	01/18/17	0.031	0.031	0.001 L	0.0005
FMMW-1	07/12/17	0.180 L	0.090	0.001 L	0.0005
FMMW-1	01/10/18	0.180 L	0.090	0.001 L	0.0005
FMMW-1	08/28/18	0.180 L	0.090	0.001 L	0.0005
No. Analyzed		16		16	
No. Detect		2		0	
Minimum conc.			0.015		0.0005
Maximum conc.			0.230		0.0005
Average conc.			0.059		0.0005
Distribution			NC		NC
UCL 95			NC		NC
<b>FMMW-2</b>					
FMMW-2	01/08/14	0.100 L	0.050	0.081	0.0810
FMMW-2	04/08/14	0.100 L	0.050	0.084	0.0840
FMMW-2	07/09/14	0.100 L	0.050	0.072	0.0720
FMMW-2	10/28/14	0.100 L	0.050	0.090	0.0900
FMMW-2	01/14/15	0.100 L	0.050	0.086	0.0860
FMMW-2	04/22/15	0.100 L	0.050	0.070	0.0700
FMMW-2	07/29/15	0.100 L	0.050	0.082	0.0820
FMMW-2	10/16/15	0.100 L	0.050	0.068	0.0680
FMMW-2	01/11/16	0.029 L	0.015	0.028	0.0280
FMMW-2	04/20/16	0.029 L	0.015	0.055	0.0550
FMMW-2	07/05/16	0.029 L	0.015	0.041	0.0410
FMMW-2	10/11/16	0.030 L	0.015	0.067	0.0670
FMMW-2	01/18/17	0.030 L	0.015	0.047	0.0470
FMMW-2	07/12/17	0.180 L	0.090	0.036	0.0360
FMMW-2	01/10/18	0.180 L	0.090	0.007	0.0065
FMMW-2	08/28/18	0.180 L	0.090	0.043	0.0430
No. Analyzed		16		16	
No. Detect		0		16	
Minimum conc.			0.015		0.0065
Maximum conc.			0.090		0.0900
Average conc.			0.046		0.060
Distribution			NC		Normal
UCL 95			NC		<b>0.0900*</b>
Notes:					
No data available for MW-12S in 2014					
<b>Bold</b> indicates UCL 95 is greater than Cleanup Level.					
L indicates below the given method reporting limit (MRL).					
ND indicates not detected.					
NC indicates not calculated due to less than 50 percent detection frequency.					
* UCL represents maximum concentration detected because the calculated value was greater than the data sample range or the distribution was neither lognormal nor normal.					
Statistical calculations use one half the MRL for non-detected parameters.					



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Monitoring Well	Date	1,4-Dichlorobenzene	
		Result	Conc.
<b>MW-11S</b>			
MW-11S	01/08/14	0.5 L	0.25
MW-11S	04/08/14	0.5 L	0.25
MW-11S	07/08/14	0.5 L	0.25
MW-11S	10/27/14	0.5 L	0.25
MW-11S	01/12/15	0.5 L	0.25
MW-11S	04/20/15	0.5 L	0.25
MW-11S	07/30/15	0.5 L	0.25
MW-11S	10/13/15	0.5 L	0.25
MW-11S	01/11/16	0.5 L	0.25
MW-11S	04/19/16	0.5 L	0.25
MW-11S	07/05/16	0.5 L	0.25
MW-11S	10/12/16	0.5 L	0.25
MW-11S	01/18/17	0.5 L	0.25
MW-11S	07/11/17	0.5 L	0.25
MW-11S	01/09/18	0.5 L	0.25
MW-11S	08/27/18	0.5 L	0.25
No. Analyzed		16	
No. Detect		0	
Minimum conc.			0.25
Maximum conc.			0.25
Average conc.			0.25
Distribution			NC
UCL 95			NC

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Monitoring Well	Date	1,4-Dichlorobenzene	
		Result	Conc.
<b>MW-12S</b>			
MW-12S	01/12/15	0.5 L	0.25
MW-12S	04/20/15	0.5 L	0.25
MW-12S	07/30/15	0.5 L	0.25
MW-12S	10/13/15	0.5 L	0.25
MW-12S	01/14/16	0.5 L	0.25
MW-12S	04/19/16	0.7	0.73
MW-12S	07/06/16	0.5 L	0.25
MW-12S	10/12/16	0.5 L	0.25
MW-12S	01/19/17	0.5 L	0.25
MW-12S	07/10/17	0.5 L	0.25
MW-12S	01/09/18	0.5 L	0.25
MW-12S	08/28/18	0.5 L	0.25
No. Analyzed		12	
No. Detect		1	
Minimum conc.			0.25
Maximum conc.			0.73
Average conc.			0.29
Distribution			NC
UCL 95			NC
<b>MW-12D</b>			
MW-12D	01/07/14	0.5 L	0.25
MW-12D	07/11/14	0.5 L	0.25
MW-12D	10/30/14	0.5 L	0.25
MW-12D	01/12/15	0.5 L	0.25
MW-12D	04/20/15	0.5 L	0.25
MW-12D	07/30/15	0.5 L	0.25
MW-12D	10/13/15	0.5 L	0.25
MW-12D	01/14/16	0.5 L	0.25
MW-12D	04/19/16	0.5 L	0.25
MW-12D	07/06/16	0.5 L	0.25
MW-12D	10/12/16	0.5 L	0.25
MW-12D	01/19/17	0.5 L	0.25
MW-12D	07/10/17	0.5 L	0.25
MW-12D	01/09/18	0.5 L	0.25
MW-12D	08/28/18	0.5 L	0.25
No. Analyzed		15	
No. Detect		0	
Minimum conc.			0.25
Maximum conc.			0.25
Average conc.			0.25
Distribution			NC
UCL 95			NC

**Statistical Summary of Groundwater Data - Volatile Organic Compounds  
2018 Annual Monitoring Report  
Hidden Valley Landfill, Pierce County, Washington**

Monitoring Well	Date	1,4-Dichlorobenzene	
		Result	Conc.
<b>MW-13S</b>			
MW-13S	01/06/14	0.5 L	0.25
MW-13S	04/09/14	0.5 L	0.25
MW-13S	07/08/14	0.5 L	0.25
MW-13S	10/29/14	0.5 L	0.25
MW-13S	01/12/15	0.5 L	0.25
MW-13S	04/20/15	0.5 L	0.25
MW-13S	07/30/15	0.5 L	0.25
MW-13S	10/13/15	0.5 L	0.25
MW-13S	01/13/16	0.5 L	0.25
MW-13S	04/19/16	0.5 L	0.25
MW-13S	07/06/16	0.5 L	0.25
MW-13S	10/11/16	0.5 L	0.25
MW-13S	01/18/17	0.5 L	0.25
MW-13S	07/10/17	0.5 L	0.25
MW-13S	01/08/18	0.5 L	0.25
MW-13S	08/28/18	0.5 L	0.25
No. Analyzed		16	
No. Detect		0	
Minimum conc.			0.25
Maximum conc.			0.25
Average conc.			0.25
Distribution			NC
UCL 95			NC

**Statistical Summary of Groundwater Data - Volatile Organic Compounds  
2018 Annual Monitoring Report  
Hidden Valley Landfill, Pierce County, Washington**

Monitoring Well	Date	1,4-Dichlorobenzene	
		Result	Conc.
<b>MW-13D</b>			
MW-13D	01/06/14	0.5 L	0.25
MW-13D	04/07/14	0.5 L	0.25
MW-13D	07/08/14	0.5 L	0.25
MW-13D	10/29/14	0.5 L	0.25
MW-13D	01/12/15	0.5 L	0.25
MW-13D	04/20/15	0.5 L	0.25
MW-13D	07/30/15	0.5 L	0.25
MW-13D	10/13/15	0.5 L	0.25
MW-13D	01/13/16	0.5 L	0.25
MW-13D	04/19/16	0.5 L	0.25
MW-13D	07/06/16	0.5 L	0.25
MW-13D	10/10/16	0.5 L	0.25
MW-13D	01/18/17	0.5 L	0.25
MW-13D	07/10/17	0.5 L	0.25
MW-13D	01/08/18	0.5 L	0.25
MW-13D	08/28/18	0.5 L	0.25
No. Analyzed		16	
No. Detect		0	
Minimum conc.			0.25
Maximum conc.			0.25
Average conc.			0.25
Distribution			NC
UCL 95			NC

**Statistical Summary of Groundwater Data - Volatile Organic Compounds  
2018 Annual Monitoring Report  
Hidden Valley Landfill, Pierce County, Washington**

Monitoring Well	Date	1,4-Dichlorobenzene	
		Result	Conc.
<b>MW-15S</b>			
MW-15S	01/07/14	0.5 L	0.25
MW-15S	07/09/14	0.5 L	0.25
MW-15S	10/28/14	0.5 L	0.25
MW-15S	01/12/15	0.5 L	0.25
MW-15S	04/20/15	0.5 L	0.25
MW-15S	07/30/15	0.5 L	0.25
MW-15S	10/13/15	0.5 L	0.25
MW-15S	01/13/16	0.5 L	0.25
MW-15S	04/18/16	0.5 L	0.25
MW-15S	07/06/16	0.5 L	0.25
MW-15S	10/10/16	0.5 L	0.25
MW-15S	01/17/17	0.5 L	0.25
MW-15S	07/10/17	0.5 L	0.25
MW-15S	01/08/18	0.5 L	0.25
MW-15S	08/27/18	0.5 L	0.25
No. Analyzed		15	
No. Detect		0	
Minimum conc.			0.25
Maximum conc.			0.25
Average conc.			0.25
Distribution			NC
UCL 95			NC

**Statistical Summary of Groundwater Data - Volatile Organic Compounds  
2018 Annual Monitoring Report  
Hidden Valley Landfill, Pierce County, Washington**

Monitoring Well	Date	1,4-Dichlorobenzene	
		Result	Conc.
<b>MW-17S</b>			
MW-17S	01/09/14	0.5 L	0.25
MW-17S	04/08/14	0.5 L	0.25
MW-17S	07/08/14	0.5 L	0.25
MW-17S	10/28/14	0.5 L	0.25
MW-17S	01/12/15	0.5 L	0.25
MW-17S	04/20/15	0.5 L	0.25
MW-17S	07/30/15	0.5 L	0.25
MW-17S	10/13/15	0.5 L	0.25
MW-17S	01/12/16	0.5 L	0.25
MW-17S	04/19/16	0.5 L	0.25
MW-17S	07/06/16	0.5 L	0.25
MW-17S	10/13/16	0.5 L	0.25
MW-17S	01/17/17	0.5 L	0.25
MW-17S	07/11/17	0.5 L	0.25
MW-17S	01/08/18	0.5 L	0.25
MW-17S	08/27/18	0.5 L	0.25
No. Analyzed		16	
No. Detect		0	
Minimum conc.			0.25
Maximum conc.			0.25
Average conc.			0.25
Distribution			NC
UCL 95			NC

**Statistical Summary of Groundwater Data - Volatile Organic Compounds  
2018 Annual Monitoring Report  
Hidden Valley Landfill, Pierce County, Washington**

Monitoring Well	Date	1,4-Dichlorobenzene	
		Result	Conc.
<b>MW-18S</b>			
MW-18S	01/09/14	0.5 L	0.25
MW-18S	07/09/14	0.5 L	0.25
MW-18S	10/27/14	0.5 L	0.25
MW-18S	01/12/15	0.5 L	0.25
MW-18S	04/20/15	0.5 L	0.25
MW-18S	07/30/15	0.5 L	0.25
MW-18S	10/13/15	0.5 L	0.25
MW-18S	01/11/16	0.5 L	0.25
MW-18S	04/19/16	0.5 L	0.25
MW-18S	07/06/16	0.5 L	0.25
MW-18S	10/11/16	0.5 L	0.25
MW-18S	01/17/17	0.5 L	0.25
MW-18S	07/13/17	0.5 L	0.25
MW-18S	01/10/18	0.5 L	0.25
MW-18S	08/29/18	0.5 L	0.25
No. Analyzed		15	
No. Detect		0	
Minimum conc.			0.25
Maximum conc.			0.25
Average conc.			0.25
Distribution			NC
UCL 95			NC

**Statistical Summary of Groundwater Data - Volatile Organic Compounds  
2018 Annual Monitoring Report  
Hidden Valley Landfill, Pierce County, Washington**


Monitoring Well	Date	1,4-Dichlorobenzene	
		Result	Conc.
<b>FMMW-2</b>			
FMMW-2	01/08/14	0.5 L	0.25
FMMW-2	04/08/14	0.5 L	0.25
FMMW-2	07/09/14	0.5 L	0.25
FMMW-2	10/28/14	0.5 L	0.25
FMMW-2	01/12/15	0.5 L	0.25
FMMW-2	04/20/15	0.5 L	0.25
FMMW-2	07/30/15	0.5 L	0.25
FMMW-2	10/13/15	0.5 L	0.25
FMMW-2	01/11/16	0.5 L	0.25
FMMW-2	04/20/16	0.5 L	0.25
FMMW-2	07/05/16	0.5 L	0.25
FMMW-2	10/11/16	0.5 L	0.25
FMMW-2	01/18/17	0.5 L	0.25
FMMW-2	07/12/17	0.5 L	0.25
FMMW-2	01/10/18	0.5 L	0.25
FMMW-2	08/28/18	0.5 L	0.25
No. Analyzed		16	
No. Detect		0	
Minimum conc.			0.25
Maximum conc.			0.25
Average conc.			0.25
Distribution			NC
UCL 95			NC
Notes:			
No data available for MW-12S in 2014			
L = below the method reporting limit (MRL)			
ND = not detected			
NC = not calculated due to less than 50 percent detection frequency or historically no detections.			
Calculations use one-half the MRL for non-detected parameters.			



**Statistical Summary of Groundwater Data - Volatile Organic Compounds  
2018 Annual Monitoring Report  
Hidden Valley Landfill, Pierce County, Washington**

Monitoring Well	Date	1,4-Dichlorobenzene		Tetrachloroethene (PCE)	
		Result	Conc.	Result	Conc.
<b>MW-11D(2)</b>					
MW-11D(2)	01/08/14	0.5 L	0.25	0.88	0.88
MW-11D(2)	04/08/14	0.5 L	0.25	0.77	0.77
MW-11D(2)	07/08/14	0.5 L	0.25	0.65	0.65
MW-11D(2)	10/27/14	0.5 L	0.25	0.50 L	0.25
MW-11D(2)	01/12/15	0.5 L	0.25	0.67	0.67
MW-11D(2)	04/20/15	0.5 L	0.25	0.50 L	0.25
MW-11D(2)	07/30/15	0.5 L	0.25	0.85	0.85
MW-11D(2)	10/13/15	0.5 L	0.25	0.77	0.77
MW-11D(2)	01/11/16	0.5 L	0.25	0.98	0.98
MW-11D(2)	04/19/16	0.5 L	0.25	0.82	0.82
MW-11D(2)	07/05/16	0.5 L	0.25	0.96	0.96
MW-11D(2)	10/12/16	0.5 L	0.25	0.82	0.82
MW-11D(2)	01/19/17	0.5 L	0.25	1.00	1.00
MW-11D(2)	07/11/17	0.5 L	0.25	0.92	0.92
MW-11D(2)	01/10/18	0.5 L	0.25	0.80	0.80
MW-11D(2)	08/27/18	0.5 L	0.25	0.86	0.86
No. Analyzed		16		16	
No. Detect		0		14	
Minimum conc.			0.25		0.25
Maximum conc.			0.25		1.00
Average conc.			0.25		0.77
Distribution			NC		Neither
UCL 95			NC		1.00*
Notes:					
<b>Bold</b> indicates UCL 95 is greater than Cleanup Level.					
L = below the method reporting limit (MRL)					
ND = indicates not detected					
NC = not calculated due to less than 50 percent detection frequency or historically no detections					
* UCL represents maximum concentration detected because the calculated value was greater than the data sample range or the distribution was neither lognormal nor normal.					
Calculations use half the MRL for non-detected parameters					





Appendix H  
QUARTERLY SITE INSPECTION REPORTS



**Facility Inspection Checklist**  
**Hidden Valley Landfill, Pierce County, Washington**

Name: Alexo Deep

Date: 3/21/2018

Signature: Alexo Deep

Weather: Sunny

Items	Yes	No	Comments
<b>Cover System</b>		✓	
Settlement Depressions (sinkholes)		✓	
Cracking of Cover Soils		✓	
Inadequate Cover Soil or Rock		✓	
Standing Water		✓	
<b>Vegetation</b>			
Bare or Sparsely Vegetated Areas		✓	
Areas of Dying Vegetation		✓	
Large Root Vegetation (ex. Bushes)		✓	
<b>Stormwater Conveyance System</b>			
Ditch Obstructions or Flat Areas		✓	
Culvert Obstructions		✓	
Catch Basin Debris or Silt Accumulation		✓	
Stormwater Basin Debris or Silt	✓		some silt runoff
<b>Cover Erosion</b>			
Gullies and/or Erosion Scars		✓	
Presence of Seeps		✓	
<b>Vector Control</b>			
Evidence of Ground Burrows		✓	
<b>Leachate Collection &amp; Leak Detection Systems</b>			
Piping or Valve Issues		✓	
Pump or Meter Issues		✓	
Foaming at Pump		✓	

**Other Remarks:**

# Facility Inspection Checklist

Hidden Valley Landfill, Pierce County, Washington

Name: Alexo Deep & Travis Randa Date: 5/21/18

Signature: Alexo Deep Weather: Overcast

Items	Yes	No	Comments
<b>Cover System</b>			
Settlement Depressions (sinkholes)		X	
Cracking of Cover Soils		X	
Inadequate Cover Soil or Rock		X	
Standing Water		X	
<b>Vegetation</b>			
Bare or Sparsely Vegetated Areas		X	
Areas of Dying Vegetation		X	
Large Root Vegetation (ex. Bushes)	X		bushes & trees along SW closure area & W closure area
<b>Stormwater Conveyance System</b>			
Ditch Obstructions or Flat Areas		X	
Culvert Obstructions		X	
Catch Basin Debris or Silt Accumulation		X	
Stormwater Basin Debris or Silt	X		some silt runoff in SW basin / pond near 6P10
<b>Cover Erosion</b>			
Gullies and/or Erosion Scars		X	
Presence of Seeps		X	
<b>Vector Control</b>			
Evidence of Ground Burrows		X	
<b>Leachate Collection &amp; Leak Detection Systems</b>			
Piping or Valve Issues		X	
Pump or Meter Issues	X		see condensa bc sump inspection form
Foaming at Pump		X	

Other Remarks:

# Facility Inspection Checklist

Hidden Valley Landfill, Pierce County, Washington

Name: Alexa Deep

Date: 8/29/18 - 8/30/18

Signature: Alexa Deep

Weather: sunny

Items	Yes	No	Comments
<b>Cover System</b>			
Settlement Depressions (sinkholes)		X	
Cracking of Cover Soils		X	
Inadequate Cover Soil or Rock		X	
Standing Water		X	
<b>Vegetation</b>			
Bare or Sparsely Vegetated Areas		X	
Areas of Dying Vegetation		X	
Large Root Vegetation (ex. Bushes)		X	
<b>Stormwater Conveyance System</b>			
Ditch Obstructions or Flat Areas		X	
Culvert Obstructions		X	
Catch Basin Debris or Silt Accumulation		X	
Stormwater Basin Debris or Silt		X	dmj
<b>Cover Erosion</b>			
Gullies and/or Erosion Scars		X	
Presence of Seeps		X	
<b>Vector Control</b>			
Evidence of Ground Burrows		X	
<b>Leachate Collection &amp; Leak Detection Systems</b>			
Piping or Valve Issues		X	
Pump or Meter Issues	X		see condensate sump inspection form
Foaming at Pump		X	

Other Remarks:

# Facility Inspection Checklist

## Hidden Valley Landfill, Pierce County, Washington

Name: Travis Berndahl

Date: 11/27/18 - 11/28/18


Signature: 

Weather: Sunny

Items	Yes	No	Comments
<b>Cover System</b>			
Settlement Depressions (sinkholes)		X	
Cracking of Cover Soils		X	
Inadequate Cover Soil or Rock		X	
Standing Water		X	
<b>Vegetation</b>			
Bare or Sparsely Vegetated Areas		X	
Areas of Dying Vegetation		X	
Large Root Vegetation (ex. Bushes)		X	
<b>Stormwater Conveyance System</b>			
Ditch Obstructions or Flat Areas		X	
Culvert Obstructions		X	
Catch Basin Debris or Silt Accumulation		X	
Stormwater Basin Debris or Silt		X	
<b>Cover Erosion</b>			
Gullies and/or Erosion Scars		X	
Presence of Seeps		X	
<b>Vector Control</b>			
Evidence of Ground Burrows		X	
<b>Leachate Collection &amp; Leak Detection Systems</b>			
Piping or Valve Issues		X	
Pump or Meter Issues	X		See Condensate Sump Inspection Form
Foaming at Pump		X	

Other Remarks:





Appendix I  
LANDFILL GAS SYSTEM O&M REPORTS



# Hidden Valley Landfill LFG System Monitoring & Maintenance

January 30 and 31, 2018

## MAINTENANCE ITEMS COMPLETED THIS MONTH:

- Performed monthly LFG extraction well monitoring on January 30 and 31, 2018.

## LANDFILL FLARE STATION

### Before system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
1/30/2018 11:02	31.2	23	1.5	44.3	247	247	29.65
1/31/2018 9:59	33.8	23.9	1.9	40.4	216	216	29.7

### After system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
1/30/2018 17:36	34.8	24.6	1.7	38.9	220	220	29.68
1/31/2018 13:18	37.8	24.9	1.7	36.1	204	204	29.7

## Barometric Pressure Trend for January 2018



**Source:** KPLU

[https://www.wunderground.com/history/airport/KPLU/2018/1/30/MonthlyHistory.html?req\\_city=Puyallup&req\\_state=WA&req\\_statename=&reqdb.zip=98375&reqdb.magic=5&reqdb.wmo=99999](https://www.wunderground.com/history/airport/KPLU/2018/1/30/MonthlyHistory.html?req_city=Puyallup&req_state=WA&req_statename=&reqdb.zip=98375&reqdb.magic=5&reqdb.wmo=99999)

# Hidden Valley Landfill

## LFG System Monitoring & Maintenance

February 7, 14, and 15, 2018

### MAINTENANCE ITEMS COMPLETED THIS MONTH:

- Performed monthly LFG extraction well monitoring on February 14 and 15, 2018.
- Completed the following repairs on February 7, 2018:
  - Replaced 8-inch LFG hose on header at N-3.
  - Replaced 3-inch LFG hose on lateral at N-3.
  - Replaced 12-inch LFG hose on header at N-4.
  - Replaced 3-inch LFG hose and 2-inch valve at N-4 wellhead.
  - Replaced 12-inch LFG hose on header at N-15.
  - Replaced 3-inch LFG hose on lateral and damaged 3-inch coupler at E-39.
  - Replaced 3-inch LFG hose and 2-inch valve at N-48.
  - Installed a 6-inch LFG hose on header at E-7.

### LANDFILL FLARE STATION

#### Before system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
4/27/2018 7:14	32.9	22.3	2.8	42	192	192	29.37
4/30/2018 8:23	32.1	22.5	1.8	43.6	258	258	29.63

#### After system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
4/27/2018 12:30	39.2	24.3	1.4	35.1	270	270	29.35
4/30/2018 12:20	34.3	22.8	2.2	40.7	219	219	29.59

### Photo Log



**Before 6-in Hose Installation at E-7**



**After 6-in Hose Installation at E-7**



**Before 4-in Lateral Installation at E-39**



**After 4-in Lateral Installation at E-39**



**Before 12-in Lateral Installation at E-39**



**After 12-in Lateral Installation at E-39**



**Before Hose Replacement at N-3**



**After Hose Replacement at N-3**





**Before Hose Replacement at N-3**



**After Hose Replacement at N-3**



**Before Hose Replacement at N-4**



**After Hose Replacement at N-4**



**Before Well Head Replacement at N-4**



**After Well Head Replacement at N-4**



**Before Hose Replacement at N-15**



**After Hose Replacement at N-15**

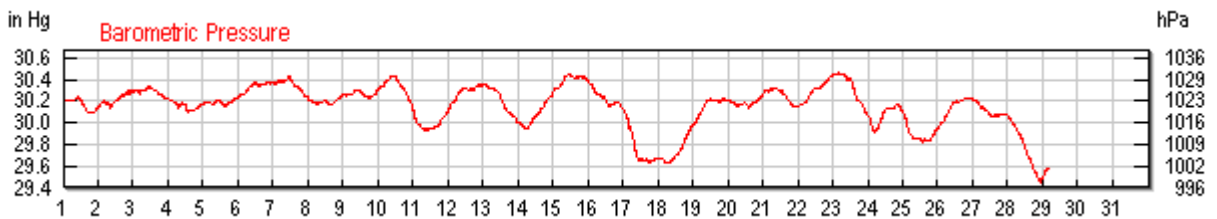


**Before Hose and Valve Replacement at N-48**



**After Hose and Valve Replacement at N-48**

**Barometric Pressure Trend for February 2018**



**Source:** KPLU

[https://www.wunderground.com/history/airport/KPLU/2018/2/14/MonthlyHistory.html?req\\_city=Puyallup&req\\_state=WA&req\\_statename=&reqdb.zip=98375&reqdb.magic=5&reqdb.wmo=99999](https://www.wunderground.com/history/airport/KPLU/2018/2/14/MonthlyHistory.html?req_city=Puyallup&req_state=WA&req_statename=&reqdb.zip=98375&reqdb.magic=5&reqdb.wmo=99999)



# Hidden Valley Landfill LFG System Monitoring & Maintenance

March 15, 16, and 22, 2018

## MAINTENANCE ITEMS COMPLETED THIS MONTH:

- Performed monthly LFG extraction well monitoring on March 15 and 16, 2018.
- The following maintenance activities were performed:
  - Increased flare operating temperature set point from 1,425 °F to 1,475 °F.
  - Changed flare alarm set point to 1,425 °F.
  - Increased flare shutdown temperature from 1,000 °F to 1,400 °F.
  - Adjusted extraction well EW-64A to help with methane detections in gas probe GP-13.

## LANDFILL FLARE STATION

### Before system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
3/15/2018 9:53	29.8	20.8	3.5	45.9	251	251	29.23
3/16/2018 9:11	32.0	21.0	4.2	42.8	172	172	29.30

### After system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
3/15/2018 16:38	36.2	22.4	2.8	38.6	182	182	29.15
3/16/2018 10:38	36.8	23.4	2.4	37.4	201	201	29.27

## Barometric Pressure Trend for March 2018



**Source:** KPLU

[https://www.wunderground.com/history/airport/KPLU/2018/3/15/MonthlyHistory.html?req\\_city=Puyallup&req\\_state=WA&req\\_statename=&reqdb.zip=98375&reqdb.magic=5&reqdb.wmo=99999](https://www.wunderground.com/history/airport/KPLU/2018/3/15/MonthlyHistory.html?req_city=Puyallup&req_state=WA&req_statename=&reqdb.zip=98375&reqdb.magic=5&reqdb.wmo=99999)



# Hidden Valley Landfill LFG System Monitoring & Maintenance

April 13, 27, and 30, 2018

## MAINTENANCE ITEMS COMPLETED THIS MONTH:

- Performed system shutdown and startup test on April 13, 2018.
- Performed monthly extraction well monitoring on April 27 and 30, 2018.

## LANDFILL FLARE STATION

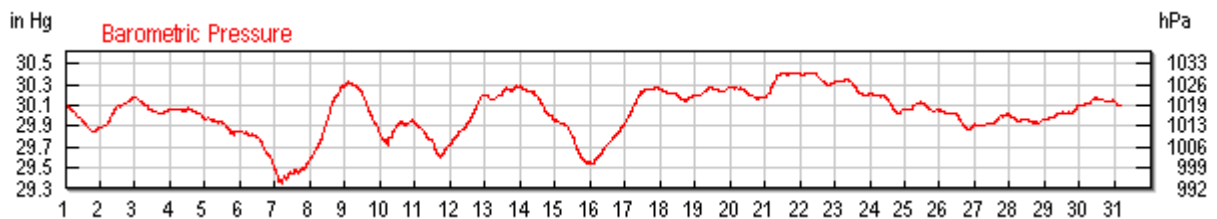
### Before system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
4/27/2018 7:14	32.9	22.3	2.8	42.0	192	192	29.37
4/30/2018 8:23	32.1	22.5	1.8	43.6	258	258	29.63

### After system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
4/27/2018 12:30	39.2	24.3	1.4	35.1	270	270	29.35
4/30/2018 12:20	34.3	22.8	2.2	40.7	219	219	29.59

## Barometric Pressure Trend for April 2018



**Source:** KPLU

<https://www.wunderground.com/history/airport/KPLU/2018/4/30/MonthlyHistory.html?&reqdb.zip=&reqdb.magic=&reqdb.wmo=>

# Hidden Valley Landfill LFG System Monitoring & Maintenance

May 15, 17, and 18, 2018

## MAINTENANCE ITEMS COMPLETED THIS MONTH:

- Performed monthly extraction well monitoring on May 15<sup>th</sup>, 17<sup>th</sup>, and 18<sup>th</sup>.

## LANDFILL FLARE STATION

### Before system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
5/15/2018 9:01	31.8	21.8	2.5	43.9	219	219	29.42
5/17/2018 12:40	35.0	23.3	3.1	38.6	150	150	29.52
5/18/2018 7:22	34.0	23.3	3.3	39.4	160	160	29.50

### After system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
5/15/2018 15:15	37.7	24.7	2.2	35.4	150	150	29.29
5/18/2018 8:25	32.7	22.5	4.1	40.7	175	175	29.49

## Barometric Pressure Trend for May 2018



**Source:** KPLU

<https://www.wunderground.com/history/airport/KPLU/2018/5/31/MonthlyHistory.html?&reqdb.zip=&reqdb.magic=&reqdb.wmo=>

# Hidden Valley Landfill LFG System Monitoring & Maintenance

June 27 and 28, 2018

## MAINTENANCE ITEMS COMPLETED THIS MONTH:

- Performed monthly extraction well monitoring on June 27<sup>th</sup> and 28<sup>th</sup>.

## LANDFILL FLARE STATION

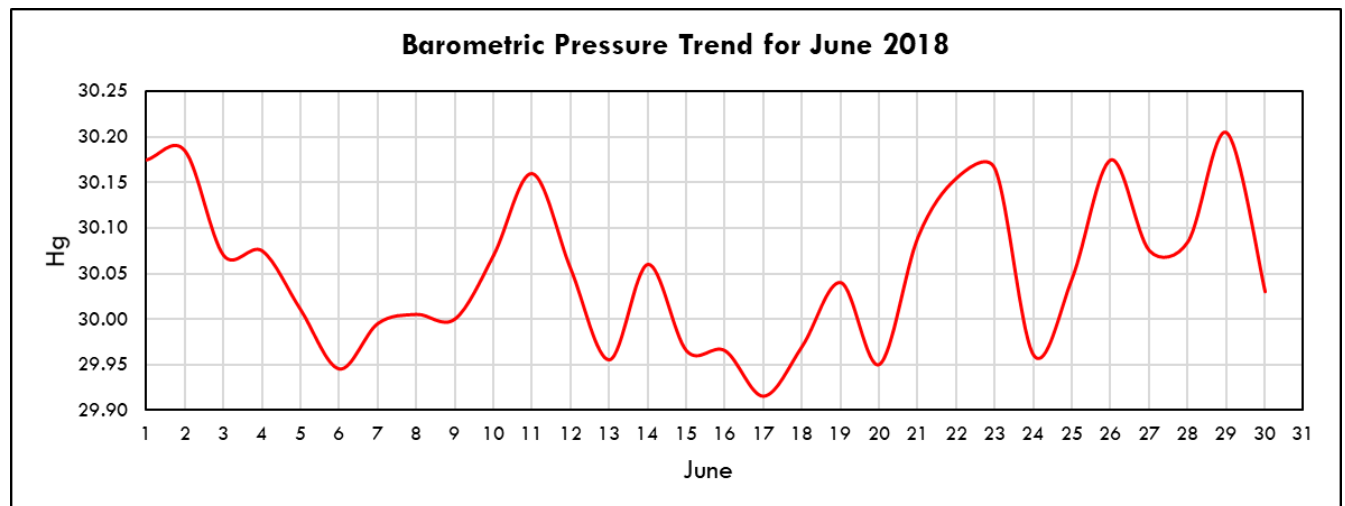
### Before system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
6/27/2018 11:38	30.4	21.8	3.7	44.1	180	180	29.48
6/28/2018 6:24	36.1	23.9	3.2	36.8	226	226	29.54

### After system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
6/27/2018 15:03	38.2	26	1.7	34.1	226	226	29.39
6/28/2018 11:20	43	25.3	1.8	29.9	226	226	29.47

## Barometric Pressure Trend for June 2018



Source: KPLU

<https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2018-6-28>

# Hidden Valley Landfill

## LFG System Monitoring & Maintenance

July 11, 12, and 13, 2018

### MAINTENANCE ITEMS COMPLETED THIS MONTH:

- Performed monthly extraction well monitoring on July 11<sup>th</sup>, 12<sup>th</sup>, and 13<sup>th</sup>.
- Removed vegetation at E18
- Completed the following repairs on July 11<sup>th</sup>, 2018
  - Replaced 12" x 36" hose at N12
- Completed the following repairs on July 12<sup>th</sup>, 2018
  - Connected 3-in lateral that separated N29
  - Rebuilt well head damaged by mowing at E9A
  - Repaired damaged 3-in PVC T at E22
  - Replaced damaged 3-in LFG Hose at N25
- Completed the following repairs on July 13<sup>th</sup>, 2018
  - Rebuilt Well Head at E16 damaged during mowing

### LANDFILL FLARE STATION

#### Before system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
7/12/2018 10:38	35.6	23.5	2.0	38.9	206	206	29.51
7/13/2018 7:58	34.3	22	4.9	38.8	134	134	29.52

#### After system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
7/11/2018 16:36	28.6	19.3	4.8	47.3	236	236	29.44
7/12/2018 17:03	39.7	24.2	2.5	33.6	130	130	29.34
7/13/2018 9:19	42.2	26.2	2.1	29.5	163	163	29.46

### Photo Log



Before 12-in x 36-in Hose Installation at N12



After 12-in x 36-in Hose Installation at N12





Before E9A Well Head Repairs



After E9A Well Head Repairs



Before Repaired 3-in PVC T at E22



After Repaired 3-in PVC T at E22



Before Replaced 3-in LFG Hose at N25



After Replaced 3-in LFG Hose at N25



Before Well Head at E16 Repair

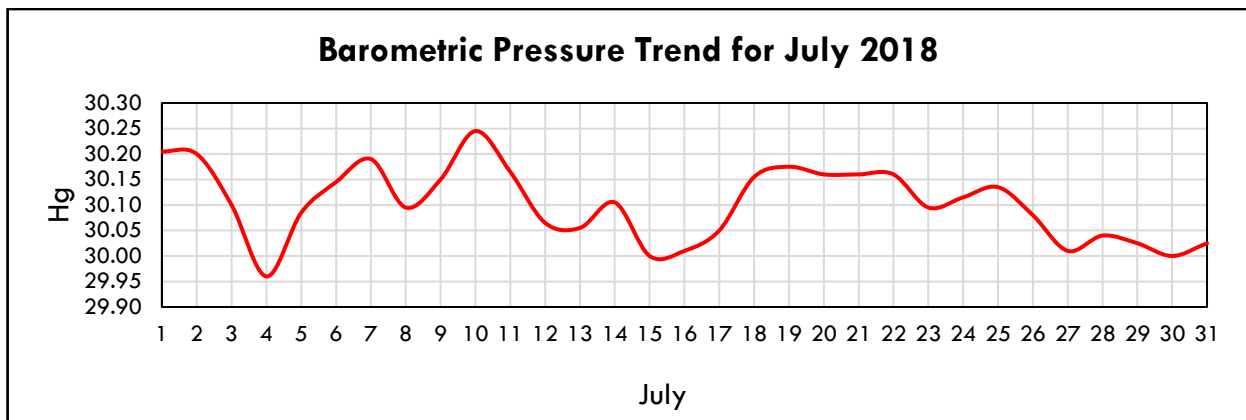


After Well Head at E16 Repair



Before Vegetation was removed at E18

Barometric Pressure Trend for July 2018



Source : KPLU

<https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2018-7-26>



# Hidden Valley Landfill

## LFG System Monitoring & Maintenance

August 29<sup>th</sup> and 30<sup>th</sup>, 2018

### MAINTENANCE ITEMS COMPLETED THIS MONTH:

- Performed monthly extraction well monitoring on August 29<sup>th</sup> and 30<sup>th</sup>, 2018.
- Shutdown the flare on August 30<sup>th</sup> for the following LFG repairs:
  - Rebuilt wellhead at N-12
  - Replaced damaged hoses and valve at E-13

### LANDFILL FLARE STATION

#### Before system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
8/29/2018 8:44	29.8	19.7	5.5	45.0	205	205	29.32
8/29/2018 8:48	30.0	19.7	5.5	44.8	205	205	29.36
8/30/2018 6:45	34.8	22.5	2.5	40.2	245	245	29.41

#### After system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
8/29/2018 15:04	37.0	23.2	1.9	37.9	238	238	29.30
8/30/2018 14:47	38.9	23.1	1.7	36.3	266	266	29.47

### Photo Log



Repairs at E-13



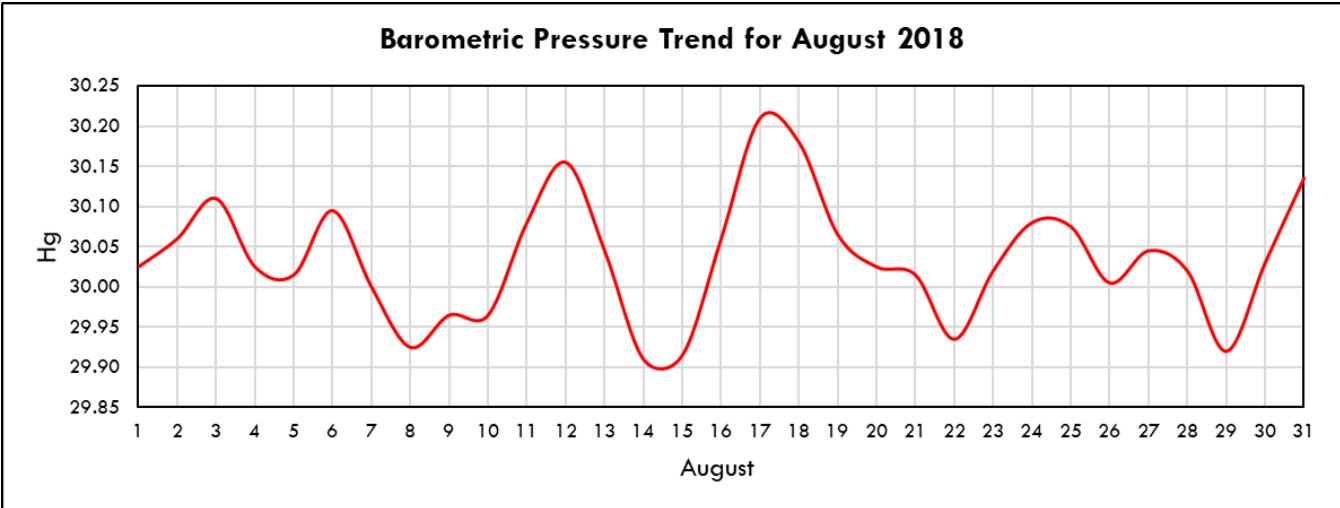
N-12 Before Repairs



N-12 After Repairs



Barometric Pressure Trend for August 2018



Source: KPLU  
<https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2018-8-29>

# Hidden Valley Landfill LFG System Monitoring & Maintenance

September 25<sup>th</sup> and 28<sup>th</sup>, 2018

## MAINTENANCE ITEMS COMPLETED THIS MONTH:

- Performed monthly extraction well monitoring on September 25<sup>th</sup> and 28<sup>th</sup>, 2018.

## LANDFILL FLARE STATION

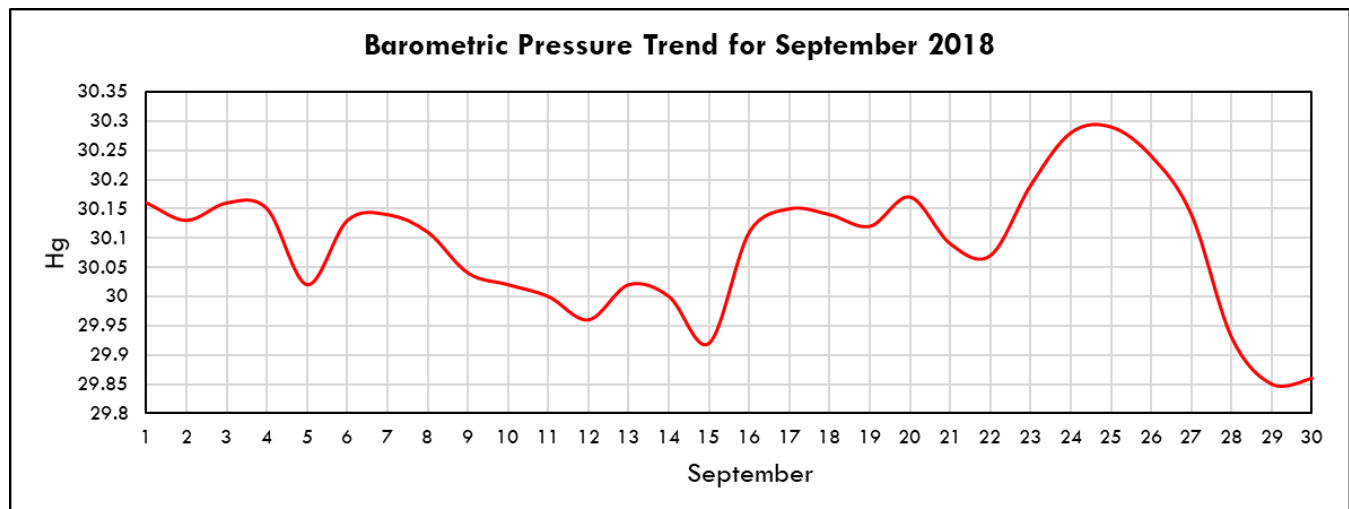
### Before system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
9/25/2018 8:30	29.6	19.8	4.2	46.4	272	272	29.69
9/28/2018 9:06	33.9	20.6	2.4	43.1	238	238	29.28

### After system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
9/25/2018 11:40	33.3	22.2	2.9	41.6	240	240	29.71
9/28/2018 12:33	41.7	25.2	1.3	31.8	250	250	29.26

## Barometric Pressure Trend for September 2018



Source: KPLU

<https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2018-9-25>

# Hidden Valley Landfill LFG System Monitoring & Maintenance

October 11 and 12, 2018

## MAINTENANCE ITEMS COMPLETED THIS MONTH:

- Performed monthly extraction well monitoring on October 11 and 12, 2018

## LANDFILL FLARE STATION

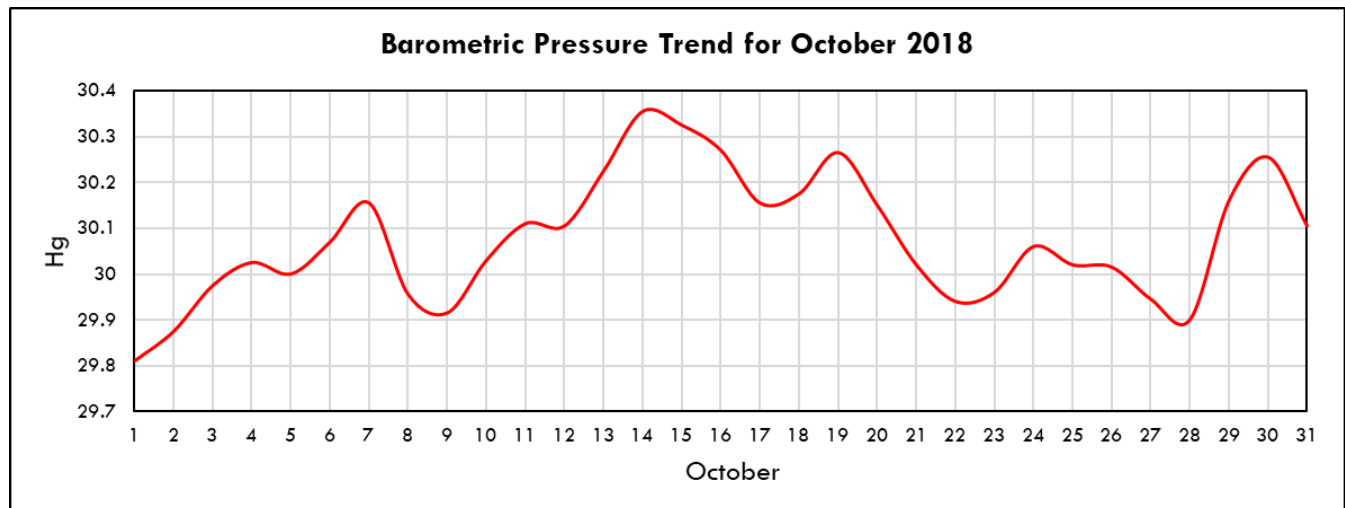
### Before system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
10/11/2018 11:52	32.8	24.1	1.9	41.2	242	242	29.57
10/12/2018 6:43	33.8	22.5	3.6	40.1	231	231	29.55

### After system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
10/11/2018 16:00	34.6	25.0	1.7	38.7	220	220	29.49
10/12/2018 11:42	43.3	25.5	2.4	28.8	193	193	29.53

## Barometric Pressure Trend for October 2018



Source: KPLU

<https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2018-10-24>

# Hidden Valley Landfill

## LFG System Monitoring & Maintenance

November 16<sup>th</sup> and 28<sup>th</sup>, 2018

### MAINTENANCE ITEMS COMPLETED THIS MONTH:

- Performed monthly extraction well monitoring on November 16<sup>th</sup> and 28<sup>th</sup>
- Completed the following LFG system repairs:
  - Replaced LFG hose at E-7
  - Replaced LFG Hose at N-37

### LANDFILL FLARE STATION

#### Before system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
11/16/2018 7:52	28.4	17.4	7.7	46.5	230	230	29.64
11/28/2018 8:48	35.2	24.0	3.0	37.8	215	215	29.19

#### After system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
11/16/2018 11:28	39.2	24.6	2.5	33.7	222	222	29.66

### Photo Log



Before Hose Replacement at E-7



After Hose Replacement at E-7



Before Hose Replacement at N-37

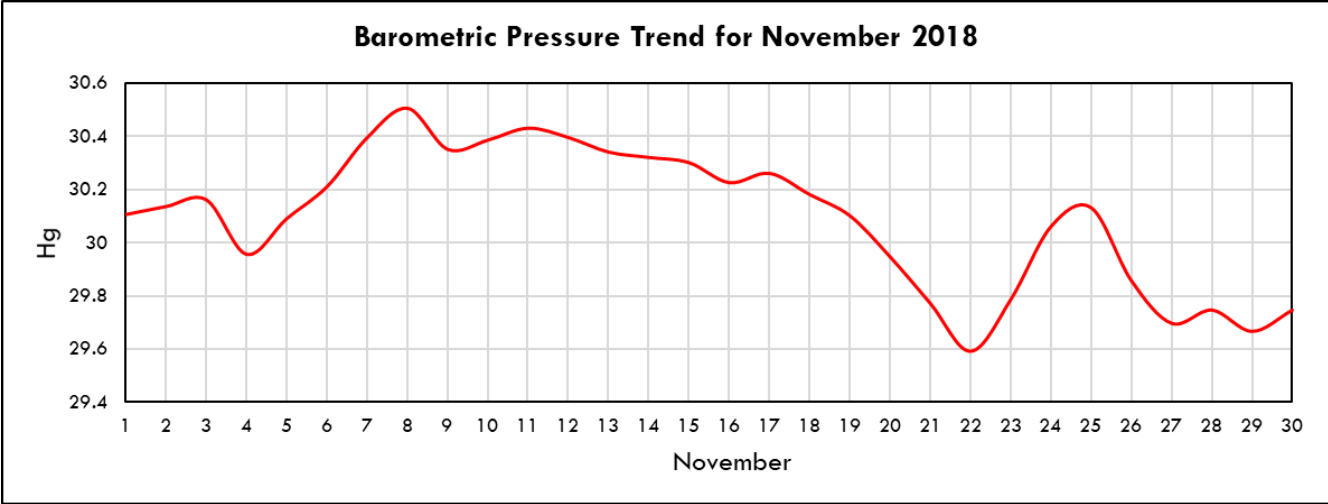


Before Hose Replacement at N-37



After Hose Replacement at N-37

Barometric Pressure Trend for November 2018



Source: KPLU

<https://www.wunderground.com/history/monthly/us/wa/puyallup/KPLU/date/2018-11>



# Hidden Valley Landfill

## LFG System Monitoring & Maintenance

December 20<sup>th</sup> and 21<sup>st</sup>, 2018

### MAINTENANCE ITEMS COMPLETED THIS MONTH:

- Performed monthly extraction well monitoring on December 20th and 21st
- Completed the following LFG system repairs:
  - Replaced LFG hose and gate valve at N-23
  - Replaced LFG hose and gate valve at N-65

### LANDFILL FLARE STATION

#### Before system maintenance

Date & Time	CH <sub>4</sub>	CO <sub>2</sub>	O <sub>2</sub>	Balance	Init. Flow	Adj. Flow	Baro. Press.
	%	%	%	%	SCFM	SCFM	inches Hg
12/20/2018 8:44	35.8	22.9	1.3	40	231	231	29.06
12/21/2018 7:35	34.6	20.5	4.1	40.8	222	222	29.61

#### After system maintenance

Date & Time	CH <sub>4</sub>	CO <sub>2</sub>	O <sub>2</sub>	Balance	Init. Flow	Adj. Flow	Baro. Press.
	%	%	%	%	SCFM	SCFM	inches Hg
12/20/2018 14:46	40	24.8	1.5	33.7	207	207	29.32
12/21/2018 11:50	40.1	24.7	2	33.2	196	196	29.66

### Photo Log



Before Hose and Valve Replacement at N-23



After Replacement at N-23



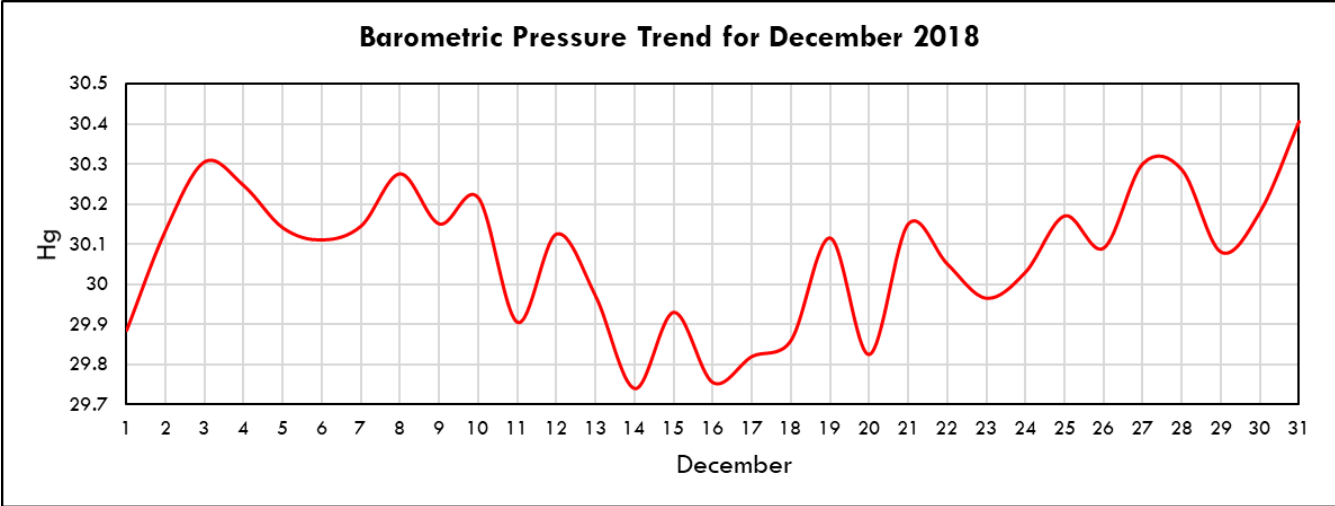
Before Hose and Valve Replacement at N-65



After Hose and Valve Replacement at N-65



Barometric Pressure Trend for December 2018



Source: KPLU

<https://www.wunderground.com/history/monthly/us/wa/puyallup/KPLU/date/2018-12>

**Condensate Recirculation Inspection Checklist**  
**Hidden Valley Landfill, Pierce County, Washington**

Name: Alexa Deep

Date: 3/21/2018

Signature: Alexa Deep

Weather: Sunny

**Instructions:** Inspect each sump for pump operation and measure condensate fluid level, which should be below the overflow drainage pipe. Note any unusual observations such as soil staining or air leaks in the comments section.

Sump	Operation per Design (Y or N)	(1) Depth to Condensate (ft)	(2) Depth to Bottom (ft)	Height of Condensate (ft) = (2) - (1)	Comments
Sump No. 1	Y	—	9.50		dry
Sump No. 2	Y	6.41	8.55	2.14	
Sump No. 3	Y	—	8.99	<del>2.00</del>	dry
Sump No. 4	Y	6.33	8.81	2.48	
Sump No. 5	Y	—	9.88		dry
Sump No. 6	N	6.19	9.65	3.46	
Sump No. 7	Y	7.40	9.43	2.03	
Sump No. 8	Y	—	9.21		dry
Sump No. 9	Y	7.99	9.51	1.52	
Sump No. 10	N	—	9.56		dry
Sump No. 11	Y	7.25	9.53	2.28	

**Other Remarks:**

# Condensate Recirculation Inspection Checklist

Hidden Valley Landfill, Pierce County, Washington

Name: Alexa Deep + Travis Randon

Date: 5/21/18

Signature: Alexa Deep

Weather: Overcast

**Instructions:** Inspect each sump for pump operation and measure condensate fluid level, which should be below the overflow drainage pipe. Note any unusual observations such as soil staining or air leaks in the comments section.

Sump	Operation per Design (Y or N)	(1) Depth to Condensate (ft)	(2) Depth to Bottom (ft)	Height of Condensate (ft) = (2) - (1)	Comments
Sump No. 1	Y	-	9.53	-	dry
Sump No. 2	Y	6.43	8.57	2.14	
Sump No. 3	Y	-	8.91	-	dry
Sump No. 4	Y	6.35	8.63	2.28	
Sump No. 5	Y	-	10.03	-	dry
Sump No. 6	N	6.18	9.57	3.39	
Sump No. 7	Y	7.36	9.29	1.93	
Sump No. 8	Y	-	9.22	-	dry
Sump No. 9	Y	7.90	9.53	1.63	
Sump No. 10	N	-	9.57	-	dry
Sump No. 11	Y	7.24	9.63	2.39	

**Other Remarks:**

**Condensate Recirculation Inspection Checklist**  
**Hidden Valley Landfill, Pierce County, Washington**

Name: Alexa Deep  
 Signature: Alexa Deep

Date: 8/29/18  
 Weather: Sunny

**Instructions:** Inspect each sump for pump operation and measure condensate fluid level, which should be below the overflow drainage pipe. Note any unusual observations such as soil staining or air leaks in the comments section.

Sump	Operation per Design (Y or N)	(1) Depth to Condensate (ft)	(2) Depth to Bottom (ft)	Height of Condensate (ft) = (2) - (1)	Comments
Sump No. 1	Y	—	9.59	—	dry
Sump No. 2	Y	6.39	8.51	2.12	
Sump No. 3	Y	—	9.01	—	dry
Sump No. 4	Y	6.41	8.63	2.22	
Sump No. 5	Y	9.11	10.12	1.01	
Sump No. 6	N	—	—	—	unable to measure due to blockage
Sump No. 7	Y	7.62	9.43	1.81	
Sump No. 8	Y	—	9.23	—	dry
Sump No. 9	Y	7.92	9.54	1.62	
Sump No. 10	N	—	9.40	—	dry
Sump No. 11	Y	7.25	9.63	2.38	

**Other Remarks:**

**Condensate Recirculation Inspection Checklist**  
**Hidden Valley Landfill, Pierce County, Washington**

Name: Travis Berndahl

Date: 11/27/18

Signature: 


Weather: Sunny

**Instructions:** Inspect each sump for pump operation and measure condensate fluid level, which should be below the overflow drainage pipe. Note any unusual observations such as soil staining or air leaks in the comments section.

Sump	Operation per Design (Y or N)	(1) Depth to Condensate (ft)	(2) Depth to Bottom (ft)	Height of Condensate (ft) = (2) - (1)	Comments
Sump No. 1	Y	—	9.49	—	Dry
Sump No. 2	Y	6.36	8.49	2.13	
Sump No. 3	Y	8.92	8.98	0.06	
Sump No. 4	Y	6.31	8.58	2.27	
Sump No. 5	Y	—	10.01	—	Dry
Sump No. 6	N	5.98	9.64	3.66	
Sump No. 7	Y	—	9.21	—	Dry
Sump No. 8	Y	7.26	9.26	2.00	
Sump No. 9	Y	7.91	9.45	1.54	
Sump No. 10	N	—	9.59	—	Dry
Sump No. 11	Y	7.23	9.61	2.38	

**Other Remarks:**





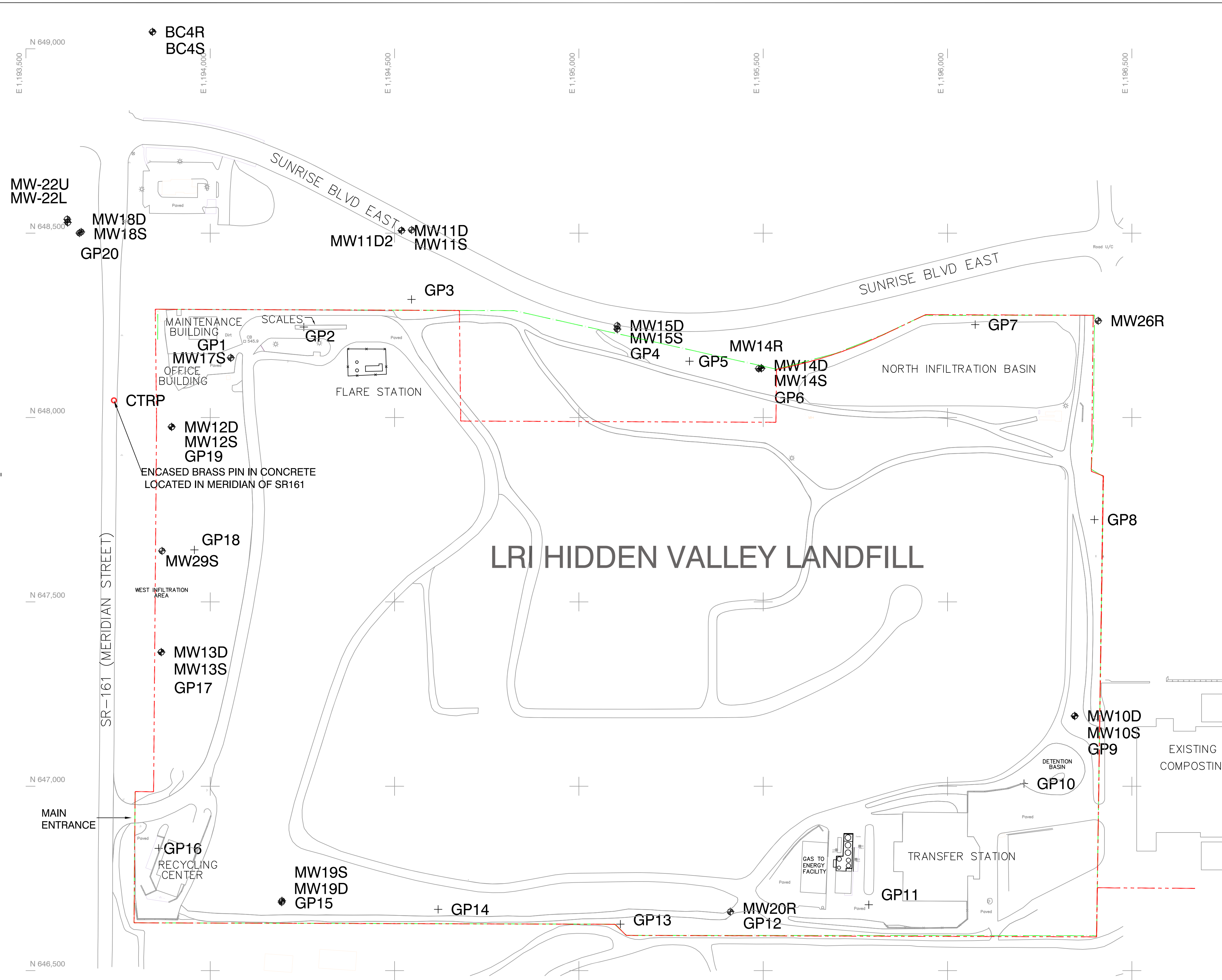
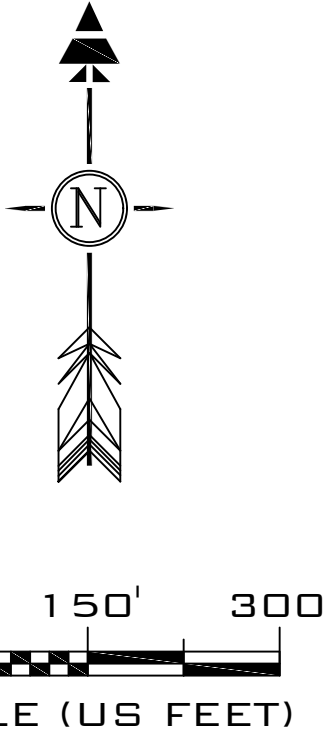
# Appendix J

## Survey Data





I:\ELL HOOD RIVER\LANDFILLS\LRI HIDDEN VALLEY\2018 HVL COORD CONVERSION\AUTOCAD\2018 HVL MW & GP SURVEY - UPDATED 2019 0307.DWG PLOTTED: 3/7/2019 10:58 AM ON ANSI FULL BLEED D (34.00 X 22.00 INCHES)



**COORDINATE POINT TABLE**

Name	Northing	Easting	Probe Elev	Ground Elev
FMMW1	648562.55	1193003.01	546.033	546.533
FMMW2	648895.23	1193385.69	539.957	540.457
MW10D	647190.52	1196345.03	464.088	462.338
MW10S	647190.73	1196344.89	463.648	462.318
MW11D	648507.09	1194518.91	520.102	520.652
MW11D2	648508.66	1194546.26	519.531	517.178
MW11S	648507.24	1194519.12	520.025	520.625
MW12D*	647974.55	1193895.43	493.486	492.326
MW12S*	647974.63	1193895.13	493.406	492.346
MW13D*	647363.75	1193866.97	450.190	449.220
MW13S*	647363.72	1193867.20	452.255	451.285
MW14D	648133.96	1195494.73	481.390	479.190
MW14R	648132.58	1195487.84	480.264	479.474
MW14S	648133.72	1195495.06	481.298	479.178
MW15D	648248.96	1195104.15	509.090	506.640
MW15S	648239.74	1195104.03	506.780	505.680
MW17S	648161.98	1194055.65	555.974	553.714
MW18D	648500.35	1193645.16	541.785	539.885
MW18S	648503.28	1193649.84	541.426	539.226
MW19D	646685.69	1194193.68	489.350	489.350
MW19S	646689.25	1194194.53	489.232	488.732
MW20R	646659.49	1195410.82	472.899	472.099
MW22U	648529.05	1193613.42	549.168	547.368
MW22L	648537.71	1193612.12	548.946	547.546
MW26R	648262.24	1196408.69	485.400	484.540
MW29S*	647638.18	1193869.23	450.654	447.494
BC4R	649045.94	1193843.51	530.312	530.452
BC4S	649045.83	1193843.40	530.246	530.406
GP1	648161.84	1194055.91	556.103	553.693
GP2	648245.44	1194253.78	551.410	550.750
GP3	648320.30	1194545.97	550.891	549.061
GP4	648239.75	1195104.26	506.895	505.695
GP5	648152.72	1195299.97	485.747	483.867
GP6	648133.74	1195495.15	481.762	479.162
GP7	648252.02	1196075.01	475.397	473.267
GP8	647723.24	1196398.40	459.547	457.397
GP9	647190.70	1196345.26	464.549	462.279
GP10	647007.32	1196207.38	463.281	461.781
GP11	646678.68	1195786.35	472.325	472.725
GP12	646659.70	1195410.67	472.923	472.123
GP13	646626.04	1195112.51	469.628	467.498
GP14	646666.21	1194618.14	495.912	494.432
GP15	646689.35	1194194.40	488.549	487.629
GP16	646831.67	1193860.15	472.462	473.012
GP17*	647363.92	1193867.05	453.048	451.228
GP18*	647641.10	1193957.01	446.364	445.104
GP19*	647974.72	1193895.15	493.612	492.252
GP20	648528.93	1193613.07	549.715	547.845
Name	Northing	Easting	Elevation	Description
600	647573.84	1194084.03	491.59	Temp. Point
601	648011.74	1194063.90	525.86	Temp. Point
602	646908.75	1193891.25	472.78	Temp. Point

REV	DATE	DESCRIPTION	DES	DRN	APP

DATE: 3/7/2019

**WASTE CONNECTIONS, INC**  
 HIDDEN VALLEY LANDFILL  
 17925 MERIDIAN STREET EAST  
 PUYALLUP, WASHINGTON 98375  
 GAS PROBES & GROUND WATER MONITORING WELL LOCATIONS

DRAWING NO. **1** OF 1

**NOTES:**

- HORIZONTAL DATUM: WASHINGTON STATE PLANE SOUTH 4602 (NAD83/91).
- VERTICAL DATUM: NAVD88.
- SURVEY PERFORMED BY VISTA GEOENVIRONMENTAL SERVICES ON MARCH 3RD & 4TH, 2018, UPDATED BY HRK ENGINEERING ON MARCH 6TH, 2019.
- BOUNDARY SHOWN IN THIS MAP IS BASED ON PIERCE COUNTY ASSESSOR MAP.
- GAS PROBES AND GROUND WATER MONITORING WELLS WERE SURVEYED ON TOP OF PROTRUDING PVC PIPES INSIDE WELL CASINGS.

**LEGEND:**


- CTRP PIERCE COUNTY SURVEY CONTROL POINT
- + GP13 GAS PROBE
- ⊕ MW29S GROUND WATER MONITORING WELL

APPROVED:

*JAMES T. JONES* 03/07/2019  
PROJECT SURVEYOR, PLS DATE

*KENNETH G. MARCHEBANKS* 03/07/2019  
PROJECT SURVEYOR DATE

**HRK ENGINEERING & FIELD SERVICES**  
 489 N 8TH STREET - SUITE 201  
 HOOD RIVER, OREGON 97031  
 (541) 386-6480  
 PROJECT NO. 19-026



Appendix K  
Lab Reports



## ANALYTICAL REPORT

Job Number: 280-105260-1  
Job Description: Hidden Valley LF

For:  
SCS Engineers  
2405 140th Avenue NE  
Suite 107  
Bellevue, WA 98005-1877  
Attention: Mr. Kevin Lakey

MW-10S  
MW-10D  
MW-13S  
MW-13D  
MW-14S  
MW-14D  
MW-14R  
MW-15S  
MW-15D  
MW-17S  
MW-20R  
MW-26R



Approved for release.  
Betsy A Sara  
Project Manager II  
1/31/2018 12:30 PM

---

Betsy A Sara, Project Manager II  
4955 Yarrow Street, Arvada, CO, 80002  
(303)736-0189  
betsy.sara@testamericainc.com  
01/31/2018

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

These data and reporting limits are being used specifically to meet the needs of this project. All RLs are supported by TestAmerica's Method Detection Limits (MDLs). Reporting limits in this report are at or above the MDL.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002  
Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)

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## CASE NARRATIVE

Client: SCS Engineers

Project: Hidden Valley LF

Report Number: 280-105260-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### Sample Receiving

The samples were received on 01/09/2018; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 1.0° C, 1.8° C, 2.6° C and 4.1° C.

### Holding Times

All holding times were within established control limits.

### Method Blanks

All Method Blanks were within established control limits.

### Laboratory Control Samples (LCS)

All Laboratory Control Samples were within established control limits.

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

The percent recoveries and/or relative percent difference of the MS/MSD performed on a sample from another client were outside control limits for Dissolved Sodium Method 6010B because the sample concentration was greater than four times the spike amount. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, no corrective action was taken.

All other MS and MSD samples were within established control limits.

### General Comments

The analysis for Chloride and Sulfate Method 300.0 was performed at the TestAmerica's St. Louis Laboratory.  
13715 Rider Trail North  
Earth City, MO 63045  
Phone: 314-298-8566

The analysis for Iron Method 6020 was performed at the TestAmerica's Seattle Laboratory.  
5755 8th Street East  
Tacoma, WA 98424  
Phone: 253-922-2310

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-105260-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-105260-1</b>	<b>HVL-010818-01</b>	<b>MW-14S</b>				
Chloromethane		0.53		0.50	ug/L	8260B
Nitrate as N		1.0		0.20	mg/L	300.0
Ammonia		0.27		0.10	mg/L	350.1
Alkalinity		42		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		42		5.0	mg/L	SM 2320B
Total Dissolved Solids		83		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.8		1.0	mg/L	SM 5310B
Chloride		4.4		0.20	mg/L	300.0
Sulfate		5.4		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		10		0.20	mg/L	6010B
Magnesium, Dissolved		3.4		0.10	mg/L	6010B
Potassium, Dissolved		2.5		2.0	mg/L	6010B
Sodium, Dissolved		5.9		1.0	mg/L	6010B
Manganese, Dissolved		0.10		0.0010	mg/L	6020
<b>280-105260-2</b>	<b>HVL-010818-02</b>	<b>MW-14R</b>				
Barium, Total		0.0050		0.0050	mg/L	6020
Alkalinity		44		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		44		5.0	mg/L	SM 2320B
Total Dissolved Solids		86		10	mg/L	SM 2540C
Chloride		1.7		0.20	mg/L	300.0
Sulfate		3.4		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		7.8		0.20	mg/L	6010B
Magnesium, Dissolved		4.5		0.10	mg/L	6010B
Sodium, Dissolved		5.2		1.0	mg/L	6010B
Manganese, Dissolved		0.18		0.0010	mg/L	6020



## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-105260-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>MW-14D</b>						
<b>280-105260-3</b>	<b>HVL-010818-03</b>					
Barium, Total		0.011		0.0050	mg/L	6020
Ammonia		3.7		0.10	mg/L	350.1
Alkalinity		83		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		83		5.0	mg/L	SM 2320B
Total Dissolved Solids		140		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.8		1.0	mg/L	SM 5310B
Chloride		11		0.20	mg/L	300.0
Sulfate		11		0.25	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		15		0.20	mg/L	6010B
Magnesium, Dissolved		4.8		0.10	mg/L	6010B
Potassium, Dissolved		7.0		2.0	mg/L	6010B
Sodium, Dissolved		11		1.0	mg/L	6010B
Iron, Dissolved		2.2		0.18	mg/L	6020
Manganese, Dissolved		1.0		0.0010	mg/L	6020
<b>MW-15S</b>						
<b>280-105260-4</b>	<b>HVL-010818-04</b>					
Barium, Total		0.013		0.0050	mg/L	6020
Nitrate as N		0.91		0.20	mg/L	300.0
Ammonia		2.7		0.10	mg/L	350.1
Alkalinity		90		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		90		5.0	mg/L	SM 2320B
Total Dissolved Solids		150		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.9		1.0	mg/L	SM 5310B
Chloride		17		0.20	mg/L	300.0
Sulfate		8.4		0.25	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		19		0.20	mg/L	6010B
Magnesium, Dissolved		5.8		0.10	mg/L	6010B
Potassium, Dissolved		9.2		2.0	mg/L	6010B
Sodium, Dissolved		15		1.0	mg/L	6010B
Manganese, Dissolved		0.85		0.0010	mg/L	6020



## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-105260-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-105260-5</b>	<b>HVL-010818-05</b>	<b>MW-10S</b>				
Nitrate as N		0.76		0.20	mg/L	300.0
Alkalinity		120		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		120		5.0	mg/L	SM 2320B
Total Dissolved Solids		160		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.1		1.0	mg/L	SM 5310B
Chloride		6.6		0.20	mg/L	300.0
Sulfate		8.9		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		30		0.20	mg/L	6010B
Magnesium, Dissolved		9.7		0.10	mg/L	6010B
Sodium, Dissolved		9.1		1.0	mg/L	6010B
<b>280-105260-6</b>	<b>HVL-010818-06</b>	<b>MW-15D</b>				
Nitrate as N		0.82		0.20	mg/L	300.0
Alkalinity		100		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		100		5.0	mg/L	SM 2320B
Total Dissolved Solids		170		10	mg/L	SM 2540C
Chloride		8.5		0.20	mg/L	300.0
Sulfate		9.6		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		21		0.20	mg/L	6010B
Magnesium, Dissolved		8.4		0.10	mg/L	6010B
Potassium, Dissolved		2.4		2.0	mg/L	6010B
Sodium, Dissolved		17		1.0	mg/L	6010B
Manganese, Dissolved		0.064		0.0010	mg/L	6020
<b>280-105260-7</b>	<b>HVL-010818-07</b>	<b>MW-10D</b>				
Nitrate as N		2.3		0.20	mg/L	300.0
Alkalinity		79		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		79		5.0	mg/L	SM 2320B
Total Dissolved Solids		140		10	mg/L	SM 2540C
Chloride		4.9		0.20	mg/L	300.0
Sulfate		8.6		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		21		0.20	mg/L	6010B
Magnesium, Dissolved		7.5		0.10	mg/L	6010B
Sodium, Dissolved		6.8		1.0	mg/L	6010B

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-105260-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-105260-8</b>	<b>HVL-010818-08</b>	<b>MW-26R</b>				
Barium, Total		0.0078		0.0050	mg/L	6020
Alkalinity		81		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		81		5.0	mg/L	SM 2320B
Total Dissolved Solids		130		10	mg/L	SM 2540C
Chloride		4.5		0.20	mg/L	300.0
Sulfate		9.2		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		18		0.20	mg/L	6010B
Magnesium, Dissolved		8.0		0.10	mg/L	6010B
Sodium, Dissolved		6.0		1.0	mg/L	6010B
Iron, Dissolved		0.64		0.18	mg/L	6020
Manganese, Dissolved		0.38		0.0010	mg/L	6020
<b>280-105260-9</b>	<b>HVL-010818-09</b>	<b>MW-13S</b>				
Barium, Total		0.0077		0.0050	mg/L	6020
Nitrate as N		1.8		0.20	mg/L	300.0
Alkalinity		100		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		100		5.0	mg/L	SM 2320B
Total Dissolved Solids		180		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.2		1.0	mg/L	SM 5310B
Chloride		10		0.20	mg/L	300.0
Sulfate		12		0.25	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		24		0.20	mg/L	6010B
Magnesium, Dissolved		6.8		0.10	mg/L	6010B
Potassium, Dissolved		4.8		2.0	mg/L	6010B
Sodium, Dissolved		24		1.0	mg/L	6010B
<b>280-105260-10</b>	<b>HVL-010818-10</b>	<b>MW-20R</b>				
Alkalinity		43		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		43		5.0	mg/L	SM 2320B
Total Dissolved Solids		87		10	mg/L	SM 2540C
Chloride		1.7		0.20	mg/L	300.0
Sulfate		3.0		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		7.3		0.20	mg/L	6010B
Magnesium, Dissolved		3.7		0.10	mg/L	6010B
Sodium, Dissolved		5.4		1.0	mg/L	6010B

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-105260-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-105260-11</b>	<b>HVL-010818-11</b>	<b>MW-13D</b>				
Chloromethane		0.52		0.50	ug/L	8260B
Barium, Total		0.0057		0.0050	mg/L	6020
Nitrate as N		1.2		0.20	mg/L	300.0
Alkalinity		120		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		120		5.0	mg/L	SM 2320B
Total Dissolved Solids		200		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.1		1.0	mg/L	SM 5310B
Chloride		12		0.20	mg/L	300.0
Sulfate		12		0.25	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		30		0.20	mg/L	6010B
Magnesium, Dissolved		11		0.10	mg/L	6010B
Potassium, Dissolved		3.9		2.0	mg/L	6010B
Sodium, Dissolved		19		1.0	mg/L	6010B
<b>280-105260-12</b>	<b>HVL-010818-12</b>	<b>MW-17S</b>				
Barium, Total		0.021		0.0050	mg/L	6020
Nitrate as N		12		0.21	mg/L	300.0
Ammonia		3.1		0.10	mg/L	350.1
Alkalinity		120		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		120		5.0	mg/L	SM 2320B
Total Dissolved Solids		250		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.8		1.0	mg/L	SM 5310B
Chloride		20		0.20	mg/L	300.0
Sulfate		4.6		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		27		0.20	mg/L	6010B
Magnesium, Dissolved		9.0		0.10	mg/L	6010B
Potassium, Dissolved		14		2.0	mg/L	6010B
Sodium, Dissolved		27		1.0	mg/L	6010B
Manganese, Dissolved		0.82		0.0010	mg/L	6020

## METHOD SUMMARY

Client: SCS Engineers

Job Number: 280-105260-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Volatile Organic Compounds (GC/MS)	TAL DEN	SW846 8260B	
Purge and Trap	TAL DEN		SW846 5030B
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Total Metals	TAL DEN		SW846 3010A
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Metals	TAL DEN		SW846 3020A
Anions, Ion Chromatography	TAL DEN	MCAWW 300.0	
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
Alkalinity	TAL DEN	SM SM 2320B	
Solids, Total Dissolved (TDS)	TAL DEN	SM SM 2540C	
Solids, Total Suspended (TSS)	TAL DEN	SM SM 2540D	
Organic Carbon, Total (TOC)	TAL DEN	SM SM 5310B	
Metals (ICP/MS)	TAL SEA	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL SEA		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Anions, Ion Chromatography	TAL SL	MCAWW 300.0	

### Lab References:

TAL DEN = TestAmerica Denver

TAL SEA = TestAmerica Seattle

TAL SL = TestAmerica St. Louis

### Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

## METHOD / ANALYST SUMMARY

Client: SCS Engineers

Job Number: 280-105260-1

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
SW846 8260B	Ilczyszyn, Dennis P	DPI
SW846 6010B	Lackey, Cara M	CML
SW846 6020	Trudell, Lynn-Anne M	LMT
SW846 6020	Woo, Fred C	FCW
MCAWW 300.0	Phan, Thu L	TLP
MCAWW 350.1	Lehman, Jeffrey M	JML
SM SM 2320B	Duplin, Alysha 1	A1D
SM SM 2540C	Pedrick, Joshua A	JAP
SM SM 2540D	Pedrick, Joshua A	JAP
SM SM 5310B	Jewell, Connie C	CCJ
MCAWW 300.0	Boyd, Jacob C	JCB

# SAMPLE SUMMARY

Client: SCS Engineers

Job Number: 280-105260-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
280-105260-1	HVL-010818-01	Water	01/08/2018 0950	01/09/2018 0900
280-105260-2	HVL-010818-02	Water	01/08/2018 1000	01/09/2018 0900
280-105260-3	HVL-010818-03	Water	01/08/2018 1038	01/09/2018 0900
280-105260-4	HVL-010818-04	Water	01/08/2018 1055	01/09/2018 0900
280-105260-5	HVL-010818-05	Water	01/08/2018 1154	01/09/2018 0900
280-105260-6	HVL-010818-06	Water	01/08/2018 1142	01/09/2018 0900
280-105260-7	HVL-010818-07	Water	01/08/2018 1232	01/09/2018 0900
280-105260-8	HVL-010818-08	Water	01/08/2018 1234	01/09/2018 0900
280-105260-9	HVL-010818-09	Water	01/08/2018 1352	01/09/2018 0900
280-105260-10	HVL-010818-10	Water	01/08/2018 1334	01/09/2018 0900
280-105260-11	HVL-010818-11	Water	01/08/2018 1435	01/09/2018 0900
280-105260-12	HVL-010818-12	Water	01/08/2018 1428	01/09/2018 0900

# SAMPLE RESULTS

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-01**

Lab Sample ID: 280-105260-1

Date Sampled: 01/08/2018 0950

Client Matrix: Water

Date Received: 01/09/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8562.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1555		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1555		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	0.53		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0



# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-01**

Lab Sample ID: 280-105260-1

Date Sampled: 01/08/2018 0950

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8562.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1555		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1555		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	95		70 - 127
4-Bromofluorobenzene (Surr)	90		78 - 120
Dibromofluoromethane (Surr)	106		77 - 120
Toluene-d8 (Surr)	106		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-02**

Lab Sample ID: 280-105260-2

Date Sampled: 01/08/2018 1000

Client Matrix: Water

Date Received: 01/09/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8547.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1026		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1026		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-02**

Lab Sample ID: 280-105260-2

Date Sampled: 01/08/2018 1000

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8547.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1026		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1026		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	93		70 - 127
4-Bromofluorobenzene (Surr)	93		78 - 120
Dibromofluoromethane (Surr)	106		77 - 120
Toluene-d8 (Surr)	110		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-03**

Lab Sample ID: 280-105260-3

Date Sampled: 01/08/2018 1038

Client Matrix: Water

Date Received: 01/09/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B                      Analysis Batch: 280-401190                      Instrument ID: VMS\_G2  
Prep Method: 5030B                      Prep Batch: N/A                      Lab File ID: G2\_8548.D  
Dilution: 1.0                      Initial Weight/Volume: 20 mL  
Analysis Date: 01/10/2018 1047                      Final Weight/Volume: 20 mL  
Prep Date: 01/10/2018 1047

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-03**

Lab Sample ID: 280-105260-3

Date Sampled: 01/08/2018 1038

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8548.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1047		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1047		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		70 - 127
4-Bromofluorobenzene (Surr)	87		78 - 120
Dibromofluoromethane (Surr)	107		77 - 120
Toluene-d8 (Surr)	107		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-04**

Lab Sample ID: 280-105260-4

Date Sampled: 01/08/2018 1055

Client Matrix: Water

Date Received: 01/09/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8549.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1108		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1108		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-04**

Lab Sample ID: 280-105260-4

Date Sampled: 01/08/2018 1055

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8549.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1108		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1108		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 127
4-Bromofluorobenzene (Surr)	91		78 - 120
Dibromofluoromethane (Surr)	106		77 - 120
Toluene-d8 (Surr)	107		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-05**

Lab Sample ID: 280-105260-5

Date Sampled: 01/08/2018 1154

Client Matrix: Water

Date Received: 01/09/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8563.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1615		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1615		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0



# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-05**

Lab Sample ID: 280-105260-5

Date Sampled: 01/08/2018 1154

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8563.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1615		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1615		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 127
4-Bromofluorobenzene (Surr)	89		78 - 120
Dibromofluoromethane (Surr)	108		77 - 120
Toluene-d8 (Surr)	104		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-06**

Lab Sample ID: 280-105260-6

Date Sampled: 01/08/2018 1142

Client Matrix: Water

Date Received: 01/09/2018 0900

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8564.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1636		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1636		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-06**

Lab Sample ID: 280-105260-6

Date Sampled: 01/08/2018 1142

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8564.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1636		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1636		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 127
4-Bromofluorobenzene (Surr)	88		78 - 120
Dibromofluoromethane (Surr)	107		77 - 120
Toluene-d8 (Surr)	107		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-07**

Lab Sample ID: 280-105260-7

Date Sampled: 01/08/2018 1232

Client Matrix: Water

Date Received: 01/09/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8565.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1657		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1657		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-07**

Lab Sample ID: 280-105260-7

Date Sampled: 01/08/2018 1232

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8565.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1657		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1657		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106		70 - 127
4-Bromofluorobenzene (Surr)	92		78 - 120
Dibromofluoromethane (Surr)	113		77 - 120
Toluene-d8 (Surr)	112		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-08**

Lab Sample ID: 280-105260-8

Date Sampled: 01/08/2018 1234

Client Matrix: Water

Date Received: 01/09/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8550.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1128		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1128		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-08**

Lab Sample ID: 280-105260-8

Date Sampled: 01/08/2018 1234

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8550.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1128		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1128		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 127
4-Bromofluorobenzene (Surr)	93		78 - 120
Dibromofluoromethane (Surr)	109		77 - 120
Toluene-d8 (Surr)	108		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-09**

Lab Sample ID: 280-105260-9

Date Sampled: 01/08/2018 1352

Client Matrix: Water

Date Received: 01/09/2018 0900

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8566.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1718		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1718		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0



# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-09**

Lab Sample ID: 280-105260-9

Date Sampled: 01/08/2018 1352

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8566.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1718		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1718		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 127
4-Bromofluorobenzene (Surr)	88		78 - 120
Dibromofluoromethane (Surr)	107		77 - 120
Toluene-d8 (Surr)	104		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-10**

Lab Sample ID: 280-105260-10

Date Sampled: 01/08/2018 1334

Client Matrix: Water

Date Received: 01/09/2018 0900

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8567.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1739		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1739		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-10**

Lab Sample ID: 280-105260-10

Date Sampled: 01/08/2018 1334

Client Matrix: Water

Date Received: 01/09/2018 0900

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### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8567.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1739		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1739		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	97		70 - 127
4-Bromofluorobenzene (Surr)	81		78 - 120
Dibromofluoromethane (Surr)	106		77 - 120
Toluene-d8 (Surr)	101		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-11**

Lab Sample ID: 280-105260-11

Date Sampled: 01/08/2018 1435

Client Matrix: Water

Date Received: 01/09/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B      Analysis Batch: 280-401190      Instrument ID: VMS\_G2  
Prep Method: 5030B      Prep Batch: N/A      Lab File ID: G2\_8568.D  
Dilution: 1.0      Initial Weight/Volume: 20 mL  
Analysis Date: 01/10/2018 1759      Final Weight/Volume: 20 mL  
Prep Date: 01/10/2018 1759

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	0.52		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-11**

Lab Sample ID: 280-105260-11

Date Sampled: 01/08/2018 1435

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8568.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1759		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1759		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		70 - 127
4-Bromofluorobenzene (Surr)	89		78 - 120
Dibromofluoromethane (Surr)	111		77 - 120
Toluene-d8 (Surr)	107		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-12**

Lab Sample ID: 280-105260-12

Date Sampled: 01/08/2018 1428

Client Matrix: Water

Date Received: 01/09/2018 0900

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8569.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1820		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1820		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-12**

Lab Sample ID: 280-105260-12

Date Sampled: 01/08/2018 1428

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8569.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 1820		Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 1820		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		70 - 127
4-Bromofluorobenzene (Surr)	89		78 - 120
Dibromofluoromethane (Surr)	110		77 - 120
Toluene-d8 (Surr)	110		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-01**

Lab Sample ID: 280-105260-1

Date Sampled: 01/08/2018 0950

Client Matrix: Water

Date Received: 01/09/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 11.d
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/15/2018 1658	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	4.4		0.20
Sulfate	5.4		0.20



## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-02**

Lab Sample ID: 280-105260-2

Date Sampled: 01/08/2018 1000

Client Matrix: Water

Date Received: 01/09/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-346367

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 011518- 14.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 01/15/2018 1846

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	1.7		0.20
Sulfate	3.4		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-03**

Lab Sample ID: 280-105260-3

Date Sampled: 01/08/2018 1038

Client Matrix: Water

Date Received: 01/09/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 15.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/15/2018 1902	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	11		0.20
Sulfate	11		0.25

## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-04**

Lab Sample ID: 280-105260-4

Date Sampled: 01/08/2018 1055

Client Matrix: Water

Date Received: 01/09/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 16.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/15/2018 1919	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	17		0.20
Sulfate	8.4		0.25

## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-05**

Lab Sample ID: 280-105260-5

Date Sampled: 01/08/2018 1154

Client Matrix: Water

Date Received: 01/09/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 17.d
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/15/2018 1935	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	6.6		0.20
Sulfate	8.9		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-06**

Lab Sample ID: 280-105260-6

Date Sampled: 01/08/2018 1142

Client Matrix: Water

Date Received: 01/09/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 18.d
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/15/2018 1952	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	8.5		0.20
Sulfate	9.6		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-07**

Lab Sample ID: 280-105260-7

Date Sampled: 01/08/2018 1232

Client Matrix: Water

Date Received: 01/09/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 21.d
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/15/2018 2041	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	4.9		0.20
Sulfate	8.6		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-08**

Lab Sample ID: 280-105260-8

Date Sampled: 01/08/2018 1234

Client Matrix: Water

Date Received: 01/09/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 22.d
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/15/2018 2057	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	4.5		0.20
Sulfate	9.2		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-09**

Lab Sample ID: 280-105260-9

Date Sampled: 01/08/2018 1352

Client Matrix: Water

Date Received: 01/09/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 23.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/15/2018 2114	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	10		0.20
Sulfate	12		0.25



## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-10**

Lab Sample ID: 280-105260-10

Date Sampled: 01/08/2018 1334

Client Matrix: Water

Date Received: 01/09/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-346367

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 011518- 24.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 01/15/2018 2130

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	1.7		0.20
Sulfate	3.0		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID:** HVL-010818-11

Lab Sample ID: 280-105260-11

Date Sampled: 01/08/2018 1435

Client Matrix: Water

Date Received: 01/09/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 25.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/15/2018 2147	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	12		0.20
Sulfate	12		0.25

## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-12**

Lab Sample ID: 280-105260-12

Date Sampled: 01/08/2018 1428

Client Matrix: Water

Date Received: 01/09/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-346367

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 011518- 27.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 01/15/2018 2220

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

---

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	4.6		0.20

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## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-12**

Lab Sample ID: 280-105260-12

Date Sampled: 01/08/2018 1428

Client Matrix: Water

Date Received: 01/09/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 28.d
Dilution:	10			Initial Weight/Volume:	5 mL
Analysis Date:	01/15/2018 2236	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	20		0.20

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-01**

Lab Sample ID: 280-105260-1  
Client Matrix: Water

Date Sampled: 01/08/2018 0950  
Date Received: 01/09/2018 0900

## 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402105      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401174      Lab File ID: 51A011818B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0136      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

## 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401319      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51B011018C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 0203      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	10		0.20
Magnesium, Dissolved	3.4		0.10
Potassium, Dissolved	2.5		2.0

Analysis Method: 6010B      Analysis Batch: 280-401459      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51A011118B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 2012      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Sodium, Dissolved	5.9		1.0

## 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-402004      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401171      Lab File ID: 181SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0135      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Arsenic, Total	ND		0.0050
Barium, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010

## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-01**

Lab Sample ID: 280-105260-1

Date Sampled: 01/08/2018 0950

Client Matrix: Water

Date Received: 01/09/2018 0900

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### 6020 Metals (ICP/MS)

Analyte	Result (mg/L)	Qualifier	RL
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-401890	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-401183	Lab File ID: 221SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 0457		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.10		0.0010

Analysis Method: 6020	Analysis Batch: 580-265558	Instrument ID: TAC110
Prep Method: 3005A	Prep Batch: 580-265415	Lab File ID: 066SMPL.d
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 1427		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1333		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-02**

Lab Sample ID: 280-105260-2

Date Sampled: 01/08/2018 1000

Client Matrix: Water

Date Received: 01/09/2018 0900

## 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402105      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401174      Lab File ID: 51A011818B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0139      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

## 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401319      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51B011018C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 0206      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	7.8		0.20
Magnesium, Dissolved	4.5		0.10
Potassium, Dissolved	ND		2.0

Analysis Method: 6010B      Analysis Batch: 280-401459      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51A011118B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 2015      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Sodium, Dissolved	5.2		1.0

## 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-402004      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401171      Lab File ID: 186SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0155      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Arsenic, Total	ND		0.0050
Barium, Total	0.0050		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010

## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-02**

Lab Sample ID: 280-105260-2

Date Sampled: 01/08/2018 1000

Client Matrix: Water

Date Received: 01/09/2018 0900

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### 6020 Metals (ICP/MS)

Analyte	Result (mg/L)	Qualifier	RL
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-401890	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-401183	Lab File ID: 226SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 0517		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.18		0.0010

Analysis Method: 6020	Analysis Batch: 580-265558	Instrument ID: TAC110
Prep Method: 3005A	Prep Batch: 580-265415	Lab File ID: 075SMPL.d
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 1458		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1333		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18



## Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-03**

Lab Sample ID: 280-105260-3

Date Sampled: 01/08/2018 1038

Client Matrix: Water

Date Received: 01/09/2018 0900

### 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402105      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401174      Lab File ID: 51A011818B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0150      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401319      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51B011018C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 0209      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	15		0.20
Magnesium, Dissolved	4.8		0.10
Potassium, Dissolved	7.0		2.0

Analysis Method: 6010B      Analysis Batch: 280-401459      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51A011118B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 2030      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Sodium, Dissolved	11		1.0

### 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-402004      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401171      Lab File ID: 187SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0159      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Arsenic, Total	ND		0.0050
Barium, Total	0.011		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-03**

Lab Sample ID: 280-105260-3

Date Sampled: 01/08/2018 1038

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 6020 Metals (ICP/MS)

Analyte	Result (mg/L)	Qualifier	RL
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

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## 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-401890	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-401183	Lab File ID: 227SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 0520		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	1.0		0.0010

Analysis Method: 6020	Analysis Batch: 580-265558	Instrument ID: TAC110
Prep Method: 3005A	Prep Batch: 580-265415	Lab File ID: 076SMPL.d
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 1502		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1333		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	2.2		0.18

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-04**

Lab Sample ID: 280-105260-4

Date Sampled: 01/08/2018 1055

Client Matrix: Water

Date Received: 01/09/2018 0900

## 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402105      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401174      Lab File ID: 51A011818B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0153      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

## 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401319      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51B011018C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 0212      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	19		0.20
Magnesium, Dissolved	5.8		0.10
Potassium, Dissolved	9.2		2.0

Analysis Method: 6010B      Analysis Batch: 280-401459      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51A011118B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 2033      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Sodium, Dissolved	15		1.0

## 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-402004      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401171      Lab File ID: 190SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0210      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Arsenic, Total	ND		0.0050
Barium, Total	0.013		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-04**

Lab Sample ID: 280-105260-4

Date Sampled: 01/08/2018 1055

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 6020 Metals (ICP/MS)

Analyte	Result (mg/L)	Qualifier	RL
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

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## 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-401890	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-401183	Lab File ID: 228SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 0524		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.85		0.0010

Analysis Method: 6020	Analysis Batch: 580-265558	Instrument ID: TAC110
Prep Method: 3005A	Prep Batch: 580-265415	Lab File ID: 077SMPL.d
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 1505		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1333		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-05**

Lab Sample ID: 280-105260-5

Date Sampled: 01/08/2018 1154

Client Matrix: Water

Date Received: 01/09/2018 0900

## 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402105      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401174      Lab File ID: 51A011818B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0156      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

## 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401319      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51B011018C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 0215      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	30		0.20
Magnesium, Dissolved	9.7		0.10
Potassium, Dissolved	ND		2.0

Analysis Method: 6010B      Analysis Batch: 280-401459      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51A011118B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 2036      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Sodium, Dissolved	9.1		1.0

## 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-402004      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401171      Lab File ID: 191SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0214      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Arsenic, Total	ND		0.0050
Barium, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-05**

Lab Sample ID: 280-105260-5

Date Sampled: 01/08/2018 1154

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 6020 Metals (ICP/MS)

Analyte	Result (mg/L)	Qualifier	RL
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

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## 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-401890	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-401183	Lab File ID: 231SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 0536		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020	Analysis Batch: 580-265558	Instrument ID: TAC110
Prep Method: 3005A	Prep Batch: 580-265415	Lab File ID: 078SMPL.d
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 1509		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1333		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-06**

Lab Sample ID: 280-105260-6

Date Sampled: 01/08/2018 1142

Client Matrix: Water

Date Received: 01/09/2018 0900

## 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402105      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401174      Lab File ID: 51A011818B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0211      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

## 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401319      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51B011018C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 0218      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	21		0.20
Magnesium, Dissolved	8.4		0.10
Potassium, Dissolved	2.4		2.0

Analysis Method: 6010B      Analysis Batch: 280-401459      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51A011118B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 2039      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Sodium, Dissolved	17		1.0

## 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-402004      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401171      Lab File ID: 192SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0218      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Arsenic, Total	ND		0.0050
Barium, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-06**

Lab Sample ID: 280-105260-6

Date Sampled: 01/08/2018 1142

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 6020 Metals (ICP/MS)

Analyte	Result (mg/L)	Qualifier	RL
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

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## 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-401890	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-401183	Lab File ID: 232SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 0540		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.064		0.0010

Analysis Method: 6020	Analysis Batch: 580-265558	Instrument ID: TAC110
Prep Method: 3005A	Prep Batch: 580-265415	Lab File ID: 079SMPL.d
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 1512		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1333		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18



# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-07**

Lab Sample ID: 280-105260-7

Date Sampled: 01/08/2018 1232

Client Matrix: Water

Date Received: 01/09/2018 0900

## 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402105      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401174      Lab File ID: 51A011818B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0214      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

## 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401319      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51B011018C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 0221      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	21		0.20
Magnesium, Dissolved	7.5		0.10
Potassium, Dissolved	ND		2.0

Analysis Method: 6010B      Analysis Batch: 280-401459      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51A011118B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 2042      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Sodium, Dissolved	6.8		1.0

## 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-402004      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401171      Lab File ID: 193SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0222      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Arsenic, Total	ND		0.0050
Barium, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-07**

Lab Sample ID: 280-105260-7

Date Sampled: 01/08/2018 1232

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 6020 Metals (ICP/MS)

Analyte	Result (mg/L)	Qualifier	RL
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

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## 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-401890	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-401183	Lab File ID: 233SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 0544		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020	Analysis Batch: 580-265558	Instrument ID: TAC110
Prep Method: 3005A	Prep Batch: 580-265415	Lab File ID: 080SMPL.d
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 1516		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1333		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-08**

Lab Sample ID: 280-105260-8

Date Sampled: 01/08/2018 1234

Client Matrix: Water

Date Received: 01/09/2018 0900

## 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402105      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401174      Lab File ID: 51A011818B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0217      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

## 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401319      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51B011018C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 0224      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	18		0.20
Magnesium, Dissolved	8.0		0.10
Potassium, Dissolved	ND		2.0

Analysis Method: 6010B      Analysis Batch: 280-401459      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51A011118B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 2045      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Sodium, Dissolved	6.0		1.0

## 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-402004      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401171      Lab File ID: 194SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0226      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Arsenic, Total	ND		0.0050
Barium, Total	0.0078		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-08**

Lab Sample ID: 280-105260-8

Date Sampled: 01/08/2018 1234

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 6020 Metals (ICP/MS)

Analyte	Result (mg/L)	Qualifier	RL
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

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## 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-401890	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-401183	Lab File ID: 234SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 0547		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.38		0.0010

Analysis Method: 6020	Analysis Batch: 580-265558	Instrument ID: TAC110
Prep Method: 3005A	Prep Batch: 580-265415	Lab File ID: 081SMPL.d
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 1520		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1333		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	0.64		0.18

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-09**

Lab Sample ID: 280-105260-9

Date Sampled: 01/08/2018 1352

Client Matrix: Water

Date Received: 01/09/2018 0900

## 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402105      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401174      Lab File ID: 51A011818B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0220      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

## 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401319      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51B011018C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 0227      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	24		0.20
Magnesium, Dissolved	6.8		0.10
Potassium, Dissolved	4.8		2.0

Analysis Method: 6010B      Analysis Batch: 280-401459      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51A011118B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 2048      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Sodium, Dissolved	24		1.0

## 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-402004      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401171      Lab File ID: 195SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0229      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Arsenic, Total	ND		0.0050
Barium, Total	0.0077		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-09**

Lab Sample ID: 280-105260-9

Date Sampled: 01/08/2018 1352

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 6020 Metals (ICP/MS)

Analyte	Result (mg/L)	Qualifier	RL
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

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## 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-401890	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-401183	Lab File ID: 235SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 0551		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020	Analysis Batch: 580-265558	Instrument ID: TAC110
Prep Method: 3005A	Prep Batch: 580-265415	Lab File ID: 082SMPL.d
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 1523		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1333		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-10**

Lab Sample ID: 280-105260-10  
Client Matrix: Water

Date Sampled: 01/08/2018 1334  
Date Received: 01/09/2018 0900

## 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402105      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401174      Lab File ID: 51A011818B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0223      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

## 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401319      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51B011018C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 0230      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	7.3		0.20
Magnesium, Dissolved	3.7		0.10
Potassium, Dissolved	ND		2.0

Analysis Method: 6010B      Analysis Batch: 280-401459      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51A011118B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 2051      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Sodium, Dissolved	5.4		1.0

## 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-402004      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401171      Lab File ID: 196SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0233      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Arsenic, Total	ND		0.0050
Barium, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-10**

Lab Sample ID: 280-105260-10

Date Sampled: 01/08/2018 1334

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 6020 Metals (ICP/MS)

Analyte	Result (mg/L)	Qualifier	RL
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

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## 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-401890	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-401183	Lab File ID: 236SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 0555		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020	Analysis Batch: 580-265558	Instrument ID: TAC110
Prep Method: 3005A	Prep Batch: 580-265415	Lab File ID: 083SMPL.d
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 1527		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1333		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18



# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-11**

Lab Sample ID: 280-105260-11

Date Sampled: 01/08/2018 1435

Client Matrix: Water

Date Received: 01/09/2018 0900

## 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402105      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401174      Lab File ID: 51A011818B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0226      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

## 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401319      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51B011018C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 0245      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	30		0.20
Magnesium, Dissolved	11		0.10

Analysis Method: 6010B      Analysis Batch: 280-401459      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51A011118B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 2054      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Potassium, Dissolved	3.9		2.0
Sodium, Dissolved	19		1.0

## 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-402004      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401171      Lab File ID: 197SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0237      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Arsenic, Total	ND		0.0050
Barium, Total	0.0057		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-11**

Lab Sample ID: 280-105260-11

Date Sampled: 01/08/2018 1435

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 6020 Metals (ICP/MS)

Analyte	Result (mg/L)	Qualifier	RL
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

---

## 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-401890	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-401183	Lab File ID: 237SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 0559		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020	Analysis Batch: 580-265558	Instrument ID: TAC110
Prep Method: 3005A	Prep Batch: 580-265415	Lab File ID: 088SMPL.d
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 1544		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1333		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-12**

Lab Sample ID: 280-105260-12  
Client Matrix: Water

Date Sampled: 01/08/2018 1428  
Date Received: 01/09/2018 0900

## 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402105      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401174      Lab File ID: 51A011818B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0229      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

## 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401319      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51B011018C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 0248      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	27		0.20
Magnesium, Dissolved	9.0		0.10

Analysis Method: 6010B      Analysis Batch: 280-401459      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401182      Lab File ID: 51A011118B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/11/2018 2057      Final Weight/Volume: 50 mL  
Prep Date: 01/10/2018 0732

Analyte	Result (mg/L)	Qualifier	RL
Potassium, Dissolved	14		2.0
Sodium, Dissolved	27		1.0

## 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-402004      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401171      Lab File ID: 198SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0241      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Arsenic, Total	ND		0.0050
Barium, Total	0.021		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010

# Analytical Data

Client: SCS Engineers

Job Number: 280-105260-1

**Client Sample ID: HVL-010818-12**

Lab Sample ID: 280-105260-12

Date Sampled: 01/08/2018 1428

Client Matrix: Water

Date Received: 01/09/2018 0900

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## 6020 Metals (ICP/MS)

Analyte	Result (mg/L)	Qualifier	RL
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

---

## 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-401890	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-401183	Lab File ID: 238SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 0603		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.82		0.0010

Analysis Method: 6020	Analysis Batch: 580-265558	Instrument ID: TAC110
Prep Method: 3005A	Prep Batch: 580-265415	Lab File ID: 089SMPL.d
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 1548		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1333		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

Client: SCS Engineers

Job Number: 280-105260-1

General Chemistry

Client Sample ID: HVL-010818-01

Lab Sample ID: 280-105260-1

Client Matrix: Water

Date Sampled: 01/08/2018 0950

Date Received: 01/09/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	1.0		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401114		Analysis Date: 01/09/2018 1717			
Ammonia	0.27		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-402775		Analysis Date: 01/25/2018 0853			
Alkalinity	42		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1810			
Bicarbonate Alkalinity as CaCO3	42		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1810			
Total Dissolved Solids	83		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401213		Analysis Date: 01/10/2018 0801			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401211		Analysis Date: 01/10/2018 0759			
Total Organic Carbon - Quad	1.8		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-401755		Analysis Date: 01/16/2018 0010			

Client: SCS Engineers

Job Number: 280-105260-1

**General Chemistry**

**Client Sample ID: HVL-010818-02**

Lab Sample ID: 280-105260-2

Date Sampled: 01/08/2018 1000

Client Matrix: Water

Date Received: 01/09/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	ND		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401114		Analysis Date: 01/09/2018 1829			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-402775		Analysis Date: 01/25/2018 0859			
Alkalinity	44		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1712			
Bicarbonate Alkalinity as CaCO3	44		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1712			
Total Dissolved Solids	86		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401213		Analysis Date: 01/10/2018 0801			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401211		Analysis Date: 01/10/2018 0759			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-401755		Analysis Date: 01/16/2018 0026			

Client: SCS Engineers

Job Number: 280-105260-1

General Chemistry

Client Sample ID: HVL-010818-03

Lab Sample ID: 280-105260-3

Date Sampled: 01/08/2018 1038

Client Matrix: Water

Date Received: 01/09/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	ND		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401114		Analysis Date: 01/09/2018 1846			
Ammonia	3.7		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-402775		Analysis Date: 01/25/2018 0901			
Alkalinity	83		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1706			
Bicarbonate Alkalinity as CaCO3	83		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1706			
Total Dissolved Solids	140		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401213		Analysis Date: 01/10/2018 0801			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401211		Analysis Date: 01/10/2018 0759			
Total Organic Carbon - Quad	1.8		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-401755		Analysis Date: 01/16/2018 0117			

Client: SCS Engineers

Job Number: 280-105260-1

**General Chemistry**

**Client Sample ID: HVL-010818-04**

Lab Sample ID: 280-105260-4

Date Sampled: 01/08/2018 1055

Client Matrix: Water

Date Received: 01/09/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	0.91		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401114		Analysis Date: 01/09/2018 1904			
Ammonia	2.7		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-402775		Analysis Date: 01/25/2018 0903			
Alkalinity	90		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1816			
Bicarbonate Alkalinity as CaCO3	90		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1816			
Total Dissolved Solids	150		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401213		Analysis Date: 01/10/2018 0801			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401211		Analysis Date: 01/10/2018 0759			
Total Organic Carbon - Quad	1.9		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-401755		Analysis Date: 01/16/2018 0204			



Client: SCS Engineers

Job Number: 280-105260-1

**General Chemistry**

**Client Sample ID: HVL-010818-05**

Lab Sample ID: 280-105260-5

Date Sampled: 01/08/2018 1154

Client Matrix: Water

Date Received: 01/09/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	0.76		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401114		Analysis Date: 01/09/2018 1922			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-402775		Analysis Date: 01/25/2018 0905			
Alkalinity	120		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1718			
Bicarbonate Alkalinity as CaCO3	120		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1718			
Total Dissolved Solids	160		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401213		Analysis Date: 01/10/2018 0801			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401211		Analysis Date: 01/10/2018 0759			
Total Organic Carbon - Quad	1.1		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-401755		Analysis Date: 01/16/2018 0218			

Client: SCS Engineers

Job Number: 280-105260-1

General Chemistry

Client Sample ID: HVL-010818-06

Lab Sample ID: 280-105260-6

Client Matrix: Water

Date Sampled: 01/08/2018 1142

Date Received: 01/09/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	0.82		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401114		Analysis Date: 01/09/2018 1940			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-402775		Analysis Date: 01/25/2018 0907			
Alkalinity	100		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1724			
Bicarbonate Alkalinity as CaCO3	100		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1724			
Total Dissolved Solids	170		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401213		Analysis Date: 01/10/2018 0801			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401211		Analysis Date: 01/10/2018 0759			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-401755		Analysis Date: 01/16/2018 0233			

Client: SCS Engineers

Job Number: 280-105260-1

**General Chemistry**

**Client Sample ID: HVL-010818-07**

Lab Sample ID: 280-105260-7

Date Sampled: 01/08/2018 1232

Client Matrix: Water

Date Received: 01/09/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	2.3		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401114		Analysis Date: 01/09/2018 1958			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-402775		Analysis Date: 01/25/2018 0923			
Alkalinity	79		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1730			
Bicarbonate Alkalinity as CaCO3	79		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1730			
Total Dissolved Solids	140		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401213		Analysis Date: 01/10/2018 0801			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401211		Analysis Date: 01/10/2018 0759			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-401755		Analysis Date: 01/16/2018 0247			

Client: SCS Engineers

Job Number: 280-105260-1

**General Chemistry**

**Client Sample ID: HVL-010818-08**

Lab Sample ID: 280-105260-8

Date Sampled: 01/08/2018 1234

Client Matrix: Water

Date Received: 01/09/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	ND		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401114		Analysis Date: 01/09/2018 2051			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-402775		Analysis Date: 01/25/2018 0925			
Alkalinity	81		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1822			
Bicarbonate Alkalinity as CaCO3	81		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1822			
Total Dissolved Solids	130		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401213		Analysis Date: 01/10/2018 0801			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401211		Analysis Date: 01/10/2018 0759			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-401755		Analysis Date: 01/16/2018 0304			

Client: SCS Engineers

Job Number: 280-105260-1

**General Chemistry**

**Client Sample ID: HVL-010818-09**

Lab Sample ID: 280-105260-9

Date Sampled: 01/08/2018 1352

Client Matrix: Water

Date Received: 01/09/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	1.8		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401114		Analysis Date: 01/09/2018 2109			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-402775		Analysis Date: 01/25/2018 0927			
Alkalinity	100		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1828			
Bicarbonate Alkalinity as CaCO3	100		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1828			
Total Dissolved Solids	180		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401213		Analysis Date: 01/10/2018 0801			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401211		Analysis Date: 01/10/2018 0759			
Total Organic Carbon - Quad	1.2		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-401755		Analysis Date: 01/16/2018 0321			

Client: SCS Engineers

Job Number: 280-105260-1

**General Chemistry**

**Client Sample ID: HVL-010818-10**

Lab Sample ID: 280-105260-10

Date Sampled: 01/08/2018 1334

Client Matrix: Water

Date Received: 01/09/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	ND		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401114		Analysis Date: 01/09/2018 2220			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-402775		Analysis Date: 01/25/2018 0929			
Alkalinity	43		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1804			
Bicarbonate Alkalinity as CaCO3	43		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1804			
Total Dissolved Solids	87		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401213		Analysis Date: 01/10/2018 0801			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401211		Analysis Date: 01/10/2018 0759			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-401755		Analysis Date: 01/16/2018 0337			

Client: SCS Engineers

Job Number: 280-105260-1

General Chemistry

Client Sample ID: HVL-010818-11

Lab Sample ID: 280-105260-11

Client Matrix: Water

Date Sampled: 01/08/2018 1435

Date Received: 01/09/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	1.2		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401114		Analysis Date: 01/09/2018 2238			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-402775		Analysis Date: 01/25/2018 0931			
Alkalinity	120		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1758			
Bicarbonate Alkalinity as CaCO3	120		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1758			
Total Dissolved Solids	200		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401213		Analysis Date: 01/10/2018 0801			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401211		Analysis Date: 01/10/2018 0759			
Total Organic Carbon - Quad	1.1		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-401755		Analysis Date: 01/16/2018 0428			

Client: SCS Engineers

Job Number: 280-105260-1

General Chemistry

Client Sample ID: HVL-010818-12

Lab Sample ID: 280-105260-12

Client Matrix: Water

Date Sampled: 01/08/2018 1428

Date Received: 01/09/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	12		mg/L	0.21	5.0	300.0
	Analysis Batch: 280-401114		Analysis Date: 01/10/2018 1446			
Ammonia	3.1		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-402775		Analysis Date: 01/25/2018 0933			
Alkalinity	120		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1736			
Bicarbonate Alkalinity as CaCO3	120		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401226		Analysis Date: 01/09/2018 1736			
Total Dissolved Solids	250		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401213		Analysis Date: 01/10/2018 0801			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401211		Analysis Date: 01/10/2018 0759			
Total Organic Carbon - Quad	1.8		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-401755		Analysis Date: 01/16/2018 0442			



## DATA REPORTING QUALIFIERS

Client: SCS Engineers

Job Number: 280-105260-1

<b>Lab Section</b>	<b>Qualifier</b>	<b>Description</b>
Metals	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

# QUALITY CONTROL RESULTS

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS VOA</b>					
<b>Analysis Batch:280-401190</b>					
LCS 280-401190/4	Lab Control Sample	T	Water	8260B	
MB 280-401190/6	Method Blank	T	Water	8260B	
280-105260-1	HVL-010818-01	T	Water	8260B	
280-105260-2	HVL-010818-02	T	Water	8260B	
280-105260-3	HVL-010818-03	T	Water	8260B	
280-105260-4	HVL-010818-04	T	Water	8260B	
280-105260-5	HVL-010818-05	T	Water	8260B	
280-105260-6	HVL-010818-06	T	Water	8260B	
280-105260-7	HVL-010818-07	T	Water	8260B	
280-105260-8	HVL-010818-08	T	Water	8260B	
280-105260-8MS	Matrix Spike	T	Water	8260B	
280-105260-8MSD	Matrix Spike Duplicate	T	Water	8260B	
280-105260-9	HVL-010818-09	T	Water	8260B	
280-105260-10	HVL-010818-10	T	Water	8260B	
280-105260-11	HVL-010818-11	T	Water	8260B	
280-105260-12	HVL-010818-12	T	Water	8260B	

#### Report Basis

T = Total

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

## QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 580-265415</b>					
LCS 580-265415/20-A	Lab Control Sample	R	Water	3005A	
LCSD 580-265415/21-A	Lab Control Sample Duplicate	R	Water	3005A	
MB 580-265415/19-A	Method Blank	R	Water	3005A	
280-105260-1	HVL-010818-01	D	Water	3005A	
280-105260-1DU	Duplicate	D	Water	3005A	
280-105260-1MS	Matrix Spike	D	Water	3005A	
280-105260-1MSD	Matrix Spike Duplicate	D	Water	3005A	
280-105260-2	HVL-010818-02	D	Water	3005A	
280-105260-3	HVL-010818-03	D	Water	3005A	
280-105260-4	HVL-010818-04	D	Water	3005A	
280-105260-5	HVL-010818-05	D	Water	3005A	
280-105260-6	HVL-010818-06	D	Water	3005A	
280-105260-7	HVL-010818-07	D	Water	3005A	
280-105260-8	HVL-010818-08	D	Water	3005A	
280-105260-9	HVL-010818-09	D	Water	3005A	
280-105260-10	HVL-010818-10	D	Water	3005A	
280-105260-11	HVL-010818-11	D	Water	3005A	
280-105260-12	HVL-010818-12	D	Water	3005A	
<b>Analysis Batch:580-265558</b>					
LCS 580-265415/20-A	Lab Control Sample	R	Water	6020	580-265415
LCSD 580-265415/21-A	Lab Control Sample Duplicate	R	Water	6020	580-265415
MB 580-265415/19-A	Method Blank	R	Water	6020	580-265415
280-105260-1	HVL-010818-01	D	Water	6020	580-265415
280-105260-1DU	Duplicate	D	Water	6020	580-265415
280-105260-1MS	Matrix Spike	D	Water	6020	580-265415
280-105260-1MSD	Matrix Spike Duplicate	D	Water	6020	580-265415
280-105260-2	HVL-010818-02	D	Water	6020	580-265415
280-105260-3	HVL-010818-03	D	Water	6020	580-265415
280-105260-4	HVL-010818-04	D	Water	6020	580-265415
280-105260-5	HVL-010818-05	D	Water	6020	580-265415
280-105260-6	HVL-010818-06	D	Water	6020	580-265415
280-105260-7	HVL-010818-07	D	Water	6020	580-265415
280-105260-8	HVL-010818-08	D	Water	6020	580-265415
280-105260-9	HVL-010818-09	D	Water	6020	580-265415
280-105260-10	HVL-010818-10	D	Water	6020	580-265415
280-105260-11	HVL-010818-11	D	Water	6020	580-265415
280-105260-12	HVL-010818-12	D	Water	6020	580-265415

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 280-401171</b>					
LCS 280-401171/2-A	Lab Control Sample	T	Water	3020A	
MB 280-401171/1-A	Method Blank	T	Water	3020A	
280-105260-1	HVL-010818-01	T	Water	3020A	
280-105260-1MS	Matrix Spike	T	Water	3020A	
280-105260-1MSD	Matrix Spike Duplicate	T	Water	3020A	
280-105260-2	HVL-010818-02	T	Water	3020A	
280-105260-3	HVL-010818-03	T	Water	3020A	
280-105260-4	HVL-010818-04	T	Water	3020A	
280-105260-5	HVL-010818-05	T	Water	3020A	
280-105260-6	HVL-010818-06	T	Water	3020A	
280-105260-7	HVL-010818-07	T	Water	3020A	
280-105260-8	HVL-010818-08	T	Water	3020A	
280-105260-9	HVL-010818-09	T	Water	3020A	
280-105260-10	HVL-010818-10	T	Water	3020A	
280-105260-11	HVL-010818-11	T	Water	3020A	
280-105260-12	HVL-010818-12	T	Water	3020A	
<b>Prep Batch: 280-401174</b>					
LCS 280-401174/2-A	Lab Control Sample	T	Water	3010A	
MB 280-401174/1-A	Method Blank	T	Water	3010A	
280-105260-1	HVL-010818-01	T	Water	3010A	
280-105260-2	HVL-010818-02	T	Water	3010A	
280-105260-2MS	Matrix Spike	T	Water	3010A	
280-105260-2MSD	Matrix Spike Duplicate	T	Water	3010A	
280-105260-3	HVL-010818-03	T	Water	3010A	
280-105260-4	HVL-010818-04	T	Water	3010A	
280-105260-5	HVL-010818-05	T	Water	3010A	
280-105260-6	HVL-010818-06	T	Water	3010A	
280-105260-7	HVL-010818-07	T	Water	3010A	
280-105260-8	HVL-010818-08	T	Water	3010A	
280-105260-9	HVL-010818-09	T	Water	3010A	
280-105260-10	HVL-010818-10	T	Water	3010A	
280-105260-11	HVL-010818-11	T	Water	3010A	
280-105260-12	HVL-010818-12	T	Water	3010A	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 280-401182</b>					
LCS 280-401182/2-A	Lab Control Sample	R	Water	3005A	
MB 280-401182/1-A	Method Blank	R	Water	3005A	
280-105260-1	HVL-010818-01	D	Water	3005A	
280-105260-2	HVL-010818-02	D	Water	3005A	
280-105260-3	HVL-010818-03	D	Water	3005A	
280-105260-4	HVL-010818-04	D	Water	3005A	
280-105260-5	HVL-010818-05	D	Water	3005A	
280-105260-6	HVL-010818-06	D	Water	3005A	
280-105260-7	HVL-010818-07	D	Water	3005A	
280-105260-8	HVL-010818-08	D	Water	3005A	
280-105260-9	HVL-010818-09	D	Water	3005A	
280-105260-10	HVL-010818-10	D	Water	3005A	
280-105260-11	HVL-010818-11	D	Water	3005A	
280-105260-12	HVL-010818-12	D	Water	3005A	
280-105265-B-2-B MS	Matrix Spike	D	Water	3005A	
280-105265-B-2-C MSD	Matrix Spike Duplicate	D	Water	3005A	
<b>Prep Batch: 280-401183</b>					
LCS 280-401183/2-A	Lab Control Sample	R	Water	3005A	
MB 280-401183/1-A	Method Blank	R	Water	3005A	
280-105260-1	HVL-010818-01	D	Water	3005A	
280-105260-1MS	Matrix Spike	D	Water	3005A	
280-105260-1MSD	Matrix Spike Duplicate	D	Water	3005A	
280-105260-2	HVL-010818-02	D	Water	3005A	
280-105260-3	HVL-010818-03	D	Water	3005A	
280-105260-4	HVL-010818-04	D	Water	3005A	
280-105260-5	HVL-010818-05	D	Water	3005A	
280-105260-6	HVL-010818-06	D	Water	3005A	
280-105260-7	HVL-010818-07	D	Water	3005A	
280-105260-8	HVL-010818-08	D	Water	3005A	
280-105260-9	HVL-010818-09	D	Water	3005A	
280-105260-10	HVL-010818-10	D	Water	3005A	
280-105260-11	HVL-010818-11	D	Water	3005A	
280-105260-12	HVL-010818-12	D	Water	3005A	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

## QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Analysis Batch:280-401319</b>					
LCS 280-401182/2-A	Lab Control Sample	R	Water	6010B	280-401182
MB 280-401182/1-A	Method Blank	R	Water	6010B	280-401182
280-105260-1	HVL-010818-01	D	Water	6010B	280-401182
280-105260-2	HVL-010818-02	D	Water	6010B	280-401182
280-105260-3	HVL-010818-03	D	Water	6010B	280-401182
280-105260-4	HVL-010818-04	D	Water	6010B	280-401182
280-105260-5	HVL-010818-05	D	Water	6010B	280-401182
280-105260-6	HVL-010818-06	D	Water	6010B	280-401182
280-105260-7	HVL-010818-07	D	Water	6010B	280-401182
280-105260-8	HVL-010818-08	D	Water	6010B	280-401182
280-105260-9	HVL-010818-09	D	Water	6010B	280-401182
280-105260-10	HVL-010818-10	D	Water	6010B	280-401182
280-105260-11	HVL-010818-11	D	Water	6010B	280-401182
280-105260-12	HVL-010818-12	D	Water	6010B	280-401182
280-105265-B-2-B MS	Matrix Spike	D	Water	6010B	280-401182
280-105265-B-2-C MSD	Matrix Spike Duplicate	D	Water	6010B	280-401182
<b>Analysis Batch:280-401459</b>					
LCS 280-401182/2-A	Lab Control Sample	R	Water	6010B	280-401182
MB 280-401182/1-A	Method Blank	R	Water	6010B	280-401182
280-105260-1	HVL-010818-01	D	Water	6010B	280-401182
280-105260-2	HVL-010818-02	D	Water	6010B	280-401182
280-105260-3	HVL-010818-03	D	Water	6010B	280-401182
280-105260-4	HVL-010818-04	D	Water	6010B	280-401182
280-105260-5	HVL-010818-05	D	Water	6010B	280-401182
280-105260-6	HVL-010818-06	D	Water	6010B	280-401182
280-105260-7	HVL-010818-07	D	Water	6010B	280-401182
280-105260-8	HVL-010818-08	D	Water	6010B	280-401182
280-105260-9	HVL-010818-09	D	Water	6010B	280-401182
280-105260-10	HVL-010818-10	D	Water	6010B	280-401182
280-105260-11	HVL-010818-11	D	Water	6010B	280-401182
280-105260-12	HVL-010818-12	D	Water	6010B	280-401182
280-105265-B-2-B MS	Matrix Spike	D	Water	6010B	280-401182
280-105265-B-2-C MSD	Matrix Spike Duplicate	D	Water	6010B	280-401182

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

## QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Analysis Batch:280-401890</b>					
LCS 280-401183/2-A	Lab Control Sample	R	Water	6020	280-401183
MB 280-401183/1-A	Method Blank	R	Water	6020	280-401183
280-105260-1	HVL-010818-01	D	Water	6020	280-401183
280-105260-1MS	Matrix Spike	D	Water	6020	280-401183
280-105260-1MSD	Matrix Spike Duplicate	D	Water	6020	280-401183
280-105260-2	HVL-010818-02	D	Water	6020	280-401183
280-105260-3	HVL-010818-03	D	Water	6020	280-401183
280-105260-4	HVL-010818-04	D	Water	6020	280-401183
280-105260-5	HVL-010818-05	D	Water	6020	280-401183
280-105260-6	HVL-010818-06	D	Water	6020	280-401183
280-105260-7	HVL-010818-07	D	Water	6020	280-401183
280-105260-8	HVL-010818-08	D	Water	6020	280-401183
280-105260-9	HVL-010818-09	D	Water	6020	280-401183
280-105260-10	HVL-010818-10	D	Water	6020	280-401183
280-105260-11	HVL-010818-11	D	Water	6020	280-401183
280-105260-12	HVL-010818-12	D	Water	6020	280-401183
<b>Analysis Batch:280-402004</b>					
LCS 280-401171/2-A	Lab Control Sample	T	Water	6020	280-401171
MB 280-401171/1-A	Method Blank	T	Water	6020	280-401171
280-105260-1	HVL-010818-01	T	Water	6020	280-401171
280-105260-1MS	Matrix Spike	T	Water	6020	280-401171
280-105260-1MSD	Matrix Spike Duplicate	T	Water	6020	280-401171
280-105260-2	HVL-010818-02	T	Water	6020	280-401171
280-105260-3	HVL-010818-03	T	Water	6020	280-401171
280-105260-4	HVL-010818-04	T	Water	6020	280-401171
280-105260-5	HVL-010818-05	T	Water	6020	280-401171
280-105260-6	HVL-010818-06	T	Water	6020	280-401171
280-105260-7	HVL-010818-07	T	Water	6020	280-401171
280-105260-8	HVL-010818-08	T	Water	6020	280-401171
280-105260-9	HVL-010818-09	T	Water	6020	280-401171
280-105260-10	HVL-010818-10	T	Water	6020	280-401171
280-105260-11	HVL-010818-11	T	Water	6020	280-401171
280-105260-12	HVL-010818-12	T	Water	6020	280-401171



## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Analysis Batch:280-402105</b>					
LCS 280-401174/2-A	Lab Control Sample	T	Water	6010B	280-401174
MB 280-401174/1-A	Method Blank	T	Water	6010B	280-401174
280-105260-1	HVL-010818-01	T	Water	6010B	280-401174
280-105260-2	HVL-010818-02	T	Water	6010B	280-401174
280-105260-2MS	Matrix Spike	T	Water	6010B	280-401174
280-105260-2MSD	Matrix Spike Duplicate	T	Water	6010B	280-401174
280-105260-3	HVL-010818-03	T	Water	6010B	280-401174
280-105260-4	HVL-010818-04	T	Water	6010B	280-401174
280-105260-5	HVL-010818-05	T	Water	6010B	280-401174
280-105260-6	HVL-010818-06	T	Water	6010B	280-401174
280-105260-7	HVL-010818-07	T	Water	6010B	280-401174
280-105260-8	HVL-010818-08	T	Water	6010B	280-401174
280-105260-9	HVL-010818-09	T	Water	6010B	280-401174
280-105260-10	HVL-010818-10	T	Water	6010B	280-401174
280-105260-11	HVL-010818-11	T	Water	6010B	280-401174
280-105260-12	HVL-010818-12	T	Water	6010B	280-401174

#### Report Basis

D = Dissolved

R = Total Recoverable

T = Total

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-401114</b>					
LCS 280-401114/4	Lab Control Sample	T	Water	300.0	
LCSD 280-401114/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-401114/6	Method Blank	T	Water	300.0	
280-105260-1	HVL-010818-01	T	Water	300.0	
280-105260-1DU	Duplicate	T	Water	300.0	
280-105260-1MS	Matrix Spike	T	Water	300.0	
280-105260-1MSD	Matrix Spike Duplicate	T	Water	300.0	
280-105260-2	HVL-010818-02	T	Water	300.0	
280-105260-3	HVL-010818-03	T	Water	300.0	
280-105260-4	HVL-010818-04	T	Water	300.0	
280-105260-5	HVL-010818-05	T	Water	300.0	
280-105260-6	HVL-010818-06	T	Water	300.0	
280-105260-7	HVL-010818-07	T	Water	300.0	
280-105260-8	HVL-010818-08	T	Water	300.0	
280-105260-9	HVL-010818-09	T	Water	300.0	
280-105260-9DU	Duplicate	T	Water	300.0	
280-105260-9MS	Matrix Spike	T	Water	300.0	
280-105260-9MSD	Matrix Spike Duplicate	T	Water	300.0	
280-105260-10	HVL-010818-10	T	Water	300.0	
280-105260-11	HVL-010818-11	T	Water	300.0	
280-105260-12	HVL-010818-12	T	Water	300.0	
<b>Analysis Batch:280-401211</b>					
LCS 280-401211/2	Lab Control Sample	T	Water	SM 2540D	
MB 280-401211/1	Method Blank	T	Water	SM 2540D	
280-105222-C-1 DU	Duplicate	T	Water	SM 2540D	
280-105260-1	HVL-010818-01	T	Water	SM 2540D	
280-105260-2	HVL-010818-02	T	Water	SM 2540D	
280-105260-3	HVL-010818-03	T	Water	SM 2540D	
280-105260-4	HVL-010818-04	T	Water	SM 2540D	
280-105260-5	HVL-010818-05	T	Water	SM 2540D	
280-105260-6	HVL-010818-06	T	Water	SM 2540D	
280-105260-7	HVL-010818-07	T	Water	SM 2540D	
280-105260-8	HVL-010818-08	T	Water	SM 2540D	
280-105260-9	HVL-010818-09	T	Water	SM 2540D	
280-105260-10	HVL-010818-10	T	Water	SM 2540D	
280-105260-11	HVL-010818-11	T	Water	SM 2540D	
280-105260-12	HVL-010818-12	T	Water	SM 2540D	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-401213</b>					
LCS 280-401213/2	Lab Control Sample	T	Water	SM 2540C	
MB 280-401213/1	Method Blank	T	Water	SM 2540C	
280-105223-A-1 DU	Duplicate	T	Water	SM 2540C	
280-105260-1	HVL-010818-01	T	Water	SM 2540C	
280-105260-2	HVL-010818-02	T	Water	SM 2540C	
280-105260-3	HVL-010818-03	T	Water	SM 2540C	
280-105260-4	HVL-010818-04	T	Water	SM 2540C	
280-105260-5	HVL-010818-05	T	Water	SM 2540C	
280-105260-6	HVL-010818-06	T	Water	SM 2540C	
280-105260-7	HVL-010818-07	T	Water	SM 2540C	
280-105260-8	HVL-010818-08	T	Water	SM 2540C	
280-105260-9	HVL-010818-09	T	Water	SM 2540C	
280-105260-10	HVL-010818-10	T	Water	SM 2540C	
280-105260-11	HVL-010818-11	T	Water	SM 2540C	
280-105260-12	HVL-010818-12	T	Water	SM 2540C	
<b>Analysis Batch:280-401226</b>					
LCS 280-401226/4	Lab Control Sample	T	Water	SM 2320B	
MB 280-401226/5	Method Blank	T	Water	SM 2320B	
280-105260-1	HVL-010818-01	T	Water	SM 2320B	
280-105260-2	HVL-010818-02	T	Water	SM 2320B	
280-105260-3	HVL-010818-03	T	Water	SM 2320B	
280-105260-4	HVL-010818-04	T	Water	SM 2320B	
280-105260-5	HVL-010818-05	T	Water	SM 2320B	
280-105260-6	HVL-010818-06	T	Water	SM 2320B	
280-105260-7	HVL-010818-07	T	Water	SM 2320B	
280-105260-8	HVL-010818-08	T	Water	SM 2320B	
280-105260-9	HVL-010818-09	T	Water	SM 2320B	
280-105260-10	HVL-010818-10	T	Water	SM 2320B	
280-105260-11	HVL-010818-11	T	Water	SM 2320B	
280-105260-12	HVL-010818-12	T	Water	SM 2320B	
280-105265-C-2 DU	Duplicate	T	Water	SM 2320B	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-401755</b>					
LCS 280-401755/34	Lab Control Sample	T	Water	SM 5310B	
MB 280-401755/35	Method Blank	T	Water	SM 5310B	
280-105260-1	HVL-010818-01	T	Water	SM 5310B	
280-105260-2	HVL-010818-02	T	Water	SM 5310B	
280-105260-3	HVL-010818-03	T	Water	SM 5310B	
280-105260-3MS	Matrix Spike	T	Water	SM 5310B	
280-105260-3MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
280-105260-4	HVL-010818-04	T	Water	SM 5310B	
280-105260-5	HVL-010818-05	T	Water	SM 5310B	
280-105260-6	HVL-010818-06	T	Water	SM 5310B	
280-105260-7	HVL-010818-07	T	Water	SM 5310B	
280-105260-8	HVL-010818-08	T	Water	SM 5310B	
280-105260-9	HVL-010818-09	T	Water	SM 5310B	
280-105260-10	HVL-010818-10	T	Water	SM 5310B	
280-105260-11	HVL-010818-11	T	Water	SM 5310B	
280-105260-12	HVL-010818-12	T	Water	SM 5310B	
<b>Analysis Batch:280-402775</b>					
LCS 280-402775/18	Lab Control Sample	T	Water	350.1	
LCS 280-402775/46	Lab Control Sample	T	Water	350.1	
LCSD 280-402775/19	Lab Control Sample Duplicate	T	Water	350.1	
LCSD 280-402775/54	Lab Control Sample Duplicate	T	Water	350.1	
MB 280-402775/20	Method Blank	T	Water	350.1	
MB 280-402775/55	Method Blank	T	Water	350.1	
280-105260-1	HVL-010818-01	T	Water	350.1	
280-105260-1MS	Matrix Spike	T	Water	350.1	
280-105260-1MSD	Matrix Spike Duplicate	T	Water	350.1	
280-105260-2	HVL-010818-02	T	Water	350.1	
280-105260-3	HVL-010818-03	T	Water	350.1	
280-105260-4	HVL-010818-04	T	Water	350.1	
280-105260-5	HVL-010818-05	T	Water	350.1	
280-105260-6	HVL-010818-06	T	Water	350.1	
280-105260-7	HVL-010818-07	T	Water	350.1	
280-105260-8	HVL-010818-08	T	Water	350.1	
280-105260-9	HVL-010818-09	T	Water	350.1	
280-105260-10	HVL-010818-10	T	Water	350.1	
280-105260-11	HVL-010818-11	T	Water	350.1	
280-105260-12	HVL-010818-12	T	Water	350.1	
280-105260-12MS	Matrix Spike	T	Water	350.1	
280-105260-12MSD	Matrix Spike Duplicate	T	Water	350.1	
280-105366-A-10 DU	Duplicate	T	Water	350.1	

**Report Basis**

T = Total

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>HPLC/IC</b>					
<b>Analysis Batch:160-346367</b>					
LCS 160-346367/10	Lab Control Sample	T	Water	300.0	
MB 160-346367/9	Method Blank	T	Water	300.0	
280-105260-1DL	HVL-010818-01	T	Water	300.0	
280-105260-1DUDL	Duplicate	T	Water	300.0	
280-105260-1MSDL	Matrix Spike	T	Water	300.0	
280-105260-2	HVL-010818-02	T	Water	300.0	
280-105260-3DL	HVL-010818-03	T	Water	300.0	
280-105260-4DL	HVL-010818-04	T	Water	300.0	
280-105260-5DL	HVL-010818-05	T	Water	300.0	
280-105260-6DL	HVL-010818-06	T	Water	300.0	
280-105260-7DL	HVL-010818-07	T	Water	300.0	
280-105260-8DL	HVL-010818-08	T	Water	300.0	
280-105260-9DL	HVL-010818-09	T	Water	300.0	
280-105260-10	HVL-010818-10	T	Water	300.0	
280-105260-11DL	HVL-010818-11	T	Water	300.0	
280-105260-11MSDL	Matrix Spike	T	Water	300.0	
280-105260-12	HVL-010818-12	T	Water	300.0	
280-105260-12DL	HVL-010818-12	T	Water	300.0	

#### Report Basis

T = Total

Client: SCS Engineers

Job Number: 280-105260-1

**Surrogate Recovery Report**

**8260B Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	DBFM %Rec	TOL %Rec
280-105260-1	HVL-010818-01	95	90	106	106
280-105260-2	HVL-010818-02	93	93	106	110
280-105260-3	HVL-010818-03	100	87	107	107
280-105260-4	HVL-010818-04	96	91	106	107
280-105260-5	HVL-010818-05	98	89	108	104
280-105260-6	HVL-010818-06	96	88	107	107
280-105260-7	HVL-010818-07	106	92	113	112
280-105260-8	HVL-010818-08	99	93	109	108
280-105260-9	HVL-010818-09	99	88	107	104
280-105260-10	HVL-010818-10	97	81	106	101
280-105260-11	HVL-010818-11	102	89	111	107
280-105260-12	HVL-010818-12	102	89	110	110
MB 280-401190/6		104	100	112	115
LCS 280-401190/4		95	97	104	112
280-105260-8 MS	HVL-010818-08 MS	107	101	118	122
280-105260-8 MSD	HVL-010818-08 MSD	93	96	104	114

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	70-127
BFB = 4-Bromofluorobenzene (Surr)	78-120
DBFM = Dibromofluoromethane (Surr)	77-120
TOL = Toluene-d8 (Surr)	80-125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Method Blank - Batch: 280-401190**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: MB 280-401190/6  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/10/2018 0843  
 Prep Date: 01/10/2018 0843  
 Leach Date: N/A

Analysis Batch: 280-401190  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: VMS\_G2  
 Lab File ID: G2\_8542.D  
 Initial Weight/Volume: 20 mL  
 Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

## Method Blank - Batch: 280-401190

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: MB 280-401190/6  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/10/2018 0843  
Prep Date: 01/10/2018 0843  
Leach Date: N/A

Analysis Batch: 280-401190  
Prep Batch: N/A  
Leach Batch: N/A  
Units: ug/L

Instrument ID: VMS\_G2  
Lab File ID: G2\_8542.D  
Initial Weight/Volume: 20 mL  
Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
trans-1,4-Dichloro-2-butene	ND		3.0
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104	70 - 127
4-Bromofluorobenzene (Surr)	100	78 - 120
Dibromofluoromethane (Surr)	112	77 - 120
Toluene-d8 (Surr)	115	80 - 125



# Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Lab Control Sample - Batch: 280-401190**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID:	LCS 280-401190/4	Analysis Batch:	280-401190	Instrument ID:	VMS_G2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	G2_8541.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	01/10/2018 0822	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	01/10/2018 0822				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1,2-Tetrachloroethane	5.00	4.64	93	65 - 135	
1,1,1-Trichloroethane	5.00	4.81	96	65 - 135	
1,1,2,2-Tetrachloroethane	5.00	4.61	92	58 - 135	
1,1,2-Trichloroethane	5.00	5.05	101	64 - 135	
1,1-Dichloroethane	5.00	4.61	92	65 - 135	
1,1-Dichloroethene	5.00	4.52	90	65 - 136	
1,2,3-Trichloropropane	5.00	4.51	90	65 - 135	
1,2-Dibromo-3-Chloropropane	5.00	3.85	77	57 - 135	
1,2-Dibromoethane	5.00	4.64	93	65 - 135	
1,2-Dichlorobenzene	5.00	4.65	93	65 - 135	
1,2-Dichloroethane	5.00	5.03	101	65 - 135	
1,2-Dichloropropane	5.00	4.80	96	64 - 135	
1,4-Dichlorobenzene	5.00	4.44	89	65 - 135	
2-Butanone (MEK)	20.0	20.0	100	44 - 177	
2-Hexanone	20.0	21.5	107	57 - 139	
4-Methyl-2-pentanone (MIBK)	20.0	18.9	95	60 - 150	
Acetone	20.0	20.2	101	39 - 156	
Acrylonitrile	50.0	46.3	93	56 - 135	
Benzene	5.00	4.82	96	65 - 135	
Bromochloromethane	5.00	4.87	97	65 - 135	
Bromodichloromethane	5.00	4.98	100	65 - 135	
Bromoform	5.00	3.88	78	62 - 135	
Bromomethane	5.00	4.91	98	45 - 135	
Carbon disulfide	5.00	4.74	95	55 - 143	
Carbon tetrachloride	5.00	4.88	98	65 - 135	
Chlorobenzene	5.00	4.61	92	65 - 135	
Chloroethane	5.00	4.81	96	46 - 136	
Chloroform	5.00	4.89	98	65 - 135	
Chloromethane	5.00	5.13	103	34 - 145	
cis-1,2-Dichloroethene	5.00	4.56	91	65 - 135	
cis-1,3-Dichloropropene	5.00	4.18	84	65 - 135	
Dibromochloromethane	5.00	4.54	91	65 - 135	
Dibromomethane	5.00	4.83	97	65 - 135	
Dichlorodifluoromethane	5.00	5.07	101	43 - 142	
Ethylbenzene	5.00	4.66	93	65 - 135	
Iodomethane	5.00	4.70	94	65 - 142	
Methylene Chloride	5.00	4.85	97	54 - 141	
m-Xylene & p-Xylene	5.00	4.62	92	65 - 135	
o-Xylene	5.00	4.64	93	65 - 135	
Styrene	5.00	4.80	96	65 - 135	
Tetrachloroethene	5.00	4.66	93	65 - 135	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Lab Control Sample - Batch: 280-401190**

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: LCS 280-401190/4	Analysis Batch: 280-401190	Instrument ID: VMS_G2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: G2_8541.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 01/10/2018 0822	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 01/10/2018 0822		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Toluene	5.00	5.30	106	65 - 135	
trans-1,2-Dichloroethene	5.00	4.98	100	65 - 135	
trans-1,3-Dichloropropene	5.00	4.55	91	65 - 135	
trans-1,4-Dichloro-2-butene	5.00	3.98	80	53 - 135	
Trichloroethene	5.00	4.65	93	65 - 135	
Trichlorofluoromethane	5.00	4.76	95	53 - 137	
Vinyl acetate	10.0	7.51	75	11 - 187	
Vinyl chloride	5.00	5.01	100	40 - 137	
Surrogate		% Rec		Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		95		70 - 127	
4-Bromofluorobenzene (Surr)		97		78 - 120	
Dibromofluoromethane (Surr)		104		77 - 120	
Toluene-d8 (Surr)		112		80 - 125	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401190**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-105260-8  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/10/2018 1228  
Prep Date: 01/10/2018 1228  
Leach Date: N/A

Analysis Batch: 280-401190  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: VMS\_G2  
Lab File ID: G2\_8552.D  
Initial Weight/Volume: 20 mL  
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 280-105260-8  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/10/2018 1249  
Prep Date: 01/10/2018 1249  
Leach Date: N/A

Analysis Batch: 280-401190  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: VMS\_G2  
Lab File ID: G2\_8553.D  
Initial Weight/Volume: 20 mL  
Final Weight/Volume: 20 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1,1,2-Tetrachloroethane	106	100	65 - 135	6	20		
1,1,1-Trichloroethane	102	100	65 - 135	2	20		
1,1,2,2-Tetrachloroethane	104	95	58 - 135	9	20		
1,1,2-Trichloroethane	114	106	64 - 135	7	27		
1,1-Dichloroethane	101	96	65 - 135	5	21		
1,1-Dichloroethene	93	95	65 - 136	2	20		
1,2,3-Trichloropropane	96	92	65 - 135	4	23		
1,2-Dibromo-3-Chloropropane	85	91	57 - 135	7	22		
1,2-Dibromoethane	99	95	65 - 135	4	27		
1,2-Dichlorobenzene	98	97	65 - 135	1	20		
1,2-Dichloroethane	114	106	65 - 135	8	20		
1,2-Dichloropropane	106	98	64 - 135	8	20		
1,4-Dichlorobenzene	96	94	65 - 135	2	23		
2-Butanone (MEK)	97	103	44 - 177	6	32		
2-Hexanone	103	101	57 - 139	2	25		
4-Methyl-2-pentanone (MIBK)	90	81	60 - 150	11	22		
Acetone	100	89	39 - 156	11	23		
Acrylonitrile	102	96	56 - 135	7	30		
Benzene	107	102	65 - 135	5	20		
Bromochloromethane	113	99	65 - 135	13	29		
Bromodichloromethane	110	102	65 - 135	7	20		
Bromoform	88	80	62 - 135	9	27		
Bromomethane	106	102	45 - 135	4	33		
Carbon disulfide	105	100	55 - 143	5	20		
Carbon tetrachloride	105	101	65 - 135	4	21		
Chlorobenzene	105	100	65 - 135	4	20		
Chloroethane	106	100	46 - 136	6	25		
Chloroform	109	103	65 - 135	5	20		
Chloromethane	109	110	34 - 145	1	24		
cis-1,2-Dichloroethene	102	97	65 - 135	5	20		
cis-1,3-Dichloropropene	83	78	65 - 135	5	26		
Dibromochloromethane	102	95	65 - 135	7	20		

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401190**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-105260-8  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/10/2018 1228  
Prep Date: 01/10/2018 1228  
Leach Date: N/A

Analysis Batch: 280-401190  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: VMS\_G2  
Lab File ID: G2\_8552.D  
Initial Weight/Volume: 20 mL  
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 280-105260-8  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/10/2018 1249  
Prep Date: 01/10/2018 1249  
Leach Date: N/A

Analysis Batch: 280-401190  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: VMS\_G2  
Lab File ID: G2\_8553.D  
Initial Weight/Volume: 20 mL  
Final Weight/Volume: 20 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Dibromomethane	107	100	65 - 135	7	26		
Dichlorodifluoromethane	103	105	43 - 142	2	30		
Ethylbenzene	99	96	65 - 135	2	20		
Iodomethane	103	99	65 - 142	3	25		
Methylene Chloride	108	100	54 - 141	8	26		
m-Xylene & p-Xylene	95	93	65 - 135	2	20		
o-Xylene	95	92	65 - 135	3	20		
Styrene	106	94	65 - 135	11	26		
Tetrachloroethene	95	95	65 - 135	0	20		
Toluene	117	111	65 - 135	5	20		
trans-1,2-Dichloroethene	109	104	65 - 135	5	24		
trans-1,3-Dichloropropene	96	87	65 - 135	10	26		
trans-1,4-Dichloro-2-butene	85	80	53 - 135	7	25		
Trichloroethene	97	94	65 - 135	4	20		
Trichlorofluoromethane	98	95	53 - 137	3	27		
Vinyl acetate	76	71	11 - 187	7	24		
Vinyl chloride	106	106	40 - 137	1	24		
Surrogate	MS % Rec		MSD % Rec		Acceptance Limits		
1,2-Dichloroethane-d4 (Surr)	107		93		70 - 127		
4-Bromofluorobenzene (Surr)	101		96		78 - 120		
Dibromofluoromethane (Surr)	118		104		77 - 120		
Toluene-d8 (Surr)	122		114		80 - 125		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Method Blank - Batch: 160-346367**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 160-346367/9	Analysis Batch: 160-346367	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011518- 9.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/15/2018 1625	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Result	Qual	RL
Chloride	ND		0.20
Sulfate	ND		0.20

**Lab Control Sample - Batch: 160-346367**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: LCS 160-346367/10	Analysis Batch: 160-346367	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011518- 10.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/15/2018 1641	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.00	1.91	95	90 - 110	
Sulfate	8.00	7.62	95	90 - 110	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Matrix Spike - Batch: 160-346367**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-105260-1DL	Analysis Batch: 160-346367	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011518- 13.d
Dilution: 2.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/15/2018 1830	Units: mg/L	Final Weight/Volume:
Prep Date: N/A	Run Type: DL	Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	4.4	4.00	8.42	102	90 - 110	
Sulfate	5.4	8.00	12.7	90	90 - 110	

**Matrix Spike - Batch: 160-346367**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-105260-11DL	Analysis Batch: 160-346367	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011518- 26.d
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/15/2018 2203	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A	Run Type: DL	Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	12	10.0	21.7	101	90 - 110	
Sulfate	12	20.0	30.3	90	90 - 110	

**Duplicate - Batch: 160-346367**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-105260-1DL	Analysis Batch: 160-346367	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011518- 12.d
Dilution: 2.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/15/2018 1714	Units: mg/L	Final Weight/Volume:
Prep Date: N/A	Run Type: DL	Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	4.4	4.40	1	20	
Sulfate	5.4	5.41	0.5	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Method Blank - Batch: 280-401174**

**Method: 6010B  
Preparation: 3010A**

Lab Sample ID: MB 280-401174/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/19/2018 0130  
 Prep Date: 01/16/2018 1504  
 Leach Date: N/A

Analysis Batch: 280-402105  
 Prep Batch: 280-401174  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: MT\_051  
 Lab File ID: 51A011818B.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

**Lab Control Sample - Batch: 280-401174**

**Method: 6010B  
Preparation: 3010A**

Lab Sample ID: LCS 280-401174/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/19/2018 0133  
 Prep Date: 01/16/2018 1504  
 Leach Date: N/A

Analysis Batch: 280-402105  
 Prep Batch: 280-401174  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: MT\_051  
 Lab File ID: 51A011818B.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Beryllium, Total	0.0500	0.0506	101	89 - 113	
Cadmium, Total	0.100	0.101	101	88 - 111	
Cobalt, Total	0.500	0.485	97	89 - 111	
Silver, Total	0.0500	0.0519	104	86 - 115	
Vanadium, Total	0.500	0.503	101	90 - 111	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401174**

**Method: 6010B  
Preparation: 3010A**

MS Lab Sample ID: 280-105260-2  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/19/2018 0145  
 Prep Date: 01/16/2018 1504  
 Leach Date: N/A

Analysis Batch: 280-402105  
 Prep Batch: 280-401174  
 Leach Batch: N/A

Instrument ID: MT\_051  
 Lab File ID: 51A011818B.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-105260-2  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/19/2018 0148  
 Prep Date: 01/16/2018 1504  
 Leach Date: N/A

Analysis Batch: 280-402105  
 Prep Batch: 280-401174  
 Leach Batch: N/A

Instrument ID: MT\_051  
 Lab File ID: 51A011818B.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Beryllium, Total	100	103	79 - 121	3	20		
Cadmium, Total	99	102	82 - 119	3	20		
Cobalt, Total	95	98	82 - 119	2	20		
Silver, Total	101	105	75 - 141	3	20		
Vanadium, Total	99	101	85 - 120	3	20		



# Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

## Method Blank - Batch: 280-401182

Lab Sample ID: MB 280-401182/1-A  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/11/2018 0128  
Prep Date: 01/10/2018 0732  
Leach Date: N/A

Analysis Batch: 280-401319  
Prep Batch: 280-401182  
Leach Batch: N/A  
Units: mg/L

## Method: 6010B Preparation: 3005A Total Recoverable

Instrument ID: MT\_051  
Lab File ID: 51B011018C.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Calcium, Dissolved	ND		0.20
Magnesium, Dissolved	ND		0.10
Potassium, Dissolved	ND		2.0

## Method Blank - Batch: 280-401182

Lab Sample ID: MB 280-401182/1-A  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/11/2018 1948  
Prep Date: 01/10/2018 0732  
Leach Date: N/A

Analysis Batch: 280-401459  
Prep Batch: 280-401182  
Leach Batch: N/A  
Units: mg/L

## Method: 6010B Preparation: 3005A Total Recoverable

Instrument ID: MT\_051  
Lab File ID: 51A011118B.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Sodium, Dissolved	ND		1.0

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

## Lab Control Sample - Batch: 280-401182

Lab Sample ID: LCS 280-401182/2-A  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/11/2018 0131  
Prep Date: 01/10/2018 0732  
Leach Date: N/A

Analysis Batch: 280-401319  
Prep Batch: 280-401182  
Leach Batch: N/A  
Units: mg/L

## Method: 6010B Preparation: 3005A Total Recoverable

Instrument ID: MT\_051  
Lab File ID: 51B011018C.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Calcium, Dissolved	50.0	49.7	99	90 - 111	
Magnesium, Dissolved	50.0	48.5	97	90 - 113	
Potassium, Dissolved	50.0	53.7	107	89 - 114	

## Lab Control Sample - Batch: 280-401182

Lab Sample ID: LCS 280-401182/2-A  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/11/2018 1951  
Prep Date: 01/10/2018 0732  
Leach Date: N/A

Analysis Batch: 280-401459  
Prep Batch: 280-401182  
Leach Batch: N/A  
Units: mg/L

## Method: 6010B Preparation: 3005A Total Recoverable

Instrument ID: MT\_051  
Lab File ID: 51A011118B.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sodium, Dissolved	50.0	56.7	113	90 - 115	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401182**

**Method: 6010B  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-105265-B-2-B MS	Analysis Batch: 280-401319	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-401182	Lab File ID: 51B011018C.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/11/2018 0139		Final Weight/Volume: 50 mL
Prep Date: 01/10/2018 0732		
Leach Date: N/A		

MSD Lab Sample ID: 280-105265-B-2-C MSD	Analysis Batch: 280-401319	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-401182	Lab File ID: 51B011018C.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/11/2018 0142		Final Weight/Volume: 50 mL
Prep Date: 01/10/2018 0732		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Calcium, Dissolved	102	103	48 - 153	0	20		
Magnesium, Dissolved	103	104	62 - 146	0	20		
Potassium, Dissolved	111	111	76 - 132	0	20		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401182**

**Method: 6010B  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-105265-B-2-B MS	Analysis Batch: 280-401459	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-401182	Lab File ID: 51A011118B.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/11/2018 2000		Final Weight/Volume: 50 mL
Prep Date: 01/10/2018 0732		
Leach Date: N/A		

MSD Lab Sample ID: 280-105265-B-2-C MSD	Analysis Batch: 280-401459	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-401182	Lab File ID: 51A011118B.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/11/2018 2003		Final Weight/Volume: 50 mL
Prep Date: 01/10/2018 0732		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Sodium, Dissolved	37	107	70 - 203	10	20	4	4

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Method Blank - Batch: 580-265415**

Lab Sample ID: MB 580-265415/19-A  
 Client Matrix: Water  
 Dilution: 5.0  
 Analysis Date: 01/18/2018 1416  
 Prep Date: 01/17/2018 1333  
 Leach Date: N/A

Analysis Batch: 580-265558  
 Prep Batch: 580-265415  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: TAC110  
 Lab File ID: 063SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Iron, Dissolved	ND		0.18

**Lab Control Sample/  
 Lab Control Sample Duplicate Recovery Report - Batch: 580-265415**

LCS Lab Sample ID: LCS 580-265415/20-A  
 Client Matrix: Water  
 Dilution: 50  
 Analysis Date: 01/18/2018 1420  
 Prep Date: 01/17/2018 1334  
 Leach Date: N/A

Analysis Batch: 580-265558  
 Prep Batch: 580-265415  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: TAC110  
 Lab File ID: 064SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Iron, Dissolved	96	96	80 - 120	0	20		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Iron, Dissolved	96	96	80 - 120	0	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-265415**

**Method: 6020  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-105260-1  
Client Matrix: Water  
Dilution: 50  
Analysis Date: 01/18/2018 1437  
Prep Date: 01/17/2018 1333  
Leach Date: N/A

Analysis Batch: 580-265558  
Prep Batch: 580-265415  
Leach Batch: N/A

Instrument ID: TAC110  
Lab File ID: 069SMPL.d  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-105260-1  
Client Matrix: Water  
Dilution: 50  
Analysis Date: 01/18/2018 1441  
Prep Date: 01/17/2018 1333  
Leach Date: N/A

Analysis Batch: 580-265558  
Prep Batch: 580-265415  
Leach Batch: N/A

Instrument ID: TAC110  
Lab File ID: 070SMPL.d  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Iron, Dissolved	96	97	80 - 120	1	20		

**Duplicate - Batch: 580-265415**

**Method: 6020  
Preparation: 3005A  
Dissolved**

Lab Sample ID: 280-105260-1  
Client Matrix: Water  
Dilution: 5.0  
Analysis Date: 01/18/2018 1430  
Prep Date: 01/17/2018 1333  
Leach Date: N/A

Analysis Batch: 580-265558  
Prep Batch: 580-265415  
Leach Batch: N/A  
Units: mg/L

Instrument ID: TAC110  
Lab File ID: 067SMPL.d  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Iron, Dissolved	ND	ND	NC	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Method Blank - Batch: 280-401171**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: MB 280-401171/1-A	Analysis Batch: 280-402004	Instrument ID: MT_077
Client Matrix: Water	Prep Batch: 280-401171	Lab File ID: 179_BLK.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 0128	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		
Leach Date: N/A		

Analyte	Result	Qual	RL
Antimony, Total	ND		0.0020
Arsenic, Total	ND		0.0050
Barium, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

**Lab Control Sample - Batch: 280-401171**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: LCS 280-401171/2-A	Analysis Batch: 280-402004	Instrument ID: MT_077
Client Matrix: Water	Prep Batch: 280-401171	Lab File ID: 180_LCS.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 0132	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony, Total	0.0400	0.0378	95	85 - 115	
Arsenic, Total	0.0400	0.0370	93	85 - 117	
Barium, Total	0.0400	0.0384	96	85 - 118	
Chromium, Total	0.0400	0.0387	97	84 - 121	
Copper, Total	0.0400	0.0393	98	85 - 119	
Lead, Total	0.0400	0.0395	99	85 - 118	
Nickel, Total	0.0400	0.0387	97	85 - 119	
Selenium, Total	0.0400	0.0376	94	77 - 122	
Thallium, Total	0.0400	0.0394	98	85 - 118	
Zinc, Total	0.0400	0.0419	105	83 - 122	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401171**

**Method: 6020  
Preparation: 3020A**

MS Lab Sample ID: 280-105260-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/18/2018 0143  
Prep Date: 01/16/2018 1504  
Leach Date: N/A

Analysis Batch: 280-402004  
Prep Batch: 280-401171  
Leach Batch: N/A

Instrument ID: MT\_077  
Lab File ID: 183SMPL.d  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-105260-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/18/2018 0147  
Prep Date: 01/16/2018 1504  
Leach Date: N/A

Analysis Batch: 280-402004  
Prep Batch: 280-401171  
Leach Batch: N/A

Instrument ID: MT\_077  
Lab File ID: 184SMPL.d  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Antimony, Total	97	97	85 - 115	0	20		
Arsenic, Total	92	94	85 - 117	3	20		
Barium, Total	104	104	85 - 118	0	20		
Chromium, Total	98	100	84 - 121	2	20		
Copper, Total	99	99	85 - 119	0	20		
Lead, Total	101	101	85 - 118	0	20		
Nickel, Total	99	97	85 - 119	2	20		
Selenium, Total	94	96	77 - 122	2	20		
Thallium, Total	99	100	85 - 118	1	20		
Zinc, Total	108	111	83 - 122	2	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Method Blank - Batch: 280-401183**

Lab Sample ID: MB 280-401183/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/17/2018 0450  
 Prep Date: 01/16/2018 1504  
 Leach Date: N/A

Analysis Batch: 280-401890  
 Prep Batch: 280-401183  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_077  
 Lab File ID: 219\_BLK.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Manganese, Dissolved	ND		0.0010

**Lab Control Sample - Batch: 280-401183**

Lab Sample ID: LCS 280-401183/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/17/2018 0454  
 Prep Date: 01/16/2018 1504  
 Leach Date: N/A

Analysis Batch: 280-401890  
 Prep Batch: 280-401183  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_077  
 Lab File ID: 220\_LCS.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Manganese, Dissolved	0.0400	0.0383	96	85 - 117	

**Matrix Spike/  
 Matrix Spike Duplicate Recovery Report - Batch: 280-401183**

MS Lab Sample ID: 280-105260-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/17/2018 0505  
 Prep Date: 01/16/2018 1504  
 Leach Date: N/A

Analysis Batch: 280-401890  
 Prep Batch: 280-401183  
 Leach Batch: N/A

**Method: 6020  
 Preparation: 3005A  
 Dissolved**

Instrument ID: MT\_077  
 Lab File ID: 223SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-105260-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/17/2018 0509  
 Prep Date: 01/16/2018 1504  
 Leach Date: N/A

Analysis Batch: 280-401890  
 Prep Batch: 280-401183  
 Leach Batch: N/A

Instrument ID: MT\_077  
 Lab File ID: 224SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Manganese, Dissolved	88	85	85 - 117	1	20		



## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Method Blank - Batch: 280-401114**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-401114/6	Analysis Batch: 280-401114	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 06.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/09/2018 1340	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Nitrate as N	ND		0.20

**Method Reporting Limit Check - Batch: 280-401114**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-401114/3	Analysis Batch: 280-401114	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 03.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/09/2018 1247	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	0.200	ND	86	50 - 150	

**Lab Control Sample/**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-401114**

**Method: 300.0**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-401114/4	Analysis Batch: 280-401114	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 04.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/09/2018 1304	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-401114/5	Analysis Batch: 280-401114	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 05.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/09/2018 1322	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Nitrate as N	98	98	90 - 110	0	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401114**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-105260-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/09/2018 1753  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401114  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom7  
Lab File ID: 09.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

MSD Lab Sample ID: 280-105260-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/09/2018 1811  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401114  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom7  
Lab File ID: 10.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate as N	103	102	80 - 120	0	20		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401114**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-105260-9  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/09/2018 2144  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401114  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom7  
Lab File ID: 22.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

MSD Lab Sample ID: 280-105260-9  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/09/2018 2202  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401114  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom7  
Lab File ID: 23.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate as N	102	103	80 - 120	1	20		

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

## Duplicate - Batch: 280-401114

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-105260-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/09/2018 1735  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401114  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: WC\_IonChrom7  
Lab File ID: 08.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate as N	1.0	0.990	1	15	

## Duplicate - Batch: 280-401114

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-105260-9  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/09/2018 2127  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401114  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: WC\_IonChrom7  
Lab File ID: 21.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate as N	1.8	1.78	0.3	15	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

## Method Blank - Batch: 280-402775

**Method: 350.1**  
**Preparation: N/A**

Lab Sample ID:	MB 280-402775/20	Analysis Batch:	280-402775	Instrument ID:	WC_Alp 3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\012518.RS
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	01/25/2018 0726	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	RL
Ammonia	ND		0.10

## Method Blank - Batch: 280-402775

**Method: 350.1**  
**Preparation: N/A**

Lab Sample ID:	MB 280-402775/55	Analysis Batch:	280-402775	Instrument ID:	WC_Alp 3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\012518.RS
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	01/25/2018 0851	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	RL
Ammonia	ND		0.10

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Lab Control Sample/**  
**Lab Control Sample Duplicate Recovery Report - Batch: 280-402775**      **Method: 350.1**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-402775/18	Analysis Batch: 280-402775	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\012518.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/25/2018 0722	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-402775/19	Analysis Batch: 280-402775	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\012518.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/25/2018 0724	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ammonia	100	92	90 - 110	8	10		

**Lab Control Sample/**  
**Lab Control Sample Duplicate Recovery Report - Batch: 280-402775**      **Method: 350.1**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-402775/46	Analysis Batch: 280-402775	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\012518.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/25/2018 0818	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-402775/54	Analysis Batch: 280-402775	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\012518.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/25/2018 0849	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ammonia	100	97	90 - 110	3	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-402775**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-105260-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/25/2018 0855  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-402775  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_Alp 3  
Lab File ID: C:\FLOW\_4\012518.RS  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 280-105260-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/25/2018 0857  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-402775  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_Alp 3  
Lab File ID: C:\FLOW\_4\012518.RS  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia	101	95	90 - 110	4	10		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-402775**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-105260-12  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/25/2018 0935  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-402775  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_Alp 3  
Lab File ID: C:\FLOW\_4\012518.RS  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 280-105260-12  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/25/2018 0937  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-402775  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_Alp 3  
Lab File ID: C:\FLOW\_4\012518.RS  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia	96	97	90 - 110	0	10		

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

## Duplicate - Batch: 280-402775

**Method: 350.1**  
**Preparation: N/A**

Lab Sample ID:	280-105366-A-10 DU	Analysis Batch:	280-402775	Instrument ID:	WC_Alp 3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\012518.RS
Dilution:	10	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	01/25/2018 0730	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Ammonia	10	10.7	4	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Method Blank - Batch: 280-401226**

**Method: SM 2320B  
Preparation: N/A**

Lab Sample ID: MB 280-401226/5	Analysis Batch: 280-401226	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 010918.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/09/2018 1625	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Alkalinity	ND		5.0
Bicarbonate Alkalinity as CaCO3	ND		5.0

**Lab Control Sample - Batch: 280-401226**

**Method: SM 2320B  
Preparation: N/A**

Lab Sample ID: LCS 280-401226/4	Analysis Batch: 280-401226	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 010918.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/09/2018 1617	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	200	186	93	90 - 110	

**Duplicate - Batch: 280-401226**

**Method: SM 2320B  
Preparation: N/A**

Lab Sample ID: 280-105265-C-2 DU	Analysis Batch: 280-401226	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 010918.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/09/2018 1642	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity	390	400	2	10	



## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Method Blank - Batch: 280-401213**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: MB 280-401213/1	Analysis Batch: 280-401213	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/10/2018 0801	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Dissolved Solids	ND		10

**Lab Control Sample - Batch: 280-401213**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: LCS 280-401213/2	Analysis Batch: 280-401213	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/10/2018 0801	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Dissolved Solids	500	484	97	86 - 110	

**Duplicate - Batch: 280-401213**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: 280-105223-A-1 DU	Analysis Batch: 280-401213	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/10/2018 0801	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Dissolved Solids	520	524	1	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Method Blank - Batch: 280-401211**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: MB 280-401211/1	Analysis Batch: 280-401211	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 01/10/2018 0759	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Suspended Solids	ND		4.0

**Lab Control Sample - Batch: 280-401211**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: LCS 280-401211/2	Analysis Batch: 280-401211	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 01/10/2018 0759	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Suspended Solids	100	91.2	91	86 - 114	

**Duplicate - Batch: 280-401211**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: 280-105222-C-1 DU	Analysis Batch: 280-401211	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 01/10/2018 0759	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Suspended Solids	ND	ND	NC	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105260-1

**Method Blank - Batch: 280-401755**

**Method: SM 5310B**

**Preparation: N/A**

Lab Sample ID: MB 280-401755/35	Analysis Batch: 280-401755	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011518B.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/15/2018 2337	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Organic Carbon - Quad	ND		1.0

**Lab Control Sample - Batch: 280-401755**

**Method: SM 5310B**

**Preparation: N/A**

Lab Sample ID: LCS 280-401755/34	Analysis Batch: 280-401755	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011518B.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/15/2018 2322	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Quad	25.0	24.3	97	88 - 112	

**Matrix Spike/**

**Matrix Spike Duplicate Recovery Report - Batch: 280-401755**

**Method: SM 5310B**

**Preparation: N/A**

MS Lab Sample ID: 280-105260-3	Analysis Batch: 280-401755	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011518B.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/16/2018 0131		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-105260-3	Analysis Batch: 280-401755	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011518B.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/16/2018 0147		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Total Organic Carbon - Quad	97	97	88 - 112	0	15		

Chain of Custody Record

4150 9261 5964  
 4150 9261 5975

THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information</b> Client Contact: Sam Graber Company: SCS Engineers Address: 2405 140th Avenue NE Suite 107 City: Bellevue State, Zip: WA, 98005-1877 Phone: 612 940 2980 Email: SGrabert@scsengineers.com		Lab PM: Sara, Betsy A E-Mail: betsy.sara@testamericainc.com		Carrier Tracking No(s): 4150 9261 5986 4150 9261 5987		COC No: 280-21691-6019.1 Page: 1 of 2 Job #: 04217003.03	
Due Date Requested: Standard TAT Requested (days): PO #: Purchase Order not required WO #:		Project #: 28003580-Quarterly Groundwater Wells Site: SSO/WI		Analysis Requested 280-105260 Chain of Custody		Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecaldehyde U - Acetone V - MCAA W - ph 4-5 X - EDTA L - EDA Other:	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Identification HVL-010818-01 HVL-010818-02 HVL-010818-03 HVL-010818-04 HVL-010818-05 HVL-010818-06 HVL-010818-07 HVL-010818-08 HVL-010818-09 HVL-010818-10 HVL-010818-11		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) Dissolved Metals (6010B/6020) Dissolved Iron (A Seattle) TDS/Alk/NO3(C) Cl/NO4 (TA St. Louis) Ammonia/TC TSS Total Metals		Special Instructions/Note: Short Hold: NO3(C) Total Number of containers: 10	
Empty Kit Relinquished by:		Date:		Method of Shipment:		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Relinquished by: <i>SA</i>		Date/Time: 1/8/18 1600		Received by: <i>KANTAN</i>		Date/Time: 1-9-18 0900	
Relinquished by:		Date/Time:		Received by:		Date/Time:	
Relinquished by:		Date/Time:		Received by:		Date/Time:	
Custody Seals Intact Δ Yes Δ No		Custody Seal No.: 437278 - 437281		Cooler Temperature(s) °C and Other Remarks: 4.0, 0.9, 2.5, 1.7		Company: TH-DEN Company:	

<b>Client Information</b> Client Contact: Sam Graber Company: SCS Engineers Address: 2405 140th Avenue NE, Suite 107 Bellevue State, Zip: WA, 98005-1877 Phone: 612 940 2980 Email: SGrab@scsengineers.com Project Name: Hidden Valley Landfill Site:		Lab PM: Sara, Betsy A E-Mail: betsy.sara@testamericainc.com Carrier Tracking Note: See pg 2 COC No: 280-21691-6019.1 Page: 2 of 2 Job #: 0421700303	
Due Date Requested: Standard TAT Requested (days): PO #: Purchase Order not required WO #:		<b>Analysis Requested</b> Dissolved Metals (6010B/6020) A D X Dissolved Iron (TA Seattle) D X TDS/AI/ks/NO3(C) N X Cl/SO4 (TA St. Louis) N X Ammonia/TC N X TSS N X Total Metals N X Total Number of Containers 10	
Sample Identification HVL-010818-12 Sample Date: 1/8/18 Sample Time: 1429 Sample Type (C=comp, G=grab): G Preservation Code: W Matrix (W=water, S=solid, D=metal, BT=tissue, A=air)		Field Filtered Sample (Yes or No) Y Perform MS/MSD (Yes or No) N 8260B A D X Special Instructions/Note: Short Hold: NO3(IC)	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)			
Empty Kit Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by: [Signature] Custody Seal No.: See pg. 2 Custody Seal Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No			
Date: 1/8/18 1600 Date/Time: 1/8/18 1600 Date/Time:		Date/Time: 1/9/18 0900 Date/Time: 1/9/18 0900 Date/Time:	
Date: 1/8/18 1600 Date/Time: 1/8/18 1600 Date/Time:		Date/Time: 1/9/18 0900 Date/Time: 1/9/18 0900 Date/Time:	

# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:				
Client Contact:		Sara, Betsy A			280-424589.1				
Shipping/Receiving		Phone:	E-Mail:	State of Origin:	Page: 1 of 2				
Company:			betsy.sara@testamericainc.com	Washington	Job #:				
TestAmerica Laboratories, Inc.		Accreditations Required (See note):		State Program - Washington	280-105260-1				
Address:		Due Date Requested:	Preservation Codes:						
13715 Rider Trail North,		1/26/2018	A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)						
City:		TAT Requested (days):	Analysis Requested						
Earth City									
State, Zip:		PO #:							
MO, 63045		WO #:							
Phone:		Project #:							
314-298-8566(Tel) 314-298-8757(Fax)		28003580							
Email:		SSOW#::							
Project Name:		Total Number of Containers							
Hidden Valley LF									
Site:									
<b>Sample Identification - Client ID (Lab ID)</b>		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=oil, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300 ORGFM_280I (MOD) Sulfate/Chloride (TA SL)	Special Instructions/Note:
HVL-010818-01 (280-105260-1)	1/8/18	09:50 Pacific	Water	X	X	1	1	Unpreserved	
HVL-010818-02 (280-105260-2)	1/8/18	10:00 Pacific	Water	X	X	1	1		
HVL-010818-03 (280-105260-3)	1/8/18	10:38 Pacific	Water	X	X	1	1		
HVL-010818-04 (280-105260-4)	1/8/18	10:55 Pacific	Water	X	X	1	1		
HVL-010818-05 (280-105260-5)	1/8/18	11:54 Pacific	Water	X	X	1	1		
HVL-010818-06 (280-105260-6)	1/8/18	11:42 Pacific	Water	X	X	1	1		
HVL-010818-07 (280-105260-7)	1/8/18	12:32 Pacific	Water	X	X	1	1		
HVL-010818-08 (280-105260-8)	1/8/18	12:34 Pacific	Water	X	X	1	1		
HVL-010818-09 (280-105260-9)	1/8/18	13:52 Pacific	Water	X	X	1	1		

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analyte/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**

Unconfirmed  
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months  
 Special Instructions/OC Requirements:

Empty Kit Relinquished by: \_\_\_\_\_ Date: 1/18/18 Time: 6:20  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Custody Seal No.: \_\_\_\_\_  
 Custody Seal Intact:  Yes  No  
 Cooler Temperature(s) °C and Other Remarks:

# Chain of Custody Record

<b>Client Information (Sub Contract Lab)</b>		Sampler: Lab PM: Sara, Betsy A		Carrier Tracking No(s): 280-424589.2						
Client Contact: Arvada, CO 80002		Phone: E-Mail: betsy.sara@testamericainc.com		State of Origin: Washington						
Shipping/Receiving		Company: TestAmerica Laboratories, Inc.		Page: Page 2 of 2						
Address: 13715 Rider Trail North,		Accreditations Required (See note): State Program - Washington		Job #: 280-105260-1						
City: Earth City		Due Date Requested: 1/26/2018		Preservation Codes:						
State, Zip: MO, 63045		TAT Requested (days):		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:						
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		PO #:		M - Hexamine N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecylhydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)						
Email:		WO #:								
Project Name: Hidden Valley LF		Project #: 28003580								
Site:		SSOW#:								
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Orwash, A=lab)	Field Filtered Sample (Yes or No)	Perform MSMSD (Yes or No)	300 ORGM 280I (MOD) Sulfate/Chloride (TA St Louis)	Total Number of Containers	Special Instructions/Note:
HVL-010818-10 (280-105260-10)		1/8/18	13:34 Pacific	Water	Water	X	X	X	1	Unpreserved
HVL-010818-11 (280-105260-11)		1/8/18	14:35 Pacific	Water	Water	X	X	X	1	
HVL-010818-12 (280-105260-12)		1/8/18	14:28 Pacific	Water	Water	X	X	X	1	
<p>Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte &amp; accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.</p>										
<b>Possible Hazard Identification</b>										
Unconfirmed										
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2										
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)										
<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:										
Time: _____ Method of Shipment: _____										
Relinquished by: <i>Alan Stotah</i>		Date: 1/18/18 16:20		Company: _____		Received by: <i>Kristine Jay</i>		Date Time: 1/10/18		Company: <i>ASR</i>
Relinquished by:		Date Time:		Company:		Received by:		Date Time:		Company:
Relinquished by:		Date Time:		Company:		Received by:		Date Time:		Company:
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:						



**TestAmerica Denver**

4955 Yarrow Street  
Arvada, CO 80002  
Phone (303) 736-0100 Fax (303) 431-7171

**Chain of Custody Record**



**TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information (Sub Contract Lab)</b>		Sampler:		Lab PM:		Carrier Tracking No(s):		COC No:			
Client Contact:		Phone:		E-Mail:		State of Origin:		Page:			
Shipping/Receiving				betsy.sara@testamericainc.com		Washington		Page 1 of 2			
Company:				Accreditations Required (See note):				Job #:			
TestAmerica Laboratories, Inc.				State Program - Washington				280-105260-1			
Address:		Due Date Requested:		<b>Analysis Requested</b>						<b>Preservation Codes:</b>	
5755 8th Street East,		1/25/2018									
City:		TAT Requested (days):		Field Filtered Sample (Yes or No)		Perform: MS/MSD (Yes or No)		6020/FIELD_FLTRD (MOD) Iron		Total Number of containers	
Tacoma											
State, Zip:		PO #:		BT=Tissue, A=Air						A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify)	
WA, 98424		WO #:									
Phone:		Project #:		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil)				Other:	
253-922-2310(Tel) 253-922-5047(Fax)		28003580									
Email:		SSOW#:		Sample Date		Sample Time		Preservation Code		Special Instructions/Note:	
Project Name:		Project #:		Sample Date		Sample Time		Preservation Code		Special Instructions/Note:	
Hidden Valley LF		28003580									
Site:		SSOW#:		Sample Date		Sample Time		Preservation Code		Special Instructions/Note:	
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil)		Special Instructions/Note:	
HVL-010818-01 (280-105260-1)		1/8/18		09:50 Pacific		Water		X		1	
HVL-010818-02 (280-105260-2)		1/8/18		10:00 Pacific		Water		X		1	
HVL-010818-03 (280-105260-3)		1/8/18		10:38 Pacific		Water		X		1	
HVL-010818-04 (280-105260-4)		1/8/18		10:55 Pacific		Water		X		1	
HVL-010818-05 (280-105260-5)		1/8/18		11:54 Pacific		Water		X		1	
HVL-010818-06 (280-105260-6)		1/8/18		11:42 Pacific		Water		X		1	
HVL-010818-07 (280-105260-7)		1/8/18		12:32 Pacific		Water		X		1	
HVL-010818-08 (280-105260-8)		1/8/18		12:34 Pacific		Water		X		1	
HVL-010818-09 (280-105260-9)		1/8/18		13:52 Pacific		Water		X		1	
<p>Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte &amp; accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.</p>											
<b>Possible Hazard Identification</b>						<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>					
Unconfirmed						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements:					
Empty Kit Relinquished by:						Method of Shipment:					
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
<i>[Signature]</i>		1/19/18 1550		[Company]		<i>[Signature]</i>		1-10-18 0820		TASCO	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Custody Seals Intact:		Custody Seal No.:		Page 133 of 137				Cooler Temperature(s) °C and Other Remarks:		01/31/2018	
Δ Yes Δ No											

L-12a



**TestAmerica Denver**

4955 Yarrow Street  
 Arvada, CO 80002  
 Phone (303) 736-0100 Fax (303) 431-7171

**Chain of Custody Record**



THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information (Sub Contract Lab)</b>		Sampler:		Lab PM: Sara, Betsy A		Carrier Tracking No(s):		COC No: 280-424588.2			
Client Contact: Shipping/Receiving		Phone:		E-Mail: betsy.sara@testamericainc.com		State of Origin: Washington		Page: Page 2 of 2			
Company: TestAmerica Laboratories, Inc.				Accreditations Required (See note): State Program - Washington				Job #: 280-105260-1			
Address: 5755 8th Street East,		Due Date Requested: 1/25/2018		<b>Analysis Requested</b>						Preservation Codes: A - HCL                    M - Hexane B - NaOH                 N - None C - Zn Acetate         O - AsNaO2 D - Nitric Acid         P - Na2O4S E - NaHSO4             Q - Na2SO3 F - MeOH                R - Na2S2O3 G - Amchlor            S - H2SO4 H - Ascorbic Acid     T - TSP Dodecahydrate I - Ice                     U - Acetone J - DI Water            V - MCAA K - EDTA                W - pH 4-5 L - EDA                  Z - other (specify)	
City: Tacoma		TAT Requested (days):									
State, Zip: WA, 98424		PO #:		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		6020(FIELD_FLTRD (MOD) Iron		Total Number of Containers	
Phone: 253-922-2310(Tel) 253-922-5047(Fax)		WO #:									
Email:		Project #: 28003580		Project Name: Hidden Valley LF		SSOW#:		Site:		Other:	
<b>Sample Identification - Client ID (Lab ID)</b>		<b>Sample Date</b>	<b>Sample Time</b>	<b>Sample Type (C=comp, G=grab)</b>	<b>Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)</b>	<b>Field Filtered Sample (Yes or No)</b>	<b>Perform MS/MSD (Yes or No)</b>	<b>6020(FIELD_FLTRD (MOD) Iron</b>	<b>Total Number of Containers</b>	<b>Special Instructions/Note:</b>	
				<b>Preservation Code:</b>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
HVL-010818-10 (280-105260-10)		1/8/18	13:34 Pacific		Water		X		1	dis Metals HNO3 preserved	
HVL-010818-11 (280-105260-11)		1/8/18	14:35 Pacific		Water		X		1		
HVL-010818-12 (280-105260-12)		1/8/18	14:28 Pacific		Water		X		1		
Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.											
<b>Possible Hazard Identification</b>						<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>					
Unconfirmed						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (specify)				Primary Deliverable Rank: 2		Special Instructions/QC Requirements:					
Empty Kit Relinquished by:				Date:		Time:		Method of Shipment:			
Relinquished by: <i>[Signature]</i>		Date/Time: 1/19/18 1550		Company:		Received by: <i>[Signature]</i>		Date/Time: 1-10-19 0820		Company: TASEA	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Page 134 of 137				Cooler Temperature(s) °C and Other Remarks:		01/31/2018	

[ = 12 a

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-105260-1

**Login Number: 105260**  
**List Number: 1**  
**Creator: Loux, Lauren P**

**List Source: TestAmerica Denver**

<b>Question</b>	<b>Answer</b>	<b>Comment</b>
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-105260-1

**Login Number: 105260**  
**List Number: 2**  
**Creator: Hobbs, Kenneth F**

**List Source: TestAmerica Seattle**  
**List Creation: 01/10/18 10:34 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	IR 5= 13.9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-105260-1

**Login Number: 105260**  
**List Number: 3**  
**Creator: Taylor, Kristene N**

**List Source: TestAmerica St. Louis**  
**List Creation: 01/10/18 02:35 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.5,21.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Job Number: 280-105377-1

Job Description: Hidden Valley LF

For:

SCS Engineers

2405 140th Avenue NE

Suite 107

Bellevue, WA 98005-1877

Attention: Mr. Kevin Lakey

MW-11S  
MW-11D(2)  
MW-11D(2) dupl  
MW-12S  
MW-12D  
MW-18S  
MW-18D  
FM-1  
FM-2  
Field Blank  
Trip Blank



Approved for release.  
Betsy A Sara  
Project Manager II  
1/31/2018 12:55 PM

---

Betsy A Sara, Project Manager II  
4955 Yarrow Street, Arvada, CO, 80002  
(303)736-0189  
betsy.sara@testamericainc.com  
01/31/2018

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

These data and reporting limits are being used specifically to meet the needs of this project. All RLs are supported by TestAmerica's Method Detection Limits (MDLs). Reporting limits in this report are at or above the MDL.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002  
Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)

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## CASE NARRATIVE

Client: SCS Engineers

Project: Hidden Valley LF

Report Number: 280-105377-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### Sample Receiving

The samples were received on 01/11/2018; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 0.9° C, 1.0° C, 1.8° C and 2.2° C.

The cooler containing samples HVL-010918-15, HVL-011018-16, HVL-011018-17, HVL-011018-18,, HVL-011018-20 and Trip Blank did not have tape or a custody seal. The client was notified.

### Trip Blanks

Chloroform was detected in the trip blank sample at the requested reporting limit, however, Chloroform was not detected in any other samples, and therefore, no corrective action was performed.

### Holding Times

The analysis for Nitrate Method 300.0 for the samples HVL-010918-13, HVL-010918-14, HVL-010918-15 and HVL-010918-16 was performed outside of hold due to more than half of the hold time expiring during transit due to a FedEx shipping delay. It is TestAmerica's policy to analyze all samples within holding times, but when samples are received with less than half the hold time remaining, this can not be guaranteed. Nitrate+Nitrite was added to these samples per the client's request.

The original Nitrate Method 300.0 result for the sample HVL-011018-20 was over the calibration range, therefore the sample was reanalyzed outside of the 48-hour holding time. Only the reanalysis result within calibration range is reported in this submission.

All other holding times were within established control limits.

### Method Blanks

All Method Blanks were within established control limits.

### Laboratory Control Samples (LCS)

All Laboratory Control Samples were within established control limits.

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

The Matrix Spike and Matrix Spike Duplicate performed on a sample from another client exhibited recoveries outside control limits for Ammonia Method 350.1. In addition, the RPD result was outside the RPD limit for Ammonia. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, this anomaly may be due to matrix interference and no corrective action was taken.

All other MS and MSD samples were within established control limits.

### General Comments

The analysis for Chloride and Sulfate Method 300.0 was performed at the TestAmerica's St. Louis Laboratory.  
13715 Rider Trail North  
Earth City, MO 63045

Phone: 314-298-8566

The analysis for Iron Method 6020 was performed at the TestAmerica's Seattle Laboratory.  
5755 8th Street East  
Tacoma, WA 98424  
Phone: 253-922-2310



## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-105377-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-105377-1</b>	<b>HVL-010918-13</b>	<b>MW-12D</b>				
Nitrate as N		1.5	H	0.20	mg/L	300.0
Nitrate Nitrite as N		1.5		0.10	mg/L	353.2
Alkalinity		110		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		110		5.0	mg/L	SM 2320B
Total Dissolved Solids		170		10	mg/L	SM 2540C
Chloride		8.1		0.20	mg/L	300.0
Sulfate		6.7		0.25	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		24		0.20	mg/L	6010B
Magnesium, Dissolved		9.8		0.10	mg/L	6010B
Potassium, Dissolved		2.3		2.0	mg/L	6010B
Sodium, Dissolved		16		1.0	mg/L	6010B
<b>280-105377-2</b>	<b>HVL-010918-14</b>	<b>MW-12S</b>				
Barium, Total		0.017		0.0050	mg/L	6020
Zinc, Total		0.015		0.010	mg/L	6020
Nitrate as N		19	H	0.21	mg/L	300.0
Ammonia		1.4		0.10	mg/L	350.1
Nitrate Nitrite as N		20		0.10	mg/L	353.2
Alkalinity		45		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		45		5.0	mg/L	SM 2320B
Total Dissolved Solids		230		10	mg/L	SM 2540C
Total Suspended Solids		4.0		4.0	mg/L	SM 2540D
Total Organic Carbon - Quad		2.0		1.0	mg/L	SM 5310B
Chloride		14		0.20	mg/L	300.0
Sulfate		2.9		0.25	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		20		0.20	mg/L	6010B
Magnesium, Dissolved		5.8		0.10	mg/L	6010B
Potassium, Dissolved		10		2.0	mg/L	6010B
Sodium, Dissolved		18		1.0	mg/L	6010B
Manganese, Dissolved		0.43		0.0010	mg/L	6020

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-105377-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-105377-3</b>	<b>HVL-010918-15</b>	<b>MW-11S</b>				
Barium, Total		0.011		0.0050	mg/L	6020
Nitrate as N		5.4	H	0.21	mg/L	300.0
Nitrate Nitrite as N		5.9		0.10	mg/L	353.2
Alkalinity		74		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		74		5.0	mg/L	SM 2320B
Total Dissolved Solids		170		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.2		1.0	mg/L	SM 5310B
Chloride		16		0.20	mg/L	300.0
Sulfate		11		0.25	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		22		0.20	mg/L	6010B
Magnesium, Dissolved		6.7		0.10	mg/L	6010B
Potassium, Dissolved		5.6		2.0	mg/L	6010B
Sodium, Dissolved		18		1.0	mg/L	6010B
<b>280-105377-4</b>	<b>HVL-010918-16</b>	<b>FB</b>				
Acetone		14		10	ug/L	8260B
Chloromethane		0.62		0.50	ug/L	8260B
<b>280-105377-5</b>	<b>HVL-011018-17</b>	<b>FM-1</b>				
Barium, Total		0.0088		0.0050	mg/L	6020
Nitrate as N		3.0		0.21	mg/L	300.0
Alkalinity		100		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		100		5.0	mg/L	SM 2320B
Total Dissolved Solids		190		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.3		1.0	mg/L	SM 5310B
Chloride		15		0.20	mg/L	300.0
Sulfate		8.2		0.25	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		23		0.20	mg/L	6010B
Magnesium, Dissolved		6.7		0.10	mg/L	6010B
Potassium, Dissolved		3.3		2.0	mg/L	6010B
Sodium, Dissolved		23		1.0	mg/L	6010B

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-105377-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-105377-6</b>	<b>HVL-011018-18</b>	<b>FM-2</b>				
Barium, Total		0.016		0.0050	mg/L	6020
Nitrate as N		9.8		0.20	mg/L	300.0
Alkalinity		92		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		92		5.0	mg/L	SM 2320B
Total Dissolved Solids		230		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.3		1.0	mg/L	SM 5310B
Chloride		19		0.20	mg/L	300.0
Sulfate		11		0.25	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		27		0.20	mg/L	6010B
Magnesium, Dissolved		8.7		0.10	mg/L	6010B
Potassium, Dissolved		9.6		2.0	mg/L	6010B
Sodium, Dissolved		22		1.0	mg/L	6010B
Manganese, Dissolved		0.0065		0.0010	mg/L	6020
<b>280-105377-7</b>	<b>HVL-011018-19</b>	<b>MW-18D</b>				
Nitrate as N		1.5		0.20	mg/L	300.0
Alkalinity		100		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		100		5.0	mg/L	SM 2320B
Total Dissolved Solids		160		10	mg/L	SM 2540C
Chloride		7.4		0.20	mg/L	300.0
Sulfate		6.7		0.25	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		24		0.20	mg/L	6010B
Magnesium, Dissolved		9.9		0.10	mg/L	6010B
Potassium, Dissolved		2.6		2.0	mg/L	6010B
Sodium, Dissolved		12		1.0	mg/L	6010B

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-105377-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-105377-8</b>	<b>HVL-011018-20</b>	<b>MW-18S</b>				
Barium, Total		0.014		0.0050	mg/L	6020
Nitrate as N		10	H	0.21	mg/L	300.0
Nitrate Nitrite as N		12		0.10	mg/L	353.2
Alkalinity		120		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		120		5.0	mg/L	SM 2320B
Total Dissolved Solids		260		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.5		1.0	mg/L	SM 5310B
Chloride		17		0.20	mg/L	300.0
Sulfate		4.5		0.25	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		32		0.20	mg/L	6010B
Magnesium, Dissolved		10		0.10	mg/L	6010B
Potassium, Dissolved		8.5		2.0	mg/L	6010B
Sodium, Dissolved		26		1.0	mg/L	6010B
<b>280-105377-9</b>	<b>HVL-011018-21</b>	<b>MW-11D(2)</b>				
Tetrachloroethene		0.80		0.50	ug/L	8260B
Nitrate as N		1.6		0.20	mg/L	300.0
Alkalinity		78		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		78		5.0	mg/L	SM 2320B
Total Dissolved Solids		140		10	mg/L	SM 2540C
Chloride		5.8		0.20	mg/L	300.0
Sulfate		8.7		0.25	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		19		0.20	mg/L	6010B
Magnesium, Dissolved		8.6		0.10	mg/L	6010B
Sodium, Dissolved		7.5		1.0	mg/L	6010B
<b>280-105377-10</b>	<b>HVL-011018-22</b>	<b>MW-11D(2) dupl</b>				
Tetrachloroethene		0.80		0.50	ug/L	8260B
Nitrate as N		1.6		0.20	mg/L	300.0
Alkalinity		78		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		78		5.0	mg/L	SM 2320B
Total Dissolved Solids		130		10	mg/L	SM 2540C
Chloride		5.9		0.20	mg/L	300.0
Sulfate		8.6		0.25	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		20		0.20	mg/L	6010B
Magnesium, Dissolved		8.7		0.10	mg/L	6010B
Sodium, Dissolved		8.0		1.0	mg/L	6010B

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-105377-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
280-105377-11 Chloroform	TRIP BLANK	0.50		0.50	ug/L	8260B

## METHOD SUMMARY

Client: SCS Engineers

Job Number: 280-105377-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Volatile Organic Compounds (GC/MS)	TAL DEN	SW846 8260B	
Purge and Trap	TAL DEN		SW846 5030B
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Total Metals	TAL DEN		SW846 3010A
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Metals	TAL DEN		SW846 3020A
Anions, Ion Chromatography	TAL DEN	MCAWW 300.0	
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
Nitrogen, Nitrate-Nitrite	TAL DEN	MCAWW 353.2	
Alkalinity	TAL DEN	SM SM 2320B	
Solids, Total Dissolved (TDS)	TAL DEN	SM SM 2540C	
Solids, Total Suspended (TSS)	TAL DEN	SM SM 2540D	
Organic Carbon, Total (TOC)	TAL DEN	SM SM 5310B	
Metals (ICP/MS)	TAL SEA	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL SEA		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Anions, Ion Chromatography	TAL SL	MCAWW 300.0	

### Lab References:

TAL DEN = TestAmerica Denver

TAL SEA = TestAmerica Seattle

TAL SL = TestAmerica St. Louis

### Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

## METHOD / ANALYST SUMMARY

Client: SCS Engineers

Job Number: 280-105377-1

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
SW846 8260B	Ilczyszyn, Dennis P	DPI
SW846 6010B	Lackey, Cara M	CML
SW846 6020	Trudell, Lynn-Anne M	LMT
SW846 6020	Woo, Fred C	FCW
MCAWW 300.0	Phan, Thu L	TLP
MCAWW 350.1	Lehman, Jeffrey M	JML
MCAWW 353.2	Cherry, Scott V	SVC
SM SM 2320B	Duplin, Alysha 1	A1D
SM SM 2540C	Pedrick, Joshua A	JAP
SM SM 2540D	Pedrick, Joshua A	JAP
SM SM 5310B	Jewell, Connie C	CCJ
MCAWW 300.0	Boyd, Jacob C	JCB

# SAMPLE SUMMARY

Client: SCS Engineers

Job Number: 280-105377-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
280-105377-1	HVL-010918-13	Water	01/09/2018 1147	01/11/2018 0900
280-105377-2	HVL-010918-14	Water	01/09/2018 1245	01/11/2018 0900
280-105377-3	HVL-010918-15	Water	01/09/2018 1400	01/11/2018 0900
280-105377-4	HVL-010918-16	Water	01/09/2018 1445	01/11/2018 0900
280-105377-5	HVL-011018-17	Water	01/10/2018 0900	01/11/2018 0900
280-105377-6	HVL-011018-18	Water	01/10/2018 1015	01/11/2018 0900
280-105377-7	HVL-011018-19	Water	01/10/2018 1143	01/11/2018 0900
280-105377-8	HVL-011018-20	Water	01/10/2018 1248	01/11/2018 0900
280-105377-9	HVL-011018-21	Water	01/10/2018 1414	01/11/2018 0900
280-105377-10	HVL-011018-22	Water	01/10/2018 1430	01/11/2018 0900
280-105377-11	TRIP BLANK	Water	01/10/2018 0000	01/11/2018 0900



# **SAMPLE RESULTS**

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-13**

Lab Sample ID: 280-105377-1

Date Sampled: 01/09/2018 1147

Client Matrix: Water

Date Received: 01/11/2018 0900

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8794.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1356		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1356		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-13**

Lab Sample ID: 280-105377-1

Date Sampled: 01/09/2018 1147

Client Matrix: Water

Date Received: 01/11/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8794.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1356		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1356		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		70 - 127
4-Bromofluorobenzene (Surr)	99		78 - 120
Dibromofluoromethane (Surr)	113		77 - 120
Toluene-d8 (Surr)	108		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-14**

Lab Sample ID: 280-105377-2

Date Sampled: 01/09/2018 1245

Client Matrix: Water

Date Received: 01/11/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B                      Analysis Batch: 280-401742                      Instrument ID: VMS\_G2  
Prep Method: 5030B                      Prep Batch: N/A                      Lab File ID: G2\_8795.D  
Dilution: 1.0                      Initial Weight/Volume: 20 mL  
Analysis Date: 01/16/2018 1416                      Final Weight/Volume: 20 mL  
Prep Date: 01/16/2018 1416

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-14**

Lab Sample ID: 280-105377-2

Date Sampled: 01/09/2018 1245

Client Matrix: Water

Date Received: 01/11/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8795.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1416		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1416		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		70 - 127
4-Bromofluorobenzene (Surr)	96		78 - 120
Dibromofluoromethane (Surr)	112		77 - 120
Toluene-d8 (Surr)	109		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-15**

Lab Sample ID: 280-105377-3

Date Sampled: 01/09/2018 1400

Client Matrix: Water

Date Received: 01/11/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8796.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1437		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1437		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-15**

Lab Sample ID: 280-105377-3

Date Sampled: 01/09/2018 1400

Client Matrix: Water

Date Received: 01/11/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8796.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1437		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1437		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		70 - 127
4-Bromofluorobenzene (Surr)	93		78 - 120
Dibromofluoromethane (Surr)	114		77 - 120
Toluene-d8 (Surr)	110		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-16**

Lab Sample ID: 280-105377-4

Date Sampled: 01/09/2018 1445

Client Matrix: Water

Date Received: 01/11/2018 0900

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8797.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1457		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1457		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	14		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	0.62		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0



# Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-16**

Lab Sample ID: 280-105377-4

Date Sampled: 01/09/2018 1445

Client Matrix: Water

Date Received: 01/11/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8797.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1457		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1457		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		70 - 127
4-Bromofluorobenzene (Surr)	93		78 - 120
Dibromofluoromethane (Surr)	108		77 - 120
Toluene-d8 (Surr)	108		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-17**

Lab Sample ID: 280-105377-5

Date Sampled: 01/10/2018 0900

Client Matrix: Water

Date Received: 01/11/2018 0900

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8798.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1518		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1518		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-17**

Lab Sample ID: 280-105377-5

Date Sampled: 01/10/2018 0900

Client Matrix: Water

Date Received: 01/11/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8798.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1518		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1518		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		70 - 127
4-Bromofluorobenzene (Surr)	94		78 - 120
Dibromofluoromethane (Surr)	109		77 - 120
Toluene-d8 (Surr)	105		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-18**

Lab Sample ID: 280-105377-6

Date Sampled: 01/10/2018 1015

Client Matrix: Water

Date Received: 01/11/2018 0900

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8799.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1539		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1539		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-18**

Lab Sample ID: 280-105377-6

Date Sampled: 01/10/2018 1015

Client Matrix: Water

Date Received: 01/11/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8799.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1539		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1539		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		70 - 127
4-Bromofluorobenzene (Surr)	95		78 - 120
Dibromofluoromethane (Surr)	111		77 - 120
Toluene-d8 (Surr)	109		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-19**

Lab Sample ID: 280-105377-7

Date Sampled: 01/10/2018 1143

Client Matrix: Water

Date Received: 01/11/2018 0900

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8800.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1559		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1559		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-19**

Lab Sample ID: 280-105377-7

Date Sampled: 01/10/2018 1143

Client Matrix: Water

Date Received: 01/11/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8800.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1559		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1559		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 127
4-Bromofluorobenzene (Surr)	92		78 - 120
Dibromofluoromethane (Surr)	104		77 - 120
Toluene-d8 (Surr)	107		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-20**

Lab Sample ID: 280-105377-8

Date Sampled: 01/10/2018 1248

Client Matrix: Water

Date Received: 01/11/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8801.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1620		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1620		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0



# Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-20**

Lab Sample ID: 280-105377-8

Date Sampled: 01/10/2018 1248

Client Matrix: Water

Date Received: 01/11/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8801.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1620		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1620		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		70 - 127
4-Bromofluorobenzene (Surr)	95		78 - 120
Dibromofluoromethane (Surr)	105		77 - 120
Toluene-d8 (Surr)	109		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-21**

Lab Sample ID: 280-105377-9

Date Sampled: 01/10/2018 1414

Client Matrix: Water

Date Received: 01/11/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B      Analysis Batch: 280-401742      Instrument ID: VMS\_G2  
Prep Method: 5030B      Prep Batch: N/A      Lab File ID: G2\_8802.D  
Dilution: 1.0      Initial Weight/Volume: 20 mL  
Analysis Date: 01/16/2018 1641      Final Weight/Volume: 20 mL  
Prep Date: 01/16/2018 1641

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	0.80		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-21**

Lab Sample ID: 280-105377-9

Date Sampled: 01/10/2018 1414

Client Matrix: Water

Date Received: 01/11/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8802.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1641		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1641		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 127
4-Bromofluorobenzene (Surr)	92		78 - 120
Dibromofluoromethane (Surr)	106		77 - 120
Toluene-d8 (Surr)	108		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

Client Sample ID: HVL-011018-22

Lab Sample ID: 280-105377-10

Date Sampled: 01/10/2018 1430

Client Matrix: Water

Date Received: 01/11/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B      Analysis Batch: 280-401742      Instrument ID: VMS\_G2  
Prep Method: 5030B      Prep Batch: N/A      Lab File ID: G2\_8803.D  
Dilution: 1.0      Initial Weight/Volume: 20 mL  
Analysis Date: 01/16/2018 1701      Final Weight/Volume: 20 mL  
Prep Date: 01/16/2018 1701

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	0.80		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-22**

Lab Sample ID: 280-105377-10

Date Sampled: 01/10/2018 1430

Client Matrix: Water

Date Received: 01/11/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8803.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1701		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1701		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 127
4-Bromofluorobenzene (Surr)	96		78 - 120
Dibromofluoromethane (Surr)	105		77 - 120
Toluene-d8 (Surr)	110		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-105377-11

Date Sampled: 01/10/2018 0000

Client Matrix: Water

Date Received: 01/11/2018 0900

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8804.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1722		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1722		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	0.50		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-105377-11

Date Sampled: 01/10/2018 0000

Client Matrix: Water

Date Received: 01/11/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401742	Instrument ID: VMS_G2
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G2_8804.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1722		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1722		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105		70 - 127
4-Bromofluorobenzene (Surr)	96		78 - 120
Dibromofluoromethane (Surr)	109		77 - 120
Toluene-d8 (Surr)	110		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-13**

Lab Sample ID: 280-105377-1

Date Sampled: 01/09/2018 1147

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 33.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/15/2018 2358	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	8.1		0.20
Sulfate	6.7		0.25



## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-14**

Lab Sample ID: 280-105377-2

Date Sampled: 01/09/2018 1245

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 36.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/16/2018 0047	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	14		0.20
Sulfate	2.9		0.25

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-15**

Lab Sample ID: 280-105377-3

Date Sampled: 01/09/2018 1400

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 37.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/16/2018 0104	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	16		0.20
Sulfate	11		0.25

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-16**

Lab Sample ID: 280-105377-4

Date Sampled: 01/09/2018 1445

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-346367

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 011518- 38.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 01/16/2018 0120

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	ND		0.20
Sulfate	ND		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID:** HVL-011018-17

Lab Sample ID: 280-105377-5

Date Sampled: 01/10/2018 0900

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 39.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/16/2018 0137	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	15		0.20
Sulfate	8.2		0.25

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-18**

Lab Sample ID: 280-105377-6

Date Sampled: 01/10/2018 1015

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 40.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/16/2018 0153	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	19		0.20
Sulfate	11		0.25

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-19**

Lab Sample ID: 280-105377-7

Date Sampled: 01/10/2018 1143

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 43.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/16/2018 0242	Run Type:	DL	Final Weight/Volume:	1.0 mL
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	7.4		0.20
Sulfate	6.7		0.25

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-20**

Lab Sample ID: 280-105377-8

Date Sampled: 01/10/2018 1248

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 44.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/16/2018 0259	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	17		0.20
Sulfate	4.5		0.25

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-21**

Lab Sample ID: 280-105377-9

Date Sampled: 01/10/2018 1414

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 45.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/16/2018 0315	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	5.8		0.20
Sulfate	8.7		0.25



## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-22**

Lab Sample ID: 280-105377-10

Date Sampled: 01/10/2018 1430

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-346367	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	011518- 46.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/16/2018 0331	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	5.9		0.20
Sulfate	8.6		0.25

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-13**

Lab Sample ID: 280-105377-1

Date Sampled: 01/09/2018 1147

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402116      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401619      Lab File ID: 51A011818C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0446      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

---

### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401862      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401428      Lab File ID: 51A011618C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/16/2018 2147      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 0726

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	24		0.20
Magnesium, Dissolved	9.8		0.10
Potassium, Dissolved	2.3		2.0
Sodium, Dissolved	16		1.0

---

### 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-401890      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401620      Lab File ID: 254SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/17/2018 0705      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Arsenic, Total	ND		0.0050
Barium, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-13**

Lab Sample ID: 280-105377-1

Date Sampled: 01/09/2018 1147

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 6020 Metals (ICP/MS)

Analysis Method: 6020	Analysis Batch: 280-402004	Instrument ID: MT_077
Prep Method: 3020A	Prep Batch: 280-401620	Lab File ID: 125SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 2200		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-402004	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-401631	Lab File ID: 154SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 2351		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 0729		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020	Analysis Batch: 580-265709	Instrument ID: SEA044
Prep Method: 3005A	Prep Batch: 580-265594	Lab File ID: 041SMPL.D
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/22/2018 0949		Final Weight/Volume: 50 mL
Prep Date: 01/19/2018 1049		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-14**

Lab Sample ID: 280-105377-2

Date Sampled: 01/09/2018 1245

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402116      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401619      Lab File ID: 51A011818C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0459      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

---

### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401862      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401428      Lab File ID: 51A011618C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/16/2018 2150      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 0726

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	20		0.20
Magnesium, Dissolved	5.8		0.10
Potassium, Dissolved	10		2.0
Sodium, Dissolved	18		1.0

---

### 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-401890      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401620      Lab File ID: 255SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/17/2018 0708      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Arsenic, Total	ND		0.0050
Barium, Total	0.017		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	0.015		0.010

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-14**

Lab Sample ID: 280-105377-2

Date Sampled: 01/09/2018 1245

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 6020 Metals (ICP/MS)

Analysis Method: 6020	Analysis Batch: 280-402004	Instrument ID: MT_077
Prep Method: 3020A	Prep Batch: 280-401620	Lab File ID: 126SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 2203		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-402004	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-401631	Lab File ID: 155SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 2355		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 0729		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.43		0.0010

Analysis Method: 6020	Analysis Batch: 580-265709	Instrument ID: SEA044
Prep Method: 3005A	Prep Batch: 580-265594	Lab File ID: 042SMPL.D
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/22/2018 0953		Final Weight/Volume: 50 mL
Prep Date: 01/19/2018 1049		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-15**

Lab Sample ID: 280-105377-3

Date Sampled: 01/09/2018 1400

Client Matrix: Water

Date Received: 01/11/2018 0900

### 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402116      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401619      Lab File ID: 51A011818C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0501      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401862      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401428      Lab File ID: 51A011618C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/16/2018 2205      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 0726

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	22		0.20
Magnesium, Dissolved	6.7		0.10
Potassium, Dissolved	5.6		2.0
Sodium, Dissolved	18		1.0

### 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-401890      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401620      Lab File ID: 262SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/17/2018 0736      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Arsenic, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-15**

Lab Sample ID: 280-105377-3

Date Sampled: 01/09/2018 1400

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 6020 Metals (ICP/MS)

Analysis Method: 6020	Analysis Batch: 280-402004	Instrument ID: MT_077
Prep Method: 3020A	Prep Batch: 280-401620	Lab File ID: 133SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 2230		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Barium, Total	0.011		0.0050

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-402004	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-401631	Lab File ID: 156SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 2359		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 0729		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020	Analysis Batch: 580-265709	Instrument ID: SEA044
Prep Method: 3005A	Prep Batch: 580-265594	Lab File ID: 043SMPL.D
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/22/2018 0957		Final Weight/Volume: 50 mL
Prep Date: 01/19/2018 1049		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-16**

Lab Sample ID: 280-105377-4

Date Sampled: 01/09/2018 1445

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402116      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401619      Lab File ID: 51A011818C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0504      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

---

### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401862      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401428      Lab File ID: 51A011618C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/16/2018 2207      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 0726

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	ND		0.20
Magnesium, Dissolved	ND		0.10
Potassium, Dissolved	ND		2.0
Sodium, Dissolved	ND		1.0

---

### 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-401890      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401620      Lab File ID: 263SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/17/2018 0739      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Arsenic, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010



## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-010918-16**

Lab Sample ID: 280-105377-4

Date Sampled: 01/09/2018 1445

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 6020 Metals (ICP/MS)

Analysis Method: 6020                      Analysis Batch: 280-402004                      Instrument ID: MT\_077  
Prep Method: 3020A                      Prep Batch: 280-401620                      Lab File ID: 134SMPL.d  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Analysis Date: 01/17/2018 2234                      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Barium, Total	ND		0.0050

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020                      Analysis Batch: 280-402004                      Instrument ID: MT\_077  
Prep Method: 3005A                      Prep Batch: 280-401631                      Lab File ID: 157SMPL.d  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0003                      Final Weight/Volume: 50 mL  
Prep Date: 01/17/2018 0729

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020                      Analysis Batch: 580-265709                      Instrument ID: SEA044  
Prep Method: 3005A                      Prep Batch: 580-265594                      Lab File ID: 044SMPL.D  
Dilution: 5.0                      Initial Weight/Volume: 50 mL  
Analysis Date: 01/22/2018 1001                      Final Weight/Volume: 50 mL  
Prep Date: 01/19/2018 1049

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID:** HVL-011018-17

Lab Sample ID: 280-105377-5

Date Sampled: 01/10/2018 0900

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402116      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401619      Lab File ID: 51A011818C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0508      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

---

### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401862      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401428      Lab File ID: 51A011618C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/16/2018 2210      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 0726

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	23		0.20
Magnesium, Dissolved	6.7		0.10
Potassium, Dissolved	3.3		2.0
Sodium, Dissolved	23		1.0

---

### 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-401890      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401620      Lab File ID: 264SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/17/2018 0743      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Arsenic, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-17**

Lab Sample ID: 280-105377-5

Date Sampled: 01/10/2018 0900

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 6020 Metals (ICP/MS)

Analysis Method: 6020	Analysis Batch: 280-402004	Instrument ID: MT_077
Prep Method: 3020A	Prep Batch: 280-401620	Lab File ID: 135SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 2238		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Barium, Total	0.0088		0.0050

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-402004	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-401631	Lab File ID: 158SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 0007		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 0729		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020	Analysis Batch: 580-265709	Instrument ID: SEA044
Prep Method: 3005A	Prep Batch: 580-265594	Lab File ID: 045SMPL.D
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/22/2018 1005		Final Weight/Volume: 50 mL
Prep Date: 01/19/2018 1049		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-18**

Lab Sample ID: 280-105377-6

Date Sampled: 01/10/2018 1015

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402116      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401619      Lab File ID: 51A011818C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0522      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

---

### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401862      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401428      Lab File ID: 51A011618C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/16/2018 2213      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 0726

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	27		0.20
Magnesium, Dissolved	8.7		0.10
Potassium, Dissolved	9.6		2.0
Sodium, Dissolved	22		1.0

---

### 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-401890      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401620      Lab File ID: 265SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/17/2018 0747      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Arsenic, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-18**

Lab Sample ID: 280-105377-6

Date Sampled: 01/10/2018 1015

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 6020 Metals (ICP/MS)

Analysis Method: 6020	Analysis Batch: 280-402004	Instrument ID: MT_077
Prep Method: 3020A	Prep Batch: 280-401620	Lab File ID: 136SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 2242		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Barium, Total	0.016		0.0050

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-402004	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-401631	Lab File ID: 159SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 0010		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 0729		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.0065		0.0010

Analysis Method: 6020	Analysis Batch: 580-265709	Instrument ID: SEA044
Prep Method: 3005A	Prep Batch: 580-265594	Lab File ID: 046SMPL.D
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/22/2018 1009		Final Weight/Volume: 50 mL
Prep Date: 01/19/2018 1049		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-19**

Lab Sample ID: 280-105377-7

Date Sampled: 01/10/2018 1143

Client Matrix: Water

Date Received: 01/11/2018 0900

### 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402116      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401619      Lab File ID: 51A011818C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0525      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401862      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401428      Lab File ID: 51A011618C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/16/2018 2216      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 0726

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	24		0.20
Magnesium, Dissolved	9.9		0.10
Potassium, Dissolved	2.6		2.0
Sodium, Dissolved	12		1.0

### 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-401890      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401620      Lab File ID: 266SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/17/2018 0751      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Arsenic, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-19**

Lab Sample ID: 280-105377-7

Date Sampled: 01/10/2018 1143

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 6020 Metals (ICP/MS)

Analysis Method: 6020                      Analysis Batch: 280-402004                      Instrument ID: MT\_077  
Prep Method: 3020A                      Prep Batch: 280-401620                      Lab File ID: 137SMPL.d  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Analysis Date: 01/17/2018 2246                      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Barium, Total	ND		0.0050

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020                      Analysis Batch: 280-402004                      Instrument ID: MT\_077  
Prep Method: 3005A                      Prep Batch: 280-401631                      Lab File ID: 160SMPL.d  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0014                      Final Weight/Volume: 50 mL  
Prep Date: 01/17/2018 0729

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020                      Analysis Batch: 580-265709                      Instrument ID: SEA044  
Prep Method: 3005A                      Prep Batch: 580-265594                      Lab File ID: 047SMPL.D  
Dilution: 5.0                      Initial Weight/Volume: 50 mL  
Analysis Date: 01/22/2018 1013                      Final Weight/Volume: 50 mL  
Prep Date: 01/19/2018 1049

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-20**

Lab Sample ID: 280-105377-8

Date Sampled: 01/10/2018 1248

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402116      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401619      Lab File ID: 51A011818C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0528      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

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Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

---

### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401862      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401428      Lab File ID: 51A011618C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/16/2018 2219      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 0726

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Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	32		0.20
Magnesium, Dissolved	10		0.10
Potassium, Dissolved	8.5		2.0
Sodium, Dissolved	26		1.0

---

### 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-401890      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401620      Lab File ID: 267SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/17/2018 0755      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

---

Analyte	Result (mg/L)	Qualifier	RL
Arsenic, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010



## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-20**

Lab Sample ID: 280-105377-8

Date Sampled: 01/10/2018 1248

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 6020 Metals (ICP/MS)

Analysis Method: 6020                      Analysis Batch: 280-402004                      Instrument ID: MT\_077  
Prep Method: 3020A                      Prep Batch: 280-401620                      Lab File ID: 138SMPL.d  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Analysis Date: 01/17/2018 2250                      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Barium, Total	0.014		0.0050

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020                      Analysis Batch: 280-402004                      Instrument ID: MT\_077  
Prep Method: 3005A                      Prep Batch: 280-401631                      Lab File ID: 161SMPL.d  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0018                      Final Weight/Volume: 50 mL  
Prep Date: 01/17/2018 0729

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020                      Analysis Batch: 580-265709                      Instrument ID: SEA044  
Prep Method: 3005A                      Prep Batch: 580-265594                      Lab File ID: 048SMPL.D  
Dilution: 5.0                      Initial Weight/Volume: 50 mL  
Analysis Date: 01/22/2018 1017                      Final Weight/Volume: 50 mL  
Prep Date: 01/19/2018 1049

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-21**

Lab Sample ID: 280-105377-9

Date Sampled: 01/10/2018 1414

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402116      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401619      Lab File ID: 51A011818C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0531      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

---

### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401862      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401428      Lab File ID: 51A011618C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/16/2018 2222      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 0726

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	19		0.20
Magnesium, Dissolved	8.6		0.10
Potassium, Dissolved	ND		2.0
Sodium, Dissolved	7.5		1.0

---

### 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-401890      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401620      Lab File ID: 268SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/17/2018 0759      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Arsenic, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

# Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-21**

Lab Sample ID: 280-105377-9

Date Sampled: 01/10/2018 1414

Client Matrix: Water

Date Received: 01/11/2018 0900

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## 6020 Metals (ICP/MS)

Analysis Method: 6020	Analysis Batch: 280-402004	Instrument ID: MT_077
Prep Method: 3020A	Prep Batch: 280-401620	Lab File ID: 139SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 2253		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Barium, Total	ND		0.0050

---

## 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-402004	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-401631	Lab File ID: 164SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 0030		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 0729		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020	Analysis Batch: 580-265709	Instrument ID: SEA044
Prep Method: 3005A	Prep Batch: 580-265594	Lab File ID: 049SMPL.D
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/22/2018 1020		Final Weight/Volume: 50 mL
Prep Date: 01/19/2018 1049		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-22**

Lab Sample ID: 280-105377-10

Date Sampled: 01/10/2018 1430

Client Matrix: Water

Date Received: 01/11/2018 0900

### 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402116      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401619      Lab File ID: 51A011818C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0534      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-401862      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401428      Lab File ID: 51A011618C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/16/2018 2225      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 0726

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	20		0.20
Magnesium, Dissolved	8.7		0.10
Potassium, Dissolved	ND		2.0
Sodium, Dissolved	8.0		1.0

### 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-401890      Instrument ID: MT\_077  
Prep Method: 3020A      Prep Batch: 280-401620      Lab File ID: 269SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/17/2018 0802      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Arsenic, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

## Analytical Data

Client: SCS Engineers

Job Number: 280-105377-1

**Client Sample ID: HVL-011018-22**

Lab Sample ID: 280-105377-10

Date Sampled: 01/10/2018 1430

Client Matrix: Water

Date Received: 01/11/2018 0900

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### 6020 Metals (ICP/MS)

Analysis Method: 6020                      Analysis Batch: 280-402004                      Instrument ID: MT\_077  
Prep Method: 3020A                      Prep Batch: 280-401620                      Lab File ID: 140SMPL.d  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Analysis Date: 01/17/2018 2257                      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Barium, Total	ND		0.0050

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### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020                      Analysis Batch: 280-402004                      Instrument ID: MT\_077  
Prep Method: 3005A                      Prep Batch: 280-401631                      Lab File ID: 165SMPL.d  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0034                      Final Weight/Volume: 50 mL  
Prep Date: 01/17/2018 0729

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020                      Analysis Batch: 580-265709                      Instrument ID: SEA044  
Prep Method: 3005A                      Prep Batch: 580-265594                      Lab File ID: 031SMPL.D  
Dilution: 5.0                      Initial Weight/Volume: 50 mL  
Analysis Date: 01/22/2018 0910                      Final Weight/Volume: 50 mL  
Prep Date: 01/19/2018 1049

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

Client: SCS Engineers

Job Number: 280-105377-1

**General Chemistry**

**Client Sample ID: HVL-010918-13**

Lab Sample ID: 280-105377-1

Date Sampled: 01/09/2018 1147

Client Matrix: Water

Date Received: 01/11/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	1.5	H	mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401382		Analysis Date: 01/11/2018 1911			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-402949		Analysis Date: 01/26/2018 1155			
Nitrate Nitrite as N	1.5		mg/L	0.10	1.0	353.2
	Analysis Batch: 280-403191		Analysis Date: 01/29/2018 2241			
Alkalinity	110		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468		Analysis Date: 01/12/2018 0054			
Bicarbonate Alkalinity as CaCO3	110		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468		Analysis Date: 01/12/2018 0054			
Total Dissolved Solids	170		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401768		Analysis Date: 01/16/2018 0914			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401818		Analysis Date: 01/16/2018 1428			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-402034		Analysis Date: 01/17/2018 1707			

Client: SCS Engineers

Job Number: 280-105377-1

**General Chemistry**

**Client Sample ID: HVL-010918-14**

Lab Sample ID: 280-105377-2

Date Sampled: 01/09/2018 1245

Client Matrix: Water

Date Received: 01/11/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	19	H	mg/L	0.21	5.0	300.0
	Analysis Batch: 280-401503	Analysis Date: 01/12/2018	2241			
Ammonia	1.4		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-402949	Analysis Date: 01/26/2018	1157			
Nitrate Nitrite as N	20		mg/L	0.10	2.0	353.2
	Analysis Batch: 280-403191	Analysis Date: 01/29/2018	2247			
Alkalinity	45		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468	Analysis Date: 01/11/2018	2208			
Bicarbonate Alkalinity as CaCO3	45		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468	Analysis Date: 01/11/2018	2208			
Total Dissolved Solids	230		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401768	Analysis Date: 01/16/2018	0914			
Total Suspended Solids	4.0		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401818	Analysis Date: 01/16/2018	1428			
Total Organic Carbon - Quad	2.0		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-402034	Analysis Date: 01/17/2018	1724			

Client: SCS Engineers

Job Number: 280-105377-1

**General Chemistry**

**Client Sample ID: HVL-010918-15**

Lab Sample ID: 280-105377-3

Date Sampled: 01/09/2018 1400

Client Matrix: Water

Date Received: 01/11/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	5.4	H	mg/L	0.21	5.0	300.0
	Analysis Batch: 280-401382		Analysis Date: 01/12/2018 0325			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-402949		Analysis Date: 01/26/2018 1159			
Nitrate Nitrite as N	5.9		mg/L	0.10	1.0	353.2
	Analysis Batch: 280-403191		Analysis Date: 01/29/2018 2249			
Alkalinity	74		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468		Analysis Date: 01/11/2018 2150			
Bicarbonate Alkalinity as CaCO3	74		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468		Analysis Date: 01/11/2018 2150			
Total Dissolved Solids	170		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401768		Analysis Date: 01/16/2018 0914			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401818		Analysis Date: 01/16/2018 1428			
Total Organic Carbon - Quad	1.2		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-402034		Analysis Date: 01/17/2018 1812			



Client: SCS Engineers

Job Number: 280-105377-1

**General Chemistry**

**Client Sample ID: HVL-010918-16**

Lab Sample ID: 280-105377-4

Date Sampled: 01/09/2018 1445

Client Matrix: Water

Date Received: 01/11/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	ND	H	mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401382		Analysis Date: 01/11/2018 2019			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-402949		Analysis Date: 01/26/2018 1201			
Nitrate Nitrite as N	ND		mg/L	0.10	1.0	353.2
	Analysis Batch: 280-403191		Analysis Date: 01/29/2018 2251			
Alkalinity	ND		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468		Analysis Date: 01/11/2018 2125			
Bicarbonate Alkalinity as CaCO3	ND		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468		Analysis Date: 01/11/2018 2125			
Total Dissolved Solids	ND		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401768		Analysis Date: 01/16/2018 0914			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401818		Analysis Date: 01/16/2018 1428			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-402034		Analysis Date: 01/17/2018 1826			

Client: SCS Engineers

Job Number: 280-105377-1

General Chemistry

Client Sample ID: HVL-011018-17

Lab Sample ID: 280-105377-5

Date Sampled: 01/10/2018 0900

Client Matrix: Water

Date Received: 01/11/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	3.0		mg/L	0.21	5.0	300.0
	Analysis Batch: 280-401382		Analysis Date: 01/12/2018 0347			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-403259		Analysis Date: 01/30/2018 0908			
Alkalinity	100		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468		Analysis Date: 01/11/2018 2143			
Bicarbonate Alkalinity as CaCO3	100		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468		Analysis Date: 01/11/2018 2143			
Total Dissolved Solids	190		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401768		Analysis Date: 01/16/2018 0914			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401947		Analysis Date: 01/17/2018 1641			
Total Organic Carbon - Quad	1.3		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-402034		Analysis Date: 01/17/2018 1843			

Client: SCS Engineers

Job Number: 280-105377-1

General Chemistry

Client Sample ID: HVL-011018-18

Lab Sample ID: 280-105377-6

Date Sampled: 01/10/2018 1015

Client Matrix: Water

Date Received: 01/11/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	9.8		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401382		Analysis Date: 01/11/2018 2103			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-403259		Analysis Date: 01/30/2018 0910			
Alkalinity	92		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468		Analysis Date: 01/11/2018 2156			
Bicarbonate Alkalinity as CaCO3	92		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468		Analysis Date: 01/11/2018 2156			
Total Dissolved Solids	230		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401768		Analysis Date: 01/16/2018 0914			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401947		Analysis Date: 01/17/2018 1641			
Total Organic Carbon - Quad	1.3		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-402034		Analysis Date: 01/17/2018 1939			

Client: SCS Engineers

Job Number: 280-105377-1

General Chemistry

Client Sample ID: HVL-011018-19

Lab Sample ID: 280-105377-7

Date Sampled: 01/10/2018 1143

Client Matrix: Water

Date Received: 01/11/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	1.5		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401382		Analysis Date: 01/11/2018 2211			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-403259		Analysis Date: 01/30/2018 0926			
Alkalinity	100		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468		Analysis Date: 01/12/2018 0100			
Bicarbonate Alkalinity as CaCO3	100		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468		Analysis Date: 01/12/2018 0100			
Total Dissolved Solids	160		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401768		Analysis Date: 01/16/2018 0914			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401947		Analysis Date: 01/17/2018 1641			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-402034		Analysis Date: 01/17/2018 1956			

Client: SCS Engineers

Job Number: 280-105377-1

General Chemistry

Client Sample ID: HVL-011018-20

Lab Sample ID: 280-105377-8

Date Sampled: 01/10/2018 1248

Client Matrix: Water

Date Received: 01/11/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	10	H	mg/L	0.21	5.0	300.0
	Analysis Batch: 280-401503		Analysis Date: 01/12/2018 2303			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-403259		Analysis Date: 01/30/2018 0941			
Nitrate Nitrite as N	12		mg/L	0.10	2.0	353.2
	Analysis Batch: 280-403191		Analysis Date: 01/29/2018 2253			
Alkalinity	120		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468		Analysis Date: 01/11/2018 2137			
Bicarbonate Alkalinity as CaCO3	120		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468		Analysis Date: 01/11/2018 2137			
Total Dissolved Solids	260		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401768		Analysis Date: 01/16/2018 0914			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401947		Analysis Date: 01/17/2018 1641			
Total Organic Carbon - Quad	1.5		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-402034		Analysis Date: 01/17/2018 2013			

Client: SCS Engineers

Job Number: 280-105377-1

General Chemistry

Client Sample ID: HVL-011018-21

Lab Sample ID: 280-105377-9

Client Matrix: Water

Date Sampled: 01/10/2018 1414

Date Received: 01/11/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	1.6		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401382		Analysis Date: 01/11/2018 2256			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-403259		Analysis Date: 01/30/2018 0943			
Alkalinity	78		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468		Analysis Date: 01/11/2018 2131			
Bicarbonate Alkalinity as CaCO3	78		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468		Analysis Date: 01/11/2018 2131			
Total Dissolved Solids	140		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401768		Analysis Date: 01/16/2018 0914			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401947		Analysis Date: 01/17/2018 1641			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-402034		Analysis Date: 01/17/2018 2029			

Client: SCS Engineers

Job Number: 280-105377-1

General Chemistry

Client Sample ID: HVL-011018-22

Lab Sample ID: 280-105377-10

Client Matrix: Water

Date Sampled: 01/10/2018 1430

Date Received: 01/11/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	1.6		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401382		Analysis Date: 01/12/2018 0025			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-403259		Analysis Date: 01/30/2018 0945			
Alkalinity	78		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468		Analysis Date: 01/11/2018 2202			
Bicarbonate Alkalinity as CaCO3	78		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401468		Analysis Date: 01/11/2018 2202			
Total Dissolved Solids	130		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401768		Analysis Date: 01/16/2018 0914			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401947		Analysis Date: 01/17/2018 1641			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-402034		Analysis Date: 01/17/2018 2046			

## DATA REPORTING QUALIFIERS

Client: SCS Engineers

Job Number: 280-105377-1

<b>Lab Section</b>	<b>Qualifier</b>	<b>Description</b>
General Chemistry	F1	MS and/or MSD Recovery is outside acceptance limits.
	F2	MS/MSD RPD exceeds control limits
	H	Sample was prepped or analyzed beyond the specified holding time



# QUALITY CONTROL RESULTS

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS VOA</b>					
<b>Analysis Batch:280-401742</b>					
LCS 280-401742/4	Lab Control Sample	T	Water	8260B	
MB 280-401742/6	Method Blank	T	Water	8260B	
280-105377-1	HVL-010918-13	T	Water	8260B	
280-105377-2	HVL-010918-14	T	Water	8260B	
280-105377-3	HVL-010918-15	T	Water	8260B	
280-105377-4	HVL-010918-16	T	Water	8260B	
280-105377-5	HVL-011018-17	T	Water	8260B	
280-105377-6	HVL-011018-18	T	Water	8260B	
280-105377-7	HVL-011018-19	T	Water	8260B	
280-105377-8	HVL-011018-20	T	Water	8260B	
280-105377-9	HVL-011018-21	T	Water	8260B	
280-105377-10	HVL-011018-22	T	Water	8260B	
280-105377-11	TRIP BLANK	T	Water	8260B	

#### Report Basis

T = Total

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

## QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 580-265594</b>					
LCS 580-265594/19-A	Lab Control Sample	R	Water	3005A	
LCSD 580-265594/20-A	Lab Control Sample Duplicate	R	Water	3005A	
MB 580-265594/18-A	Method Blank	R	Water	3005A	
580-74422-C-1-B DU	Duplicate		Water	3005A	
580-74422-C-1-C MS	Matrix Spike		Water	3005A	
580-74422-C-1-D MSD	Matrix Spike Duplicate		Water	3005A	
280-105377-1	HVL-010918-13	D	Water	3005A	
280-105377-2	HVL-010918-14	D	Water	3005A	
280-105377-3	HVL-010918-15	D	Water	3005A	
280-105377-4	HVL-010918-16	D	Water	3005A	
280-105377-5	HVL-011018-17	D	Water	3005A	
280-105377-6	HVL-011018-18	D	Water	3005A	
280-105377-7	HVL-011018-19	D	Water	3005A	
280-105377-8	HVL-011018-20	D	Water	3005A	
280-105377-9	HVL-011018-21	D	Water	3005A	
280-105377-10	HVL-011018-22	D	Water	3005A	
<b>Analysis Batch:580-265709</b>					
LCS 580-265594/19-A	Lab Control Sample	R	Water	6020	580-265594
LCSD 580-265594/20-A	Lab Control Sample Duplicate	R	Water	6020	580-265594
MB 580-265594/18-A	Method Blank	R	Water	6020	580-265594
580-74422-C-1-B DU	Duplicate		Water	6020	580-265594
580-74422-C-1-C MS	Matrix Spike		Water	6020	580-265594
580-74422-C-1-D MSD	Matrix Spike Duplicate		Water	6020	580-265594
280-105377-1	HVL-010918-13	D	Water	6020	580-265594
280-105377-2	HVL-010918-14	D	Water	6020	580-265594
280-105377-3	HVL-010918-15	D	Water	6020	580-265594
280-105377-4	HVL-010918-16	D	Water	6020	580-265594
280-105377-5	HVL-011018-17	D	Water	6020	580-265594
280-105377-6	HVL-011018-18	D	Water	6020	580-265594
280-105377-7	HVL-011018-19	D	Water	6020	580-265594
280-105377-8	HVL-011018-20	D	Water	6020	580-265594
280-105377-9	HVL-011018-21	D	Water	6020	580-265594
280-105377-10	HVL-011018-22	D	Water	6020	580-265594

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 280-401428</b>					
LCS 280-401428/2-A	Lab Control Sample	R	Water	3005A	
MB 280-401428/1-A	Method Blank	R	Water	3005A	
280-105376-M-1-B MS	Matrix Spike	D	Water	3005A	
280-105376-M-1-C MSD	Matrix Spike Duplicate	D	Water	3005A	
280-105377-1	HVL-010918-13	D	Water	3005A	
280-105377-2	HVL-010918-14	D	Water	3005A	
280-105377-3	HVL-010918-15	D	Water	3005A	
280-105377-4	HVL-010918-16	D	Water	3005A	
280-105377-5	HVL-011018-17	D	Water	3005A	
280-105377-6	HVL-011018-18	D	Water	3005A	
280-105377-7	HVL-011018-19	D	Water	3005A	
280-105377-8	HVL-011018-20	D	Water	3005A	
280-105377-9	HVL-011018-21	D	Water	3005A	
280-105377-10	HVL-011018-22	D	Water	3005A	
<b>Prep Batch: 280-401619</b>					
LCS 280-401619/2-A	Lab Control Sample	T	Water	3010A	
MB 280-401619/1-A	Method Blank	T	Water	3010A	
280-105377-1	HVL-010918-13	T	Water	3010A	
280-105377-1MS	Matrix Spike	T	Water	3010A	
280-105377-1MSD	Matrix Spike Duplicate	T	Water	3010A	
280-105377-2	HVL-010918-14	T	Water	3010A	
280-105377-3	HVL-010918-15	T	Water	3010A	
280-105377-4	HVL-010918-16	T	Water	3010A	
280-105377-5	HVL-011018-17	T	Water	3010A	
280-105377-6	HVL-011018-18	T	Water	3010A	
280-105377-7	HVL-011018-19	T	Water	3010A	
280-105377-8	HVL-011018-20	T	Water	3010A	
280-105377-9	HVL-011018-21	T	Water	3010A	
280-105377-10	HVL-011018-22	T	Water	3010A	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 280-401620</b>					
LCS 280-401620/2-A	Lab Control Sample	T	Water	3020A	
MB 280-401620/1-A	Method Blank	T	Water	3020A	
280-105377-1	HVL-010918-13	T	Water	3020A	
280-105377-2	HVL-010918-14	T	Water	3020A	
280-105377-2MS	Matrix Spike	T	Water	3020A	
280-105377-2MSD	Matrix Spike Duplicate	T	Water	3020A	
280-105377-3	HVL-010918-15	T	Water	3020A	
280-105377-4	HVL-010918-16	T	Water	3020A	
280-105377-5	HVL-011018-17	T	Water	3020A	
280-105377-6	HVL-011018-18	T	Water	3020A	
280-105377-7	HVL-011018-19	T	Water	3020A	
280-105377-8	HVL-011018-20	T	Water	3020A	
280-105377-9	HVL-011018-21	T	Water	3020A	
280-105377-10	HVL-011018-22	T	Water	3020A	
<b>Prep Batch: 280-401631</b>					
LCS 280-401631/2-A	Lab Control Sample	R	Water	3005A	
MB 280-401631/1-A	Method Blank	R	Water	3005A	
280-105376-M-2-C MS	Matrix Spike	D	Water	3005A	
280-105376-M-2-D MSD	Matrix Spike Duplicate	D	Water	3005A	
280-105377-1	HVL-010918-13	D	Water	3005A	
280-105377-2	HVL-010918-14	D	Water	3005A	
280-105377-3	HVL-010918-15	D	Water	3005A	
280-105377-4	HVL-010918-16	D	Water	3005A	
280-105377-5	HVL-011018-17	D	Water	3005A	
280-105377-6	HVL-011018-18	D	Water	3005A	
280-105377-7	HVL-011018-19	D	Water	3005A	
280-105377-8	HVL-011018-20	D	Water	3005A	
280-105377-9	HVL-011018-21	D	Water	3005A	
280-105377-10	HVL-011018-22	D	Water	3005A	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Analysis Batch:280-401862</b>					
LCS 280-401428/2-A	Lab Control Sample	R	Water	6010B	280-401428
MB 280-401428/1-A	Method Blank	R	Water	6010B	280-401428
280-105376-M-1-B MS	Matrix Spike	D	Water	6010B	280-401428
280-105376-M-1-C MSD	Matrix Spike Duplicate	D	Water	6010B	280-401428
280-105377-1	HVL-010918-13	D	Water	6010B	280-401428
280-105377-2	HVL-010918-14	D	Water	6010B	280-401428
280-105377-3	HVL-010918-15	D	Water	6010B	280-401428
280-105377-4	HVL-010918-16	D	Water	6010B	280-401428
280-105377-5	HVL-011018-17	D	Water	6010B	280-401428
280-105377-6	HVL-011018-18	D	Water	6010B	280-401428
280-105377-7	HVL-011018-19	D	Water	6010B	280-401428
280-105377-8	HVL-011018-20	D	Water	6010B	280-401428
280-105377-9	HVL-011018-21	D	Water	6010B	280-401428
280-105377-10	HVL-011018-22	D	Water	6010B	280-401428
<b>Analysis Batch:280-401890</b>					
LCS 280-401620/2-A	Lab Control Sample	T	Water	6020	280-401620
MB 280-401620/1-A	Method Blank	T	Water	6020	280-401620
280-105377-1	HVL-010918-13	T	Water	6020	280-401620
280-105377-2	HVL-010918-14	T	Water	6020	280-401620
280-105377-2MS	Matrix Spike	T	Water	6020	280-401620
280-105377-2MSD	Matrix Spike Duplicate	T	Water	6020	280-401620
280-105377-3	HVL-010918-15	T	Water	6020	280-401620
280-105377-4	HVL-010918-16	T	Water	6020	280-401620
280-105377-5	HVL-011018-17	T	Water	6020	280-401620
280-105377-6	HVL-011018-18	T	Water	6020	280-401620
280-105377-7	HVL-011018-19	T	Water	6020	280-401620
280-105377-8	HVL-011018-20	T	Water	6020	280-401620
280-105377-9	HVL-011018-21	T	Water	6020	280-401620
280-105377-10	HVL-011018-22	T	Water	6020	280-401620

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Analysis Batch:280-402004</b>					
LCS 280-401620/2-A	Lab Control Sample	T	Water	6020	280-401620
MB 280-401620/1-A	Method Blank	T	Water	6020	280-401620
LCS 280-401631/2-A	Lab Control Sample	R	Water	6020	280-401631
MB 280-401631/1-A	Method Blank	R	Water	6020	280-401631
280-105376-M-2-C MS	Matrix Spike	D	Water	6020	280-401631
280-105376-M-2-D MSD	Matrix Spike Duplicate	D	Water	6020	280-401631
280-105377-1	HVL-010918-13	T	Water	6020	280-401620
280-105377-1	HVL-010918-13	D	Water	6020	280-401631
280-105377-2	HVL-010918-14	T	Water	6020	280-401620
280-105377-2MS	Matrix Spike	T	Water	6020	280-401620
280-105377-2MSD	Matrix Spike Duplicate	T	Water	6020	280-401620
280-105377-2	HVL-010918-14	D	Water	6020	280-401631
280-105377-3	HVL-010918-15	T	Water	6020	280-401620
280-105377-3	HVL-010918-15	D	Water	6020	280-401631
280-105377-4	HVL-010918-16	T	Water	6020	280-401620
280-105377-4	HVL-010918-16	D	Water	6020	280-401631
280-105377-5	HVL-011018-17	T	Water	6020	280-401620
280-105377-5	HVL-011018-17	D	Water	6020	280-401631
280-105377-6	HVL-011018-18	T	Water	6020	280-401620
280-105377-6	HVL-011018-18	D	Water	6020	280-401631
280-105377-7	HVL-011018-19	T	Water	6020	280-401620
280-105377-7	HVL-011018-19	D	Water	6020	280-401631
280-105377-8	HVL-011018-20	T	Water	6020	280-401620
280-105377-8	HVL-011018-20	D	Water	6020	280-401631
280-105377-9	HVL-011018-21	T	Water	6020	280-401620
280-105377-9	HVL-011018-21	D	Water	6020	280-401631
280-105377-10	HVL-011018-22	T	Water	6020	280-401620
280-105377-10	HVL-011018-22	D	Water	6020	280-401631
<b>Analysis Batch:280-402116</b>					
LCS 280-401619/2-A	Lab Control Sample	T	Water	6010B	280-401619
MB 280-401619/1-A	Method Blank	T	Water	6010B	280-401619
280-105377-1	HVL-010918-13	T	Water	6010B	280-401619
280-105377-1MS	Matrix Spike	T	Water	6010B	280-401619
280-105377-1MSD	Matrix Spike Duplicate	T	Water	6010B	280-401619
280-105377-2	HVL-010918-14	T	Water	6010B	280-401619
280-105377-3	HVL-010918-15	T	Water	6010B	280-401619
280-105377-4	HVL-010918-16	T	Water	6010B	280-401619
280-105377-5	HVL-011018-17	T	Water	6010B	280-401619
280-105377-6	HVL-011018-18	T	Water	6010B	280-401619
280-105377-7	HVL-011018-19	T	Water	6010B	280-401619
280-105377-8	HVL-011018-20	T	Water	6010B	280-401619
280-105377-9	HVL-011018-21	T	Water	6010B	280-401619
280-105377-10	HVL-011018-22	T	Water	6010B	280-401619

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
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**Report Basis**

D = Dissolved

R = Total Recoverable

T = Total



## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-401382</b>					
LCS 280-401382/4	Lab Control Sample	T	Water	300.0	
LCSD 280-401382/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-401382/6	Method Blank	T	Water	300.0	
280-105377-1	HVL-010918-13	T	Water	300.0	
280-105377-2	HVL-010918-14	T	Water	300.0	
280-105377-3	HVL-010918-15	T	Water	300.0	
280-105377-4	HVL-010918-16	T	Water	300.0	
280-105377-5	HVL-011018-17	T	Water	300.0	
280-105377-6	HVL-011018-18	T	Water	300.0	
280-105377-7	HVL-011018-19	T	Water	300.0	
280-105377-8	HVL-011018-20	T	Water	300.0	
280-105377-9	HVL-011018-21	T	Water	300.0	
280-105377-9DU	Duplicate	T	Water	300.0	
280-105377-9MS	Matrix Spike	T	Water	300.0	
280-105377-9MSD	Matrix Spike Duplicate	T	Water	300.0	
280-105377-10	HVL-011018-22	T	Water	300.0	
280-105377-10DU	Duplicate	T	Water	300.0	
280-105377-10MS	Matrix Spike	T	Water	300.0	
280-105377-10MSD	Matrix Spike Duplicate	T	Water	300.0	
<b>Analysis Batch:280-401468</b>					
LCS 280-401468/28	Lab Control Sample	T	Water	SM 2320B	
LCS 280-401468/4	Lab Control Sample	T	Water	SM 2320B	
MB 280-401468/29	Method Blank	T	Water	SM 2320B	
MB 280-401468/5	Method Blank	T	Water	SM 2320B	
280-105331-A-1 DU	Duplicate	T	Water	SM 2320B	
280-105377-1	HVL-010918-13	T	Water	SM 2320B	
280-105377-2	HVL-010918-14	T	Water	SM 2320B	
280-105377-3	HVL-010918-15	T	Water	SM 2320B	
280-105377-4	HVL-010918-16	T	Water	SM 2320B	
280-105377-5	HVL-011018-17	T	Water	SM 2320B	
280-105377-6	HVL-011018-18	T	Water	SM 2320B	
280-105377-7	HVL-011018-19	T	Water	SM 2320B	
280-105377-8	HVL-011018-20	T	Water	SM 2320B	
280-105377-9	HVL-011018-21	T	Water	SM 2320B	
280-105377-10	HVL-011018-22	T	Water	SM 2320B	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-401503</b>					
LCS 280-401503/4	Lab Control Sample	T	Water	300.0	
LCSD 280-401503/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-401503/6	Method Blank	T	Water	300.0	
280-105377-2	HVL-010918-14	T	Water	300.0	
280-105377-8	HVL-011018-20	T	Water	300.0	
280-105377-8DU	Duplicate	T	Water	300.0	
280-105377-8MS	Matrix Spike	T	Water	300.0	
280-105377-8MSD	Matrix Spike Duplicate	T	Water	300.0	
<b>Analysis Batch:280-401768</b>					
LCS 280-401768/2	Lab Control Sample	T	Water	SM 2540C	
LCSD 280-401768/3	Lab Control Sample Duplicate	T	Water	SM 2540C	
MB 280-401768/1	Method Blank	T	Water	SM 2540C	
280-105377-1	HVL-010918-13	T	Water	SM 2540C	
280-105377-2	HVL-010918-14	T	Water	SM 2540C	
280-105377-3	HVL-010918-15	T	Water	SM 2540C	
280-105377-4	HVL-010918-16	T	Water	SM 2540C	
280-105377-5	HVL-011018-17	T	Water	SM 2540C	
280-105377-6	HVL-011018-18	T	Water	SM 2540C	
280-105377-7	HVL-011018-19	T	Water	SM 2540C	
280-105377-8	HVL-011018-20	T	Water	SM 2540C	
280-105377-9	HVL-011018-21	T	Water	SM 2540C	
280-105377-10	HVL-011018-22	T	Water	SM 2540C	
280-105463-A-2 DU	Duplicate	T	Water	SM 2540C	
<b>Analysis Batch:280-401818</b>					
LCS 280-401818/2	Lab Control Sample	T	Water	SM 2540D	
LCSD 280-401818/3	Lab Control Sample Duplicate	T	Water	SM 2540D	
MB 280-401818/1	Method Blank	T	Water	SM 2540D	
280-105377-1	HVL-010918-13	T	Water	SM 2540D	
280-105377-2	HVL-010918-14	T	Water	SM 2540D	
280-105377-3	HVL-010918-15	T	Water	SM 2540D	
280-105377-4	HVL-010918-16	T	Water	SM 2540D	
280-105385-A-8 DU	Duplicate	T	Water	SM 2540D	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-401947</b>					
LCS 280-401947/2	Lab Control Sample	T	Water	SM 2540D	
LCSD 280-401947/3	Lab Control Sample Duplicate	T	Water	SM 2540D	
MB 280-401947/1	Method Blank	T	Water	SM 2540D	
280-105377-5	HVL-011018-17	T	Water	SM 2540D	
280-105377-6	HVL-011018-18	T	Water	SM 2540D	
280-105377-7	HVL-011018-19	T	Water	SM 2540D	
280-105377-8	HVL-011018-20	T	Water	SM 2540D	
280-105377-9	HVL-011018-21	T	Water	SM 2540D	
280-105377-10	HVL-011018-22	T	Water	SM 2540D	
280-105463-A-1 DU	Duplicate	T	Water	SM 2540D	
<b>Analysis Batch:280-402034</b>					
LCS 280-402034/3	Lab Control Sample	T	Water	SM 5310B	
MB 280-402034/4	Method Blank	T	Water	SM 5310B	
280-105377-1	HVL-010918-13	T	Water	SM 5310B	
280-105377-2	HVL-010918-14	T	Water	SM 5310B	
280-105377-3	HVL-010918-15	T	Water	SM 5310B	
280-105377-4	HVL-010918-16	T	Water	SM 5310B	
280-105377-5	HVL-011018-17	T	Water	SM 5310B	
280-105377-5MS	Matrix Spike	T	Water	SM 5310B	
280-105377-5MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
280-105377-6	HVL-011018-18	T	Water	SM 5310B	
280-105377-7	HVL-011018-19	T	Water	SM 5310B	
280-105377-8	HVL-011018-20	T	Water	SM 5310B	
280-105377-9	HVL-011018-21	T	Water	SM 5310B	
280-105377-10	HVL-011018-22	T	Water	SM 5310B	
<b>Analysis Batch:280-402035</b>					
LCS 280-402035/3	Lab Control Sample	T	Water	SM 5310B	
MB 280-402035/4	Method Blank	T	Water	SM 5310B	
280-105377-1	HVL-010918-13	T	Water	SM 5310B	
280-105377-2	HVL-010918-14	T	Water	SM 5310B	
280-105377-3	HVL-010918-15	T	Water	SM 5310B	
280-105377-4	HVL-010918-16	T	Water	SM 5310B	
280-105377-5	HVL-011018-17	T	Water	SM 5310B	
280-105377-5MS	Matrix Spike	T	Water	SM 5310B	
280-105377-5MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
280-105377-6	HVL-011018-18	T	Water	SM 5310B	
280-105377-7	HVL-011018-19	T	Water	SM 5310B	
280-105377-8	HVL-011018-20	T	Water	SM 5310B	
280-105377-9	HVL-011018-21	T	Water	SM 5310B	
280-105377-10	HVL-011018-22	T	Water	SM 5310B	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-402949</b>					
LCS 280-402949/57	Lab Control Sample	T	Water	350.1	
LCSD 280-402949/58	Lab Control Sample Duplicate	T	Water	350.1	
MB 280-402949/59	Method Blank	T	Water	350.1	
280-105344-F-1 MS	Matrix Spike	T	Water	350.1	
280-105344-F-1 MSD	Matrix Spike Duplicate	T	Water	350.1	
280-105377-1	HVL-010918-13	T	Water	350.1	
280-105377-2	HVL-010918-14	T	Water	350.1	
280-105377-3	HVL-010918-15	T	Water	350.1	
280-105377-4	HVL-010918-16	T	Water	350.1	
<b>Analysis Batch:280-403191</b>					
LCS 280-403191/21	Lab Control Sample	T	Water	353.2	
MB 280-403191/22	Method Blank	T	Water	353.2	
280-105377-1	HVL-010918-13	T	Water	353.2	
280-105377-1MS	Matrix Spike	T	Water	353.2	
280-105377-1MSD	Matrix Spike Duplicate	T	Water	353.2	
280-105377-2	HVL-010918-14	T	Water	353.2	
280-105377-3	HVL-010918-15	T	Water	353.2	
280-105377-4	HVL-010918-16	T	Water	353.2	
280-105377-8	HVL-011018-20	T	Water	353.2	
<b>Analysis Batch:280-403259</b>					
LCS 280-403259/18	Lab Control Sample	T	Water	350.1	
LCSD 280-403259/19	Lab Control Sample Duplicate	T	Water	350.1	
MB 280-403259/20	Method Blank	T	Water	350.1	
280-105377-5	HVL-011018-17	T	Water	350.1	
280-105377-6	HVL-011018-18	T	Water	350.1	
280-105377-7	HVL-011018-19	T	Water	350.1	
280-105377-8	HVL-011018-20	T	Water	350.1	
280-105377-9	HVL-011018-21	T	Water	350.1	
280-105377-10	HVL-011018-22	T	Water	350.1	
280-105604-E-10 MS	Matrix Spike	T	Water	350.1	
280-105604-E-10 MSD	Matrix Spike Duplicate	T	Water	350.1	

**Report Basis**

T = Total

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

## QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>HPLC/IC</b>					
<b>Analysis Batch:160-346367</b>					
LCS 160-346367/32	Lab Control Sample	T	Water	300.0	
MB 160-346367/31	Method Blank	T	Water	300.0	
280-105377-1DL	HVL-010918-13	T	Water	300.0	
280-105377-1DUDL	Duplicate	T	Water	300.0	
280-105377-1MSDL	Matrix Spike	T	Water	300.0	
280-105377-2DL	HVL-010918-14	T	Water	300.0	
280-105377-3DL	HVL-010918-15	T	Water	300.0	
280-105377-4	HVL-010918-16	T	Water	300.0	
280-105377-5DL	HVL-011018-17	T	Water	300.0	
280-105377-6DL	HVL-011018-18	T	Water	300.0	
280-105377-7DL	HVL-011018-19	T	Water	300.0	
280-105377-8DL	HVL-011018-20	T	Water	300.0	
280-105377-9DL	HVL-011018-21	T	Water	300.0	
280-105377-10DL	HVL-011018-22	T	Water	300.0	

### Report Basis

T = Total

**Surrogate Recovery Report**

**8260B Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	DBFM %Rec	TOL %Rec
280-105377-1	HVL-010918-13	102	99	113	108
280-105377-2	HVL-010918-14	104	96	112	109
280-105377-3	HVL-010918-15	103	93	114	110
280-105377-4	HVL-010918-16	101	93	108	108
280-105377-5	HVL-011018-17	102	94	109	105
280-105377-6	HVL-011018-18	103	95	111	109
280-105377-7	HVL-011018-19	99	92	104	107
280-105377-8	HVL-011018-20	100	95	105	109
280-105377-9	HVL-011018-21	98	92	106	108
280-105377-10	HVL-011018-22	98	96	105	110
280-105377-11	TRIP BLANK	105	96	109	110
MB 280-401742/6		103	99	108	112
LCS 280-401742/4		93	96	102	114

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	70-127
BFB = 4-Bromofluorobenzene (Surr)	78-120
DBFM = Dibromofluoromethane (Surr)	77-120
TOL = Toluene-d8 (Surr)	80-125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Method Blank - Batch: 280-401742**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: MB 280-401742/6  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/16/2018 0925  
 Prep Date: 01/16/2018 0925  
 Leach Date: N/A

Analysis Batch: 280-401742  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: VMS\_G2  
 Lab File ID: G2\_8782.D  
 Initial Weight/Volume: 20 mL  
 Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

## Method Blank - Batch: 280-401742

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: MB 280-401742/6  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/16/2018 0925  
Prep Date: 01/16/2018 0925  
Leach Date: N/A

Analysis Batch: 280-401742  
Prep Batch: N/A  
Leach Batch: N/A  
Units: ug/L

Instrument ID: VMS\_G2  
Lab File ID: G2\_8782.D  
Initial Weight/Volume: 20 mL  
Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
trans-1,4-Dichloro-2-butene	ND		3.0
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50
Surrogate	% Rec	Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)	103	70 - 127	
4-Bromofluorobenzene (Surr)	99	78 - 120	
Dibromofluoromethane (Surr)	108	77 - 120	
Toluene-d8 (Surr)	112	80 - 125	



# Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Lab Control Sample - Batch: 280-401742**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID:	LCS 280-401742/4	Analysis Batch:	280-401742	Instrument ID:	VMS_G2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	G2_8788.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	01/16/2018 1128	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	01/16/2018 1128				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1,2-Tetrachloroethane	5.00	5.38	108	65 - 135	
1,1,1-Trichloroethane	5.00	5.38	108	65 - 135	
1,1,2,2-Tetrachloroethane	5.00	4.84	97	58 - 135	
1,1,2-Trichloroethane	5.00	4.99	100	64 - 135	
1,1-Dichloroethane	5.00	5.09	102	65 - 135	
1,1-Dichloroethene	5.00	4.84	97	65 - 136	
1,2,3-Trichloropropane	5.00	4.69	94	65 - 135	
1,2-Dibromo-3-Chloropropane	5.00	4.05	81	57 - 135	
1,2-Dibromoethane	5.00	4.71	94	65 - 135	
1,2-Dichlorobenzene	5.00	4.89	98	65 - 135	
1,2-Dichloroethane	5.00	5.40	108	65 - 135	
1,2-Dichloropropane	5.00	5.22	104	64 - 135	
1,4-Dichlorobenzene	5.00	4.92	98	65 - 135	
2-Butanone (MEK)	20.0	17.2	86	44 - 177	
2-Hexanone	20.0	19.1	96	57 - 139	
4-Methyl-2-pentanone (MIBK)	20.0	15.0	75	60 - 150	
Acetone	20.0	16.6	83	39 - 156	
Acrylonitrile	50.0	48.6	97	56 - 135	
Benzene	5.00	5.23	105	65 - 135	
Bromochloromethane	5.00	4.88	98	65 - 135	
Bromodichloromethane	5.00	5.28	106	65 - 135	
Bromoform	5.00	4.06	81	62 - 135	
Bromomethane	5.00	5.10	102	45 - 135	
Carbon disulfide	5.00	5.29	106	55 - 143	
Carbon tetrachloride	5.00	5.54	111	65 - 135	
Chlorobenzene	5.00	5.14	103	65 - 135	
Chloroethane	5.00	5.41	108	46 - 136	
Chloroform	5.00	5.40	108	65 - 135	
Chloromethane	5.00	5.66	113	34 - 145	
cis-1,2-Dichloroethene	5.00	4.88	98	65 - 135	
cis-1,3-Dichloropropene	5.00	4.42	88	65 - 135	
Dibromochloromethane	5.00	4.86	97	65 - 135	
Dibromomethane	5.00	4.72	94	65 - 135	
Dichlorodifluoromethane	5.00	5.18	104	43 - 142	
Ethylbenzene	5.00	5.07	101	65 - 135	
Iodomethane	5.00	4.74	95	65 - 142	
Methylene Chloride	5.00	5.40	108	54 - 141	
m-Xylene & p-Xylene	5.00	4.95	99	65 - 135	
o-Xylene	5.00	4.83	97	65 - 135	
Styrene	5.00	5.23	105	65 - 135	
Tetrachloroethene	5.00	5.08	102	65 - 135	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

## Lab Control Sample - Batch: 280-401742

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID:	LCS 280-401742/4	Analysis Batch:	280-401742	Instrument ID:	VMS_G2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	G2_8788.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	01/16/2018 1128	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	01/16/2018 1128				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Toluene	5.00	5.53	111	65 - 135	
trans-1,2-Dichloroethene	5.00	5.45	109	65 - 135	
trans-1,3-Dichloropropene	5.00	4.48	90	65 - 135	
trans-1,4-Dichloro-2-butene	5.00	4.60	92	53 - 135	
Trichloroethene	5.00	4.85	97	65 - 135	
Trichlorofluoromethane	5.00	4.75	95	53 - 137	
Vinyl acetate	10.0	7.22	72	11 - 187	
Vinyl chloride	5.00	5.75	115	40 - 137	
Surrogate		% Rec		Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		93		70 - 127	
4-Bromofluorobenzene (Surr)		96		78 - 120	
Dibromofluoromethane (Surr)		102		77 - 120	
Toluene-d8 (Surr)		114		80 - 125	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Method Blank - Batch: 160-346367**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 160-346367/31	Analysis Batch: 160-346367	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011518- 31.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/15/2018 2325	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Result	Qual	RL
Chloride	ND		0.20
Sulfate	ND		0.20

**Lab Control Sample - Batch: 160-346367**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: LCS 160-346367/32	Analysis Batch: 160-346367	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011518- 32.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/15/2018 2342	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.00	1.95	97	90 - 110	
Sulfate	8.00	7.69	96	90 - 110	

**Matrix Spike - Batch: 160-346367**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-105377-1DL	Analysis Batch: 160-346367	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011518- 35.d
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/16/2018 0031	Units: mg/L	Final Weight/Volume:
Prep Date: N/A	Run Type: DL	Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	8.1	10.0	17.7	97	90 - 110	
Sulfate	6.7	20.0	24.7	90	90 - 110	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

## Duplicate - Batch: 160-346367

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-105377-1DL  
Client Matrix: Water  
Dilution: 5.0  
Analysis Date: 01/16/2018 0014  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 160-346367  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L  
Run Type: DL

Instrument ID: CIC2500  
Lab File ID: 011518- 34.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume:  
Injection Volume: 50 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	8.1	8.04	0.2	20	
Sulfate	6.7	6.81	2	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Method Blank - Batch: 280-401428**

Lab Sample ID: MB 280-401428/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/16/2018 2105  
 Prep Date: 01/16/2018 0726  
 Leach Date: N/A

Analysis Batch: 280-401862  
 Prep Batch: 280-401428  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_051  
 Lab File ID: 51A011618C.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Calcium, Dissolved	ND		0.20
Magnesium, Dissolved	ND		0.10
Potassium, Dissolved	ND		2.0
Sodium, Dissolved	ND		1.0

**Lab Control Sample - Batch: 280-401428**

Lab Sample ID: LCS 280-401428/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/16/2018 2108  
 Prep Date: 01/16/2018 0726  
 Leach Date: N/A

Analysis Batch: 280-401862  
 Prep Batch: 280-401428  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_051  
 Lab File ID: 51A011618C.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Calcium, Dissolved	50.0	50.3	101	90 - 111	
Magnesium, Dissolved	50.0	52.0	104	90 - 113	
Potassium, Dissolved	50.0	50.1	100	89 - 114	
Sodium, Dissolved	50.0	51.9	104	90 - 115	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401428**

**Method: 6010B  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-105376-M-1-B MS	Analysis Batch: 280-401862	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-401428	Lab File ID: 51A011618C.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/16/2018 2138		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 0726		
Leach Date: N/A		

MSD Lab Sample ID: 280-105376-M-1-C MSD	Analysis Batch: 280-401862	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-401428	Lab File ID: 51A011618C.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/16/2018 2141		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 0726		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Calcium, Dissolved	100	100	48 - 153	0	20		
Magnesium, Dissolved	104	104	62 - 146	0	20		
Potassium, Dissolved	101	101	76 - 132	0	20		
Sodium, Dissolved	98	99	70 - 203	0	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Method Blank - Batch: 280-401619**

**Method: 6010B**  
**Preparation: 3010A**

Lab Sample ID: MB 280-401619/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/19/2018 0440  
 Prep Date: 01/16/2018 1504  
 Leach Date: N/A

Analysis Batch: 280-402116  
 Prep Batch: 280-401619  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: MT\_051  
 Lab File ID: 51A011818C.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

**Lab Control Sample - Batch: 280-401619**

**Method: 6010B**  
**Preparation: 3010A**

Lab Sample ID: LCS 280-401619/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/19/2018 0443  
 Prep Date: 01/16/2018 1504  
 Leach Date: N/A

Analysis Batch: 280-402116  
 Prep Batch: 280-401619  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: MT\_051  
 Lab File ID: 51A011818C.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Beryllium, Total	0.0500	0.0514	103	89 - 113	
Cadmium, Total	0.100	0.103	103	88 - 111	
Cobalt, Total	0.500	0.489	98	89 - 111	
Silver, Total	0.0500	0.0518	104	86 - 115	
Vanadium, Total	0.500	0.507	101	90 - 111	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401619**

**Method: 6010B  
Preparation: 3010A**

MS Lab Sample ID: 280-105377-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/19/2018 0453  
Prep Date: 01/16/2018 1504  
Leach Date: N/A

Analysis Batch: 280-402116  
Prep Batch: 280-401619  
Leach Batch: N/A

Instrument ID: MT\_051  
Lab File ID: 51A011818C.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-105377-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/19/2018 0456  
Prep Date: 01/16/2018 1504  
Leach Date: N/A

Analysis Batch: 280-402116  
Prep Batch: 280-401619  
Leach Batch: N/A

Instrument ID: MT\_051  
Lab File ID: 51A011818C.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Beryllium, Total	101	104	79 - 121	3	20		
Cadmium, Total	100	103	82 - 119	3	20		
Cobalt, Total	95	98	82 - 119	4	20		
Silver, Total	100	107	75 - 141	6	20		
Vanadium, Total	99	102	85 - 120	3	20		



## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Method Blank - Batch: 580-265594**

Lab Sample ID: MB 580-265594/18-A  
 Client Matrix: Water  
 Dilution: 5.0  
 Analysis Date: 01/22/2018 0858  
 Prep Date: 01/19/2018 1049  
 Leach Date: N/A

Analysis Batch: 580-265709  
 Prep Batch: 580-265594  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA044  
 Lab File ID: 028SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Iron, Dissolved	ND		0.18

**Lab Control Sample/  
 Lab Control Sample Duplicate Recovery Report - Batch: 580-265594**

LCS Lab Sample ID: LCS 580-265594/19-A  
 Client Matrix: Water  
 Dilution: 50  
 Analysis Date: 01/22/2018 0902  
 Prep Date: 01/19/2018 1049  
 Leach Date: N/A

Analysis Batch: 580-265709  
 Prep Batch: 580-265594  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA044  
 Lab File ID: 029SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-265594/20-A  
 Client Matrix: Water  
 Dilution: 50  
 Analysis Date: 01/22/2018 0906  
 Prep Date: 01/19/2018 1049  
 Leach Date: N/A

Analysis Batch: 580-265709  
 Prep Batch: 580-265594  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: SEA044  
 Lab File ID: 030SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Iron, Dissolved	109	97	80 - 120	11	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-265594**

**Method: 6020**

MS Lab Sample ID: 580-74422-C-1-C MS	Analysis Batch: 580-265709	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-265594	Lab File ID: 035SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/22/2018 0926		Final Weight/Volume: 50 mL
Prep Date: 01/19/2018 1049		
Leach Date: N/A		

MSD Lab Sample ID: 580-74422-C-1-D MSD	Analysis Batch: 580-265709	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-265594	Lab File ID: 036SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/22/2018 0929		Final Weight/Volume: 50 mL
Prep Date: 01/19/2018 1049		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Iron, Dissolved	104	104	80 - 120	0	20		

**Duplicate - Batch: 580-265594**

**Method: 6020**

Lab Sample ID: 580-74422-C-1-B DU	Analysis Batch: 580-265709	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-265594	Lab File ID: 033SMPL.D
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/22/2018 0918	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/19/2018 1049		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Iron, Dissolved	0.46	0.496	8	20	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

## Method Blank - Batch: 280-401620

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: MB 280-401620/1-A  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/17/2018 0657  
Prep Date: 01/16/2018 1504  
Leach Date: N/A

Analysis Batch: 280-401890  
Prep Batch: 280-401620  
Leach Batch: N/A  
Units: mg/L

Instrument ID: MT\_077  
Lab File ID: 252\_BLK.d  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Arsenic, Total	ND		0.0050
Barium, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

## Method Blank - Batch: 280-401620

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: MB 280-401620/1-A  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/17/2018 2152  
Prep Date: 01/16/2018 1504  
Leach Date: N/A

Analysis Batch: 280-402004  
Prep Batch: 280-401620  
Leach Batch: N/A  
Units: mg/L

Instrument ID: MT\_077  
Lab File ID: 123\_BLK.d  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Antimony, Total	ND		0.0020

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Lab Control Sample - Batch: 280-401620**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: LCS 280-401620/2-A	Analysis Batch: 280-401890	Instrument ID: MT_077
Client Matrix: Water	Prep Batch: 280-401620	Lab File ID: 253_LCS.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 0701	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic, Total	0.0400	0.0358	90	85 - 117	
Barium, Total	0.0400	0.0459	115	85 - 118	
Chromium, Total	0.0400	0.0384	96	84 - 121	
Copper, Total	0.0400	0.0392	98	85 - 119	
Lead, Total	0.0400	0.0402	101	85 - 118	
Nickel, Total	0.0400	0.0394	98	85 - 119	
Selenium, Total	0.0400	0.0352	88	77 - 122	
Thallium, Total	0.0400	0.0402	101	85 - 118	
Zinc, Total	0.0400	0.0402	101	83 - 122	

**Lab Control Sample - Batch: 280-401620**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: LCS 280-401620/2-A	Analysis Batch: 280-402004	Instrument ID: MT_077
Client Matrix: Water	Prep Batch: 280-401620	Lab File ID: 124_LCS.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 2156	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony, Total	0.0400	0.0385	96	85 - 115	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401620**

**Method: 6020  
Preparation: 3020A**

MS Lab Sample ID: 280-105377-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/17/2018 0716  
Prep Date: 01/16/2018 1504  
Leach Date: N/A

Analysis Batch: 280-401890  
Prep Batch: 280-401620  
Leach Batch: N/A

Instrument ID: MT\_077  
Lab File ID: 257SMPL.d  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-105377-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/17/2018 0720  
Prep Date: 01/16/2018 1504  
Leach Date: N/A

Analysis Batch: 280-401890  
Prep Batch: 280-401620  
Leach Batch: N/A

Instrument ID: MT\_077  
Lab File ID: 258SMPL.d  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Arsenic, Total	89	89	85 - 117	1	20		
Barium, Total	108	102	85 - 118	4	20		
Chromium, Total	101	98	84 - 121	3	20		
Copper, Total	98	100	85 - 119	2	20		
Lead, Total	101	101	85 - 118	0	20		
Nickel, Total	100	97	85 - 119	3	20		
Selenium, Total	90	91	77 - 122	1	20		
Thallium, Total	100	101	85 - 118	0	20		
Zinc, Total	100	99	83 - 122	0	20		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401620**

**Method: 6020  
Preparation: 3020A**

MS Lab Sample ID: 280-105377-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/17/2018 2211  
Prep Date: 01/16/2018 1504  
Leach Date: N/A

Analysis Batch: 280-402004  
Prep Batch: 280-401620  
Leach Batch: N/A

Instrument ID: MT\_077  
Lab File ID: 128SMPL.d  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-105377-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/17/2018 2215  
Prep Date: 01/16/2018 1504  
Leach Date: N/A

Analysis Batch: 280-402004  
Prep Batch: 280-401620  
Leach Batch: N/A

Instrument ID: MT\_077  
Lab File ID: 129SMPL.d  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Antimony, Total	105	105	85 - 115	0	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Method Blank - Batch: 280-401631**

Lab Sample ID: MB 280-401631/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/17/2018 2343  
 Prep Date: 01/17/2018 0729  
 Leach Date: N/A

Analysis Batch: 280-402004  
 Prep Batch: 280-401631  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_077  
 Lab File ID: 152\_BLK.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Manganese, Dissolved	ND		0.0010

**Lab Control Sample - Batch: 280-401631**

Lab Sample ID: LCS 280-401631/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/17/2018 2347  
 Prep Date: 01/17/2018 0729  
 Leach Date: N/A

Analysis Batch: 280-402004  
 Prep Batch: 280-401631  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_077  
 Lab File ID: 153\_LCS.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Manganese, Dissolved	0.0400	0.0404	101	85 - 117	

**Matrix Spike/  
 Matrix Spike Duplicate Recovery Report - Batch: 280-401631**

MS Lab Sample ID: 280-105376-M-2-C MS  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/18/2018 0049  
 Prep Date: 01/17/2018 0729  
 Leach Date: N/A

Analysis Batch: 280-402004  
 Prep Batch: 280-401631  
 Leach Batch: N/A

**Method: 6020  
 Preparation: 3005A  
 Dissolved**

Instrument ID: MT\_077  
 Lab File ID: 169SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-105376-M-2-D MSD  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/18/2018 0053  
 Prep Date: 01/17/2018 0729  
 Leach Date: N/A

Analysis Batch: 280-402004  
 Prep Batch: 280-401631  
 Leach Batch: N/A

Instrument ID: MT\_077  
 Lab File ID: 170SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Manganese, Dissolved	100	100	85 - 117	0	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Method Blank - Batch: 280-401382**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-401382/6	Analysis Batch: 280-401382	Instrument ID: WC_IonChrom11
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 0006.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/11/2018 1542	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Nitrate as N	ND		0.20

**Method Reporting Limit Check - Batch: 280-401382**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-401382/3	Analysis Batch: 280-401382	Instrument ID: WC_IonChrom11
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 0003.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/11/2018 1435	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	0.200	ND	113	50 - 150	

**Lab Control Sample/**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-401382**

**Method: 300.0**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-401382/4	Analysis Batch: 280-401382	Instrument ID: WC_IonChrom11
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 0004.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/11/2018 1458	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		10 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-401382/5	Analysis Batch: 280-401382	Instrument ID: WC_IonChrom11
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 0005.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/11/2018 1520	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		10 uL
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Nitrate as N	98	97	90 - 110	0	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401382**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-105377-9  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/11/2018 2340  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401382  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom11  
Lab File ID: 0023.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
10 uL

MSD Lab Sample ID: 280-105377-9  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/12/2018 0003  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401382  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom11  
Lab File ID: 0024.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
10 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate as N	104	105	80 - 120	0	20		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401382**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-105377-10  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/12/2018 0110  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401382  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom11  
Lab File ID: 0027.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
10 uL

MSD Lab Sample ID: 280-105377-10  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/12/2018 0132  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401382  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom11  
Lab File ID: 0028.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
10 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate as N	105	105	80 - 120	0	20		



# Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

## Duplicate - Batch: 280-401382

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID:	280-105377-9	Analysis Batch:	280-401382	Instrument ID:	WC_IonChrom11
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0022.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	01/11/2018 2318	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				10 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate as N	1.6	1.59	3	15	

## Duplicate - Batch: 280-401382

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID:	280-105377-10	Analysis Batch:	280-401382	Instrument ID:	WC_IonChrom11
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0026.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	01/12/2018 0048	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				10 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate as N	1.6	1.61	0.4	15	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Method Blank - Batch: 280-401503**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-401503/6	Analysis Batch: 280-401503	Instrument ID: WC_IonChrom11
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 0006.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/12/2018 1325	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Nitrate as N	ND		0.20

**Method Reporting Limit Check - Batch: 280-401503**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-401503/3	Analysis Batch: 280-401503	Instrument ID: WC_IonChrom11
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 0003.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/12/2018 1218	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	0.200	ND	106	50 - 150	

**Lab Control Sample/**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-401503**

**Method: 300.0**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-401503/4	Analysis Batch: 280-401503	Instrument ID: WC_IonChrom11
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 0004.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/12/2018 1241	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		10 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-401503/5	Analysis Batch: 280-401503	Instrument ID: WC_IonChrom11
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 0005.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/12/2018 1303	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		10 uL
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Nitrate as N	96	96	90 - 110	0	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401503**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-105377-8  
Client Matrix: Water  
Dilution: 5.0  
Analysis Date: 01/13/2018 0033  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401503  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom11  
Lab File ID: 0019.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
10 uL

MSD Lab Sample ID: 280-105377-8  
Client Matrix: Water  
Dilution: 5.0  
Analysis Date: 01/13/2018 0055  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401503  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom11  
Lab File ID: 0020.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
10 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate as N	103	103	80 - 120	0	20		

**Duplicate - Batch: 280-401503**

**Method: 300.0  
Preparation: N/A**

Lab Sample ID: 280-105377-8  
Client Matrix: Water  
Dilution: 5.0  
Analysis Date: 01/12/2018 2326  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401503  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: WC\_IonChrom11  
Lab File ID: 0016.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
10 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate as N	10	10.6	1	15	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Method Blank - Batch: 280-402949**

**Method: 350.1  
Preparation: N/A**

Lab Sample ID: MB 280-402949/59	Analysis Batch: 280-402949	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\012618.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/26/2018 1045	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Ammonia	ND		0.10

**Lab Control Sample/**

**Method: 350.1  
Preparation: N/A**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-402949**

LCS Lab Sample ID: LCS 280-402949/57	Analysis Batch: 280-402949	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\012618.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/26/2018 1041	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-402949/58	Analysis Batch: 280-402949	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\012618.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/26/2018 1043	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ammonia	98	92	90 - 110	6	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-402949**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-105344-F-1 MS	Analysis Batch: 280-402949	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\012618.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 01/26/2018 1049		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-105344-F-1 MSD	Analysis Batch: 280-402949	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\012618.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 01/26/2018 1051		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia	89	99	90 - 110	11	10	F1	F2

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Method Blank - Batch: 280-403259**

**Method: 350.1  
Preparation: N/A**

Lab Sample ID: MB 280-403259/20	Analysis Batch: 280-403259	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\013018.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/30/2018 0816	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Ammonia	ND		0.10

**Lab Control Sample/**

**Method: 350.1  
Preparation: N/A**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-403259**

LCS Lab Sample ID: LCS 280-403259/18	Analysis Batch: 280-403259	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\013018.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/30/2018 0812	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-403259/19	Analysis Batch: 280-403259	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\013018.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/30/2018 0814	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ammonia	98	98	90 - 110	0	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-403259**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-105604-E-10 MS	Analysis Batch: 280-403259	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\013018.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 01/30/2018 0854		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-105604-E-10 MSD	Analysis Batch: 280-403259	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\013018.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 01/30/2018 0856		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia	94	92	90 - 110	2	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Method Blank - Batch: 280-403191**

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID: MB 280-403191/22	Analysis Batch: 280-403191	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\012917.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/29/2018 2239	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Nitrate Nitrite as N	ND		0.10

**Lab Control Sample - Batch: 280-403191**

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID: LCS 280-403191/21	Analysis Batch: 280-403191	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\012917.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/29/2018 2237	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N	5.00	4.91	98	90 - 110	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-403191**

**Method: 353.2**  
**Preparation: N/A**

MS Lab Sample ID: 280-105377-1	Analysis Batch: 280-403191	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\012917.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/29/2018 2243		Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-105377-1	Analysis Batch: 280-403191	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\012917.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/29/2018 2245		Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate Nitrite as N	105	103	90 - 110	2	10		



# Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

## Method Blank - Batch: 280-401468

Method: SM 2320B

Preparation: N/A

Lab Sample ID: MB 280-401468/5  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/11/2018 1942  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401468  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: WC\_AT2  
Lab File ID: alk 011218.TXT  
Initial Weight/Volume:  
Final Weight/Volume:

Analyte	Result	Qual	RL
Alkalinity	ND		5.0
Bicarbonate Alkalinity as CaCO3	ND		5.0

## Method Blank - Batch: 280-401468

Method: SM 2320B

Preparation: N/A

Lab Sample ID: MB 280-401468/29  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/11/2018 2238  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401468  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: WC\_AT2  
Lab File ID: alk 011218.TXT  
Initial Weight/Volume:  
Final Weight/Volume:

Analyte	Result	Qual	RL
Alkalinity	ND		5.0
Bicarbonate Alkalinity as CaCO3	ND		5.0

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Lab Control Sample - Batch: 280-401468**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: LCS 280-401468/4	Analysis Batch: 280-401468	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 011218.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/11/2018 1934	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	200	188	94	90 - 110	

**Lab Control Sample - Batch: 280-401468**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: LCS 280-401468/28	Analysis Batch: 280-401468	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 011218.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/11/2018 2230	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	200	185	92	90 - 110	

**Duplicate - Batch: 280-401468**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: 280-105331-A-1 DU	Analysis Batch: 280-401468	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 011218.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/11/2018 2251	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity	87	87.4	1	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Method Blank - Batch: 280-401768**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: MB 280-401768/1	Analysis Batch: 280-401768	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/16/2018 0914	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Dissolved Solids	ND		10

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-401768**

**Method: SM 2540C**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-401768/2	Analysis Batch: 280-401768	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/16/2018 0914	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-401768/3	Analysis Batch: 280-401768	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/16/2018 0914	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Total Dissolved Solids	98	97	86 - 110	1	20		

**Duplicate - Batch: 280-401768**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: 280-105463-A-2 DU	Analysis Batch: 280-401768	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/16/2018 0914	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Dissolved Solids	440	444	1	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Method Blank - Batch: 280-401818**

**Method: SM 2540D**  
**Preparation: N/A**

Lab Sample ID: MB 280-401818/1	Analysis Batch: 280-401818	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 01/16/2018 1428	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Suspended Solids	ND		4.0

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-401818**

**Method: SM 2540D**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-401818/2	Analysis Batch: 280-401818	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 01/16/2018 1428	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-401818/3	Analysis Batch: 280-401818	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 01/16/2018 1428	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Total Suspended Solids	93	104	86 - 114	11	20		

**Duplicate - Batch: 280-401818**

**Method: SM 2540D**  
**Preparation: N/A**

Lab Sample ID: 280-105385-A-8 DU	Analysis Batch: 280-401818	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 01/16/2018 1428	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Suspended Solids	9.2	8.40	9	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Method Blank - Batch: 280-401947**

**Method: SM 2540D**  
**Preparation: N/A**

Lab Sample ID: MB 280-401947/1	Analysis Batch: 280-401947	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 01/17/2018 1641	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Suspended Solids	ND		4.0

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-401947**

**Method: SM 2540D**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-401947/2	Analysis Batch: 280-401947	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 01/17/2018 1641	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-401947/3	Analysis Batch: 280-401947	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 01/17/2018 1641	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Total Suspended Solids	91	98	86 - 114	7	20		

**Duplicate - Batch: 280-401947**

**Method: SM 2540D**  
**Preparation: N/A**

Lab Sample ID: 280-105463-A-1 DU	Analysis Batch: 280-401947	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 01/17/2018 1641	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Suspended Solids	6.4	6.00	6	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105377-1

**Method Blank - Batch: 280-402034**

**Method: SM 5310B  
Preparation: N/A**

Lab Sample ID: MB 280-402034/4	Analysis Batch: 280-402034	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/17/2018 1445	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Organic Carbon - Quad	ND		1.0

**Lab Control Sample - Batch: 280-402034**

**Method: SM 5310B  
Preparation: N/A**

Lab Sample ID: LCS 280-402034/3	Analysis Batch: 280-402034	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/17/2018 1428	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Quad	25.0	24.7	99	88 - 112	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-402034**

**Method: SM 5310B  
Preparation: N/A**

MS Lab Sample ID: 280-105377-5	Analysis Batch: 280-402034	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/17/2018 1900		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-105377-5	Analysis Batch: 280-402034	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/17/2018 1919		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Total Organic Carbon - Quad	98	97	88 - 112	1	15		

**TestAmerica Denver**  
 4955 Yarrow Street  
 Avrada, CO 80002  
 Phone (303) 736-0100 Fax (303) 431-7171

**Chain of Custody Record**



**Client Information**  
 Client Contact: Sam Graber  
 Company: SCS Engineers  
 Address: 2405 140th Avenue NE Suite 107  
 City: Bellevue  
 State: WA, ZIP: 98005-1877  
 Phone: (206) 940-2980  
 Email: SGrabr@scsengineers.com  
 Project Name: Hidden Valley Landfill  
 Site: *↘*

**Analysis Requested**  
 Due Date Requested: Standard  
 TAT Requested (days):  
 PO #: Purchase Order not required  
 W/O #:  
 Project #: 28003580-Quarterly Groundwater Wells  
 SSOV#:

**Carrier Tracking**  
 Lab Pk: Sam B.  
 Sdra: Betsy A  
 E-Mail: betsy.sara@testamericainc.com  
 Carrier Tracking No(s): 4150 9261 6000  
 41509261 6011  
 Job #: 04217003.03  
 COC No: 280-21691-5019.1  
 Page: 1 of 1

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Overhaul, BI-Tissue AAH)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B	Dissolved Metals (6010B/6020)	Dissolved Iron (TA Seattle)	TDS/Alks/NO3(I/C)	Cl/SO4 (TA St. Louis)	Ammonia/TOC	TSS	Total Metals	Total Number of containers	Special Instructions/Note:
HVL-010918-13	1/9/18	1447	G	W		X	X	X	X	X	X	X	X	X	X	10	Short Hold NO3(I/C)
HVL-010918-14		1245				X	X	X	X	X	X	X	X	X	X		
HVL-010918-15		1400				X	X	X	X	X	X	X	X	X	X		
HVL-010918-16		1445				X	X	X	X	X	X	X	X	X	X		



**Possible Hazard Identification**  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  Radiological

Deliverable Requested: I, II, III, IV, Other (specify)

**Sample Disposal** (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Special Instructions/QC Requirements:

**Empty Kit Relinquished by:** \_\_\_\_\_ Date: \_\_\_\_\_

**Relinquished by:** *Sam B.* Date/Time: 1/9/18 1600 Company: SCS

**Relinquished by:** \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

**Custody Seals Intact:**  Yes  No

**Custody Seal No.:** 437276, 437277

**Received by:** *Sam B.* Date/Time: 1/11/18 0900 Company: THADEN

**Received by:** \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Cooler Temperature(s) °C and Other Remarks: 0.9, 0.8, 1.1, 1.7, 2.1 °C to 0.1 IR #8 transferred by

Chain of Custody Record

Client Information

Client Contact: Sam Graber  
 Company: SCS Engineers

Sampler: Sam B.  
 Phone: 612 940 2980

Lab Ptn. Sara Belsy A  
 E-Mail: belsy\_sara@testamericainc.com

Carrier Tracking No(s): 4150 9261 6033  
 4150 9261 6022

GOC No: 280-21691-6019.1  
 Page: 1 of 1

Address: 2405 140th Avenue NE Suite 107

City: Bellevue

State/Zip: WA, 98005-1877

Phone: 612 940 2980

Email: SGrabr@scsengineers.com

Project Name: Hidden Valley Landfill

Site: ↘

Due Date Requested: Standard ↘

TAT Requested (days):

PO #: Purchase Order not required

Project #: 28003580-Quarterly Groundwater Wells

SSOM#:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Weaver, Sisdid, Orvathol, Brittnau, A&H)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B	Dissolved Metals (6010B/6020)	Dissolved Iron (TA Seattle)	TDS/AIks/NO3(IC)	Cl/SO4 (TA St. Louis)	Ammonia/TOC	TSS	Total Metals	Total Number of containers	Special Instructions/Note:
HVL-011018-17	1/10/18	900	G	W	Y	N	X	X	X	X	X	X	X	X	10	Short Hold: NO3(IC)
HVL-011018-18		1015	G	W	Y	N	X	X	X	X	X	X	X	X		
HVL-011018-19		1143	G	W	Y	N	X	X	X	X	X	X	X	X		
HVL-011018-20		1248	G	W	Y	N	X	X	X	X	X	X	X	X		
HVL-011018-21		1414	G	W	Y	N	X	X	X	X	X	X	X	X		
HVL-011018-22		1430	G	W	Y	N	X	X	X	X	X	X	X	X		
Tip blank		-	-	-	N	N	X	X	X	X	X	X	X	X	5	

Possible Hazard Identification

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  Radiological

Deliverable Requested: I, II, III, IV, Other (specify)

Empty Kit Relinquished by:

Relinquished by: *[Signature]*

Relinquished by: *[Signature]*

Custody Seals Intact:  Yes  No

Custody Seal No.: U37272, U37273

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Special Instructions/QC Requirements:

Received by: *[Signature]*

Received by: *[Signature]*

Cooler Temperature(s) °C and Other Remarks:

Job #: 04217003.03

- Preservation Codes:
- A - HCL
  - B - NaOH
  - C - Zn Acetate
  - D - Nitric Acid
  - E - NaHSO4
  - F - MeOH
  - G - Amohlor
  - H - Ascorbic Acid
  - I - Ice
  - J - DI Water
  - K - EDTA
  - L - EDA
  - M - Hexane
  - N - None
  - O - AsH2O2
  - P - Na2C4H4S
  - Q - Na2SO3
  - R - Na2S2O3
  - S - H2SO4
  - T - TSP Dodecahydrate
  - U - Acetone
  - V - MCAA
  - W - Ph 4.5
  - Z - other (Specify)





<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab PM:	Carrier Tracking No(s):	GOC No:
Client Contact: Shipping/Receiving		Phone:	Sara, Betsy A	State of Origin: Washington	280-424835-1
Company: TestAmerica Laboratories, Inc.		Address: 13715 Rider Trail North,	E-Mail: betsy.sara@testamericainc.com	State Program - Washington	Page 1 of 2
City: Earth City		State, Zip: MO, 63045	Accreditations Required (See note):	Job #:	280-105377-1
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		PO #:	<b>Analysis Requested</b>		
Email:		WO #:	Preservation Codes:		
Project Name: Hidden Valley LF		Project #:	M - Hexane		
Site:		SSOW#:	N - None		
			O - Acetic Acid		
			P - NaOH		
			Q - NaOH		
			R - NaOH		
			S - NaOH		
			T - TSP Dodecahydrate		
			U - Acetone		
			V - MCAA		
			W - pH 4-5		
			X - EDTA		
			Y - EDTA		
			Z - other (specify)		
			Other:		

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Soil, Other)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	500 ORGM 28DI (MDD) Sulfate/Chloride (TA SL) (Yes or No)	Total Number of Containers	Special Instructions/Note:
HVL-010918-13 (280-105377-1)	1/9/18	11:47 Pacific	Water	Water	X	X	X	1	
HVL-010918-14 (280-105377-2)	1/9/18	12:45 Pacific	Water	Water	X	X	X	1	
HVL-010918-15 (280-105377-3)	1/9/18	14:00 Pacific	Water	Water	X	X	X	1	
HVL-010918-16 (280-105377-4)	1/9/18	14:45 Pacific	Water	Water	X	X	X	1	
HVL-011018-17 (280-105377-5)	1/10/18	09:00 Pacific	Water	Water	X	X	X	1	
HVL-011018-18 (280-105377-6)	1/10/18	10:15 Pacific	Water	Water	X	X	X	1	
HVL-011018-19 (280-105377-7)	1/10/18	11:43 Pacific	Water	Water	X	X	X	1	
HVL-011018-20 (280-105377-8)	1/10/18	12:48 Pacific	Water	Water	X	X	X	1	
HVL-011018-21 (280-105377-9)	1/10/18	14:14 Pacific	Water	Water	X	X	X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_ Primary Deliverable Rank: 2  
 Return To Client  
 Disposal By Lab  
 Archive For \_\_\_\_\_ Months

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: <i>Alan Old</i>	1/11/18	6:40	
Relinquished by:	Date/Time:	Date/Time:	Company
Relinquished by:			Company
Relinquished by:	Date/Time:	Date/Time:	Company
Relinquished by:			Company
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:		

Received by: *Kristine Jay*  
 Date/Time: 1/12/18 10:45  
 Received by: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_  
 Received by: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

Cooler Temperature(s) °C and Other Remarks:

## Chain of Custody Record

TestAmerica Denver  
4955 Yarrow Street  
Arvada, CO 80002  
Phone (303) 736-0100 Fax (303) 431-7171

<b>Client Information (Sub Contract Lab)</b> Carrier Tracking No(s): State of Origin:		Lab PM: Sara, Betsy A State of Origin: Washington	
Client Contact: Shipping/Receiving Company:		E-Mail: betsy.sara@testamericainc.com Accreditations Required (See note): State Program - Washington	
TestAmerica Laboratories, Inc. Address: 13715 Rider Trail North, City: Earth City State, Zip: MO, 63045 Phone: 314-298-8566(Tel) 314-298-8757(Fax) Email:			
Due Date Requested: 1/30/2018 TAT Requested (days):			
PO #: WO #: Project #: 28003560 SSOW#:			
Project Name: Hidden Valley LF Size:			
Sample Identification - Client ID (Lab ID) HVL-011018-22 (280-105377-10)			
Sample Date 1/10/18		Sample Time 14:30 Pacific	
Sample Type (C=Comp, G=grab)		Matrix (Water, Sewer, Stormwater, Other)	
Preservation Code:		Matrix Water	
Field Filtered Sample (Yes or No)		Field Filtered Sample (Yes or No)	
Perform M/MSD (Yes or No)		Perform M/MSD (Yes or No)	
100 ORP/M_28DI (MCD) Sulfate/Chloride (TA St. Units)		100 ORP/M_28DI (MCD) Sulfate/Chloride (TA St. Units)	
Total Number of Containers		Total Number of Containers	
Special Instructions/Note:		Special Instructions/Note:	
Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AcNaSO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecylhydrate U - Acetone V - MCAA W - pH 4.5 Z - other (specify)			

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify)  
 Primary Deliverable Rank: 2  
 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months  
 Special Instructions/OC Requirements:

Date/Time: 1/11/18 16:10  
 Date/Time: 1/12/18 10:15  
 Received by: *Kristine Payne*  
 Received by: *TSR*  
 Date/Time: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Cooler Temperature(s) °C and Other Remarks:

**TestAmerica Denver**

4955 Yarrow Street  
 Arvada, CO 80002  
 Phone (303) 736-0100 Fax (303) 431-7171

**Chain of Custody Record**



<b>Client Information (Sub Contract Lab)</b>	Sampler:	Lab PM: Sara, Betsy A	Carrier Tracking No(s):	COC No: 280-424833.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: betsy.sara@testamericainc.com	State of Origin: Washington	Page: Page 1 of 2

Company: TestAmerica Laboratories, Inc.	Accreditations Required (See note): State Program - Washington	Job #: 280-105377-1
--------------------------------------------	-------------------------------------------------------------------	------------------------

Address: 5755 8th Street East	Due Date Requested: 1/29/2018	<b>Analysis Requested</b>										<b>Preservation Codes:</b> A - HCL                      M - Hexane B - NaOH                    N - None C - Zn Acetate            O - AsNaO2 D - Nitric Acid            P - Na2O4S E - NaHSO4                Q - Na2SO3 F - MeOH                    R - Na2S2O3 G - Amchlor                S - H2SO4 H - Ascorbic Acid        T - TSP Dodecahydrate I - Ice                        U - Acetone J - DI Water                V - MCAA K - EDTA                    W - pH 4-5 L - EDA                      Z - other (specify)  Other:
City: Tacoma	TAT Requested (days):	Field Filtered Sample (Yes or No)	Perform: MS/MSD (Yes or No)	6020/FIELD_FLTRD (MOD)/Iron	Total Number of Containers							
State, Zip: WA, 98424	PO #:											
Phone: 253-922-2310(Tel) 253-922-5047(Fax)	WO #:											
Email:												
Project Name: Hidden Valley LF	Project #: 28003580											
Site:	SSOW#:											

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform: MS/MSD (Yes or No)	6020/FIELD_FLTRD (MOD)/Iron	Total Number of Containers	Special Instructions/Note:
HVL-010918-13 (280-105377-1)	1/9/18	11:47 Pacific		Water	X			1	
HVL-010918-14 (280-105377-2)	1/9/18	12:45 Pacific		Water	X			1	
HVL-010918-15 (280-105377-3)	1/9/18	14:00 Pacific		Water	X			1	
HVL-010918-16 (280-105377-4)	1/9/18	14:45 Pacific		Water	X			1	
HVL-011018-17 (280-105377-5)	1/10/18	09:00 Pacific		Water	X			1	
HVL-011018-18 (280-105377-6)	1/10/18	10:15 Pacific		Water	X			1	
HVL-011018-19 (280-105377-7)	1/10/18	11:43 Pacific		Water	X			1	
HVL-011018-20 (280-105377-8)	1/10/18	12:48 Pacific		Water	X			1	
HVL-011018-21 (280-105377-9)	1/10/18	14:14 Pacific		Water	X			1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

<b>Possible Hazard Identification</b>	<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>
Unconfirmed	<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For    Months

Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2	Special Instructions/QC Requirements:
--------------------------------------------------------	-----------------------------	---------------------------------------

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: <i>Tom [Signature]</i>	Date/Time: 1/11/18 16:50	Company:	Received by: <i>Kung [Signature]</i>
Relinquished by:	Date/Time:	Company:	Date/Time: 1-12-18 0965
Relinquished by:	Date/Time:	Company:	Company: TASE2

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Page 127 of 131	Cooler Temperature(s) °C and Other Remarks:	01/31/2018
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IR5=10.1

**TestAmerica Denver**

4955 Yarrow Street  
Arvada, CO 80002  
Phone (303) 736-0100 Fax (303) 431-7171

**Chain of Custody Record**



THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: Shipping/Receiving		Phone:	Sara, Betsy A		280-424833.2
Company: TestAmerica Laboratories, Inc.		E-Mail: betsy.sara@testamericainc.com		State of Origin: Washington	Page: Page 2 of 2
Address: 5755 8th Street East,		Due Date Requested: 1/29/2018	Accreditations Required (See note): State Program - Washington		Job #: 280-105377-1
City: Tacoma		TAT Requested (days):	<b>Analysis Requested</b>		<b>Preservation Codes:</b> A - HCL                    M - Hexane B - NaOH                N - None C - Zn Acetate        O - AsNaO2 D - Nitric Acid        P - Na2O4S E - NaHSO4            Q - Na2SO3 F - MeOH              R - Na2S2O3 G - Amchlor          S - H2SO4 H - Ascorbic Acid    T - TSP Dodecahydrate I - Ice                    U - Acetone J - DI Water          V - MCAA K - EDTA              W - pH 4-5 L - EDTA              Z - other (specify)
State, Zip: WA, 98424		PO #:			
Phone: 253-922-2310(Tel) 253-922-5047(Fax)		WO #:			<b>Other:</b>
Email:		Project #: 28003580			
Project Name: Hidden Valley LF		SSOW#:			
Site:					

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020(FIELD_FLTRD (MOO)Iron	Total Number of containers	Special Instructions/Note:
HVL-011018-22 (280-105377-10)	1/10/18	14:30 Pacific		Water			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

<b>Possible Hazard Identification</b>	<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>
Unconfirmed	<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2
	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: <i>Ken Adell</i>	Date/Time: 1/11/18 16:50	Company:	Received by: <i>Raymond</i>
Relinquished by:	Date/Time:	Company:	Date/Time: 1-12-18 0955
Relinquished by:	Date/Time:	Company:	Date/Time:
Relinquished by:	Date/Time:	Company:	Date/Time:

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
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## Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-105377-1

**Login Number: 105377**

**List Source: TestAmerica Denver**

**List Number: 1**

**Creator: Burtness, Benjamin W**

<b>Question</b>	<b>Answer</b>	<b>Comment</b>
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	False	No: Not present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-105377-1

**Login Number: 105377**  
**List Number: 3**  
**Creator: Hobbs, Kenneth F**

**List Source: TestAmerica Seattle**  
**List Creation: 01/13/18 01:20 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	IR5=10.1/10.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-105377-1

**Login Number: 105377**  
**List Number: 2**  
**Creator: Taylor, Kristene N**

**List Source: TestAmerica St. Louis**  
**List Creation: 01/12/18 01:08 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

MW-29S

Job Number: 280-105482-1

Job Description: Hidden Valley LF

For:

SCS Engineers

2405 140th Avenue NE

Suite 107

Bellevue, WA 98005-1877

Attention: Mr. Kevin Lakey



Approved for release.  
Betsy A Sara  
Project Manager II  
2/7/2018 8:03 AM

---

Betsy A Sara, Project Manager II  
4955 Yarrow Street, Arvada, CO, 80002  
(303)736-0189  
betsy.sara@testamericainc.com  
02/07/2018

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

These data and reporting limits are being used specifically to meet the needs of this project. All RLs are supported by TestAmerica's Method Detection Limits (MDLs). Reporting limits in this report are at or above the MDL.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002

Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)



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## CASE NARRATIVE

Client: SCS Engineers

Project: Hidden Valley LF

Report Number: 280-105482-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### Sample Receiving

The sample was received on 01/15/2018; the sample arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.6 C.

The cooler arrived without a custody seal. However, the tape was intact. The client was notified on 1/15/2018.

### Holding Times

The analysis for Nitrate Method 300.0 for the sample HVL-011118-22 was performed outside of hold due to the hold time expiring during transit due to a FedEx shipping delay.

All other holding times were within established control limits.

### Method Blanks

All Method Blanks were within established control limits.

### Laboratory Control Samples (LCS)

All Laboratory Control Samples were within established control limits.

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

The percent recoveries and/or relative percent difference of the MS/MSD performed on a sample from another client were outside control limits for Methylene Chloride Method 8260B because the sample concentration was greater than four times the spike amount. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, no corrective action was taken.

The percent recoveries and/or relative percent difference of the MS/MSD performed on sample HVL-011118-22 were outside control limits for Dissolved Manganese Method 6020 because the sample concentration was greater than four times the spike amount. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, no corrective action was taken.

All other MS and MSD samples were within established control limits.

### Sample Duplicate

The Method 6020 Sample Duplicate performed on a sample from another client exhibited an RPD that exceeded the limit for Dissolved Iron, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.

The Method 2540D Sample Duplicate performed on a sample from another client exhibited an RPD that exceeded the limit for Total Suspended Solids (TSS), and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.

### General Comments

The analysis for Chloride and Sulfate Method 300.0 was performed at the TestAmerica's St. Louis Laboratory.  
13715 Rider Trail North

Earth City, MO 63045  
Phone: 314-298-8566

The analysis for Iron Method 6020 was performed at the TestAmerica's Seattle Laboratory.  
5755 8th Street East  
Tacoma, WA 98424  
Phone: 253-922-2310

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-105482-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-105482-1</b>	<b>HVL-011118-22</b>	<b>MW-29S</b>				
Barium, Total		0.0084		0.0050	mg/L	6020
Zinc, Total		0.052		0.010	mg/L	6020
Nitrate as N		1.0	H	0.20	mg/L	300.0
Alkalinity		110		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		110		5.0	mg/L	SM 2320B
Total Dissolved Solids		180		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.7		1.0	mg/L	SM 5310B
Chloride		13		0.20	mg/L	300.0
Sulfate		10		0.20	mg/L	300.0
<b><i>Dissolved</i></b>						
Calcium, Dissolved		24		0.20	mg/L	6010B
Magnesium, Dissolved		7.6		0.10	mg/L	6010B
Potassium, Dissolved		2.9		2.0	mg/L	6010B
Sodium, Dissolved		25		1.0	mg/L	6010B
Iron, Dissolved		0.29		0.18	mg/L	6020
Manganese, Dissolved		0.98		0.0010	mg/L	6020

## METHOD SUMMARY

Client: SCS Engineers

Job Number: 280-105482-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Volatile Organic Compounds (GC/MS)	TAL DEN	SW846 8260B	
Purge and Trap	TAL DEN		SW846 5030B
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Total Metals	TAL DEN		SW846 3010A
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Metals	TAL DEN		SW846 3020A
Anions, Ion Chromatography	TAL DEN	MCAWW 300.0	
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
Alkalinity	TAL DEN	SM SM 2320B	
Solids, Total Dissolved (TDS)	TAL DEN	SM SM 2540C	
Solids, Total Suspended (TSS)	TAL DEN	SM SM 2540D	
Organic Carbon, Total (TOC)	TAL DEN	SM SM 5310B	
Metals (ICP/MS)	TAL SEA	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL SEA		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Anions, Ion Chromatography	TAL SL	MCAWW 300.0	

### Lab References:

TAL DEN = TestAmerica Denver

TAL SEA = TestAmerica Seattle

TAL SL = TestAmerica St. Louis

### Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

## METHOD / ANALYST SUMMARY

Client: SCS Engineers

Job Number: 280-105482-1

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
SW846 8260B	Wickham, Tom A	TAW
SW846 6010B	Lackey, Cara M	CML
SW846 6020	Trudell, Lynn-Anne M	LMT
SW846 6020	Woo, Fred C	FCW
MCAWW 300.0	Phan, Thu L	TLP
MCAWW 350.1	Lehman, Jeffrey M	JML
SM SM 2320B	Duplin, Alysha 1	A1D
SM SM 2540C	Pedrick, Joshua A	JAP
SM SM 2540D	Pedrick, Joshua A	JAP
SM SM 5310B	Jewell, Connie C	CCJ
MCAWW 300.0	Boyd, Jacob C	JCB

**SAMPLE SUMMARY**

Client: SCS Engineers

Job Number: 280-105482-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
280-105482-1	HVL-011118-22	Water	01/11/2018 0952	01/15/2018 0915

# SAMPLE RESULTS



## Analytical Data

Client: SCS Engineers

Job Number: 280-105482-1

**Client Sample ID: HVL-011118-22**

Lab Sample ID: 280-105482-1

Date Sampled: 01/11/2018 0952

Client Matrix: Water

Date Received: 01/15/2018 0915

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_8078.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1435		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1435		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105482-1

**Client Sample ID: HVL-011118-22**

Lab Sample ID: 280-105482-1

Date Sampled: 01/11/2018 0952

Client Matrix: Water

Date Received: 01/15/2018 0915

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_8078.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1435		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1435		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	119		70 - 127
4-Bromofluorobenzene (Surr)	109		78 - 120
Dibromofluoromethane (Surr)	120		77 - 120
Toluene-d8 (Surr)	111		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-105482-1

**Client Sample ID: HVL-011118-22**

Lab Sample ID: 280-105482-1

Date Sampled: 01/11/2018 0952

Client Matrix: Water

Date Received: 01/15/2018 0915

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-347807	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	012418- 39.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/25/2018 0221			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	10		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-105482-1

**Client Sample ID:** HVL-011118-22

Lab Sample ID: 280-105482-1

Date Sampled: 01/11/2018 0952

Client Matrix: Water

Date Received: 01/15/2018 0915

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-347807	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	012418- 40.d
Dilution:	10			Initial Weight/Volume:	5 mL
Analysis Date:	01/25/2018 0237	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	13		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-105482-1

**Client Sample ID:** HVL-011118-22

Lab Sample ID: 280-105482-1

Client Matrix: Water

Date Sampled: 01/11/2018 0952

Date Received: 01/15/2018 0915

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### 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402105      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401786      Lab File ID: 51A011818B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0057      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

---

### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-402000      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-401728      Lab File ID: 51A011718C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0053      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	24		0.20
Magnesium, Dissolved	7.6		0.10
Potassium, Dissolved	2.9		2.0
Sodium, Dissolved	25		1.0

---

### 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-401996      Instrument ID: MT\_078  
Prep Method: 3020A      Prep Batch: 280-401787      Lab File ID: 215SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0214      Final Weight/Volume: 50 mL  
Prep Date: 01/17/2018 1437

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	ND		0.0020
Arsenic, Total	ND		0.0050
Barium, Total	0.0084		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050

## Analytical Data

Client: SCS Engineers

Job Number: 280-105482-1

**Client Sample ID: HVL-011118-22**

Lab Sample ID: 280-105482-1

Date Sampled: 01/11/2018 0952

Client Matrix: Water

Date Received: 01/15/2018 0915

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### 6020 Metals (ICP/MS)

Analysis Method: 6020	Analysis Batch: 280-402728	Instrument ID: MT_077
Prep Method: 3020A	Prep Batch: 280-402283	Lab File ID: 094SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/24/2018 1727		Final Weight/Volume: 50 mL
Prep Date: 01/22/2018 1438		

Analyte	Result (mg/L)	Qualifier	RL
Zinc, Total	0.052		0.010

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### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-401996	Instrument ID: MT_078
Prep Method: 3005A	Prep Batch: 280-401730	Lab File ID: 234SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 0322		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1437		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.98		0.0010

Analysis Method: 6020	Analysis Batch: 580-265807	Instrument ID: SEA044
Prep Method: 3005A	Prep Batch: 580-265708	Lab File ID: 023SMPL.D
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/23/2018 1203		Final Weight/Volume: 50 mL
Prep Date: 01/22/2018 1454		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	0.29		0.18

Client: SCS Engineers

Job Number: 280-105482-1

**General Chemistry**

**Client Sample ID: HVL-011118-22**

Lab Sample ID: 280-105482-1

Date Sampled: 01/11/2018 0952

Client Matrix: Water

Date Received: 01/15/2018 0915

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	1.0	H	mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401695		Analysis Date: 01/15/2018 2053			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-403811		Analysis Date: 02/03/2018 1020			
Alkalinity	110		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401838		Analysis Date: 01/16/2018 1623			
Bicarbonate Alkalinity as CaCO3	110		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401838		Analysis Date: 01/16/2018 1623			
Total Dissolved Solids	180		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401868		Analysis Date: 01/17/2018 0824			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401948		Analysis Date: 01/17/2018 1641			
Total Organic Carbon - Quad	1.7		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-402034		Analysis Date: 01/18/2018 0558			

## DATA REPORTING QUALIFIERS

Client: SCS Engineers

Job Number: 280-105482-1

Lab Section	Qualifier	Description
GC/MS VOA	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
Metals	F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
General Chemistry	F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
	H	Sample was prepped or analyzed beyond the specified holding time



# QUALITY CONTROL RESULTS

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS VOA</b>					
<b>Analysis Batch:280-401740</b>					
LCS 280-401740/4	Lab Control Sample	T	Water	8260B	
MB 280-401740/6	Method Blank	T	Water	8260B	
280-105392-A-5 MS	Matrix Spike	T	Water	8260B	
280-105392-A-5 MSD	Matrix Spike Duplicate	T	Water	8260B	
280-105482-1	HVL-011118-22	T	Water	8260B	
<b>Report Basis</b>					
T = Total					
<b>Metals</b>					
<b>Prep Batch: 580-265708</b>					
LCS 580-265708/17-A	Lab Control Sample	R	Water	3005A	
LCSD 580-265708/18-A	Lab Control Sample Duplicate	R	Water	3005A	
MB 580-265708/16-A	Method Blank	R	Water	3005A	
580-74424-D-1-B DU	Duplicate		Water	3005A	
580-74424-D-1-C MS	Matrix Spike		Water	3005A	
580-74424-D-1-D MSD	Matrix Spike Duplicate		Water	3005A	
280-105482-1	HVL-011118-22	D	Water	3005A	
<b>Analysis Batch:580-265807</b>					
LCS 580-265708/17-A	Lab Control Sample	R	Water	6020	580-265708
LCSD 580-265708/18-A	Lab Control Sample Duplicate	R	Water	6020	580-265708
MB 580-265708/16-A	Method Blank	R	Water	6020	580-265708
580-74424-D-1-B DU	Duplicate		Water	6020	580-265708
580-74424-D-1-C MS	Matrix Spike		Water	6020	580-265708
580-74424-D-1-D MSD	Matrix Spike Duplicate		Water	6020	580-265708
280-105482-1	HVL-011118-22	D	Water	6020	580-265708
<b>Prep Batch: 280-401728</b>					
LCS 280-401728/2-A	Lab Control Sample	R	Water	3005A	
MB 280-401728/1-A	Method Blank	R	Water	3005A	
280-105482-1	HVL-011118-22	D	Water	3005A	
280-105488-A-10-B MS	Matrix Spike	D	Water	3005A	
280-105488-A-10-C MSD	Matrix Spike Duplicate	D	Water	3005A	
<b>Prep Batch: 280-401730</b>					
LCS 280-401730/2-A	Lab Control Sample	R	Water	3005A	
MB 280-401730/1-A	Method Blank	R	Water	3005A	
280-105482-1	HVL-011118-22	D	Water	3005A	
280-105482-1MS	Matrix Spike	D	Water	3005A	
280-105482-1MSD	Matrix Spike Duplicate	D	Water	3005A	
<b>Prep Batch: 280-401786</b>					
LCS 280-401786/2-A	Lab Control Sample	T	Water	3010A	

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## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 280-401786</b>					
MB 280-401786/1-A	Method Blank	T	Water	3010A	
280-105482-1	HVL-011118-22	T	Water	3010A	
280-105486-D-2-D MS	Matrix Spike	T	Water	3010A	
280-105486-D-2-E MSD	Matrix Spike Duplicate	T	Water	3010A	
<b>Prep Batch: 280-401787</b>					
LCS 280-401787/2-A	Lab Control Sample	T	Water	3020A	
MB 280-401787/1-A	Method Blank	T	Water	3020A	
280-105482-1	HVL-011118-22	T	Water	3020A	
280-105484-C-2-B MS	Matrix Spike	T	Water	3020A	
280-105484-C-2-C MSD	Matrix Spike Duplicate	T	Water	3020A	
<b>Analysis Batch:280-401996</b>					
LCS 280-401730/2-A	Lab Control Sample	R	Water	6020	280-401730
MB 280-401730/1-A	Method Blank	R	Water	6020	280-401730
LCS 280-401787/2-A	Lab Control Sample	T	Water	6020	280-401787
MB 280-401787/1-A	Method Blank	T	Water	6020	280-401787
280-105482-1	HVL-011118-22	D	Water	6020	280-401730
280-105482-1MS	Matrix Spike	D	Water	6020	280-401730
280-105482-1MSD	Matrix Spike Duplicate	D	Water	6020	280-401730
280-105482-1	HVL-011118-22	T	Water	6020	280-401787
280-105484-C-2-B MS	Matrix Spike	T	Water	6020	280-401787
280-105484-C-2-C MSD	Matrix Spike Duplicate	T	Water	6020	280-401787
<b>Analysis Batch:280-402000</b>					
LCS 280-401728/2-A	Lab Control Sample	R	Water	6010B	280-401728
MB 280-401728/1-A	Method Blank	R	Water	6010B	280-401728
280-105482-1	HVL-011118-22	D	Water	6010B	280-401728
280-105488-A-10-B MS	Matrix Spike	D	Water	6010B	280-401728
280-105488-A-10-C MSD	Matrix Spike Duplicate	D	Water	6010B	280-401728
<b>Analysis Batch:280-402105</b>					
LCS 280-401786/2-A	Lab Control Sample	T	Water	6010B	280-401786
MB 280-401786/1-A	Method Blank	T	Water	6010B	280-401786
280-105482-1	HVL-011118-22	T	Water	6010B	280-401786
280-105486-D-2-D MS	Matrix Spike	T	Water	6010B	280-401786
280-105486-D-2-E MSD	Matrix Spike Duplicate	T	Water	6010B	280-401786
<b>Prep Batch: 280-402283</b>					
LCS 280-402283/2-A	Lab Control Sample	T	Water	3020A	
MB 280-402283/1-A	Method Blank	T	Water	3020A	
280-105482-1	HVL-011118-22	T	Water	3020A	
280-105484-C-2-E MS	Matrix Spike	T	Water	3020A	
280-105484-C-2-F MSD	Matrix Spike Duplicate	T	Water	3020A	

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## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Analysis Batch:280-402728</b>					
LCS 280-402283/2-A	Lab Control Sample	T	Water	6020	280-402283
MB 280-402283/1-A	Method Blank	T	Water	6020	280-402283
280-105482-1	HVL-011118-22	T	Water	6020	280-402283
280-105484-C-2-E MS	Matrix Spike	T	Water	6020	280-402283
280-105484-C-2-F MSD	Matrix Spike Duplicate	T	Water	6020	280-402283

#### Report Basis

D = Dissolved

R = Total Recoverable

T = Total

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-401695</b>					
LCS 280-401695/4	Lab Control Sample	T	Water	300.0	
LCSD 280-401695/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-401695/6	Method Blank	T	Water	300.0	
280-105482-1	HVL-011118-22	T	Water	300.0	
280-105482-1DU	Duplicate	T	Water	300.0	
280-105482-1MS	Matrix Spike	T	Water	300.0	
280-105482-1MSD	Matrix Spike Duplicate	T	Water	300.0	
<b>Analysis Batch:280-401838</b>					
LCS 280-401838/4	Lab Control Sample	T	Water	SM 2320B	
MB 280-401838/5	Method Blank	T	Water	SM 2320B	
280-105338-B-3 DU	Duplicate	T	Water	SM 2320B	
280-105482-1	HVL-011118-22	T	Water	SM 2320B	
<b>Analysis Batch:280-401868</b>					
LCS 280-401868/2	Lab Control Sample	T	Water	SM 2540C	
MB 280-401868/1	Method Blank	T	Water	SM 2540C	
280-105436-F-1 DU	Duplicate	T	Water	SM 2540C	
280-105482-1	HVL-011118-22	T	Water	SM 2540C	
<b>Analysis Batch:280-401948</b>					
LCS 280-401948/2	Lab Control Sample	T	Water	SM 2540D	
MB 280-401948/1	Method Blank	T	Water	SM 2540D	
280-105436-F-1 DU	Duplicate	T	Water	SM 2540D	
280-105482-1	HVL-011118-22	T	Water	SM 2540D	
<b>Analysis Batch:280-402034</b>					
LCS 280-402034/34	Lab Control Sample	T	Water	SM 5310B	
MB 280-402034/35	Method Blank	T	Water	SM 5310B	
280-105482-1	HVL-011118-22	T	Water	SM 5310B	
280-105486-C-2 MS	Matrix Spike	T	Water	SM 5310B	
280-105486-C-2 MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
<b>Analysis Batch:280-402035</b>					
LCS 280-402035/34	Lab Control Sample	T	Water	SM 5310B	
MB 280-402035/35	Method Blank	T	Water	SM 5310B	
280-105482-1	HVL-011118-22	T	Water	SM 5310B	
280-105486-C-2 MS	Matrix Spike	T	Water	SM 5310B	
280-105486-C-2 MSD	Matrix Spike Duplicate	T	Water	SM 5310B	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-403811</b>					
LCS 280-403811/18	Lab Control Sample	T	Water	350.1	
LCSD 280-403811/19	Lab Control Sample Duplicate	T	Water	350.1	
MB 280-403811/20	Method Blank	T	Water	350.1	
280-105482-1	HVL-011118-22	T	Water	350.1	
280-105664-P-5 MS	Matrix Spike	T	Water	350.1	
280-105664-P-5 MSD	Matrix Spike Duplicate	T	Water	350.1	

#### Report Basis

T = Total

#### **HPLC/IC**

<b>Analysis Batch:160-347807</b>					
LCS 160-347807/14	Lab Control Sample	T	Water	300.0	
MB 160-347807/13	Method Blank	T	Water	300.0	
280-105482-1	HVL-011118-22	T	Water	300.0	
280-105482-1DL	HVL-011118-22	T	Water	300.0	
280-105482-1DU	Duplicate	T	Water	300.0	
280-105482-1DUDL	Duplicate	T	Water	300.0	
280-105482-1MS	Matrix Spike	T	Water	300.0	
280-105482-1MSDL	Matrix Spike	T	Water	300.0	

#### Report Basis

T = Total

Client: SCS Engineers

Job Number: 280-105482-1

**Surrogate Recovery Report**

**8260B Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	DBFM %Rec	TOL %Rec
280-105482-1	HVL-011118-22	119	109	120	111
MB 280-401740/6		110	115	113	112
LCS 280-401740/4		109	109	112	111
280-105392-A-5 MS		111	107	112	111
280-105392-A-5 MSD		108	102	107	106

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	70-127
BFB = 4-Bromofluorobenzene (Surr)	78-120
DBFM = Dibromofluoromethane (Surr)	77-120
TOL = Toluene-d8 (Surr)	80-125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Method Blank - Batch: 280-401740**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: MB 280-401740/6  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/16/2018 0926  
 Prep Date: 01/16/2018 0926  
 Leach Date: N/A

Analysis Batch: 280-401740  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: VMS\_MS1  
 Lab File ID: MS1\_8063.D  
 Initial Weight/Volume: 20 mL  
 Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50



# Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

## Method Blank - Batch: 280-401740

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: MB 280-401740/6  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/16/2018 0926  
Prep Date: 01/16/2018 0926  
Leach Date: N/A

Analysis Batch: 280-401740  
Prep Batch: N/A  
Leach Batch: N/A  
Units: ug/L

Instrument ID: VMS\_MS1  
Lab File ID: MS1\_8063.D  
Initial Weight/Volume: 20 mL  
Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
trans-1,4-Dichloro-2-butene	ND		3.0
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50
Surrogate	% Rec		Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	110		70 - 127
4-Bromofluorobenzene (Surr)	115		78 - 120
Dibromofluoromethane (Surr)	113		77 - 120
Toluene-d8 (Surr)	112		80 - 125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Lab Control Sample - Batch: 280-401740**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID:	LCS 280-401740/4	Analysis Batch:	280-401740	Instrument ID:	VMS_MS1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	MS1_8062.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	01/16/2018 0906	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	01/16/2018 0906				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1,2-Tetrachloroethane	5.00	5.33	107	65 - 135	
1,1,1-Trichloroethane	5.00	5.72	114	65 - 135	
1,1,2,2-Tetrachloroethane	5.00	4.96	99	58 - 135	
1,1,2-Trichloroethane	5.00	5.38	108	64 - 135	
1,1-Dichloroethane	5.00	5.59	112	65 - 135	
1,1-Dichloroethene	5.00	5.38	108	65 - 136	
1,2,3-Trichloropropane	5.00	4.84	97	65 - 135	
1,2-Dibromo-3-Chloropropane	5.00	4.05	81	57 - 135	
1,2-Dibromoethane	5.00	4.86	97	65 - 135	
1,2-Dichlorobenzene	5.00	5.41	108	65 - 135	
1,2-Dichloroethane	5.00	5.48	110	65 - 135	
1,2-Dichloropropane	5.00	5.46	109	64 - 135	
1,4-Dichlorobenzene	5.00	5.39	108	65 - 135	
2-Butanone (MEK)	20.0	18.7	94	44 - 177	
2-Hexanone	20.0	16.1	80	57 - 139	
4-Methyl-2-pentanone (MIBK)	20.0	18.2	91	60 - 150	
Acetone	20.0	21.9	110	39 - 156	
Acrylonitrile	50.0	50.9	102	56 - 135	
Benzene	5.00	5.74	115	65 - 135	
Bromochloromethane	5.00	5.41	108	65 - 135	
Bromodichloromethane	5.00	5.45	109	65 - 135	
Bromoform	5.00	4.01	80	62 - 135	
Bromomethane	5.00	6.00	120	45 - 135	
Carbon disulfide	5.00	5.31	106	55 - 143	
Carbon tetrachloride	5.00	5.58	112	65 - 135	
Chlorobenzene	5.00	5.30	106	65 - 135	
Chloroethane	5.00	5.72	114	46 - 136	
Chloroform	5.00	5.65	113	65 - 135	
Chloromethane	5.00	5.51	110	34 - 145	
cis-1,2-Dichloroethene	5.00	5.53	111	65 - 135	
cis-1,3-Dichloropropene	5.00	5.11	102	65 - 135	
Dibromochloromethane	5.00	4.63	93	65 - 135	
Dibromomethane	5.00	5.13	103	65 - 135	
Dichlorodifluoromethane	5.00	5.63	113	43 - 142	
Ethylbenzene	5.00	5.53	111	65 - 135	
Iodomethane	5.00	5.59	112	65 - 142	
Methylene Chloride	5.00	5.60	112	54 - 141	
m-Xylene & p-Xylene	5.00	5.32	106	65 - 135	
o-Xylene	5.00	5.62	112	65 - 135	
Styrene	5.00	5.35	107	65 - 135	
Tetrachloroethene	5.00	5.34	107	65 - 135	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

### Lab Control Sample - Batch: 280-401740

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: LCS 280-401740/4	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_8062.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 0906	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 0906		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Toluene	5.00	5.86	117	65 - 135	
trans-1,2-Dichloroethene	5.00	5.85	117	65 - 135	
trans-1,3-Dichloropropene	5.00	4.93	99	65 - 135	
trans-1,4-Dichloro-2-butene	5.00	4.93	99	53 - 135	
Trichloroethene	5.00	5.51	110	65 - 135	
Trichlorofluoromethane	5.00	5.68	114	53 - 137	
Vinyl acetate	10.0	9.31	93	11 - 187	
Vinyl chloride	5.00	5.69	114	40 - 137	
Surrogate		% Rec		Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		109		70 - 127	
4-Bromofluorobenzene (Surr)		109		78 - 120	
Dibromofluoromethane (Surr)		112		77 - 120	
Toluene-d8 (Surr)		111		80 - 125	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401740**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-105392-A-5 MS	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_8069.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1132		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1132		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-105392-A-5 MSD	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_8070.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1152		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1152		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1,1,2-Tetrachloroethane	110	105	65 - 135	5	20		
1,1,1-Trichloroethane	121	114	65 - 135	7	20		
1,1,2,2-Tetrachloroethane	101	98	58 - 135	3	20		
1,1,2-Trichloroethane	108	105	64 - 135	2	27		
1,1-Dichloroethane	115	109	65 - 135	5	21		
1,1-Dichloroethene	113	105	65 - 136	7	20		
1,2,3-Trichloropropane	98	97	65 - 135	1	23		
1,2-Dibromo-3-Chloropropane	85	84	57 - 135	1	22		
1,2-Dibromoethane	98	98	65 - 135	0	27		
1,2-Dichlorobenzene	104	102	65 - 135	2	20		
1,2-Dichloroethane	109	108	65 - 135	2	20		
1,2-Dichloropropane	110	108	64 - 135	2	20		
1,4-Dichlorobenzene	105	102	65 - 135	3	23		
2-Butanone (MEK)	95	95	44 - 177	0	32		
2-Hexanone	82	81	57 - 139	1	25		
4-Methyl-2-pentanone (MIBK)	93	92	60 - 150	0	22		
Acetone	108	96	39 - 156	10	23		
Acrylonitrile	103	101	56 - 135	1	30		
Benzene	115	110	65 - 135	5	20		
Bromochloromethane	107	108	65 - 135	1	29		
Bromodichloromethane	113	109	65 - 135	4	20		
Bromoform	81	80	62 - 135	1	27		
Bromomethane	123	117	45 - 135	4	33		
Carbon disulfide	109	102	55 - 143	7	20		
Carbon tetrachloride	121	113	65 - 135	7	21		
Chlorobenzene	107	104	65 - 135	4	20		
Chloroethane	118	112	46 - 136	5	25		
Chloroform	114	110	65 - 135	3	20		
Chloromethane	105	99	34 - 145	6	24		
cis-1,2-Dichloroethene	111	108	65 - 135	3	20		
cis-1,3-Dichloropropene	98	97	65 - 135	1	26		
Dibromochloromethane	91	91	65 - 135	1	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401740**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-105392-A-5 MS	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_8069.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1132		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1132		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-105392-A-5 MSD	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_8070.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1152		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1152		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Dibromomethane	103	102	65 - 135	1	26		
Dichlorodifluoromethane	123	115	43 - 142	6	30		
Ethylbenzene	111	106	65 - 135	5	20		
Iodomethane	108	106	65 - 142	2	25		
Methylene Chloride	221	150	54 - 141	9	26	4	4
m-Xylene & p-Xylene	108	103	65 - 135	5	20		
o-Xylene	112	109	65 - 135	2	20		
Styrene	104	101	65 - 135	3	26		
Tetrachloroethene	112	104	65 - 135	7	20		
Toluene	119	113	65 - 135	5	20		
trans-1,2-Dichloroethene	117	112	65 - 135	4	24		
trans-1,3-Dichloropropene	100	98	65 - 135	2	26		
trans-1,4-Dichloro-2-butene	100	96	53 - 135	4	25		
Trichloroethene	114	109	65 - 135	5	20		
Trichlorofluoromethane	124	115	53 - 137	7	27		
Vinyl acetate	91	90	11 - 187	1	24		
Vinyl chloride	111	107	40 - 137	3	24		
Surrogate	MS % Rec		MSD % Rec	Acceptance Limits			
1,2-Dichloroethane-d4 (Surr)	111		108	70 - 127			
4-Bromofluorobenzene (Surr)	107		102	78 - 120			
Dibromofluoromethane (Surr)	112		107	77 - 120			
Toluene-d8 (Surr)	111		106	80 - 125			

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Method Blank - Batch: 160-347807**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 160-347807/13	Analysis Batch: 160-347807	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 012418- 13.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/24/2018 1927	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Result	Qual	RL
Chloride	ND		0.20
Sulfate	ND		0.20

**Lab Control Sample - Batch: 160-347807**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: LCS 160-347807/14	Analysis Batch: 160-347807	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 012418- 14.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/24/2018 1943	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.00	1.94	97	90 - 110	
Sulfate	8.00	7.79	97	90 - 110	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

## Matrix Spike - Batch: 160-347807

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID:	280-105482-1	Analysis Batch:	160-347807	Instrument ID:	CIC2500
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	012418- 43.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	01/25/2018 0325	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	10	4.00	14.2	99	90 - 110	

## Matrix Spike - Batch: 160-347807

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID:	280-105482-1DL	Analysis Batch:	160-347807	Instrument ID:	CIC2500
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	012418- 44.d
Dilution:	10	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	01/25/2018 0341	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A	Run Type:	DL	Injection Volume:	50 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	13	20.0	32.8	98	90 - 110	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Duplicate - Batch: 160-347807**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-105482-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/25/2018 0253  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 160-347807  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: CIC2500  
Lab File ID: 012418- 41.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume:  
Injection Volume: 50 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Sulfate	10	10.3	0.4	20	

**Duplicate - Batch: 160-347807**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-105482-1DL  
Client Matrix: Water  
Dilution: 10  
Analysis Date: 01/25/2018 0309  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 160-347807  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L  
Run Type: DL

Instrument ID: CIC2500  
Lab File ID: 012418- 42.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume:  
Injection Volume: 50 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	13	13.3	0.4	20	



## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Method Blank - Batch: 280-401728**

Lab Sample ID: MB 280-401728/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/18/2018 0005  
 Prep Date: 01/16/2018 1504  
 Leach Date: N/A

Analysis Batch: 280-402000  
 Prep Batch: 280-401728  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_051  
 Lab File ID: 51A011718C.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Calcium, Dissolved	ND		0.20
Magnesium, Dissolved	ND		0.10
Potassium, Dissolved	ND		2.0
Sodium, Dissolved	ND		1.0

**Lab Control Sample - Batch: 280-401728**

Lab Sample ID: LCS 280-401728/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/18/2018 0008  
 Prep Date: 01/16/2018 1504  
 Leach Date: N/A

Analysis Batch: 280-402000  
 Prep Batch: 280-401728  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_051  
 Lab File ID: 51A011718C.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Calcium, Dissolved	50.0	53.4	107	90 - 111	
Magnesium, Dissolved	50.0	53.6	107	90 - 113	
Potassium, Dissolved	50.0	51.9	104	89 - 114	
Sodium, Dissolved	50.0	51.9	104	90 - 115	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401728**

**Method: 6010B  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-105488-A-10-B MS    Analysis Batch: 280-402000  
Client Matrix: Water    Prep Batch: 280-401728  
Dilution: 1.0    Leach Batch: N/A  
Analysis Date: 01/18/2018 0041  
Prep Date: 01/16/2018 1504  
Leach Date: N/A

Instrument ID: MT\_051  
Lab File ID: 51A011718C.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-105488-A-10-C MSD    Analysis Batch: 280-402000  
Client Matrix: Water    Prep Batch: 280-401728  
Dilution: 1.0    Leach Batch: N/A  
Analysis Date: 01/18/2018 0044  
Prep Date: 01/16/2018 1504  
Leach Date: N/A

Instrument ID: MT\_051  
Lab File ID: 51A011718C.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Calcium, Dissolved	96	106	48 - 153	8	20		
Magnesium, Dissolved	103	108	62 - 146	4	20		
Potassium, Dissolved	96	105	76 - 132	8	20		
Sodium, Dissolved	92	104	70 - 203	8	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Method Blank - Batch: 280-401786**

**Method: 6010B**  
**Preparation: 3010A**

Lab Sample ID: MB 280-401786/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/19/2018 0048  
 Prep Date: 01/16/2018 1504  
 Leach Date: N/A

Analysis Batch: 280-402105  
 Prep Batch: 280-401786  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: MT\_051  
 Lab File ID: 51A011818B.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Cobalt, Total	ND		0.010
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

**Lab Control Sample - Batch: 280-401786**

**Method: 6010B**  
**Preparation: 3010A**

Lab Sample ID: LCS 280-401786/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/19/2018 0051  
 Prep Date: 01/16/2018 1504  
 Leach Date: N/A

Analysis Batch: 280-402105  
 Prep Batch: 280-401786  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: MT\_051  
 Lab File ID: 51A011818B.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Beryllium, Total	0.0500	0.0525	105	89 - 113	
Cadmium, Total	0.100	0.105	105	88 - 111	
Cobalt, Total	0.500	0.502	100	89 - 111	
Silver, Total	0.0500	0.0532	106	86 - 115	
Vanadium, Total	0.500	0.520	104	90 - 111	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401786**

**Method: 6010B  
Preparation: 3010A**

MS Lab Sample ID: 280-105486-D-2-D MS	Analysis Batch: 280-402105	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-401786	Lab File ID: 51A011818B.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/19/2018 0109		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		
Leach Date: N/A		

MSD Lab Sample ID: 280-105486-D-2-E MSD	Analysis Batch: 280-402105	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-401786	Lab File ID: 51A011818B.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/19/2018 0112		Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Beryllium, Total	110	104	79 - 121	5	20		
Cadmium, Total	108	102	82 - 119	5	20		
Cobalt, Total	103	98	82 - 119	5	20		
Silver, Total	111	105	75 - 141	6	20		
Vanadium, Total	109	103	85 - 120	5	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Method Blank - Batch: 580-265708**

Lab Sample ID: MB 580-265708/16-A  
 Client Matrix: Water  
 Dilution: 5.0  
 Analysis Date: 01/23/2018 1151  
 Prep Date: 01/22/2018 1454  
 Leach Date: N/A

Analysis Batch: 580-265807  
 Prep Batch: 580-265708  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA044  
 Lab File ID: 020SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Iron, Dissolved	ND		0.18

**Lab Control Sample/  
 Lab Control Sample Duplicate Recovery Report - Batch: 580-265708**

LCS Lab Sample ID: LCS 580-265708/17-A  
 Client Matrix: Water  
 Dilution: 50  
 Analysis Date: 01/23/2018 1155  
 Prep Date: 01/22/2018 1455  
 Leach Date: N/A

Analysis Batch: 580-265807  
 Prep Batch: 580-265708  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA044  
 Lab File ID: 021SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Iron, Dissolved	101	106	80 - 120	5	20		

Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Iron, Dissolved	101	106	80 - 120	5	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-265708**

**Method: 6020**

MS Lab Sample ID: 580-74424-D-1-C MS	Analysis Batch: 580-265807	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-265708	Lab File ID: 027SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/23/2018 1218		Final Weight/Volume: 50 mL
Prep Date: 01/22/2018 1454		
Leach Date: N/A		

MSD Lab Sample ID: 580-74424-D-1-D MSD	Analysis Batch: 580-265807	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-265708	Lab File ID: 028SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/23/2018 1222		Final Weight/Volume: 50 mL
Prep Date: 01/22/2018 1454		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Iron, Dissolved	103	109	80 - 120	5	20		

**Duplicate - Batch: 580-265708**

**Method: 6020**

Lab Sample ID: 580-74424-D-1-B DU	Analysis Batch: 580-265807	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-265708	Lab File ID: 025SMPL.D
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/23/2018 1210	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/22/2018 1454		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Iron, Dissolved	0.72	0.888	21	20	F5

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Method Blank - Batch: 280-401730**

Lab Sample ID: MB 280-401730/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/18/2018 0315  
 Prep Date: 01/17/2018 1437  
 Leach Date: N/A

Analysis Batch: 280-401996  
 Prep Batch: 280-401730  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_078  
 Lab File ID: 232\_BLK.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Manganese, Dissolved	ND		0.0010

**Lab Control Sample - Batch: 280-401730**

Lab Sample ID: LCS 280-401730/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/18/2018 0318  
 Prep Date: 01/17/2018 1437  
 Leach Date: N/A

Analysis Batch: 280-401996  
 Prep Batch: 280-401730  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_078  
 Lab File ID: 233\_LCS.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Manganese, Dissolved	0.0400	0.0385	96	85 - 117	

**Matrix Spike/  
 Matrix Spike Duplicate Recovery Report - Batch: 280-401730**

MS Lab Sample ID: 280-105482-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/18/2018 0329  
 Prep Date: 01/17/2018 1437  
 Leach Date: N/A

Analysis Batch: 280-401996  
 Prep Batch: 280-401730  
 Leach Batch: N/A

**Method: 6020  
 Preparation: 3005A  
 Dissolved**

Instrument ID: MT\_078  
 Lab File ID: 236SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-105482-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/18/2018 0332  
 Prep Date: 01/17/2018 1437  
 Leach Date: N/A

Analysis Batch: 280-401996  
 Prep Batch: 280-401730  
 Leach Batch: N/A

Instrument ID: MT\_078  
 Lab File ID: 237SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Manganese, Dissolved	45	226	85 - 117	7	20	4	4

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Method Blank - Batch: 280-401787**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: MB 280-401787/1-A	Analysis Batch: 280-401996	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-401787	Lab File ID: 213_BLK.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 0207	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1437		
Leach Date: N/A		

Analyte	Result	Qual	RL
Antimony, Total	ND		0.0020
Arsenic, Total	ND		0.0050
Barium, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010
Lead, Total	ND		0.0020
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050

**Lab Control Sample - Batch: 280-401787**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: LCS 280-401787/2-A	Analysis Batch: 280-401996	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-401787	Lab File ID: 214_LCS.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 0211	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1437		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony, Total	0.0400	0.0371	93	85 - 115	
Arsenic, Total	0.0400	0.0358	90	85 - 117	
Barium, Total	0.0400	0.0388	97	85 - 118	
Chromium, Total	0.0400	0.0381	95	84 - 121	
Copper, Total	0.0400	0.0387	97	85 - 119	
Lead, Total	0.0400	0.0389	97	85 - 118	
Nickel, Total	0.0400	0.0392	98	85 - 119	
Selenium, Total	0.0400	0.0377	94	77 - 122	
Thallium, Total	0.0400	0.0386	96	85 - 118	



## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401787**

**Method: 6020  
Preparation: 3020A**

MS Lab Sample ID: 280-105484-C-2-B MS	Analysis Batch: 280-401996	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-401787	Lab File ID: 219SMPL.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 0228		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1437		
Leach Date: N/A		

MSD Lab Sample ID: 280-105484-C-2-C MSD	Analysis Batch: 280-401996	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-401787	Lab File ID: 220SMPL.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 0232		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1437		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Antimony, Total	94	93	85 - 115	2	20		
Arsenic, Total	91	92	85 - 117	2	20		
Barium, Total	95	97	85 - 118	2	20		
Chromium, Total	96	95	84 - 121	1	20		
Copper, Total	93	96	85 - 119	2	20		
Lead, Total	92	94	85 - 118	2	20		
Nickel, Total	93	95	85 - 119	2	20		
Selenium, Total	95	95	77 - 122	0	20		
Thallium, Total	93	96	85 - 118	3	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Method Blank - Batch: 280-402283**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: MB 280-402283/1-A	Analysis Batch: 280-402728	Instrument ID: MT_077
Client Matrix: Water	Prep Batch: 280-402283	Lab File ID: 092_BLK.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/24/2018 1720	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/22/2018 1438		
Leach Date: N/A		

Analyte	Result	Qual	RL
Zinc, Total	ND		0.010

**Lab Control Sample - Batch: 280-402283**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: LCS 280-402283/2-A	Analysis Batch: 280-402728	Instrument ID: MT_077
Client Matrix: Water	Prep Batch: 280-402283	Lab File ID: 093_LCS.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/24/2018 1723	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/22/2018 1438		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Zinc, Total	0.0400	0.0379	95	83 - 122	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-402283**

**Method: 6020**  
**Preparation: 3020A**

MS Lab Sample ID: 280-105484-C-2-E MS	Analysis Batch: 280-402728	Instrument ID: MT_077
Client Matrix: Water	Prep Batch: 280-402283	Lab File ID: 098SMPL.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/24/2018 1743		Final Weight/Volume: 50 mL
Prep Date: 01/22/2018 1438		
Leach Date: N/A		

MSD Lab Sample ID: 280-105484-C-2-F MSD	Analysis Batch: 280-402728	Instrument ID: MT_077
Client Matrix: Water	Prep Batch: 280-402283	Lab File ID: 099SMPL.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/24/2018 1747		Final Weight/Volume: 50 mL
Prep Date: 01/22/2018 1438		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Zinc, Total	94	91	83 - 122	3	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Method Blank - Batch: 280-401695**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-401695/6	Analysis Batch: 280-401695	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 06.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/15/2018 1730	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Nitrate as N	ND		0.20

**Method Reporting Limit Check - Batch: 280-401695**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-401695/3	Analysis Batch: 280-401695	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 03.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/15/2018 1636	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	0.200	ND	97	50 - 150	

**Lab Control Sample/**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-401695**

**Method: 300.0**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-401695/4	Analysis Batch: 280-401695	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 04.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/15/2018 1654	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-401695/5	Analysis Batch: 280-401695	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 05.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/15/2018 1712	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Nitrate as N	100	100	90 - 110	0	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401695**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-105482-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/15/2018 2129  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401695  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom7  
Lab File ID: 09.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

MSD Lab Sample ID: 280-105482-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/15/2018 2147  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401695  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom7  
Lab File ID: 10.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate as N	106	107	80 - 120	1	20		

**Duplicate - Batch: 280-401695**

**Method: 300.0  
Preparation: N/A**

Lab Sample ID: 280-105482-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/15/2018 2111  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401695  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: WC\_IonChrom7  
Lab File ID: 08.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate as N	1.0	1.00	0.8	15	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Method Blank - Batch: 280-403811**

**Method: 350.1  
Preparation: N/A**

Lab Sample ID: MB 280-403811/20	Analysis Batch: 280-403811	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\020318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 1.0 mL
Analysis Date: 02/03/2018 0942	Units: mg/L	Final Weight/Volume: 1.0 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Ammonia	ND		0.10

**Lab Control Sample/**

**Method: 350.1  
Preparation: N/A**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-403811**

LCS Lab Sample ID: LCS 280-403811/18	Analysis Batch: 280-403811	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\020318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 02/03/2018 0938	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-403811/19	Analysis Batch: 280-403811	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\020318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 02/03/2018 0940	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ammonia	98	98	90 - 110	1	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-403811**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-105664-P-5 MS	Analysis Batch: 280-403811	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\020318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 02/03/2018 0958		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-105664-P-5 MSD	Analysis Batch: 280-403811	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\020318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 02/03/2018 1000		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia	99	98	90 - 110	1	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Method Blank - Batch: 280-401838**

**Method: SM 2320B  
Preparation: N/A**

Lab Sample ID: MB 280-401838/5	Analysis Batch: 280-401838	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 011618.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/16/2018 1416	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Alkalinity	ND		5.0
Bicarbonate Alkalinity as CaCO3	ND		5.0

**Lab Control Sample - Batch: 280-401838**

**Method: SM 2320B  
Preparation: N/A**

Lab Sample ID: LCS 280-401838/4	Analysis Batch: 280-401838	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 011618.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/16/2018 1408	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	200	185	92	90 - 110	

**Duplicate - Batch: 280-401838**

**Method: SM 2320B  
Preparation: N/A**

Lab Sample ID: 280-105338-B-3 DU	Analysis Batch: 280-401838	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 011618.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/16/2018 1429	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity	120	116	0.1	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Method Blank - Batch: 280-401868**

**Method: SM 2540C  
Preparation: N/A**

Lab Sample ID: MB 280-401868/1	Analysis Batch: 280-401868	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/17/2018 0824	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Dissolved Solids	ND		10

**Lab Control Sample - Batch: 280-401868**

**Method: SM 2540C  
Preparation: N/A**

Lab Sample ID: LCS 280-401868/2	Analysis Batch: 280-401868	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/17/2018 0824	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Dissolved Solids	500	490	98	86 - 110	

**Duplicate - Batch: 280-401868**

**Method: SM 2540C  
Preparation: N/A**

Lab Sample ID: 280-105436-F-1 DU	Analysis Batch: 280-401868	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 0824	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Dissolved Solids	1100	1120	3	10	



## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Method Blank - Batch: 280-401948**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: MB 280-401948/1	Analysis Batch: 280-401948	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 01/17/2018 1641	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Suspended Solids	ND		4.0

**Lab Control Sample - Batch: 280-401948**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: LCS 280-401948/2	Analysis Batch: 280-401948	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 01/17/2018 1641	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Suspended Solids	100	97.2	97	86 - 114	

**Duplicate - Batch: 280-401948**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: 280-105436-F-1 DU	Analysis Batch: 280-401948	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 01/17/2018 1641	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Suspended Solids	5.6	7.20	25	10	F5

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105482-1

**Method Blank - Batch: 280-402034**

**Method: SM 5310B**  
**Preparation: N/A**

Lab Sample ID: MB 280-402034/35	Analysis Batch: 280-402034	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/17/2018 2326	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Organic Carbon - Quad	ND		1.0

**Lab Control Sample - Batch: 280-402034**

**Method: SM 5310B**  
**Preparation: N/A**

Lab Sample ID: LCS 280-402034/34	Analysis Batch: 280-402034	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/17/2018 2308	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Quad	25.0	25.7	103	88 - 112	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-402034**

**Method: SM 5310B**  
**Preparation: N/A**

MS Lab Sample ID: 280-105486-C-2 MS	Analysis Batch: 280-402034	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/18/2018 0503		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-105486-C-2 MSD	Analysis Batch: 280-402034	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/18/2018 0520		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Total Organic Carbon - Quad	101	106	88 - 112	4	15		

Chain of Custody Record

<b>Client Information</b> Client Contact: Sam Graber Company: SCS Engineers Address: 2405 140th Avenue NE Suite 107 City: Bellevue State, Zip: WA, 98005-1877 Phone: 612 440 2480 Email: SGrab@scsengineers.com		Lab PM: Sara, Betsy A E-Mail: betsy.sara@testamericainc.com Carrier Tracking No(s): 4150 9261 6055 COC No: 290-21691-6019.1 Page: 1 of 1 Job #: 04217003.03	
<b>Due Date Requested:</b> Standard <b>TAT Requested (days):</b> PO #: Purchase Order not required WO #:		<b>Analysis Requested</b> Perform MS/MSD (Yes or No): Field Filtered Sample (Yes or No): 8260B Dissolved Metals (6010B/6020) Dissolved Iron (TA Seattle) TDS/AI/MS/NO3(C) Cl/SO4 (TA St. Louis) Ammonia/TOC TSS Total Metals	
<b>Sample Identification</b> WL-01118-22 Project Name: Hidden Valley Landfill Site:		Sample Date: 1/11/13 Sample Time: 952 Sample Type (C=comp, G=grab): Matrix (W=water, S=solid, O=wash/oil, BT=Tissue, A=Air) Preservation Code: W	
<b>Possible Hazard Identification</b> <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/OC Requirements:	
<b>Empty Kit Relinquished by:</b> Relinquished by: [Signature] Relinquished by: Relinquished by:		<b>Method of Shipment:</b> Date/Time: 1/15/13 0915 Date/Time: Date/Time:	
Custody Seal No.: 437274 Custody Seals Intact: Δ Yes Δ No		Cooler Temperature(s) °C and Other Remarks: 1.5, 10, 15, transferred by A16 1.15.18	

**Chain of Custody Record**



<b>Client Information (Sub Contract Lab)</b>		<b>Sampler:</b> Sara, Betsy A	<b>Carrier Tracking No(s):</b> 280-425054-1
<b>Client Contact:</b> 4955 Yarrow Street Arvada, CO 80002 Phone (303) 736-0100 Fax (303) 431-7171		<b>State of Origin:</b> Washington	<b>Page:</b> Page 1 of 1
<b>Shipping/Receiving:</b>		<b>E-Mail:</b> betsy.sara@testamericainc.com	<b>Job #:</b> 280-105482-1
<b>Company:</b> TestAmerica Laboratories, Inc.		<b>Accreditations Required (See note):</b> State Program - Washington	
<b>Address:</b> 13715 Rider Trail North,		<b>Preservation Codes:</b>	
<b>City:</b> Earth City		A - HCL	M - Hexane
<b>State, Zip:</b> MO, 63045		B - NaOH	N - None
<b>Phone:</b> 314-298-8566(Tel) 314-298-8757(Fax)		C - Zn Acetate	O - AgNO2
<b>Email:</b>		D - Nitric Acid	P - Na2O4S
		E - NaHSO4	Q - Na2SO3
		F - MeOH	R - Na2S2O3
		G - Amchlor	S - H2SO4
		H - Ascorbic Acid	T - TSP Dodecahydrate
		I - Ice	U - Acetone
		J - DI Water	V - MCAA
		K - EDTA	W - pH 4-5
		L - EDA	Z - other (specify)
		Other:	

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Brackish, Over-saturated, Distilled, Acid)	Analysis Requested		Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300_ORGFM_280r (MOD) Sulfate/Chloride (TA St. Units)	Total Number of Containers	Special Instructions/Note:
					Preservation Code:	LOI					
HVL-011118-22 (280-105482-1)	1/11/18	09:52 Pacific	Water	Water			X	X		1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/testing/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

<b>Possible Hazard Identification</b>		
Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2	Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For <input type="checkbox"/> Months
Special Instructions/QC Requirements:		
Method of Shipment:		
<b>Empty Kit Relinquished by:</b>	Date: 1/16/18 1:50	Company
<i>Ala Stolt</i>		Company
<b>Relinquished by:</b>	Date: 1/17/18 08:30	Company
<i>Christine Jay</i>		Company
<b>Relinquished by:</b>	Date: Time:	Company
		Company
<b>Custody Seals Intact:</b>	Custody Seal No.:	
Δ Yes Δ No		

**Chain of Custody Record**



<b>Client Information (Sub Contract Lab)</b>		Sampler:		Lab PM: Sara, Betsy A		Carrier Tracking No(s):		COC No: 280-425053.1			
Client Contact: Shipping/Receiving		Phone:		E-Mail: betsy.sara@testamericainc.com		State of Origin: Washington		Page: Page 1 of 1			
Company: TestAmerica Laboratories, Inc.				Accreditations Required (See note): State Program - Washington				Job #: 280-105482-1			
Address: 5755 8th Street East.		Due Date Requested: 1/31/2018		<b>Analysis Requested</b>						<b>Preservation Codes:</b> A - HCL                      M - Hexane B - NaOH                     N - None C - Zn Acetate             O - AsNaO2 D - Nitric Acid             P - Na2O4S E - NaHSO4                Q - Na2SO3 F - MeOH                    R - Na2S2O3 G - Amchlor                S - H2SO4 H - Ascorbic Acid         T - TSP Dodecahydrate I - Ice                         U - Acetone J - DI Water                V - MCAA K - EDTA                    W - pH 4-5 L - EDA                      Z - other (specify)  Other:	
City: Tacoma		TAT Requested (days):									
State, Zip: WA, 98424		PO #:									
Phone: 253-922-2310(Tel) 253-922-5047(Fax)		WO #:		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers			
Email:		SSOW#:		6020/FIELD_FLTRD (MOD) Iron							
Project Name: Hidden Valley LF		Project #: 28003580		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		Special Instructions/Note:			
Site:		SSOW#:		Preservation Code:							
<b>Sample Identification - Client ID (Lab ID)</b>		<b>Sample Date</b>	<b>Sample Time</b>	<b>Sample Type</b>	<b>Matrix</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	6020/FIELD_FLTRD (MOD) Iron	Total Number of containers		
HVL-011118-22 (280-105482-1)		1/11/18	09:52 Pacific	Water			X			1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

<b>Possible Hazard Identification</b>			<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>		
Unconfirmed			<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		
Deliverable Requested: I, II, III, IV, Other (specify)		Primary Deliverable Rank: 2	Special Instructions/QC Requirements:		

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by: <i>[Signature]</i>		Date/Time: 1/16/18 1620		Company:		Received by: <i>[Signature]</i>	
Relinquished by:		Date/Time:		Company:		Date/Time: 1/17/18 1331	
Relinquished by:		Date/Time:		Company:		Date/Time:	

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 125 70.4/10.4 w/cs		02/07/2018
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# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-105482-1

**Login Number: 105482**  
**List Number: 1**  
**Creator: Gomez, Alyssa I**

**List Source: TestAmerica Denver**

<b>Question</b>	<b>Answer</b>	<b>Comment</b>
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	False	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-105482-1

**Login Number: 105482**  
**List Number: 3**  
**Creator: Hobbs, Kenneth F**

**List Source: TestAmerica Seattle**  
**List Creation: 01/17/18 04:09 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	IR5=10.4/10.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-105482-1

**Login Number: 105482**  
**List Number: 2**  
**Creator: Taylor, Kristene N**

**List Source: TestAmerica St. Louis**  
**List Creation: 01/17/18 12:20 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	22.0,5.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## ANALYTICAL REPORT

**Corliss  
Paul Bunyan  
Trip Blank**

Job Number: 280-105484-1

Job Description: Hidden Valley LF

For:

SCS Engineers

2405 140th Avenue NE

Suite 107

Bellevue, WA 98005-1877

Attention: Mr. Kevin Lakey



Approved for release.  
Betsy A Sara  
Project Manager II  
2/7/2018 8:40 AM

---

Betsy A Sara, Project Manager II  
4955 Yarrow Street, Arvada, CO, 80002  
(303)736-0189  
betsy.sara@testamericainc.com  
02/07/2018

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

These data and reporting limits are being used specifically to meet the needs of this project. All RLs are supported by TestAmerica's Method Detection Limits (MDLs). Reporting limits in this report are at or above the MDL.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002

Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)

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## CASE NARRATIVE

**Client: SCS Engineers**

**Project: Hidden Valley LF**

**Report Number: 280-105484-1**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### Sample Receiving

The samples were received on 01/15/2018; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.6 C.

The cooler arrived without a custody seal, however, the tape was intact. The client was notified on 1/15/2018.

### Holding Times

The analyses for Nitrate, Nitrite Method and Color for the samples HVL-011118-25 and HVL-011118-26 were performed outside of hold due to the hold times expiring during transit due to a FedEx shipping delay.

All other holding times were within established control limits.

### Trip Blank

Acetone, a common laboratory contaminant, was detected in the trip blank sample at a level below the requested reporting limit. Acetone was also detected in the sample HVL-011118-25 at a similar level, therefore, the Acetone in this sample is likely due to laboratory artifact.

### Method Blanks

All Method Blanks were within established control limits.

### Laboratory Control Samples (LCS)

All Laboratory Control Samples were within established control limits.

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

The percent recoveries and/or relative percent difference of the MS/MSD performed on a sample from another client were outside control limits for Methylene Chloride Method 8260B because the sample concentration was greater than four times the spike amount. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, no corrective action was taken.

Sample HVL-011118-25 was selected to fulfill the laboratory batch quality control requirements for Method 300.0. Analysis of the laboratory generated MS/MSD for this sample exhibited recoveries of Nitrate above the upper control limit. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, this anomaly may be due to matrix interference and no corrective action was taken.

The Matrix Spike and Matrix Spike Duplicate performed on a sample from another client exhibited recoveries outside control limits for Chemical Oxygen Demand (COD) Method 410.4. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, this anomaly may be due to matrix interference and no corrective action was taken.

All other MS and MSD samples were within established control limits.

### General Comments

The analysis for Chloride and Sulfate Method 300.0 was performed at the TestAmerica's St. Louis Laboratory.

13715 Rider Trail North  
Earth City, MO 63045  
Phone: 314-298-8566

The analysis for Iron Method 6020 was performed at the TestAmerica's Seattle Laboratory.  
5755 8th Street East  
Tacoma, WA 98424  
Phone: 253-922-2310

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-105484-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-105484-1</b>	<b>HVL-011118-25</b>	<b>Corliss</b>				
Acetone		11		10	ug/L	8260B
Manganese, Total		1.3		1.0	ug/L	6020
Zinc, Total		0.021		0.010	mg/L	6020
Nitrate as N		1.7	H F1	0.20	mg/L	300.0
Chloride		5.2		0.20	mg/L	300.0
Sulfate		9.2		0.20	mg/L	300.0
<b>280-105484-2</b>	<b>HVL-011118-26</b>	<b>Paul Bunyan</b>				
Manganese, Total		6.4		1.0	ug/L	6020
Zinc, Total		0.014		0.010	mg/L	6020
Nitrate as N		2.5	H	0.20	mg/L	300.0
Chloride		6.1		0.20	mg/L	300.0
Sulfate		9.9		0.20	mg/L	300.0
<b>280-105484-3TB</b>	<b>TRIP BLANK</b>	<b>Trip Blank</b>				
Acetone		12		10	ug/L	8260B

## METHOD SUMMARY

Client: SCS Engineers

Job Number: 280-105484-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Volatile Organic Compounds (GC/MS)	TAL DEN	SW846 8260B	
Purge and Trap	TAL DEN		SW846 5030B
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Metals	TAL DEN		SW846 3020A
Anions, Ion Chromatography	TAL DEN	MCAWW 300.0	
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
COD	TAL DEN	MCAWW 410.4	
Color, Colorimetric	TAL DEN	SM SM 2120B	
Organic Carbon, Total (TOC)	TAL DEN	SM SM 5310B	
Metals (ICP/MS)	TAL SEA	SW846 6020	
Preparation, Total Metals	TAL SEA		SW846 3010A
Anions, Ion Chromatography	TAL SL	MCAWW 300.0	

### Lab References:

TAL DEN = TestAmerica Denver

TAL SEA = TestAmerica Seattle

TAL SL = TestAmerica St. Louis

### Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

## METHOD / ANALYST SUMMARY

Client: SCS Engineers

Job Number: 280-105484-1

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
SW846 8260B	Wickham, Tom A	TAW
SW846 6020	Trudell, Lynn-Anne M	LMT
SW846 6020	Woo, Fred C	FCW
MCAWW 300.0	Phan, Thu L	TLP
MCAWW 350.1	Lehman, Jeffrey M	JML
MCAWW 410.4	Jewell, Connie C	CCJ
SM SM 2120B	Jewell, Connie C	CCJ
SM SM 5310B	Jewell, Connie C	CCJ
MCAWW 300.0	Boyd, Jacob C	JCB

# SAMPLE SUMMARY

Client: SCS Engineers

Job Number: 280-105484-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
280-105484-1	HVL-011118-25	Water	01/11/2018 1340	01/15/2018 0915
280-105484-2	HVL-011118-26	Water	01/11/2018 1410	01/15/2018 0915
280-105484-3TB	TRIP BLANK	Water	01/11/2018 0000	01/15/2018 0915



# SAMPLE RESULTS

## Analytical Data

Client: SCS Engineers

Job Number: 280-105484-1

**Client Sample ID: HVL-011118-25**

Lab Sample ID: 280-105484-1

Date Sampled: 01/11/2018 1340

Client Matrix: Water

Date Received: 01/15/2018 0915

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_8079.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1456		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1456		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	11		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105484-1

**Client Sample ID: HVL-011118-25**

Lab Sample ID: 280-105484-1

Date Sampled: 01/11/2018 1340

Client Matrix: Water

Date Received: 01/15/2018 0915

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_8079.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1456		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1456		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	116		70 - 127
4-Bromofluorobenzene (Surr)	104		78 - 120
Dibromofluoromethane (Surr)	116		77 - 120
Toluene-d8 (Surr)	104		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-105484-1

**Client Sample ID: HVL-011118-26**

Lab Sample ID: 280-105484-2

Date Sampled: 01/11/2018 1410

Client Matrix: Water

Date Received: 01/15/2018 0915

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B      Analysis Batch: 280-401740      Instrument ID: VMS\_MS1  
Prep Method: 5030B      Prep Batch: N/A      Lab File ID: MS1\_8080.D  
Dilution: 1.0      Initial Weight/Volume: 20 mL  
Analysis Date: 01/16/2018 1516      Final Weight/Volume: 20 mL  
Prep Date: 01/16/2018 1516

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105484-1

**Client Sample ID: HVL-011118-26**

Lab Sample ID: 280-105484-2

Date Sampled: 01/11/2018 1410

Client Matrix: Water

Date Received: 01/15/2018 0915

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_8080.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1516		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1516		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	114		70 - 127
4-Bromofluorobenzene (Surr)	102		78 - 120
Dibromofluoromethane (Surr)	111		77 - 120
Toluene-d8 (Surr)	103		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-105484-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-105484-3TB

Date Sampled: 01/11/2018 0000

Client Matrix: Water

Date Received: 01/15/2018 0915

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_8065.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1010		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1010		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	12		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105484-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-105484-3TB

Date Sampled: 01/11/2018 0000

Client Matrix: Water

Date Received: 01/15/2018 0915

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_8065.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1010		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1010		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	108		70 - 127
4-Bromofluorobenzene (Surr)	104		78 - 120
Dibromofluoromethane (Surr)	111		77 - 120
Toluene-d8 (Surr)	109		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-105484-1

**Client Sample ID: HVL-011118-25**

Lab Sample ID: 280-105484-1

Date Sampled: 01/11/2018 1340

Client Matrix: Water

Date Received: 01/15/2018 0915

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-347807

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 012418- 45.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 01/25/2018 0357

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	9.2		0.20



## Analytical Data

Client: SCS Engineers

Job Number: 280-105484-1

**Client Sample ID: HVL-011118-25**

Lab Sample ID: 280-105484-1

Date Sampled: 01/11/2018 1340

Client Matrix: Water

Date Received: 01/15/2018 0915

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-347807

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 012418- 46.d

Dilution: 10

Initial Weight/Volume: 5 mL

Analysis Date: 01/25/2018 0413

Run Type: DL

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

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Analyte	Result (mg/L)	Qualifier	RL
Chloride	5.2		0.20

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## Analytical Data

Client: SCS Engineers

Job Number: 280-105484-1

**Client Sample ID: HVL-011118-26**

Lab Sample ID: 280-105484-2

Date Sampled: 01/11/2018 1410

Client Matrix: Water

Date Received: 01/15/2018 0915

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-347807

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 012418- 49.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 01/25/2018 0500

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

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Analyte	Result (mg/L)	Qualifier	RL
Sulfate	9.9		0.20

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## Analytical Data

Client: SCS Engineers

Job Number: 280-105484-1

**Client Sample ID: HVL-011118-26**

Lab Sample ID: 280-105484-2

Date Sampled: 01/11/2018 1410

Client Matrix: Water

Date Received: 01/15/2018 0915

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-347807	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	012418- 50.d
Dilution:	10			Initial Weight/Volume:	5 mL
Analysis Date:	01/25/2018 0516	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	6.1		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-105484-1

**Client Sample ID: HVL-011118-25**

Lab Sample ID: 280-105484-1

Date Sampled: 01/11/2018 1340

Client Matrix: Water

Date Received: 01/15/2018 0915

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### 6020 Metals (ICP/MS)

Analysis Method: 6020	Analysis Batch: 280-401996	Instrument ID: MT_078
Prep Method: 3020A	Prep Batch: 280-401787	Lab File ID: 216SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 0218		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1437		

Analyte	Result (mg/L)	Qualifier	RL
Arsenic, Total	ND		0.0050

Analyte	Result (ug/L)	Qualifier	RL
Manganese, Total	1.3		1.0

Analysis Method: 6020	Analysis Batch: 280-402728	Instrument ID: MT_077
Prep Method: 3020A	Prep Batch: 280-402283	Lab File ID: 095SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/24/2018 1731		Final Weight/Volume: 50 mL
Prep Date: 01/22/2018 1438		

Analyte	Result (mg/L)	Qualifier	RL
Zinc, Total	0.021		0.010

Analysis Method: 6020	Analysis Batch: 580-266530	Instrument ID: SEA044
Prep Method: 3010A	Prep Batch: 580-266422	Lab File ID: 084SMPL.D
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 02/01/2018 1224		Final Weight/Volume: 50 mL
Prep Date: 01/31/2018 1620		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Total	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-105484-1

**Client Sample ID: HVL-011118-26**

Lab Sample ID: 280-105484-2

Date Sampled: 01/11/2018 1410

Client Matrix: Water

Date Received: 01/15/2018 0915

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### 6020 Metals (ICP/MS)

Analysis Method: 6020	Analysis Batch: 280-401996	Instrument ID: MT_078
Prep Method: 3020A	Prep Batch: 280-401787	Lab File ID: 217SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 0221		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1437		

Analyte	Result (mg/L)	Qualifier	RL
Arsenic, Total	ND		0.0050

Analyte	Result (ug/L)	Qualifier	RL
Manganese, Total	6.4		1.0

Analysis Method: 6020	Analysis Batch: 280-402728	Instrument ID: MT_077
Prep Method: 3020A	Prep Batch: 280-402283	Lab File ID: 096SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/24/2018 1735		Final Weight/Volume: 50 mL
Prep Date: 01/22/2018 1438		

Analyte	Result (mg/L)	Qualifier	RL
Zinc, Total	0.014		0.010

Analysis Method: 6020	Analysis Batch: 580-266530	Instrument ID: SEA044
Prep Method: 3010A	Prep Batch: 580-266422	Lab File ID: 085SMPL.D
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 02/01/2018 1228		Final Weight/Volume: 50 mL
Prep Date: 01/31/2018 1620		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Total	ND		0.18

Client: SCS Engineers

Job Number: 280-105484-1

General Chemistry

Client Sample ID: HVL-011118-25

Lab Sample ID: 280-105484-1

Date Sampled: 01/11/2018 1340

Client Matrix: Water

Date Received: 01/15/2018 0915

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	1.7	H F1	mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401835		Analysis Date: 01/17/2018 0104			
Nitrite as N	ND	H	mg/L	0.50	1.0	300.0
	Analysis Batch: 280-401835		Analysis Date: 01/17/2018 0104			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-403811		Analysis Date: 02/03/2018 1022			
Chemical Oxygen Demand	ND		mg/L	5.0	1.0	410.4
	Analysis Batch: 280-401776		Analysis Date: 01/16/2018 0956			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-402034		Analysis Date: 01/18/2018 0313			
Analyte	Result	Qual	Units	RL	Dil	Method
Color	ND	H	PCU	5.0	1.0	SM 2120B
	Analysis Batch: 280-401874		Analysis Date: 01/17/2018 0856			

Client: SCS Engineers

Job Number: 280-105484-1

General Chemistry

Client Sample ID: HVL-011118-26

Lab Sample ID: 280-105484-2

Date Sampled: 01/11/2018 1410

Client Matrix: Water

Date Received: 01/15/2018 0915

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	2.5	H	mg/L	0.20	1.0	300.0
	Analysis Batch: 280-401835		Analysis Date: 01/17/2018 0233			
Nitrite as N	ND	H	mg/L	0.50	1.0	300.0
	Analysis Batch: 280-401835		Analysis Date: 01/17/2018 0233			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-403811		Analysis Date: 02/03/2018 1024			
Chemical Oxygen Demand	ND		mg/L	5.0	1.0	410.4
	Analysis Batch: 280-401776		Analysis Date: 01/16/2018 0956			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-402034		Analysis Date: 01/18/2018 0330			
Analyte	Result	Qual	Units	RL	Dil	Method
Color	ND	H	PCU	5.0	1.0	SM 2120B
	Analysis Batch: 280-401874		Analysis Date: 01/17/2018 0856			

## DATA REPORTING QUALIFIERS

Client: SCS Engineers

Job Number: 280-105484-1

<b>Lab Section</b>	<b>Qualifier</b>	<b>Description</b>
GC/MS VOA	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
General Chemistry	F1	MS and/or MSD Recovery is outside acceptance limits.
	H	Sample was prepped or analyzed beyond the specified holding time



# QUALITY CONTROL RESULTS

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS VOA</b>					
<b>Analysis Batch:280-401740</b>					
LCS 280-401740/4	Lab Control Sample	T	Water	8260B	
MB 280-401740/6	Method Blank	T	Water	8260B	
280-105392-A-5 MS	Matrix Spike	T	Water	8260B	
280-105392-A-5 MSD	Matrix Spike Duplicate	T	Water	8260B	
280-105484-1	HVL-011118-25	T	Water	8260B	
280-105484-2	HVL-011118-26	T	Water	8260B	
280-105484-3TB	TRIP BLANK	T	Water	8260B	
<b>Report Basis</b>					
T = Total					
<b>Metals</b>					
<b>Prep Batch: 580-266422</b>					
LCS 580-266422/11-A	Lab Control Sample	T	Water	3010A	
LCSD 580-266422/12-A	Lab Control Sample Duplicate	T	Water	3010A	
MB 580-266422/10-A	Method Blank	T	Water	3010A	
580-74690-G-1-B DU	Duplicate	T	Water	3010A	
580-74690-G-1-C MS	Matrix Spike	T	Water	3010A	
580-74690-G-1-D MSD	Matrix Spike Duplicate	T	Water	3010A	
280-105484-1	HVL-011118-25	T	Water	3010A	
280-105484-2	HVL-011118-26	T	Water	3010A	
<b>Analysis Batch:580-266530</b>					
LCS 580-266422/11-A	Lab Control Sample	T	Water	6020	580-266422
LCSD 580-266422/12-A	Lab Control Sample Duplicate	T	Water	6020	580-266422
MB 580-266422/10-A	Method Blank	T	Water	6020	580-266422
580-74690-G-1-B DU	Duplicate	T	Water	6020	580-266422
580-74690-G-1-C MS	Matrix Spike	T	Water	6020	580-266422
580-74690-G-1-D MSD	Matrix Spike Duplicate	T	Water	6020	580-266422
280-105484-1	HVL-011118-25	T	Water	6020	580-266422
280-105484-2	HVL-011118-26	T	Water	6020	580-266422
<b>Prep Batch: 280-401787</b>					
LCS 280-401787/2-A	Lab Control Sample	T	Water	3020A	
MB 280-401787/1-A	Method Blank	T	Water	3020A	
280-105484-1	HVL-011118-25	T	Water	3020A	
280-105484-2	HVL-011118-26	T	Water	3020A	
280-105484-2MS	Matrix Spike	T	Water	3020A	
280-105484-2MSD	Matrix Spike Duplicate	T	Water	3020A	
<b>Analysis Batch:280-401996</b>					
LCS 280-401787/2-A	Lab Control Sample	T	Water	6020	280-401787
MB 280-401787/1-A	Method Blank	T	Water	6020	280-401787
280-105484-1	HVL-011118-25	T	Water	6020	280-401787
280-105484-2	HVL-011118-26	T	Water	6020	280-401787

TestAmerica Denver

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Analysis Batch:280-401996</b>					
280-105484-2MS	Matrix Spike	T	Water	6020	280-401787
280-105484-2MSD	Matrix Spike Duplicate	T	Water	6020	280-401787
<b>Prep Batch: 280-402283</b>					
LCS 280-402283/2-A	Lab Control Sample	T	Water	3020A	
MB 280-402283/1-A	Method Blank	T	Water	3020A	
280-105484-1	HVL-011118-25	T	Water	3020A	
280-105484-2	HVL-011118-26	T	Water	3020A	
280-105484-2MS	Matrix Spike	T	Water	3020A	
280-105484-2MSD	Matrix Spike Duplicate	T	Water	3020A	
<b>Analysis Batch:280-402728</b>					
LCS 280-402283/2-A	Lab Control Sample	T	Water	6020	280-402283
MB 280-402283/1-A	Method Blank	T	Water	6020	280-402283
280-105484-1	HVL-011118-25	T	Water	6020	280-402283
280-105484-2	HVL-011118-26	T	Water	6020	280-402283
280-105484-2MS	Matrix Spike	T	Water	6020	280-402283
280-105484-2MSD	Matrix Spike Duplicate	T	Water	6020	280-402283

**Report Basis**

T = Total

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-401776</b>					
LCS 280-401776/3	Lab Control Sample	T	Water	410.4	
LCSD 280-401776/4	Lab Control Sample Duplicate	T	Water	410.4	
MB 280-401776/5	Method Blank	T	Water	410.4	
280-105307-C-6 MS	Matrix Spike	T	Water	410.4	
280-105307-C-6 MSD	Matrix Spike Duplicate	T	Water	410.4	
280-105484-1	HVL-011118-25	T	Water	410.4	
280-105484-2	HVL-011118-26	T	Water	410.4	
<b>Analysis Batch:280-401835</b>					
LCS 280-401835/4	Lab Control Sample	T	Water	300.0	
LCSD 280-401835/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-401835/6	Method Blank	T	Water	300.0	
280-105484-1	HVL-011118-25	T	Water	300.0	
280-105484-1DU	Duplicate	T	Water	300.0	
280-105484-1MS	Matrix Spike	T	Water	300.0	
280-105484-1MSD	Matrix Spike Duplicate	T	Water	300.0	
280-105484-2	HVL-011118-26	T	Water	300.0	
<b>Analysis Batch:280-401874</b>					
MB 280-401874/1	Method Blank	T	Water	SM 2120B	
280-105484-1	HVL-011118-25	T	Water	SM 2120B	
280-105484-1DU	Duplicate	T	Water	SM 2120B	
280-105484-2	HVL-011118-26	T	Water	SM 2120B	
<b>Analysis Batch:280-402034</b>					
LCS 280-402034/34	Lab Control Sample	T	Water	SM 5310B	
MB 280-402034/35	Method Blank	T	Water	SM 5310B	
280-105375-C-8 MS	Matrix Spike	T	Water	SM 5310B	
280-105375-C-8 MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
280-105484-1	HVL-011118-25	T	Water	SM 5310B	
280-105484-2	HVL-011118-26	T	Water	SM 5310B	
<b>Analysis Batch:280-402035</b>					
LCS 280-402035/34	Lab Control Sample	T	Water	SM 5310B	
MB 280-402035/35	Method Blank	T	Water	SM 5310B	
280-105375-C-8 MS	Matrix Spike	T	Water	SM 5310B	
280-105375-C-8 MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
280-105484-1	HVL-011118-25	T	Water	SM 5310B	
280-105484-2	HVL-011118-26	T	Water	SM 5310B	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-403811</b>					
LCS 280-403811/18	Lab Control Sample	T	Water	350.1	
LCSD 280-403811/19	Lab Control Sample Duplicate	T	Water	350.1	
MB 280-403811/20	Method Blank	T	Water	350.1	
280-105484-1	HVL-011118-25	T	Water	350.1	
280-105484-2	HVL-011118-26	T	Water	350.1	
280-105664-P-5 MS	Matrix Spike	T	Water	350.1	
280-105664-P-5 MSD	Matrix Spike Duplicate	T	Water	350.1	

#### Report Basis

T = Total

### HPLC/IC

#### **Analysis Batch:160-347807**

LCS 160-347807/14	Lab Control Sample	T	Water	300.0	
MB 160-347807/13	Method Blank	T	Water	300.0	
280-105482-G-1 DU	Duplicate	T	Water	300.0	
280-105482-G-1 DUDL	Duplicate	T	Water	300.0	
280-105482-G-1 MS	Matrix Spike	T	Water	300.0	
280-105482-G-1 MSDL	Matrix Spike	T	Water	300.0	
280-105484-1	HVL-011118-25	T	Water	300.0	
280-105484-1DL	HVL-011118-25	T	Water	300.0	
280-105484-2	HVL-011118-26	T	Water	300.0	
280-105484-2DL	HVL-011118-26	T	Water	300.0	

#### Report Basis

T = Total

Client: SCS Engineers

Job Number: 280-105484-1

**Surrogate Recovery Report**

**8260B Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	DBFM %Rec	TOL %Rec
280-105484-1	HVL-011118-25	116	104	116	104
280-105484-2	HVL-011118-26	114	102	111	103
280-105484-3	TRIP BLANK	108	104	111	109
MB 280-401740/6		110	115	113	112
LCS 280-401740/4		109	109	112	111
280-105392-A-5 MS		111	107	112	111
280-105392-A-5 MSD		108	102	107	106

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	70-127
BFB = 4-Bromofluorobenzene (Surr)	78-120
DBFM = Dibromofluoromethane (Surr)	77-120
TOL = Toluene-d8 (Surr)	80-125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

**Method Blank - Batch: 280-401740**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: MB 280-401740/6  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/16/2018 0926  
 Prep Date: 01/16/2018 0926  
 Leach Date: N/A

Analysis Batch: 280-401740  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: VMS\_MS1  
 Lab File ID: MS1\_8063.D  
 Initial Weight/Volume: 20 mL  
 Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

## Method Blank - Batch: 280-401740

Method: 8260B  
Preparation: 5030B

Lab Sample ID: MB 280-401740/6  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/16/2018 0926  
Prep Date: 01/16/2018 0926  
Leach Date: N/A

Analysis Batch: 280-401740  
Prep Batch: N/A  
Leach Batch: N/A  
Units: ug/L

Instrument ID: VMS\_MS1  
Lab File ID: MS1\_8063.D  
Initial Weight/Volume: 20 mL  
Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
trans-1,4-Dichloro-2-butene	ND		3.0
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	110	70 - 127
4-Bromofluorobenzene (Surr)	115	78 - 120
Dibromofluoromethane (Surr)	113	77 - 120
Toluene-d8 (Surr)	112	80 - 125



## Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

**Lab Control Sample - Batch: 280-401740**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: LCS 280-401740/4	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_8062.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 0906	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 0906		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1,2-Tetrachloroethane	5.00	5.33	107	65 - 135	
1,1,1-Trichloroethane	5.00	5.72	114	65 - 135	
1,1,2,2-Tetrachloroethane	5.00	4.96	99	58 - 135	
1,1,2-Trichloroethane	5.00	5.38	108	64 - 135	
1,1-Dichloroethane	5.00	5.59	112	65 - 135	
1,1-Dichloroethene	5.00	5.38	108	65 - 136	
1,2,3-Trichloropropane	5.00	4.84	97	65 - 135	
1,2-Dibromo-3-Chloropropane	5.00	4.05	81	57 - 135	
1,2-Dibromoethane	5.00	4.86	97	65 - 135	
1,2-Dichlorobenzene	5.00	5.41	108	65 - 135	
1,2-Dichloroethane	5.00	5.48	110	65 - 135	
1,2-Dichloropropane	5.00	5.46	109	64 - 135	
1,4-Dichlorobenzene	5.00	5.39	108	65 - 135	
2-Butanone (MEK)	20.0	18.7	94	44 - 177	
2-Hexanone	20.0	16.1	80	57 - 139	
4-Methyl-2-pentanone (MIBK)	20.0	18.2	91	60 - 150	
Acetone	20.0	21.9	110	39 - 156	
Acrylonitrile	50.0	50.9	102	56 - 135	
Benzene	5.00	5.74	115	65 - 135	
Bromochloromethane	5.00	5.41	108	65 - 135	
Bromodichloromethane	5.00	5.45	109	65 - 135	
Bromoform	5.00	4.01	80	62 - 135	
Bromomethane	5.00	6.00	120	45 - 135	
Carbon disulfide	5.00	5.31	106	55 - 143	
Carbon tetrachloride	5.00	5.58	112	65 - 135	
Chlorobenzene	5.00	5.30	106	65 - 135	
Chloroethane	5.00	5.72	114	46 - 136	
Chloroform	5.00	5.65	113	65 - 135	
Chloromethane	5.00	5.51	110	34 - 145	
cis-1,2-Dichloroethene	5.00	5.53	111	65 - 135	
cis-1,3-Dichloropropene	5.00	5.11	102	65 - 135	
Dibromochloromethane	5.00	4.63	93	65 - 135	
Dibromomethane	5.00	5.13	103	65 - 135	
Dichlorodifluoromethane	5.00	5.63	113	43 - 142	
Ethylbenzene	5.00	5.53	111	65 - 135	
Iodomethane	5.00	5.59	112	65 - 142	
Methylene Chloride	5.00	5.60	112	54 - 141	
m-Xylene & p-Xylene	5.00	5.32	106	65 - 135	
o-Xylene	5.00	5.62	112	65 - 135	
Styrene	5.00	5.35	107	65 - 135	
Tetrachloroethene	5.00	5.34	107	65 - 135	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

**Lab Control Sample - Batch: 280-401740**

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: LCS 280-401740/4	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_8062.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 0906	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 0906		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Toluene	5.00	5.86	117	65 - 135	
trans-1,2-Dichloroethene	5.00	5.85	117	65 - 135	
trans-1,3-Dichloropropene	5.00	4.93	99	65 - 135	
trans-1,4-Dichloro-2-butene	5.00	4.93	99	53 - 135	
Trichloroethene	5.00	5.51	110	65 - 135	
Trichlorofluoromethane	5.00	5.68	114	53 - 137	
Vinyl acetate	10.0	9.31	93	11 - 187	
Vinyl chloride	5.00	5.69	114	40 - 137	
Surrogate		% Rec		Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		109		70 - 127	
4-Bromofluorobenzene (Surr)		109		78 - 120	
Dibromofluoromethane (Surr)		112		77 - 120	
Toluene-d8 (Surr)		111		80 - 125	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401740**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-105392-A-5 MS	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_8069.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1132		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1132		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-105392-A-5 MSD	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_8070.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1152		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1152		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1,1,2-Tetrachloroethane	110	105	65 - 135	5	20		
1,1,1-Trichloroethane	121	114	65 - 135	7	20		
1,1,2,2-Tetrachloroethane	101	98	58 - 135	3	20		
1,1,2-Trichloroethane	108	105	64 - 135	2	27		
1,1-Dichloroethane	115	109	65 - 135	5	21		
1,1-Dichloroethene	113	105	65 - 136	7	20		
1,2,3-Trichloropropane	98	97	65 - 135	1	23		
1,2-Dibromo-3-Chloropropane	85	84	57 - 135	1	22		
1,2-Dibromoethane	98	98	65 - 135	0	27		
1,2-Dichlorobenzene	104	102	65 - 135	2	20		
1,2-Dichloroethane	109	108	65 - 135	2	20		
1,2-Dichloropropane	110	108	64 - 135	2	20		
1,4-Dichlorobenzene	105	102	65 - 135	3	23		
2-Butanone (MEK)	95	95	44 - 177	0	32		
2-Hexanone	82	81	57 - 139	1	25		
4-Methyl-2-pentanone (MIBK)	93	92	60 - 150	0	22		
Acetone	108	96	39 - 156	10	23		
Acrylonitrile	103	101	56 - 135	1	30		
Benzene	115	110	65 - 135	5	20		
Bromochloromethane	107	108	65 - 135	1	29		
Bromodichloromethane	113	109	65 - 135	4	20		
Bromoform	81	80	62 - 135	1	27		
Bromomethane	123	117	45 - 135	4	33		
Carbon disulfide	109	102	55 - 143	7	20		
Carbon tetrachloride	121	113	65 - 135	7	21		
Chlorobenzene	107	104	65 - 135	4	20		
Chloroethane	118	112	46 - 136	5	25		
Chloroform	114	110	65 - 135	3	20		
Chloromethane	105	99	34 - 145	6	24		
cis-1,2-Dichloroethene	111	108	65 - 135	3	20		
cis-1,3-Dichloropropene	98	97	65 - 135	1	26		
Dibromochloromethane	91	91	65 - 135	1	20		

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401740**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-105392-A-5 MS	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_8069.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1132		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1132		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-105392-A-5 MSD	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_8070.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1152		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1152		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Dibromomethane	103	102	65 - 135	1	26		
Dichlorodifluoromethane	123	115	43 - 142	6	30		
Ethylbenzene	111	106	65 - 135	5	20		
Iodomethane	108	106	65 - 142	2	25		
Methylene Chloride	221	150	54 - 141	9	26	4	4
m-Xylene & p-Xylene	108	103	65 - 135	5	20		
o-Xylene	112	109	65 - 135	2	20		
Styrene	104	101	65 - 135	3	26		
Tetrachloroethene	112	104	65 - 135	7	20		
Toluene	119	113	65 - 135	5	20		
trans-1,2-Dichloroethene	117	112	65 - 135	4	24		
trans-1,3-Dichloropropene	100	98	65 - 135	2	26		
trans-1,4-Dichloro-2-butene	100	96	53 - 135	4	25		
Trichloroethene	114	109	65 - 135	5	20		
Trichlorofluoromethane	124	115	53 - 137	7	27		
Vinyl acetate	91	90	11 - 187	1	24		
Vinyl chloride	111	107	40 - 137	3	24		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	111	108	70 - 127
4-Bromofluorobenzene (Surr)	107	102	78 - 120
Dibromofluoromethane (Surr)	112	107	77 - 120
Toluene-d8 (Surr)	111	106	80 - 125

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

**Method Blank - Batch: 160-347807**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 160-347807/13	Analysis Batch: 160-347807	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 012418- 13.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/24/2018 1927	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Result	Qual	RL
Chloride	ND		0.20
Sulfate	ND		0.20

**Lab Control Sample - Batch: 160-347807**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: LCS 160-347807/14	Analysis Batch: 160-347807	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 012418- 14.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/24/2018 1943	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.00	1.94	97	90 - 110	
Sulfate	8.00	7.79	97	90 - 110	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

## Matrix Spike - Batch: 160-347807

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID:	280-105482-G-1 MS	Analysis Batch:	160-347807	Instrument ID:	CIC2500
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	012418- 43.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	01/25/2018 0325	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	10	4.00	14.2	99	90 - 110	

## Matrix Spike - Batch: 160-347807

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID:	280-105482-G-1 MSDL	Analysis Batch:	160-347807	Instrument ID:	CIC2500
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	012418- 44.d
Dilution:	10	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	01/25/2018 0341	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A	Run Type:	DL	Injection Volume:	50 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	13	20.0	32.8	98	90 - 110	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

**Duplicate - Batch: 160-347807**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-105482-G-1 DU	Analysis Batch: 160-347807	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 012418- 41.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/25/2018 0253	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Sulfate	10	10.3	0.4	20	

**Duplicate - Batch: 160-347807**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-105482-G-1 DUDL	Analysis Batch: 160-347807	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 012418- 42.d
Dilution: 10	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/25/2018 0309	Units: mg/L	Final Weight/Volume:
Prep Date: N/A	Run Type: DL	Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	13	13.3	0.4	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

**Method Blank - Batch: 580-266422**

**Method: 6020  
Preparation: 3010A**

Lab Sample ID: MB 580-266422/10-A	Analysis Batch: 580-266530	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-266422	Lab File ID: 072SMPL.D
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 02/01/2018 1137	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/31/2018 1620		
Leach Date: N/A		

Analyte	Result	Qual	RL
Iron, Total	ND		0.18

**Lab Control Sample/**

**Method: 6020  
Preparation: 3010A**

**Lab Control Sample Duplicate Recovery Report - Batch: 580-266422**

LCS Lab Sample ID: LCS 580-266422/11-A	Analysis Batch: 580-266530	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-266422	Lab File ID: 073SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 02/01/2018 1141	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/31/2018 1620		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 580-266422/12-A	Analysis Batch: 580-266530	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-266422	Lab File ID: 074SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 02/01/2018 1144	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/31/2018 1620		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Iron, Total	100	101	80 - 120	1	20		



## Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-266422**

**Method: 6020  
Preparation: 3010A**

MS Lab Sample ID: 580-74690-G-1-C MS	Analysis Batch: 580-266530	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-266422	Lab File ID: 078SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 02/01/2018 1200		Final Weight/Volume: 50 mL
Prep Date: 01/31/2018 1620		
Leach Date: N/A		

MSD Lab Sample ID: 580-74690-G-1-D MSD	Analysis Batch: 580-266530	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-266422	Lab File ID: 079SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 02/01/2018 1204		Final Weight/Volume: 50 mL
Prep Date: 01/31/2018 1620		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Iron, Total	102	106	80 - 120	3	20		

**Duplicate - Batch: 580-266422**

**Method: 6020  
Preparation: 3010A**

Lab Sample ID: 580-74690-G-1-B DU	Analysis Batch: 580-266530	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-266422	Lab File ID: 076SMPL.D
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 02/01/2018 1152	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/31/2018 1620		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Iron, Total	1.5	1.50	2	20	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

## Method Blank - Batch: 280-401787

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: MB 280-401787/1-A  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/18/2018 0207  
Prep Date: 01/17/2018 1437  
Leach Date: N/A

Analysis Batch: 280-401996  
Prep Batch: 280-401787  
Leach Batch: N/A  
Units: mg/L

Instrument ID: MT\_078  
Lab File ID: 213\_BLK.d  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Arsenic, Total	ND		0.0050

## Method Blank - Batch: 280-401787

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: MB 280-401787/1-A  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/18/2018 0207  
Prep Date: 01/17/2018 1437  
Leach Date: N/A

Analysis Batch: 280-401996  
Prep Batch: 280-401787  
Leach Batch: N/A  
Units: ug/L

Instrument ID: MT\_078  
Lab File ID: 213\_BLK.d  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Manganese, Total	ND		1.0

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

## Lab Control Sample - Batch: 280-401787

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID:	LCS 280-401787/2-A	Analysis Batch:	280-401996	Instrument ID:	MT_078
Client Matrix:	Water	Prep Batch:	280-401787	Lab File ID:	214_LCS.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	01/18/2018 0211	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	01/17/2018 1437				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic, Total	0.0400	0.0358	90	85 - 117	

## Lab Control Sample - Batch: 280-401787

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID:	LCS 280-401787/2-A	Analysis Batch:	280-401996	Instrument ID:	MT_078
Client Matrix:	Water	Prep Batch:	280-401787	Lab File ID:	214_LCS.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	01/18/2018 0211	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	01/17/2018 1437				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Manganese, Total	40.0	39.3	98	85 - 117	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401787**

**Method: 6020  
Preparation: 3020A**

MS Lab Sample ID: 280-105484-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/18/2018 0228  
Prep Date: 01/17/2018 1437  
Leach Date: N/A

Analysis Batch: 280-401996  
Prep Batch: 280-401787  
Leach Batch: N/A

Instrument ID: MT\_078  
Lab File ID: 219SMPL.d  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-105484-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/18/2018 0232  
Prep Date: 01/17/2018 1437  
Leach Date: N/A

Analysis Batch: 280-401996  
Prep Batch: 280-401787  
Leach Batch: N/A

Instrument ID: MT\_078  
Lab File ID: 220SMPL.d  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Arsenic, Total	91	92	85 - 117	2	20		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401787**

**Method: 6020  
Preparation: 3020A**

MS Lab Sample ID: 280-105484-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/18/2018 0228  
Prep Date: 01/17/2018 1437  
Leach Date: N/A

Analysis Batch: 280-401996  
Prep Batch: 280-401787  
Leach Batch: N/A

Instrument ID: MT\_078  
Lab File ID: 219SMPL.d  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-105484-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/18/2018 0232  
Prep Date: 01/17/2018 1437  
Leach Date: N/A

Analysis Batch: 280-401996  
Prep Batch: 280-401787  
Leach Batch: N/A

Instrument ID: MT\_078  
Lab File ID: 220SMPL.d  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Manganese, Total	97	98	85 - 117	1	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

**Method Blank - Batch: 280-402283**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: MB 280-402283/1-A	Analysis Batch: 280-402728	Instrument ID: MT_077
Client Matrix: Water	Prep Batch: 280-402283	Lab File ID: 092_BLK.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/24/2018 1720	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/22/2018 1438		
Leach Date: N/A		

Analyte	Result	Qual	RL
Zinc, Total	ND		0.010

**Lab Control Sample - Batch: 280-402283**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: LCS 280-402283/2-A	Analysis Batch: 280-402728	Instrument ID: MT_077
Client Matrix: Water	Prep Batch: 280-402283	Lab File ID: 093_LCS.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/24/2018 1723	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/22/2018 1438		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Zinc, Total	0.0400	0.0379	95	83 - 122	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-402283**

**Method: 6020**  
**Preparation: 3020A**

MS Lab Sample ID: 280-105484-2	Analysis Batch: 280-402728	Instrument ID: MT_077
Client Matrix: Water	Prep Batch: 280-402283	Lab File ID: 098SMPL.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/24/2018 1743		Final Weight/Volume: 50 mL
Prep Date: 01/22/2018 1438		
Leach Date: N/A		

MSD Lab Sample ID: 280-105484-2	Analysis Batch: 280-402728	Instrument ID: MT_077
Client Matrix: Water	Prep Batch: 280-402283	Lab File ID: 099SMPL.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/24/2018 1747		Final Weight/Volume: 50 mL
Prep Date: 01/22/2018 1438		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Zinc, Total	94	91	83 - 122	3	20		

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

**Method Blank - Batch: 280-401835**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-401835/6	Analysis Batch: 280-401835	Instrument ID: WC_IonChrom11
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 0006.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/16/2018 2035	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Nitrate as N	ND		0.20
Nitrite as N	ND		0.50

**Method Reporting Limit Check - Batch: 280-401835**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-401835/3	Analysis Batch: 280-401835	Instrument ID: WC_IonChrom11
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 0003.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/16/2018 1928	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	0.200	ND	121	50 - 150	
Nitrite as N	0.200	ND	109	50 - 150	

**Lab Control Sample/**

**Method: 300.0**  
**Preparation: N/A**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-401835**

LCS Lab Sample ID: LCS 280-401835/4	Analysis Batch: 280-401835	Instrument ID: WC_IonChrom11
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 0004.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/16/2018 1950	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		10 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-401835/5	Analysis Batch: 280-401835	Instrument ID: WC_IonChrom11
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 0005.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/16/2018 2012	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		10 uL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Nitrate as N	106	108	90 - 110	2	10		
Nitrite as N	102	102	90 - 110	0	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401835**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-105484-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/17/2018 0149  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401835  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom11  
Lab File ID: 0020.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
10 uL

MSD Lab Sample ID: 280-105484-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/17/2018 0211  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401835  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom11  
Lab File ID: 0021.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
10 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate as N	118	124	80 - 120	4	20		F1
Nitrite as N	112	115	80 - 120	2	20		

**Duplicate - Batch: 280-401835**

**Method: 300.0  
Preparation: N/A**

Lab Sample ID: 280-105484-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/17/2018 0126  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401835  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: WC\_IonChrom11  
Lab File ID: 0019.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
10 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate as N	1.7	1.75	0.7	15	
Nitrite as N	ND	ND	NC	15	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

**Method Blank - Batch: 280-403811**

**Method: 350.1  
Preparation: N/A**

Lab Sample ID: MB 280-403811/20	Analysis Batch: 280-403811	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\020318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 1.0 mL
Analysis Date: 02/03/2018 0942	Units: mg/L	Final Weight/Volume: 1.0 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Ammonia	ND		0.10

**Lab Control Sample/**

**Method: 350.1  
Preparation: N/A**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-403811**

LCS Lab Sample ID: LCS 280-403811/18	Analysis Batch: 280-403811	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\020318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 02/03/2018 0938	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-403811/19	Analysis Batch: 280-403811	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\020318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 02/03/2018 0940	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ammonia	98	98	90 - 110	1	10		



## Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-403811**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-105664-P-5 MS	Analysis Batch: 280-403811	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\020318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 02/03/2018 0958		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-105664-P-5 MSD	Analysis Batch: 280-403811	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\020318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 02/03/2018 1000		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia	99	98	90 - 110	1	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

**Method Blank - Batch: 280-401776**

**Method: 410.4  
Preparation: N/A**

Lab Sample ID: MB 280-401776/5	Analysis Batch: 280-401776	Instrument ID: WC_Genesys20
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 2 mL
Analysis Date: 01/16/2018 0956	Units: mg/L	Final Weight/Volume: 2 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Chemical Oxygen Demand	ND		5.0

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-401776**

**Method: 410.4  
Preparation: N/A**

LCS Lab Sample ID: LCS 280-401776/3	Analysis Batch: 280-401776	Instrument ID: WC_Genesys20
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/16/2018 0956	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-401776/4	Analysis Batch: 280-401776	Instrument ID: WC_Genesys20
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/16/2018 0956	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Chemical Oxygen Demand	93	94	90 - 110	0	11		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401776**

**Method: 410.4  
Preparation: N/A**

MS Lab Sample ID: 280-105307-C-6 MS	Analysis Batch: 280-401776	Instrument ID: WC_Genesys20
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 20	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/16/2018 0956		Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-105307-C-6 MSD	Analysis Batch: 280-401776	Instrument ID: WC_Genesys20
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 20	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/16/2018 0956		Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chemical Oxygen Demand	64	67	90 - 110	1	11	F1	F1

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

## Method Blank - Batch: 280-401874

Method: SM 2120B

Preparation: N/A

Lab Sample ID:	MB 280-401874/1	Analysis Batch:	280-401874	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	01/17/2018 0856	Units:	PCU	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	RL
Color	ND		5.0

## Duplicate - Batch: 280-401874

Method: SM 2120B

Preparation: N/A

Lab Sample ID:	280-105484-1	Analysis Batch:	280-401874	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	01/17/2018 0856	Units:	PCU	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Color	ND	ND	NC	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105484-1

**Method Blank - Batch: 280-402034**

**Method: SM 5310B  
Preparation: N/A**

Lab Sample ID: MB 280-402034/35	Analysis Batch: 280-402034	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/17/2018 2326	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Organic Carbon - Quad	ND		1.0

**Lab Control Sample - Batch: 280-402034**

**Method: SM 5310B  
Preparation: N/A**

Lab Sample ID: LCS 280-402034/34	Analysis Batch: 280-402034	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/17/2018 2308	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Quad	25.0	25.7	103	88 - 112	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-402034**

**Method: SM 5310B  
Preparation: N/A**

MS Lab Sample ID: 280-105375-C-8 MS	Analysis Batch: 280-402034	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/18/2018 0127		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-105375-C-8 MSD	Analysis Batch: 280-402034	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/18/2018 0146		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Total Organic Carbon - Quad	100	98	88 - 112	2	15		

Chain of Custody Record

<b>Client Information</b> Client Contact: Sam Graber Company: SCS Engineers Address: 2405 140th Avenue NE Suite 107 City: Bellevue State, Zip: WA, 98005-1877 Phone: 425-290-2980 Email: sam@scsengineers.com		Sampler: Sam G. Phone: 612 940 2980 Lab PM: Sara, Betsy A E-Mail: betsy.sara@testamericainc.com		Carrier Tracking Note(s): 4150 9261 6055 Lab # 04217003.03		COC No: 280-21692-4512.1 Page: Page 1 of 1	
Due Date Requested: Standard TAT Requested (days): PO #: Purchase Order not requir WO #:		Analysis Requested Total Number of Containers:		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:		Special Instructions/Note: Short Hold: NO3/NO2(IC), Color	
Project #: 28003580-Water Supply Wells SSO#:		Matrix (Wet/Dry, Grab/Composite) Sample Type (C=Comp, G=Grab) Preservation Code		Total Metals Total Iron (TA Seattle) NO3/NO2(IC)/Color CR/SO4 (TA St. Louis) TOC/COD/Ammonia		Perform MS/MSD (Yes or No) Field Filtered Sample (Yes or No)	
Sample Identification HVL-011118-25 HVL-011118-26 Trip blank		Sample Date Sample Time Matrix		A D N S X X X X X X X X X X X X X X X X X X		Total Number of Containers: 3, 3, 4	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by:		Date/Time: 1/11/18 1530 Date/Time: 1-15-18 6915 Date/Time: 1-15-18		Company: SCS Company: T4-Den Company:	
437274		1-5 P2H 8 to 1 RP		1-15-18		1-15-18	



**TestAmerica Denver**

4955 Yarrow Street  
 Arvada, CO 80002  
 Phone (303) 736-0100 Fax (303) 431-7171

**Chain of Custody Record**



**TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information (Sub Contract Lab)</b>		Sampler:		Lab PM: Sara, Betsy A		Carrier Tracking No(s):		COC No: 280-425056.1	
Client Contact:		Phone:		E-Mail: betsy.sara@testamericainc.com		State of Origin: Washington		Page: Page 1 of 1	
Shipping/Receiving		Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Washington		Job #: 280-105484-1		Preservation Codes:	
Address: 5755 8th Street East,		Due Date Requested: 1/31/2018		<b>Analysis Requested</b>		Total Number of containers		A - HCL	
City: Tacoma		TAT Requested (days):						M - Hexane	
State, Zip: WA, 98424		PO #:						N - None	
Phone: 253-922-2310(Tel) 253-922-5047(Fax)		WO #:						O - AsNaO2	
Email:		Project #: 28003580		D - Nitric Acid		P - Na2O4S		Q - Na2SO3	
Project Name: Hidden Valley LF		SOW#:		E - NaHSO4		R - Na2S2O3		S - H2SO4	
Site:		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		G - Amchlor	
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		H - Amchlor	
HVL-011118-25 (280-105484-1)		1/11/18		13:40 Pacific		Water		I - Ice	
HVL-011118-26 (280-105484-2)		1/11/18		14:10 Pacific		Water		J - DI Water	
								K - EDTA	
								L - EDA	
								Z - other (specify)	
								Other:	
								Special Instructions/Note:	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**

Unconfirmed  **Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**

Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_ Primary Deliverable Rank: 2  Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Special Instructions/QC Requirements: \_\_\_\_\_

Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Method of Shipment: \_\_\_\_\_

Relinquished by: <i>[Signature]</i>	Date/Time: 1/16/18 1620	Company: _____	Received by: <i>[Signature]</i>	Date/Time: 1/17/18 1331	Company: TA-Spa
Relinquished by: _____	Date/Time: _____	Company: _____	Received by: _____	Date/Time: _____	Company: _____
Relinquished by: _____	Date/Time: _____	Company: _____	Received by: _____	Date/Time: _____	Company: _____

Custody Seals Intact:  Yes  No Custody Seal No.: \_\_\_\_\_ Cooler Temperature(s) °C and Other Remarks: 1R5 10.4/10.4 w/cs



# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-105484-1

**Login Number: 105484**  
**List Number: 1**  
**Creator: Pottruff, Reed W**

**List Source: TestAmerica Denver**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	False	No: Not present
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	False	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-105484-1

**Login Number: 105484**  
**List Number: 3**  
**Creator: Hobbs, Kenneth F**

**List Source: TestAmerica Seattle**  
**List Creation: 01/17/18 04:09 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	IR5=10.4/10.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-105484-1

**Login Number: 105484**  
**List Number: 2**  
**Creator: Taylor, Kristene N**

**List Source: TestAmerica St. Louis**  
**List Creation: 01/17/18 12:20 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	22.0,5.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Job Number: 280-105486-1  
Job Description: Hidden Valley LF

Leachate - main cell  
Leachate - side slope  
Hydraulic Gradient Control  
Trip Blank

For:  
SCS Engineers  
2405 140th Avenue NE  
Suite 107  
Bellevue, WA 98005-1877  
Attention: Mr. Kevin Lakey



Approved for release.  
Betsy A Sara  
Project Manager II  
2/7/2018 9:24 AM

---

Betsy A Sara, Project Manager II  
4955 Yarrow Street, Arvada, CO, 80002  
(303)736-0189  
betsy.sara@testamericainc.com  
02/07/2018

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

These data and reporting limits are being used specifically to meet the needs of this project. All RLs are supported by TestAmerica's Method Detection Limits (MDLs). Reporting limits in this report are at or above the MDL.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002  
Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)

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## CASE NARRATIVE

Client: SCS Engineers

Project: Hidden Valley LF

Report Number: 280-105486-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### Sample Receiving

The samples were received on 01/15/2018; the samples arrived on ice. The temperature of the cooler at receipt was 2.4 C.

Two of three hydrochloric preserved VOA vials for sample HVL-011118-27 contained bubbles greater than 6 mm. The laboratory used the vial without headspace to perform the analysis.

### Trip Blank

Acetone, a common laboratory contaminant, was detected in the trip blank sample at a level below the requested reporting limit. Acetone was also detected in the samples HVL-011118-23 and HVL-011118-27, however at high levels.

### Holding Times

The analysis for Nitrate Method 300.0 for the samples HVL-011118-23, HVL-011118-24 and HVL-011118-27 was performed outside of hold due to the hold time expiring during transit due to a FedEx shipping delay.

All other holding times were within established control limits.

### Method Blanks

Total Alkalinity and Bicarbonate Alkalinity Method 2320B were detected in the Method Blanks above the project established reporting limits. Because the associated samples exhibited levels of Total Alkalinity and Bicarbonate Alkalinity greater than ten times that of the Method Blank values, corrective action was deemed unnecessary.

All other Method Blanks were within established control limits.

### Laboratory Control Samples (LCS)

All Laboratory Control Samples were within established control limits.

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

The percent recoveries and/or relative percent difference of the MS/MSD performed on a sample from another client were outside control limits for Methylene Chloride Method 8260B because the sample concentration was greater than four times the spike amount. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, no corrective action was taken.

All other MS and MSD samples were within established control limits.

### Duplicate Sample

The Method 2540D Sample Duplicate performed on a sample from another client exhibited an RPD that exceeded the limit for Total Suspended Solids, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.

## **Organics**

The samples HVL-011118-23 and HVL-011118-27 were analyzed at a dilution for Method 8260B due to foaming at the time of purging. Elevated reporting limits (RL) are provided.

The prepreserved hydrochloric acid preserved vials for Method 8260B analysis for the samples HVL-011118-23 and HVL-011118-27 exhibited pH values greater than 2. This is non-compliant with Method 8260B which requires samples to be preserved with hydrochloric acid to a pH of less than 2.

## **Metals**

The bracketing Continuing Calibration Verification Samples (CCV) surrounding the Method Blank were above control limits for Total Sodium during Method 6010B analysis. Because the data are considered to be biased high and Total Sodium was not detected in the Method Blank sample above the reporting limit, corrective action was deemed unnecessary.

## **General Comments**

The analysis for Chloride and Sulfate Method 300.0 was performed at the TestAmerica's St. Louis Laboratory.  
13715 Rider Trail North  
Earth City, MO 63045  
Phone: 314-298-8566

The analysis for Iron Method 6020 was performed at the TestAmerica's Seattle Laboratory.  
5755 8th Street East  
Tacoma, WA 98424  
Phone: 253-922-2310

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-105486-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-105486-1</b>	<b>HVL-011118-23</b>	<b>Leachate - main cell</b>				
Acetone		260		10	ug/L	8260B
Ethylbenzene		3.5		1.0	ug/L	8260B
m-Xylene & p-Xylene		15		1.4	ug/L	8260B
o-Xylene		6.2		0.76	ug/L	8260B
Styrene		2.7		0.68	ug/L	8260B
Toluene		25		0.68	ug/L	8260B
Cadmium, Total		0.0060		0.0050	mg/L	6010B
Calcium, Total		390		0.20	mg/L	6010B
Cobalt, Total		0.031		0.010	mg/L	6010B
Magnesium, Total		20		0.10	mg/L	6010B
Potassium, Total		120		2.0	mg/L	6010B
Sodium, Total		780		1.0	mg/L	6010B
Vanadium, Total		0.089		0.010	mg/L	6010B
Iron, Total		58		0.18	mg/L	6020
Antimony, Total		0.021		0.0020	mg/L	6020
Arsenic, Total		0.055		0.0050	mg/L	6020
Barium, Total		0.96		0.0050	mg/L	6020
Chromium, Total		0.11		0.0050	mg/L	6020
Copper, Total		0.80		0.010	mg/L	6020
Lead, Total		0.22		0.0020	mg/L	6020
Manganese, Total		1.5		0.0050	mg/L	6020
Nickel, Total		0.15		0.020	mg/L	6020
Selenium, Total		0.0052		0.0050	mg/L	6020
Zinc, Total		2.7		0.020	mg/L	6020
Ammonia		43		1.1	mg/L	350.1
Nitrate Nitrite as N		0.24		0.10	mg/L	353.2
Alkalinity		760	B	5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		760	B	5.0	mg/L	SM 2320B
Total Dissolved Solids		4600		47	mg/L	SM 2540C
Total Suspended Solids		1100		18	mg/L	SM 2540D
Total Organic Carbon - Quad		1200		4.7	mg/L	SM 5310B
Chloride		770		4.0	mg/L	300.0
Sulfate		470		10	mg/L	300.0



## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-105486-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-105486-2</b>	<b>HVL-011118-24</b>	<b>Hydraulic Gradient Control</b>				
Calcium, Total		120		0.20	mg/L	6010B
Cobalt, Total		0.010		0.010	mg/L	6010B
Magnesium, Total		28		0.10	mg/L	6010B
Potassium, Total		4.1		2.0	mg/L	6010B
Sodium, Total		26		1.0	mg/L	6010B
Iron, Total		3.4		0.18	mg/L	6020
Antimony, Total		0.0027		0.0020	mg/L	6020
Barium, Total		0.079		0.0050	mg/L	6020
Copper, Total		1.2		0.010	mg/L	6020
Lead, Total		0.24		0.0020	mg/L	6020
Manganese, Total		3.9		0.0050	mg/L	6020
Nickel, Total		0.076		0.020	mg/L	6020
Zinc, Total		4.1		0.020	mg/L	6020
Nitrate as N		0.60	H	0.50	mg/L	300.0
Nitrate Nitrite as N		0.82		0.10	mg/L	353.2
Alkalinity		390		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		390		5.0	mg/L	SM 2320B
Total Dissolved Solids		450		10	mg/L	SM 2540C
Total Suspended Solids		12		4.0	mg/L	SM 2540D
Total Organic Carbon - Quad		3.2		1.0	mg/L	SM 5310B
Chloride		7.7		0.40	mg/L	300.0
Sulfate		8.8		0.20	mg/L	300.0

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-105486-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-105486-3</b>	<b>HVL-011118-27</b>	<b>Leachate - side slope liner</b>				
Acetone		44		10	ug/L	8260B
Benzene		2.0		0.64	ug/L	8260B
Carbon disulfide		4.2		1.8	ug/L	8260B
cis-1,2-Dichloroethene		3.2		0.60	ug/L	8260B
Toluene		2.3		0.68	ug/L	8260B
Calcium, Total		15		0.20	mg/L	6010B
Cobalt, Total		0.015		0.010	mg/L	6010B
Magnesium, Total		21		0.10	mg/L	6010B
Potassium, Total		450		2.0	mg/L	6010B
Sodium, Total		5400		1.0	mg/L	6010B
Vanadium, Total		0.092		0.010	mg/L	6010B
Iron, Total		2.4		0.18	mg/L	6020
Antimony, Total		0.030		0.0020	mg/L	6020
Arsenic, Total		0.13		0.0050	mg/L	6020
Barium, Total		0.30		0.0050	mg/L	6020
Chromium, Total		0.037		0.0050	mg/L	6020
Copper, Total		0.051		0.010	mg/L	6020
Lead, Total		0.0048		0.0020	mg/L	6020
Manganese, Total		0.12		0.0050	mg/L	6020
Nickel, Total		0.34		0.020	mg/L	6020
Selenium, Total		0.010		0.0050	mg/L	6020
Zinc, Total		0.054		0.010	mg/L	6020
Ammonia		540		4.4	mg/L	350.1
Nitrate Nitrite as N		0.57		0.10	mg/L	353.2
Alkalinity		5700	B	5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		5700	B	5.0	mg/L	SM 2320B
Total Dissolved Solids		16000		94	mg/L	SM 2540C
Total Suspended Solids		35		4.0	mg/L	SM 2540D
Total Organic Carbon - Quad		720		3.1	mg/L	SM 5310B
Chloride		5100		40	mg/L	300.0
Sulfate		150		5.0	mg/L	300.0
<b>280-105486-4TB</b>	<b>TRIP BLANK</b>	<b>Trip Blank</b>				
Acetone		11		10	ug/L	8260B

## METHOD SUMMARY

Client: SCS Engineers

Job Number: 280-105486-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Volatile Organic Compounds (GC/MS)	TAL DEN	SW846 8260B	
Purge and Trap	TAL DEN		SW846 5030B
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Total Metals	TAL DEN		SW846 3010A
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Metals	TAL DEN		SW846 3020A
Anions, Ion Chromatography	TAL DEN	MCAWW 300.0	
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
Nitrogen, Nitrate-Nitrite	TAL DEN	MCAWW 353.2	
Alkalinity	TAL DEN	SM SM 2320B	
Solids, Total Dissolved (TDS)	TAL DEN	SM SM 2540C	
Solids, Total Suspended (TSS)	TAL DEN	SM SM 2540D	
Organic Carbon, Total (TOC)	TAL DEN	SM SM 5310B	
Metals (ICP/MS)	TAL SEA	SW846 6020	
Preparation, Total Metals	TAL SEA		SW846 3010A
Anions, Ion Chromatography	TAL SL	MCAWW 300.0	

### Lab References:

TAL DEN = TestAmerica Denver

TAL SEA = TestAmerica Seattle

TAL SL = TestAmerica St. Louis

### Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

## METHOD / ANALYST SUMMARY

Client: SCS Engineers

Job Number: 280-105486-1

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
SW846 8260B	Wickham, Tom A	TAW
SW846 6010B	Broander, Laura L	LLB
SW846 6010B	Lackey, Cara M	CML
SW846 6010B	Scott, Samantha J	SJS
SW846 6020	Trudell, Lynn-Anne M	LMT
SW846 6020	Woo, Fred C	FCW
MCAWW 300.0	Phan, Thu L	TLP
MCAWW 350.1	Lehman, Jeffrey M	JML
MCAWW 353.2	Cherry, Scott V	SVC
SM SM 2320B	Duplin, Alysha 1	A1D
SM SM 2540C	Pedrick, Joshua A	JAP
SM SM 2540D	Pedrick, Joshua A	JAP
SM SM 5310B	Jewell, Connie C	CCJ
MCAWW 300.0	Boyd, Jacob C	JCB

## SAMPLE SUMMARY

Client: SCS Engineers

Job Number: 280-105486-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
280-105486-1	HVL-011118-23	Water	01/11/2018 1110	01/15/2018 0915
280-105486-2	HVL-011118-24	Water	01/11/2018 1130	01/15/2018 0915
280-105486-3	HVL-011118-27	Water	01/11/2018 1200	01/15/2018 0915
280-105486-4TB	TRIP BLANK	Water	01/11/2018 0000	01/15/2018 0915

# SAMPLE RESULTS

# Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID: HVL-011118-23**

Lab Sample ID: 280-105486-1

Date Sampled: 01/11/2018 1110

Client Matrix: Water

Date Received: 01/15/2018 0915

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_8081.D
Dilution: 4.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1537		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1537		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.84
1,1,1-Trichloroethane	ND		0.64
1,1,2,2-Tetrachloroethane	ND		0.84
1,1,2-Trichloroethane	ND		1.1
1,1-Dichloroethane	ND		0.88
1,1-Dichloroethene	ND		0.92
1,2,3-Trichloropropane	ND		1.3
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.60
1,2-Dichloroethane	ND		0.52
1,2-Dichloropropane	ND		0.72
1,4-Dichlorobenzene	ND		0.64
2-Butanone (MEK)	ND		8.0
2-Hexanone	ND		6.8
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	260		10
Acrylonitrile	ND		20
Benzene	ND		0.64
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.68
Bromoform	ND		0.76
Bromomethane	ND		0.84
Carbon disulfide	ND		1.8
Carbon tetrachloride	ND		0.76
Chlorobenzene	ND		0.68
Chloroethane	ND		1.6
Chloroform	ND		0.64
Chloromethane	ND		1.2
cis-1,2-Dichloroethene	ND		0.60
cis-1,3-Dichloropropene	ND		0.64
cis-1,4-Dichloro-2-butene	ND		3.6
Dibromochloromethane	ND		0.68
Dibromomethane	ND		0.68
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	3.5		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	15		1.4
o-Xylene	6.2		0.76
Styrene	2.7		0.68
Tetrachloroethene	ND		0.80
Toluene	25		0.68
trans-1,2-Dichloroethene	ND		0.60
trans-1,3-Dichloropropene	ND		0.76
trans-1,4-Dichloro-2-butene	ND		3.2

# Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID: HVL-011118-23**

Lab Sample ID: 280-105486-1

Date Sampled: 01/11/2018 1110

Client Matrix: Water

Date Received: 01/15/2018 0915

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_8081.D
Dilution: 4.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1537		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1537		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.64
Trichlorofluoromethane	ND		1.2
Vinyl acetate	ND		3.8
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	122		70 - 127
4-Bromofluorobenzene (Surr)	99		78 - 120
Dibromofluoromethane (Surr)	117		77 - 120
Toluene-d8 (Surr)	102		80 - 125



## Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID: HVL-011118-24**

Lab Sample ID: 280-105486-2

Date Sampled: 01/11/2018 1130

Client Matrix: Water

Date Received: 01/15/2018 0915

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_8082.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1557		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1557		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID: HVL-011118-24**

Lab Sample ID: 280-105486-2

Date Sampled: 01/11/2018 1130

Client Matrix: Water

Date Received: 01/15/2018 0915

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_8082.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1557		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1557		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	117		70 - 127
4-Bromofluorobenzene (Surr)	106		78 - 120
Dibromofluoromethane (Surr)	115		77 - 120
Toluene-d8 (Surr)	104		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID: HVL-011118-27**

Lab Sample ID: 280-105486-3

Date Sampled: 01/11/2018 1200

Client Matrix: Water

Date Received: 01/15/2018 0915

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_8083.D
Dilution: 4.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1618		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1618		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.84
1,1,1-Trichloroethane	ND		0.64
1,1,2,2-Tetrachloroethane	ND		0.84
1,1,2-Trichloroethane	ND		1.1
1,1-Dichloroethane	ND		0.88
1,1-Dichloroethene	ND		0.92
1,2,3-Trichloropropane	ND		1.3
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.60
1,2-Dichloroethane	ND		0.52
1,2-Dichloropropane	ND		0.72
1,4-Dichlorobenzene	ND		0.64
2-Butanone (MEK)	ND		8.0
2-Hexanone	ND		6.8
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	44		10
Acrylonitrile	ND		20
Benzene	2.0		0.64
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.68
Bromoform	ND		0.76
Bromomethane	ND		0.84
Carbon disulfide	4.2		1.8
Carbon tetrachloride	ND		0.76
Chlorobenzene	ND		0.68
Chloroethane	ND		1.6
Chloroform	ND		0.64
Chloromethane	ND		1.2
cis-1,2-Dichloroethene	3.2		0.60
cis-1,3-Dichloropropene	ND		0.64
cis-1,4-Dichloro-2-butene	ND		3.6
Dibromochloromethane	ND		0.68
Dibromomethane	ND		0.68
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		1.4
o-Xylene	ND		0.76
Styrene	ND		0.68
Tetrachloroethene	ND		0.80
Toluene	2.3		0.68
trans-1,2-Dichloroethene	ND		0.60
trans-1,3-Dichloropropene	ND		0.76
trans-1,4-Dichloro-2-butene	ND		3.2

## Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID: HVL-011118-27**

Lab Sample ID: 280-105486-3

Date Sampled: 01/11/2018 1200

Client Matrix: Water

Date Received: 01/15/2018 0915

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### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_8083.D
Dilution: 4.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1618		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1618		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.64
Trichlorofluoromethane	ND		1.2
Vinyl acetate	ND		3.8
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	114		70 - 127
4-Bromofluorobenzene (Surr)	98		78 - 120
Dibromofluoromethane (Surr)	111		77 - 120
Toluene-d8 (Surr)	99		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-105486-4TB

Date Sampled: 01/11/2018 0000

Client Matrix: Water

Date Received: 01/15/2018 0915

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_8066.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1030		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1030		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	11		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-105486-4TB

Date Sampled: 01/11/2018 0000

Client Matrix: Water

Date Received: 01/15/2018 0915

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_8066.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1030		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1030		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	108		70 - 127
4-Bromofluorobenzene (Surr)	107		78 - 120
Dibromofluoromethane (Surr)	110		77 - 120
Toluene-d8 (Surr)	110		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID: HVL-011118-23**

Lab Sample ID: 280-105486-1

Date Sampled: 01/11/2018 1110

Client Matrix: Water

Date Received: 01/15/2018 0915

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-347807	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	012418- 52.d
Dilution:	200			Initial Weight/Volume:	5 mL
Analysis Date:	01/25/2018 0548	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	770		4.0
Sulfate	470		10

## Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID: HVL-011118-24**

Lab Sample ID: 280-105486-2

Date Sampled: 01/11/2018 1130

Client Matrix: Water

Date Received: 01/15/2018 0915

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-347807

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 012418- 54.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 01/25/2018 0620

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	8.8		0.20



## Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID: HVL-011118-24**

Lab Sample ID: 280-105486-2

Date Sampled: 01/11/2018 1130

Client Matrix: Water

Date Received: 01/15/2018 0915

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-347807	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	012418- 55.d
Dilution:	20			Initial Weight/Volume:	5 mL
Analysis Date:	01/25/2018 0636	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	7.7		0.40

## Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID: HVL-011118-27**

Lab Sample ID: 280-105486-3

Date Sampled: 01/11/2018 1200

Client Matrix: Water

Date Received: 01/15/2018 0915

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-347807	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	012418- 59.d
Dilution:	100			Initial Weight/Volume:	5 mL
Analysis Date:	01/25/2018 0740	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	150		5.0

## Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID:** HVL-011118-27

Lab Sample ID: 280-105486-3

Date Sampled: 01/11/2018 1200

Client Matrix: Water

Date Received: 01/15/2018 0915

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-347807	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	012418- 60.d
Dilution:	2000			Initial Weight/Volume:	5 mL
Analysis Date:	01/25/2018 0756	Run Type:	DL2	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	5100		40

# Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID: HVL-011118-23**

Lab Sample ID: 280-105486-1  
Client Matrix: Water

Date Sampled: 01/11/2018 1110  
Date Received: 01/15/2018 0915

## 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402105      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401786      Lab File ID: 51A011818B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0100      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	0.0060		0.0050
Calcium, Total	390		0.20
Cobalt, Total	0.031		0.010
Magnesium, Total	20		0.10
Silver, Total	ND		0.010
Vanadium, Total	0.089		0.010

Analysis Method: 6010B      Analysis Batch: 280-403545      Instrument ID: MT\_025  
Prep Method: 3010A      Prep Batch: 280-401786      Lab File ID: 25a01318A.asc  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/31/2018 1457      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Potassium, Total	120		2.0
Sodium, Total	780		1.0

## 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-401996      Instrument ID: MT\_078  
Prep Method: 3020A      Prep Batch: 280-401787      Lab File ID: 224SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0246      Final Weight/Volume: 50 mL  
Prep Date: 01/17/2018 1437

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	0.021		0.0020
Arsenic, Total	0.055		0.0050
Barium, Total	0.96		0.0050
Chromium, Total	0.11		0.0050
Copper, Total	0.80		0.010
Lead, Total	0.22		0.0020
Manganese, Total	1.5		0.0050
Nickel, Total	0.15		0.020
Selenium, Total	0.0052		0.0050
Thallium, Total	ND		0.0050

Analysis Method: 6020      Analysis Batch: 580-266530      Instrument ID: SEA044  
Prep Method: 3010A      Prep Batch: 580-266422      Lab File ID: 087SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 02/01/2018 1236      Final Weight/Volume: 50 mL  
Prep Date: 01/31/2018 1620

## Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID: HVL-011118-23**

Lab Sample ID: 280-105486-1

Date Sampled: 01/11/2018 1110

Client Matrix: Water

Date Received: 01/15/2018 0915

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### 6020 Metals (ICP/MS)

Analyte	Result (mg/L)	Qualifier	RL
Iron, Total	58		0.18

Analysis Method: 6020

Analysis Batch: 280-402223

Instrument ID: MT\_077

Prep Method: 3020A

Prep Batch: 280-401787

Lab File ID: 130SMPL.d

Dilution: 10

Initial Weight/Volume: 50 mL

Analysis Date: 01/19/2018 2148

Final Weight/Volume: 50 mL

Prep Date: 01/17/2018 1437

Analyte	Result (mg/L)	Qualifier	RL
Zinc, Total	2.7		0.020

# Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID: HVL-011118-24**

Lab Sample ID: 280-105486-2

Date Sampled: 01/11/2018 1130

Client Matrix: Water

Date Received: 01/15/2018 0915

## 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402105      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401786      Lab File ID: 51A011818B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0103      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Calcium, Total	120		0.20
Cobalt, Total	0.010		0.010
Magnesium, Total	28		0.10
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

Analysis Method: 6010B      Analysis Batch: 280-402258      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401786      Lab File ID: 51A011918.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 1435      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Potassium, Total	4.1		2.0

Analysis Method: 6010B      Analysis Batch: 280-402422      Instrument ID: MT\_025  
Prep Method: 3010A      Prep Batch: 280-401786      Lab File ID: 25B012218a.asc  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/23/2018 0106      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Sodium, Total	26		1.0

## 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-401996      Instrument ID: MT\_078  
Prep Method: 3020A      Prep Batch: 280-401787      Lab File ID: 228SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0300      Final Weight/Volume: 50 mL  
Prep Date: 01/17/2018 1437

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	0.0027		0.0020
Arsenic, Total	ND		0.0050
Barium, Total	0.079		0.0050
Chromium, Total	ND		0.0050
Copper, Total	1.2		0.010
Lead, Total	0.24		0.0020
Manganese, Total	3.9		0.0050

## Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID: HVL-011118-24**

Lab Sample ID: 280-105486-2

Date Sampled: 01/11/2018 1130

Client Matrix: Water

Date Received: 01/15/2018 0915

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### 6020 Metals (ICP/MS)

Analyte	Result (mg/L)	Qualifier	RL
Nickel, Total	0.076		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050

Analysis Method: 6020	Analysis Batch: 580-266530	Instrument ID: SEA044
Prep Method: 3010A	Prep Batch: 580-266422	Lab File ID: 086SMPL.D
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 02/01/2018 1232		Final Weight/Volume: 50 mL
Prep Date: 01/31/2018 1620		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Total	3.4		0.18

Analysis Method: 6020	Analysis Batch: 280-402223	Instrument ID: MT_077
Prep Method: 3020A	Prep Batch: 280-401787	Lab File ID: 131SMPL.d
Dilution: 10		Initial Weight/Volume: 50 mL
Analysis Date: 01/19/2018 2152		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1437		

Analyte	Result (mg/L)	Qualifier	RL
Zinc, Total	4.1		0.020

# Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID: HVL-011118-27**

Lab Sample ID: 280-105486-3

Date Sampled: 01/11/2018 1200

Client Matrix: Water

Date Received: 01/15/2018 0915

## 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-402105      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401786      Lab File ID: 51A011818B.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 0115      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Calcium, Total	15		0.20
Cobalt, Total	0.015		0.010
Magnesium, Total	21		0.10
Silver, Total	ND		0.010
Vanadium, Total	0.092		0.010

Analysis Method: 6010B      Analysis Batch: 280-402258      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-401786      Lab File ID: 51A011918.csv  
Dilution: 2.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/19/2018 1447      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Potassium, Total	450		2.0

Analysis Method: 6010B      Analysis Batch: 280-402422      Instrument ID: MT\_025  
Prep Method: 3010A      Prep Batch: 280-401786      Lab File ID: 25B012218a.asc  
Dilution: 2.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/23/2018 0115      Final Weight/Volume: 50 mL  
Prep Date: 01/16/2018 1504

Analyte	Result (mg/L)	Qualifier	RL
Sodium, Total	5400		1.0

## 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-401996      Instrument ID: MT\_078  
Prep Method: 3020A      Prep Batch: 280-401787      Lab File ID: 225SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 01/18/2018 0250      Final Weight/Volume: 50 mL  
Prep Date: 01/17/2018 1437

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	0.030		0.0020
Arsenic, Total	0.13		0.0050
Barium, Total	0.30		0.0050
Chromium, Total	0.037		0.0050
Copper, Total	0.051		0.010
Lead, Total	0.0048		0.0020
Manganese, Total	0.12		0.0050



## Analytical Data

Client: SCS Engineers

Job Number: 280-105486-1

**Client Sample ID: HVL-011118-27**

Lab Sample ID: 280-105486-3

Date Sampled: 01/11/2018 1200

Client Matrix: Water

Date Received: 01/15/2018 0915

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### 6020 Metals (ICP/MS)

Analyte	Result (mg/L)	Qualifier	RL
Nickel, Total	0.34		0.020
Selenium, Total	0.010		0.0050
Thallium, Total	ND		0.0050

Analysis Method: 6020	Analysis Batch: 280-402728	Instrument ID: MT_077
Prep Method: 3020A	Prep Batch: 280-402283	Lab File ID: 101SMPL.D
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 01/24/2018 1754		Final Weight/Volume: 50 mL
Prep Date: 01/22/2018 1438		

Analyte	Result (mg/L)	Qualifier	RL
Zinc, Total	0.054		0.010

Analysis Method: 6020	Analysis Batch: 580-266530	Instrument ID: SEA044
Prep Method: 3010A	Prep Batch: 580-266422	Lab File ID: 088SMPL.D
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 02/01/2018 1239		Final Weight/Volume: 50 mL
Prep Date: 01/31/2018 1620		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Total	2.4		0.18

Client: SCS Engineers

Job Number: 280-105486-1

General Chemistry

Client Sample ID: HVL-011118-23

Lab Sample ID: 280-105486-1

Date Sampled: 01/11/2018 1110

Client Matrix: Water

Date Received: 01/15/2018 0915

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	ND	H	mg/L	0.84	20	300.0
	Analysis Batch: 280-401695	Analysis Date: 01/15/2018	2204			
Ammonia	43		mg/L	1.1	50	350.1
	Analysis Batch: 280-403811	Analysis Date: 02/03/2018	1026			
Nitrate Nitrite as N	0.24		mg/L	0.10	1.0	353.2
	Analysis Batch: 280-403313	Analysis Date: 01/30/2018	2035			
Alkalinity	760	B	mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401820	Analysis Date: 01/16/2018	1406			
Bicarbonate Alkalinity as CaCO3	760	B	mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401820	Analysis Date: 01/16/2018	1406			
Total Dissolved Solids	4600		mg/L	47	1.0	SM 2540C
	Analysis Batch: 280-401868	Analysis Date: 01/17/2018	0824			
Total Suspended Solids	1100		mg/L	18	1.0	SM 2540D
	Analysis Batch: 280-401948	Analysis Date: 01/17/2018	1641			
Total Organic Carbon - Quad	1200		mg/L	4.7	30	SM 5310B
	Analysis Batch: 280-402034	Analysis Date: 01/18/2018	0354			

Client: SCS Engineers

Job Number: 280-105486-1

General Chemistry

Client Sample ID: HVL-011118-24

Lab Sample ID: 280-105486-2

Date Sampled: 01/11/2018 1130

Client Matrix: Water

Date Received: 01/15/2018 0915

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	0.60	H	mg/L	0.50	1.0	300.0
	Analysis Batch: 280-401695		Analysis Date: 01/16/2018 0027			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-403811		Analysis Date: 02/03/2018 1028			
Nitrate Nitrite as N	0.82		mg/L	0.10	1.0	353.2
	Analysis Batch: 280-403313		Analysis Date: 01/30/2018 2037			
Alkalinity	390		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401838		Analysis Date: 01/16/2018 1631			
Bicarbonate Alkalinity as CaCO3	390		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401838		Analysis Date: 01/16/2018 1631			
Total Dissolved Solids	450		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-401868		Analysis Date: 01/17/2018 0824			
Total Suspended Solids	12		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401948		Analysis Date: 01/17/2018 1641			
Total Organic Carbon - Quad	3.2		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-402034		Analysis Date: 01/18/2018 0444			

Client: SCS Engineers

Job Number: 280-105486-1

**General Chemistry**

**Client Sample ID: HVL-011118-27**

Lab Sample ID: 280-105486-3

Date Sampled: 01/11/2018 1200

Client Matrix: Water

Date Received: 01/15/2018 0915

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	ND	H	mg/L	0.84	20	300.0
	Analysis Batch: 280-401695	Analysis Date: 01/15/2018	2258			
Ammonia	540		mg/L	4.4	200	350.1
	Analysis Batch: 280-403811	Analysis Date: 02/03/2018	1123			
Nitrate Nitrite as N	0.57		mg/L	0.10	1.0	353.2
	Analysis Batch: 280-403313	Analysis Date: 01/30/2018	2051			
Alkalinity	5700	B	mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401820	Analysis Date: 01/16/2018	1402			
Bicarbonate Alkalinity as CaCO3	5700	B	mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-401820	Analysis Date: 01/16/2018	1402			
Total Dissolved Solids	16000		mg/L	94	1.0	SM 2540C
	Analysis Batch: 280-401868	Analysis Date: 01/17/2018	0824			
Total Suspended Solids	35		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-401948	Analysis Date: 01/17/2018	1641			
Total Organic Carbon - Quad	720		mg/L	3.1	20	SM 5310B
	Analysis Batch: 280-402034	Analysis Date: 01/18/2018	0539			

## DATA REPORTING QUALIFIERS

Client: SCS Engineers

Job Number: 280-105486-1

Lab Section	Qualifier	Description
GC/MS VOA	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
Metals	^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
General Chemistry	B	Compound was found in the blank and sample.
	F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
	H	Sample was prepped or analyzed beyond the specified holding time

# QUALITY CONTROL RESULTS

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS VOA</b>					
<b>Analysis Batch:280-401740</b>					
LCS 280-401740/4	Lab Control Sample	T	Water	8260B	
MB 280-401740/6	Method Blank	T	Water	8260B	
280-105392-A-5 MS	Matrix Spike	T	Water	8260B	
280-105392-A-5 MSD	Matrix Spike Duplicate	T	Water	8260B	
280-105486-1	HVL-011118-23	T	Water	8260B	
280-105486-2	HVL-011118-24	T	Water	8260B	
280-105486-3	HVL-011118-27	T	Water	8260B	
280-105486-4TB	TRIP BLANK	T	Water	8260B	
<b>Report Basis</b>					
T = Total					
<b>Metals</b>					
<b>Prep Batch: 580-266422</b>					
LCS 580-266422/11-A	Lab Control Sample	T	Water	3010A	
LCSD 580-266422/12-A	Lab Control Sample Duplicate	T	Water	3010A	
MB 580-266422/10-A	Method Blank	T	Water	3010A	
580-74690-G-1-B DU	Duplicate	T	Water	3010A	
580-74690-G-1-C MS	Matrix Spike	T	Water	3010A	
580-74690-G-1-D MSD	Matrix Spike Duplicate	T	Water	3010A	
280-105486-1	HVL-011118-23	T	Water	3010A	
280-105486-2	HVL-011118-24	T	Water	3010A	
280-105486-3	HVL-011118-27	T	Water	3010A	
<b>Analysis Batch:580-266530</b>					
LCS 580-266422/11-A	Lab Control Sample	T	Water	6020	580-266422
LCSD 580-266422/12-A	Lab Control Sample Duplicate	T	Water	6020	580-266422
MB 580-266422/10-A	Method Blank	T	Water	6020	580-266422
580-74690-G-1-B DU	Duplicate	T	Water	6020	580-266422
580-74690-G-1-C MS	Matrix Spike	T	Water	6020	580-266422
580-74690-G-1-D MSD	Matrix Spike Duplicate	T	Water	6020	580-266422
280-105486-1	HVL-011118-23	T	Water	6020	580-266422
280-105486-2	HVL-011118-24	T	Water	6020	580-266422
280-105486-3	HVL-011118-27	T	Water	6020	580-266422
<b>Prep Batch: 280-401786</b>					
LCS 280-401786/2-A	Lab Control Sample	T	Water	3010A	
MB 280-401786/1-A	Method Blank	T	Water	3010A	
280-105486-1	HVL-011118-23	T	Water	3010A	
280-105486-2	HVL-011118-24	T	Water	3010A	
280-105486-2MS	Matrix Spike	T	Water	3010A	
280-105486-2MSD	Matrix Spike Duplicate	T	Water	3010A	
280-105486-3	HVL-011118-27	T	Water	3010A	

**Prep Batch: 280-401787**

**TestAmerica Denver**

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 280-401787</b>					
LCS 280-401787/2-A	Lab Control Sample	T	Water	3020A	
MB 280-401787/1-A	Method Blank	T	Water	3020A	
280-105484-C-2-B MS	Matrix Spike	T	Water	3020A	
280-105484-C-2-C MSD	Matrix Spike Duplicate	T	Water	3020A	
280-105486-1	HVL-011118-23	T	Water	3020A	
280-105486-2	HVL-011118-24	T	Water	3020A	
280-105486-3	HVL-011118-27	T	Water	3020A	
<b>Analysis Batch:280-401996</b>					
LCS 280-401787/2-A	Lab Control Sample	T	Water	6020	280-401787
MB 280-401787/1-A	Method Blank	T	Water	6020	280-401787
280-105484-C-2-B MS	Matrix Spike	T	Water	6020	280-401787
280-105484-C-2-C MSD	Matrix Spike Duplicate	T	Water	6020	280-401787
280-105486-1	HVL-011118-23	T	Water	6020	280-401787
280-105486-2	HVL-011118-24	T	Water	6020	280-401787
280-105486-3	HVL-011118-27	T	Water	6020	280-401787
<b>Analysis Batch:280-402105</b>					
LCS 280-401786/2-A	Lab Control Sample	T	Water	6010B	280-401786
MB 280-401786/1-A	Method Blank	T	Water	6010B	280-401786
280-105486-1	HVL-011118-23	T	Water	6010B	280-401786
280-105486-2	HVL-011118-24	T	Water	6010B	280-401786
280-105486-2MS	Matrix Spike	T	Water	6010B	280-401786
280-105486-2MSD	Matrix Spike Duplicate	T	Water	6010B	280-401786
280-105486-3	HVL-011118-27	T	Water	6010B	280-401786
<b>Analysis Batch:280-402223</b>					
LCS 280-401787/2-A	Lab Control Sample	T	Water	6020	280-401787
MB 280-401787/1-A	Method Blank	T	Water	6020	280-401787
280-105484-C-2-B MS	Matrix Spike	T	Water	6020	280-401787
280-105484-C-2-C MSD	Matrix Spike Duplicate	T	Water	6020	280-401787
280-105486-1	HVL-011118-23	T	Water	6020	280-401787
280-105486-2	HVL-011118-24	T	Water	6020	280-401787
<b>Analysis Batch:280-402258</b>					
LCS 280-401786/2-A	Lab Control Sample	T	Water	6010B	280-401786
MB 280-401786/1-A	Method Blank	T	Water	6010B	280-401786
280-105486-2	HVL-011118-24	T	Water	6010B	280-401786
280-105486-2MS	Matrix Spike	T	Water	6010B	280-401786
280-105486-2MSD	Matrix Spike Duplicate	T	Water	6010B	280-401786
280-105486-3	HVL-011118-27	T	Water	6010B	280-401786



# Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

## QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 280-402283</b>					
LCS 280-402283/2-A	Lab Control Sample	T	Water	3020A	
MB 280-402283/1-A	Method Blank	T	Water	3020A	
280-105484-C-2-E MS	Matrix Spike	T	Water	3020A	
280-105484-C-2-F MSD	Matrix Spike Duplicate	T	Water	3020A	
280-105486-3	HVL-011118-27	T	Water	3020A	
<b>Analysis Batch:280-402422</b>					
LCS 280-401786/2-A	Lab Control Sample	T	Water	6010B	280-401786
MB 280-401786/1-A	Method Blank	T	Water	6010B	280-401786
280-105486-2	HVL-011118-24	T	Water	6010B	280-401786
280-105486-2MS	Matrix Spike	T	Water	6010B	280-401786
280-105486-2MSD	Matrix Spike Duplicate	T	Water	6010B	280-401786
280-105486-3	HVL-011118-27	T	Water	6010B	280-401786
<b>Analysis Batch:280-402728</b>					
LCS 280-402283/2-A	Lab Control Sample	T	Water	6020	280-402283
MB 280-402283/1-A	Method Blank	T	Water	6020	280-402283
280-105484-C-2-E MS	Matrix Spike	T	Water	6020	280-402283
280-105484-C-2-F MSD	Matrix Spike Duplicate	T	Water	6020	280-402283
280-105486-3	HVL-011118-27	T	Water	6020	280-402283
<b>Analysis Batch:280-403545</b>					
280-105486-1	HVL-011118-23	T	Water	6010B	280-401786

**Report Basis**

T = Total

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

## QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-401695</b>					
LCS 280-401695/4	Lab Control Sample	T	Water	300.0	
LCSD 280-401695/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-401695/6	Method Blank	T	Water	300.0	
280-105482-B-1 DU	Duplicate	T	Water	300.0	
280-105482-B-1 MS	Matrix Spike	T	Water	300.0	
280-105482-B-1 MSD	Matrix Spike Duplicate	T	Water	300.0	
280-105486-1	HVL-011118-23	T	Water	300.0	
280-105486-2	HVL-011118-24	T	Water	300.0	
280-105486-3	HVL-011118-27	T	Water	300.0	
<b>Analysis Batch:280-401820</b>					
LCS 280-401820/4	Lab Control Sample	T	Water	SM 2320B	
MB 280-401820/5	Method Blank	T	Water	SM 2320B	
280-105315-O-1 DU	Duplicate	T	Water	SM 2320B	
280-105486-1	HVL-011118-23	T	Water	SM 2320B	
280-105486-3	HVL-011118-27	T	Water	SM 2320B	
<b>Analysis Batch:280-401838</b>					
LCS 280-401838/4	Lab Control Sample	T	Water	SM 2320B	
MB 280-401838/5	Method Blank	T	Water	SM 2320B	
280-105338-B-3 DU	Duplicate	T	Water	SM 2320B	
280-105486-2	HVL-011118-24	T	Water	SM 2320B	
<b>Analysis Batch:280-401868</b>					
LCS 280-401868/2	Lab Control Sample	T	Water	SM 2540C	
MB 280-401868/1	Method Blank	T	Water	SM 2540C	
280-105436-F-1 DU	Duplicate	T	Water	SM 2540C	
280-105486-1	HVL-011118-23	T	Water	SM 2540C	
280-105486-2	HVL-011118-24	T	Water	SM 2540C	
280-105486-3	HVL-011118-27	T	Water	SM 2540C	
<b>Analysis Batch:280-401948</b>					
LCS 280-401948/2	Lab Control Sample	T	Water	SM 2540D	
MB 280-401948/1	Method Blank	T	Water	SM 2540D	
280-105436-F-1 DU	Duplicate	T	Water	SM 2540D	
280-105486-1	HVL-011118-23	T	Water	SM 2540D	
280-105486-2	HVL-011118-24	T	Water	SM 2540D	
280-105486-3	HVL-011118-27	T	Water	SM 2540D	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-402034</b>					
LCS 280-402034/34	Lab Control Sample	T	Water	SM 5310B	
MB 280-402034/35	Method Blank	T	Water	SM 5310B	
280-105486-1	HVL-011118-23	T	Water	SM 5310B	
280-105486-2	HVL-011118-24	T	Water	SM 5310B	
280-105486-2MS	Matrix Spike	T	Water	SM 5310B	
280-105486-2MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
280-105486-3	HVL-011118-27	T	Water	SM 5310B	
<b>Analysis Batch:280-402035</b>					
LCS 280-402035/34	Lab Control Sample	T	Water	SM 5310B	
MB 280-402035/35	Method Blank	T	Water	SM 5310B	
280-105486-1	HVL-011118-23	T	Water	SM 5310B	
280-105486-2	HVL-011118-24	T	Water	SM 5310B	
280-105486-2MS	Matrix Spike	T	Water	SM 5310B	
280-105486-2MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
280-105486-3	HVL-011118-27	T	Water	SM 5310B	
<b>Analysis Batch:280-403313</b>					
LCS 280-403313/21	Lab Control Sample	T	Water	353.2	
LCS 280-403313/65	Lab Control Sample	T	Water	353.2	
MB 280-403313/22	Method Blank	T	Water	353.2	
MB 280-403313/66	Method Blank	T	Water	353.2	
280-105486-1	HVL-011118-23	T	Water	353.2	
280-105486-2	HVL-011118-24	T	Water	353.2	
280-105486-3	HVL-011118-27	T	Water	353.2	
280-105776-A-3 MS	Matrix Spike	T	Water	353.2	
280-105776-A-3 MSD	Matrix Spike Duplicate	T	Water	353.2	
<b>Analysis Batch:280-403811</b>					
LCS 280-403811/18	Lab Control Sample	T	Water	350.1	
LCSD 280-403811/19	Lab Control Sample Duplicate	T	Water	350.1	
MB 280-403811/20	Method Blank	T	Water	350.1	
280-105486-1	HVL-011118-23	T	Water	350.1	
280-105486-2	HVL-011118-24	T	Water	350.1	
280-105486-3	HVL-011118-27	T	Water	350.1	
280-105559-A-7 MS	Matrix Spike	T	Water	350.1	
280-105559-A-7 MSD	Matrix Spike Duplicate	T	Water	350.1	
280-105664-P-5 MS	Matrix Spike	T	Water	350.1	
280-105664-P-5 MSD	Matrix Spike Duplicate	T	Water	350.1	

**Report Basis**

T = Total

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

## QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>HPLC/IC</b>					
<b>Analysis Batch:160-347807</b>					
LCS 160-347807/14	Lab Control Sample	T	Water	300.0	
MB 160-347807/13	Method Blank	T	Water	300.0	
280-105482-G-1 DU	Duplicate	T	Water	300.0	
280-105482-G-1 DUDL	Duplicate	T	Water	300.0	
280-105482-G-1 MS	Matrix Spike	T	Water	300.0	
280-105482-G-1 MSDL	Matrix Spike	T	Water	300.0	
280-105486-1DL	HVL-011118-23	T	Water	300.0	
280-105486-2	HVL-011118-24	T	Water	300.0	
280-105486-2DL	HVL-011118-24	T	Water	300.0	
280-105486-3DL	HVL-011118-27	T	Water	300.0	
280-105486-3DL2	HVL-011118-27	T	Water	300.0	

### Report Basis

T = Total

Client: SCS Engineers

Job Number: 280-105486-1

**Surrogate Recovery Report**

**8260B Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	DBFM %Rec	TOL %Rec
280-105486-1	HVL-011118-23	122	99	117	102
280-105486-2	HVL-011118-24	117	106	115	104
280-105486-3	HVL-011118-27	114	98	111	99
280-105486-4	TRIP BLANK	108	107	110	110
MB 280-401740/6		110	115	113	112
LCS 280-401740/4		109	109	112	111
280-105392-A-5 MS		111	107	112	111
280-105392-A-5 MSD		108	102	107	106

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	70-127
BFB = 4-Bromofluorobenzene (Surr)	78-120
DBFM = Dibromofluoromethane (Surr)	77-120
TOL = Toluene-d8 (Surr)	80-125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Method Blank - Batch: 280-401740**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: MB 280-401740/6  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/16/2018 0926  
 Prep Date: 01/16/2018 0926  
 Leach Date: N/A

Analysis Batch: 280-401740  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: VMS\_MS1  
 Lab File ID: MS1\_8063.D  
 Initial Weight/Volume: 20 mL  
 Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

## Method Blank - Batch: 280-401740

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: MB 280-401740/6  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/16/2018 0926  
Prep Date: 01/16/2018 0926  
Leach Date: N/A

Analysis Batch: 280-401740  
Prep Batch: N/A  
Leach Batch: N/A  
Units: ug/L

Instrument ID: VMS\_MS1  
Lab File ID: MS1\_8063.D  
Initial Weight/Volume: 20 mL  
Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
trans-1,4-Dichloro-2-butene	ND		3.0
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50
Surrogate	% Rec		Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	110		70 - 127
4-Bromofluorobenzene (Surr)	115		78 - 120
Dibromofluoromethane (Surr)	113		77 - 120
Toluene-d8 (Surr)	112		80 - 125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Lab Control Sample - Batch: 280-401740**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID:	LCS 280-401740/4	Analysis Batch:	280-401740	Instrument ID:	VMS_MS1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	MS1_8062.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	01/16/2018 0906	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	01/16/2018 0906				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1,2-Tetrachloroethane	5.00	5.33	107	65 - 135	
1,1,1-Trichloroethane	5.00	5.72	114	65 - 135	
1,1,2,2-Tetrachloroethane	5.00	4.96	99	58 - 135	
1,1,2-Trichloroethane	5.00	5.38	108	64 - 135	
1,1-Dichloroethane	5.00	5.59	112	65 - 135	
1,1-Dichloroethene	5.00	5.38	108	65 - 136	
1,2,3-Trichloropropane	5.00	4.84	97	65 - 135	
1,2-Dibromo-3-Chloropropane	5.00	4.05	81	57 - 135	
1,2-Dibromoethane	5.00	4.86	97	65 - 135	
1,2-Dichlorobenzene	5.00	5.41	108	65 - 135	
1,2-Dichloroethane	5.00	5.48	110	65 - 135	
1,2-Dichloropropane	5.00	5.46	109	64 - 135	
1,4-Dichlorobenzene	5.00	5.39	108	65 - 135	
2-Butanone (MEK)	20.0	18.7	94	44 - 177	
2-Hexanone	20.0	16.1	80	57 - 139	
4-Methyl-2-pentanone (MIBK)	20.0	18.2	91	60 - 150	
Acetone	20.0	21.9	110	39 - 156	
Acrylonitrile	50.0	50.9	102	56 - 135	
Benzene	5.00	5.74	115	65 - 135	
Bromochloromethane	5.00	5.41	108	65 - 135	
Bromodichloromethane	5.00	5.45	109	65 - 135	
Bromoform	5.00	4.01	80	62 - 135	
Bromomethane	5.00	6.00	120	45 - 135	
Carbon disulfide	5.00	5.31	106	55 - 143	
Carbon tetrachloride	5.00	5.58	112	65 - 135	
Chlorobenzene	5.00	5.30	106	65 - 135	
Chloroethane	5.00	5.72	114	46 - 136	
Chloroform	5.00	5.65	113	65 - 135	
Chloromethane	5.00	5.51	110	34 - 145	
cis-1,2-Dichloroethene	5.00	5.53	111	65 - 135	
cis-1,3-Dichloropropene	5.00	5.11	102	65 - 135	
Dibromochloromethane	5.00	4.63	93	65 - 135	
Dibromomethane	5.00	5.13	103	65 - 135	
Dichlorodifluoromethane	5.00	5.63	113	43 - 142	
Ethylbenzene	5.00	5.53	111	65 - 135	
Iodomethane	5.00	5.59	112	65 - 142	
Methylene Chloride	5.00	5.60	112	54 - 141	
m-Xylene & p-Xylene	5.00	5.32	106	65 - 135	
o-Xylene	5.00	5.62	112	65 - 135	
Styrene	5.00	5.35	107	65 - 135	
Tetrachloroethene	5.00	5.34	107	65 - 135	



## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Lab Control Sample - Batch: 280-401740**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: LCS 280-401740/4	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_8062.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 0906	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 0906		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Toluene	5.00	5.86	117	65 - 135	
trans-1,2-Dichloroethene	5.00	5.85	117	65 - 135	
trans-1,3-Dichloropropene	5.00	4.93	99	65 - 135	
trans-1,4-Dichloro-2-butene	5.00	4.93	99	53 - 135	
Trichloroethene	5.00	5.51	110	65 - 135	
Trichlorofluoromethane	5.00	5.68	114	53 - 137	
Vinyl acetate	10.0	9.31	93	11 - 187	
Vinyl chloride	5.00	5.69	114	40 - 137	
<b>Surrogate</b>		<b>% Rec</b>		<b>Acceptance Limits</b>	
1,2-Dichloroethane-d4 (Surr)		109		70 - 127	
4-Bromofluorobenzene (Surr)		109		78 - 120	
Dibromofluoromethane (Surr)		112		77 - 120	
Toluene-d8 (Surr)		111		80 - 125	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401740**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-105392-A-5 MS	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_8069.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1132		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1132		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-105392-A-5 MSD	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_8070.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1152		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1152		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1,1,2-Tetrachloroethane	110	105	65 - 135	5	20		
1,1,1-Trichloroethane	121	114	65 - 135	7	20		
1,1,2,2-Tetrachloroethane	101	98	58 - 135	3	20		
1,1,2-Trichloroethane	108	105	64 - 135	2	27		
1,1-Dichloroethane	115	109	65 - 135	5	21		
1,1-Dichloroethene	113	105	65 - 136	7	20		
1,2,3-Trichloropropane	98	97	65 - 135	1	23		
1,2-Dibromo-3-Chloropropane	85	84	57 - 135	1	22		
1,2-Dibromoethane	98	98	65 - 135	0	27		
1,2-Dichlorobenzene	104	102	65 - 135	2	20		
1,2-Dichloroethane	109	108	65 - 135	2	20		
1,2-Dichloropropane	110	108	64 - 135	2	20		
1,4-Dichlorobenzene	105	102	65 - 135	3	23		
2-Butanone (MEK)	95	95	44 - 177	0	32		
2-Hexanone	82	81	57 - 139	1	25		
4-Methyl-2-pentanone (MIBK)	93	92	60 - 150	0	22		
Acetone	108	96	39 - 156	10	23		
Acrylonitrile	103	101	56 - 135	1	30		
Benzene	115	110	65 - 135	5	20		
Bromochloromethane	107	108	65 - 135	1	29		
Bromodichloromethane	113	109	65 - 135	4	20		
Bromoform	81	80	62 - 135	1	27		
Bromomethane	123	117	45 - 135	4	33		
Carbon disulfide	109	102	55 - 143	7	20		
Carbon tetrachloride	121	113	65 - 135	7	21		
Chlorobenzene	107	104	65 - 135	4	20		
Chloroethane	118	112	46 - 136	5	25		
Chloroform	114	110	65 - 135	3	20		
Chloromethane	105	99	34 - 145	6	24		
cis-1,2-Dichloroethene	111	108	65 - 135	3	20		
cis-1,3-Dichloropropene	98	97	65 - 135	1	26		
Dibromochloromethane	91	91	65 - 135	1	20		

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401740**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-105392-A-5 MS	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_8069.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1132		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1132		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-105392-A-5 MSD	Analysis Batch: 280-401740	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_8070.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 01/16/2018 1152		Final Weight/Volume: 20 mL
Prep Date: 01/16/2018 1152		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Dibromomethane	103	102	65 - 135	1	26		
Dichlorodifluoromethane	123	115	43 - 142	6	30		
Ethylbenzene	111	106	65 - 135	5	20		
Iodomethane	108	106	65 - 142	2	25		
Methylene Chloride	221	150	54 - 141	9	26	4	4
m-Xylene & p-Xylene	108	103	65 - 135	5	20		
o-Xylene	112	109	65 - 135	2	20		
Styrene	104	101	65 - 135	3	26		
Tetrachloroethene	112	104	65 - 135	7	20		
Toluene	119	113	65 - 135	5	20		
trans-1,2-Dichloroethene	117	112	65 - 135	4	24		
trans-1,3-Dichloropropene	100	98	65 - 135	2	26		
trans-1,4-Dichloro-2-butene	100	96	53 - 135	4	25		
Trichloroethene	114	109	65 - 135	5	20		
Trichlorofluoromethane	124	115	53 - 137	7	27		
Vinyl acetate	91	90	11 - 187	1	24		
Vinyl chloride	111	107	40 - 137	3	24		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	111	108	70 - 127
4-Bromofluorobenzene (Surr)	107	102	78 - 120
Dibromofluoromethane (Surr)	112	107	77 - 120
Toluene-d8 (Surr)	111	106	80 - 125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Method Blank - Batch: 160-347807**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID:	MB 160-347807/13	Analysis Batch:	160-347807	Instrument ID:	CIC2500
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	012418- 13.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	01/24/2018 1927	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL
Leach Date:	N/A				

Analyte	Result	Qual	RL
Chloride	ND		0.20
Sulfate	ND		0.20

**Lab Control Sample - Batch: 160-347807**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID:	LCS 160-347807/14	Analysis Batch:	160-347807	Instrument ID:	CIC2500
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	012418- 14.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	01/24/2018 1943	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.00	1.94	97	90 - 110	
Sulfate	8.00	7.79	97	90 - 110	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Matrix Spike - Batch: 160-347807**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-105482-G-1 MS  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/25/2018 0325  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 160-347807  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: CIC2500  
Lab File ID: 012418- 43.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume:  
Injection Volume: 50 uL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	10	4.00	14.2	99	90 - 110	

**Matrix Spike - Batch: 160-347807**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-105482-G-1 MSDL  
Client Matrix: Water  
Dilution: 10  
Analysis Date: 01/25/2018 0341  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 160-347807  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L  
Run Type: DL

Instrument ID: CIC2500  
Lab File ID: 012418- 44.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume:  
Injection Volume: 50 uL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	13	20.0	32.8	98	90 - 110	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

## Duplicate - Batch: 160-347807

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID:	280-105482-G-1 DU	Analysis Batch:	160-347807	Instrument ID:	CIC2500
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	012418- 41.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	01/25/2018 0253	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Sulfate	10	10.3	0.4	20	

## Duplicate - Batch: 160-347807

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID:	280-105482-G-1 DUDL	Analysis Batch:	160-347807	Instrument ID:	CIC2500
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	012418- 42.d
Dilution:	10	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	01/25/2018 0309	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A	Run Type:	DL	Injection Volume:	50 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	13	13.3	0.4	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Method Blank - Batch: 280-401786**

**Method: 6010B  
Preparation: 3010A**

Lab Sample ID: MB 280-401786/1-A	Analysis Batch: 280-402105	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-401786	Lab File ID: 51A011818B.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/19/2018 0048	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		
Leach Date: N/A		

Analyte	Result	Qual	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Calcium, Total	ND		0.20
Cobalt, Total	ND		0.010
Magnesium, Total	ND		0.10
Silver, Total	ND		0.010
Vanadium, Total	ND		0.010

**Method Blank - Batch: 280-401786**

**Method: 6010B  
Preparation: 3010A**

Lab Sample ID: MB 280-401786/1-A	Analysis Batch: 280-402258	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-401786	Lab File ID: 51A011918.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/19/2018 1426	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		
Leach Date: N/A		

Analyte	Result	Qual	RL
Potassium, Total	ND		2.0

**Method Blank - Batch: 280-401786**

**Method: 6010B  
Preparation: 3010A**

Lab Sample ID: MB 280-401786/1-A	Analysis Batch: 280-402422	Instrument ID: MT_025
Client Matrix: Water	Prep Batch: 280-401786	Lab File ID: 25B012218a.asc
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/23/2018 0058	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/16/2018 1504		
Leach Date: N/A		

Analyte	Result	Qual	RL
Sodium, Total	ND	^	1.0

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

## Lab Control Sample - Batch: 280-401786

**Method: 6010B**  
**Preparation: 3010A**

Lab Sample ID:	LCS 280-401786/2-A	Analysis Batch:	280-402105	Instrument ID:	MT_051
Client Matrix:	Water	Prep Batch:	280-401786	Lab File ID:	51A011818B.csv
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	01/19/2018 0051	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	01/16/2018 1504				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Beryllium, Total	0.0500	0.0525	105	89 - 113	
Cadmium, Total	0.100	0.105	105	88 - 111	
Calcium, Total	50.0	55.1	110	90 - 111	
Cobalt, Total	0.500	0.502	100	89 - 111	
Magnesium, Total	50.0	51.3	103	90 - 113	
Silver, Total	0.0500	0.0532	106	86 - 115	
Vanadium, Total	0.500	0.520	104	90 - 111	

## Lab Control Sample - Batch: 280-401786

**Method: 6010B**  
**Preparation: 3010A**

Lab Sample ID:	LCS 280-401786/2-A	Analysis Batch:	280-402258	Instrument ID:	MT_051
Client Matrix:	Water	Prep Batch:	280-401786	Lab File ID:	51A011918.csv
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	01/19/2018 1429	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	01/16/2018 1504				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Potassium, Total	50.0	51.0	102	89 - 114	

## Lab Control Sample - Batch: 280-401786

**Method: 6010B**  
**Preparation: 3010A**

Lab Sample ID:	LCS 280-401786/2-A	Analysis Batch:	280-402422	Instrument ID:	MT_025
Client Matrix:	Water	Prep Batch:	280-401786	Lab File ID:	25B012218a.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	01/23/2018 0101	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	01/16/2018 1504				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sodium, Total	50.0	52.4	105	90 - 115	



## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401786**

**Method: 6010B  
Preparation: 3010A**

MS Lab Sample ID: 280-105486-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/19/2018 0109  
Prep Date: 01/16/2018 1504  
Leach Date: N/A

Analysis Batch: 280-402105  
Prep Batch: 280-401786  
Leach Batch: N/A

Instrument ID: MT\_051  
Lab File ID: 51A011818B.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-105486-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/19/2018 0112  
Prep Date: 01/16/2018 1504  
Leach Date: N/A

Analysis Batch: 280-402105  
Prep Batch: 280-401786  
Leach Batch: N/A

Instrument ID: MT\_051  
Lab File ID: 51A011818B.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Beryllium, Total	110	104	79 - 121	5	20		
Cadmium, Total	108	102	82 - 119	5	20		
Calcium, Total	119	103	48 - 153	5	20		
Cobalt, Total	103	98	82 - 119	5	20		
Magnesium, Total	108	99	62 - 146	5	20		
Silver, Total	111	105	75 - 141	6	20		
Vanadium, Total	109	103	85 - 120	5	20		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401786**

**Method: 6010B  
Preparation: 3010A**

MS Lab Sample ID: 280-105486-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/19/2018 1441  
Prep Date: 01/16/2018 1504  
Leach Date: N/A

Analysis Batch: 280-402258  
Prep Batch: 280-401786  
Leach Batch: N/A

Instrument ID: MT\_051  
Lab File ID: 51A011918.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-105486-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/19/2018 1444  
Prep Date: 01/16/2018 1504  
Leach Date: N/A

Analysis Batch: 280-402258  
Prep Batch: 280-401786  
Leach Batch: N/A

Instrument ID: MT\_051  
Lab File ID: 51A011918.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Potassium, Total	101	102	76 - 132	1	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401786**

**Method: 6010B  
Preparation: 3010A**

MS Lab Sample ID: 280-105486-2  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/23/2018 0111  
 Prep Date: 01/16/2018 1504  
 Leach Date: N/A

Analysis Batch: 280-402422  
 Prep Batch: 280-401786  
 Leach Batch: N/A

Instrument ID: MT\_025  
 Lab File ID: 25B012218a.asc  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-105486-2  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/23/2018 0113  
 Prep Date: 01/16/2018 1504  
 Leach Date: N/A

Analysis Batch: 280-402422  
 Prep Batch: 280-401786  
 Leach Batch: N/A

Instrument ID: MT\_025  
 Lab File ID: 25B012218a.asc  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Sodium, Total	99	102	70 - 203	2	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Method Blank - Batch: 580-266422**

**Method: 6020  
Preparation: 3010A**

Lab Sample ID: MB 580-266422/10-A	Analysis Batch: 580-266530	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-266422	Lab File ID: 072SMPL.D
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 02/01/2018 1137	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/31/2018 1620		
Leach Date: N/A		

Analyte	Result	Qual	RL
Iron, Total	ND		0.18

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 580-266422**

**Method: 6020  
Preparation: 3010A**

LCS Lab Sample ID: LCS 580-266422/11-A	Analysis Batch: 580-266530	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-266422	Lab File ID: 073SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 02/01/2018 1141	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/31/2018 1620		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 580-266422/12-A	Analysis Batch: 580-266530	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-266422	Lab File ID: 074SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 02/01/2018 1144	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/31/2018 1620		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Iron, Total	100	101	80 - 120	1	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-266422**

**Method: 6020  
Preparation: 3010A**

MS Lab Sample ID: 580-74690-G-1-C MS	Analysis Batch: 580-266530	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-266422	Lab File ID: 078SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 02/01/2018 1200		Final Weight/Volume: 50 mL
Prep Date: 01/31/2018 1620		
Leach Date: N/A		

MSD Lab Sample ID: 580-74690-G-1-D MSD	Analysis Batch: 580-266530	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-266422	Lab File ID: 079SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 02/01/2018 1204		Final Weight/Volume: 50 mL
Prep Date: 01/31/2018 1620		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Iron, Total	102	106	80 - 120	3	20		

**Duplicate - Batch: 580-266422**

**Method: 6020  
Preparation: 3010A**

Lab Sample ID: 580-74690-G-1-B DU	Analysis Batch: 580-266530	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-266422	Lab File ID: 076SMPL.D
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 02/01/2018 1152	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/31/2018 1620		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Iron, Total	1.5	1.50	2	20	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

## Method Blank - Batch: 280-401787

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID:	MB 280-401787/1-A	Analysis Batch:	280-401996	Instrument ID:	MT_078
Client Matrix:	Water	Prep Batch:	280-401787	Lab File ID:	213_BLK.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	01/18/2018 0207	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	01/17/2018 1437				
Leach Date:	N/A				

Analyte	Result	Qual	RL
Antimony, Total	ND		0.0020
Arsenic, Total	ND		0.0050
Barium, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010
Lead, Total	ND		0.0020
Manganese, Total	ND		0.0050
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050

## Method Blank - Batch: 280-401787

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID:	MB 280-401787/1-A	Analysis Batch:	280-402223	Instrument ID:	MT_077
Client Matrix:	Water	Prep Batch:	280-401787	Lab File ID:	119_BLK.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	01/19/2018 2106	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	01/17/2018 1437				
Leach Date:	N/A				

Analyte	Result	Qual	RL
Zinc, Total	ND		0.010

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Lab Control Sample - Batch: 280-401787**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: LCS 280-401787/2-A	Analysis Batch: 280-401996	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-401787	Lab File ID: 214_LCS.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 0211	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1437		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony, Total	0.0400	0.0371	93	85 - 115	
Arsenic, Total	0.0400	0.0358	90	85 - 117	
Barium, Total	0.0400	0.0388	97	85 - 118	
Chromium, Total	0.0400	0.0381	95	84 - 121	
Copper, Total	0.0400	0.0387	97	85 - 119	
Lead, Total	0.0400	0.0389	97	85 - 118	
Manganese, Total	0.0400	0.0393	98	85 - 117	
Nickel, Total	0.0400	0.0392	98	85 - 119	
Selenium, Total	0.0400	0.0377	94	77 - 122	
Thallium, Total	0.0400	0.0386	96	85 - 118	

**Lab Control Sample - Batch: 280-401787**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: LCS 280-401787/2-A	Analysis Batch: 280-402223	Instrument ID: MT_077
Client Matrix: Water	Prep Batch: 280-401787	Lab File ID: 120_LCS.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/19/2018 2109	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1437		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Zinc, Total	0.0400	0.0411	103	83 - 122	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401787**

**Method: 6020  
Preparation: 3020A**

MS Lab Sample ID: 280-105484-C-2-B MS	Analysis Batch: 280-401996	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-401787	Lab File ID: 219SMPL.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 0228		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1437		
Leach Date: N/A		

MSD Lab Sample ID: 280-105484-C-2-C MSD	Analysis Batch: 280-401996	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-401787	Lab File ID: 220SMPL.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/18/2018 0232		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1437		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Antimony, Total	94	93	85 - 115	2	20		
Arsenic, Total	91	92	85 - 117	2	20		
Barium, Total	95	97	85 - 118	2	20		
Chromium, Total	96	95	84 - 121	1	20		
Copper, Total	93	96	85 - 119	2	20		
Lead, Total	92	94	85 - 118	2	20		
Manganese, Total	97	98	85 - 117	1	20		
Nickel, Total	93	95	85 - 119	2	20		
Selenium, Total	95	95	77 - 122	0	20		
Thallium, Total	93	96	85 - 118	3	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401787**

**Method: 6020  
Preparation: 3020A**

MS Lab Sample ID: 280-105484-C-2-B MS	Analysis Batch: 280-402223	Instrument ID: MT_077
Client Matrix: Water	Prep Batch: 280-401787	Lab File ID: 125SMPL.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/19/2018 2129		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1437		
Leach Date: N/A		

MSD Lab Sample ID: 280-105484-C-2-C MSD	Analysis Batch: 280-402223	Instrument ID: MT_077
Client Matrix: Water	Prep Batch: 280-401787	Lab File ID: 126SMPL.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/19/2018 2132		Final Weight/Volume: 50 mL
Prep Date: 01/17/2018 1437		
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Zinc, Total	101	99	83 - 122	2	20		



## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Method Blank - Batch: 280-402283**

Lab Sample ID: MB 280-402283/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/24/2018 1720  
 Prep Date: 01/22/2018 1438  
 Leach Date: N/A

Analysis Batch: 280-402728  
 Prep Batch: 280-402283  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3020A**

Instrument ID: MT\_077  
 Lab File ID: 092\_BLK.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Zinc, Total	ND		0.010

**Lab Control Sample - Batch: 280-402283**

Lab Sample ID: LCS 280-402283/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/24/2018 1723  
 Prep Date: 01/22/2018 1438  
 Leach Date: N/A

Analysis Batch: 280-402728  
 Prep Batch: 280-402283  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3020A**

Instrument ID: MT\_077  
 Lab File ID: 093\_LCS.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Zinc, Total	0.0400	0.0379	95	83 - 122	

**Matrix Spike/  
 Matrix Spike Duplicate Recovery Report - Batch: 280-402283**

MS Lab Sample ID: 280-105484-C-2-E MS  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/24/2018 1743  
 Prep Date: 01/22/2018 1438  
 Leach Date: N/A

Analysis Batch: 280-402728  
 Prep Batch: 280-402283  
 Leach Batch: N/A

**Method: 6020  
 Preparation: 3020A**

Instrument ID: MT\_077  
 Lab File ID: 098SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-105484-C-2-F MSD  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 01/24/2018 1747  
 Prep Date: 01/22/2018 1438  
 Leach Date: N/A

Analysis Batch: 280-402728  
 Prep Batch: 280-402283  
 Leach Batch: N/A

Instrument ID: MT\_077  
 Lab File ID: 099SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Zinc, Total	94	91	83 - 122	3	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Method Blank - Batch: 280-401695**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-401695/6	Analysis Batch: 280-401695	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 06.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/15/2018 1730	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Nitrate as N	ND		0.50

**Method Reporting Limit Check - Batch: 280-401695**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-401695/3	Analysis Batch: 280-401695	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 03.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/15/2018 1636	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	0.200	ND	97	50 - 150	

**Lab Control Sample/**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-401695**

**Method: 300.0**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-401695/4	Analysis Batch: 280-401695	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 04.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/15/2018 1654	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-401695/5	Analysis Batch: 280-401695	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 05.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/15/2018 1712	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Nitrate as N	100	100	90 - 110	0	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-401695**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-105482-B-1 MS  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/15/2018 2129  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401695  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom7  
Lab File ID: 09.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

MSD Lab Sample ID: 280-105482-B-1 MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/15/2018 2147  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401695  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom7  
Lab File ID: 10.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate as N	106	107	80 - 120	1	20		

**Duplicate - Batch: 280-401695**

**Method: 300.0  
Preparation: N/A**

Lab Sample ID: 280-105482-B-1 DU  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 01/15/2018 2111  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-401695  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: WC\_IonChrom7  
Lab File ID: 08.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate as N	1.0	1.00	0.8	15	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Method Blank - Batch: 280-403811**

**Method: 350.1  
Preparation: N/A**

Lab Sample ID: MB 280-403811/20	Analysis Batch: 280-403811	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\020318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 1.0 mL
Analysis Date: 02/03/2018 0942	Units: mg/L	Final Weight/Volume: 1.0 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Ammonia	ND		0.10

**Lab Control Sample/**

**Method: 350.1  
Preparation: N/A**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-403811**

LCS Lab Sample ID: LCS 280-403811/18	Analysis Batch: 280-403811	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\020318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 02/03/2018 0938	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-403811/19	Analysis Batch: 280-403811	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\020318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 02/03/2018 0940	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ammonia	98	98	90 - 110	1	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-403811**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-105664-P-5 MS	Analysis Batch: 280-403811	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\020318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 02/03/2018 0958		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-105664-P-5 MSD	Analysis Batch: 280-403811	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\020318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 02/03/2018 1000		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia	99	98	90 - 110	1	10		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-403811**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-105559-A-7 MS	Analysis Batch: 280-403811	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\020318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 02/03/2018 1034		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-105559-A-7 MSD	Analysis Batch: 280-403811	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\020318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 02/03/2018 1036		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia	97	102	90 - 110	4	10		

# Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

## Method Blank - Batch: 280-403313

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID:	MB 280-403313/22	Analysis Batch:	280-403313	Instrument ID:	WC_Alp 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\013018B.R:
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	01/30/2018 1853	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	RL
Nitrate Nitrite as N	ND		0.10

## Method Blank - Batch: 280-403313

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID:	MB 280-403313/66	Analysis Batch:	280-403313	Instrument ID:	WC_Alp 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\013018B.R:
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	01/30/2018 2021	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	RL
Nitrate Nitrite as N	ND		0.10

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Lab Control Sample - Batch: 280-403313**

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID: LCS 280-403313/21	Analysis Batch: 280-403313	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\013018B.R:
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/30/2018 1851	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N	5.00	5.04	101	90 - 110	

**Lab Control Sample - Batch: 280-403313**

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID: LCS 280-403313/65	Analysis Batch: 280-403313	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\013018B.R:
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/30/2018 2019	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N	5.00	5.02	100	90 - 110	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-403313**

**Method: 353.2**  
**Preparation: N/A**

MS Lab Sample ID: 280-105776-A-3 MS	Analysis Batch: 280-403313	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\013018B.R:
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/30/2018 1933		Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-105776-A-3 MSD	Analysis Batch: 280-403313	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\013018B.R:
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 01/30/2018 1935		Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate Nitrite as N	105	105	90 - 110	0	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Method Blank - Batch: 280-401820**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: MB 280-401820/5	Analysis Batch: 280-401820	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk high 011618.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/16/2018 1342	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Alkalinity	5.47		5.0
Bicarbonate Alkalinity as CaCO3	5.47		5.0

**Lab Control Sample - Batch: 280-401820**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: LCS 280-401820/4	Analysis Batch: 280-401820	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk high 011618.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/16/2018 1339	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	1000	947	95	90 - 110	B

**Duplicate - Batch: 280-401820**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: 280-105315-O-1 DU	Analysis Batch: 280-401820	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk high 011618.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/16/2018 1352	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity	1600	1650	4	10	



## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Method Blank - Batch: 280-401838**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: MB 280-401838/5	Analysis Batch: 280-401838	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 011618.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/16/2018 1416	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Alkalinity	ND		5.0
Bicarbonate Alkalinity as CaCO3	ND		5.0

**Lab Control Sample - Batch: 280-401838**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: LCS 280-401838/4	Analysis Batch: 280-401838	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 011618.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/16/2018 1408	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	200	185	92	90 - 110	

**Duplicate - Batch: 280-401838**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: 280-105338-B-3 DU	Analysis Batch: 280-401838	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 011618.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/16/2018 1429	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity	120	116	0.1	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Method Blank - Batch: 280-401868**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: MB 280-401868/1	Analysis Batch: 280-401868	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/17/2018 0824	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Dissolved Solids	ND		10

**Lab Control Sample - Batch: 280-401868**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: LCS 280-401868/2	Analysis Batch: 280-401868	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 01/17/2018 0824	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Dissolved Solids	500	490	98	86 - 110	

**Duplicate - Batch: 280-401868**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: 280-105436-F-1 DU	Analysis Batch: 280-401868	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 01/17/2018 0824	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Dissolved Solids	1100	1120	3	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Method Blank - Batch: 280-401948**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: MB 280-401948/1	Analysis Batch: 280-401948	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 01/17/2018 1641	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Suspended Solids	ND		4.0

**Lab Control Sample - Batch: 280-401948**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: LCS 280-401948/2	Analysis Batch: 280-401948	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 01/17/2018 1641	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Suspended Solids	100	97.2	97	86 - 114	

**Duplicate - Batch: 280-401948**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: 280-105436-F-1 DU	Analysis Batch: 280-401948	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 01/17/2018 1641	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Suspended Solids	5.6	7.20	25	10	F5

## Quality Control Results

Client: SCS Engineers

Job Number: 280-105486-1

**Method Blank - Batch: 280-402034**

**Method: SM 5310B  
Preparation: N/A**

Lab Sample ID: MB 280-402034/35	Analysis Batch: 280-402034	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/17/2018 2326	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Organic Carbon - Quad	ND		1.0

**Lab Control Sample - Batch: 280-402034**

**Method: SM 5310B  
Preparation: N/A**

Lab Sample ID: LCS 280-402034/34	Analysis Batch: 280-402034	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/17/2018 2308	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Quad	25.0	25.7	103	88 - 112	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-402034**

**Method: SM 5310B  
Preparation: N/A**

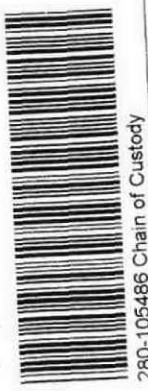
MS Lab Sample ID: 280-105486-2	Analysis Batch: 280-402034	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/18/2018 0503		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-105486-2	Analysis Batch: 280-402034	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 011718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 01/18/2018 0520		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Total Organic Carbon - Quad	101	106	88 - 112	4	15		

# Chain of Custody Record

<b>Client Information</b> Client Contact: Sam Graber Company: SCS Engineers Address: 2405 140th Avenue NE, Suite 107 City: Bellevue State: WA, Zip: 98005-1877 Phone: 612 940 2980 Email: Graber@scsengineers.com		Sampler: Sam G. Phone: 612 940 2980 Lab PIA: Sara, Betsy A E-Mail: betsy.sara@testamerica.com		Carrier Tracking Note: 4150 9261 6044 Job #: 04217003.03		COC No: 280-21695-6848-1 Page: Page 1 of 1	
Due Date Requested: Standard TAT Requested (days):		Analysis Requested		Preservation Codes: M - Hexane N - None O - AsNaO2 P - H2O2/S Q - Na2S2O3 R - Na2S2O5 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-3 X - EDTA Y - EDTA Z - other (specify) Other:		Special Instructions/Note: Short Haul - No Fuel 9 * Highly Reactive.	
PO # Purchase Order not required WO #		Perform MS/MSD (Yes or No)		Total Number of Containers		Total Metals (6/10/06/20) TOC/Ammonia NO3/Cl/PO4/Si Total Iron (TA Seattle) GUS04 (TA St. Louis)	
Project # 78003280-Leachate and Leak Detection Sumps Site #		Field Filtered Sample (Yes or No)		TOC/Ammonia NO3/Cl/PO4/Si Total Iron (TA Seattle) GUS04 (TA St. Louis)		Total Metals (6/10/06/20) TOC/Ammonia NO3/Cl/PO4/Si Total Iron (TA Seattle) GUS04 (TA St. Louis)	
Sample Identification WL-011118-23* WL-011118-24* WL-011118-27* Trip Blank		Sample Date 1/11/13 1130 1200 -		Sample Type (C=comp, G=grab) G ↓ -		Matrix (W=water, S=solid, O=other) W ↓ -	
Date/Time 1/11/13 1530		Date/Time 1/15/13 0915		Date/Time 1-15-18		Date/Time 1-15-18	
Signature [Signature]		Signature [Signature]		Signature [Signature]		Signature [Signature]	
Date/Time 1/11/13 1530		Date/Time 1/15/18 0915		Date/Time 1-15-18		Date/Time 1-15-18	
Company SCS Engineers		Company SCS Engineers		Company SCS Engineers		Company SCS Engineers	



# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b> Client Contact: Sara, Betsy A Shipping/Receiving: betsy.sara@testamericainc.com Company: TestAmerica Laboratories, Inc.			Lab P/M: Sara, Betsy A E-Mail: betsy.sara@testamericainc.com Accreditations Required (See note): State Program - Washington			Carrier Tracking No(s): 280-425063.1 Page: Page 1 of 1 Job #: 280-105486-1			COC No: 280-425063.1 Preservation Codes: A - HCL, M - Hexane, N - None, O - AlNO <sub>2</sub> , P - Na <sub>2</sub> O <sub>4</sub> S, Q - Na <sub>2</sub> SO <sub>3</sub> , R - Na <sub>2</sub> SO <sub>3</sub> , S - H <sub>2</sub> SO <sub>4</sub> , T - TSP Dodecylhydrate, U - Acetone, V - MCAA, W - pH 4-5, L - EDTA, Z - other (specify)		
Due Date Requested: 2/1/2018 TAT Requested (days):			Analysis Requested			Total Number of Containers			Special Instructions/Note:		
Address: 13715 Ridder Trail North, City: Earth City State, Zip: MO, 63045 Phone: 314-298-8566(Tel) 314-298-8757(Fax) Email:			Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 300 ORGM_28D (MOD) Sulfate/Chloride (TA SL			Matrix (Water, Sewage, Urine, Blood, Urine, Saliva, Other)			Other:		
Project Name: Hidden Valley LF Site:			Sample Date: 1/11/18 Sample Time: 11:10 Pacific Sample Type (C=Comp, G=Grab): Water Preservation Code:			Matrix (Water, Sewage, Urine, Blood, Urine, Saliva, Other): Water			Total Number of Containers: 1		
Project #: 28003580 Site:			Sample Date: 1/11/18 Sample Time: 11:30 Pacific Sample Type (C=Comp, G=Grab): Water Preservation Code:			Matrix (Water, Sewage, Urine, Blood, Urine, Saliva, Other): Water			Total Number of Containers: 1		
Project #: 28003580 Site:			Sample Date: 1/11/18 Sample Time: 12:00 Pacific Sample Type (C=Comp, G=Grab): Water Preservation Code:			Matrix (Water, Sewage, Urine, Blood, Urine, Saliva, Other): Water			Total Number of Containers: 1		

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**

Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_ Primary Deliverable Rank: 2

Special Instructions/OC Requirements: \_\_\_\_\_

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Empty Kit Relinquished by: *[Signature]* Date/Time: 1/16/18 1550 Date: 1/16/18  
 Relinquished by: *[Signature]* Date/Time: 1/17/18 0830 Date: 1/17/18  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Date: \_\_\_\_\_  
 Custody Seals Intact: \_\_\_\_\_ Custody Seal No.: \_\_\_\_\_  
 Yes  No  
 Cooler Temperature(s) °C and Other Remarks: \_\_\_\_\_

**Chain of Custody Record**



<b>Client Information (Sub Contract Lab)</b>				Sampler:	Lab PM: Sara, Betsy A	Carrier Tracking No(s):	COC No: 280-425062.1												
Client Contact: Shipping/Receiving				Phone:	E-Mail: betsy.sara@testamericainc.com	State of Origin: Washington	Page: Page 1 of 1												
Company: TestAmerica Laboratories, Inc.				Accreditations Required (See note): State Program - Washington			Job #: 280-105486-1												
Address: 5755 8th Street East,		Due Date Requested: 1/31/2018		<b>Analysis Requested</b>				<b>Preservation Codes:</b> A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify) Other:											
City: Tacoma		TAT Requested (days):																	
State, Zip: WA, 98424		PO #:		Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020/3010A Total Iron (TA Seattle)	Total Number of containers												
Phone: 253-922-2310(Tel) 253-922-5047(Fax)		WO #:																	
Email:		Project #: 28003580		Special Instructions/Note:															
Project Name: Hidden Valley LF		SSOW#:																	
Site:		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		Preservation Code		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		6020/3010A Total Iron (TA Seattle)		Total Number of containers	
<b>Sample Identification - Client ID (Lab ID)</b>																			
HVL-011118-23 (280-105486-1)		1/11/18		11:10 Pacific		Water						X						1	
HVL-011118-24 (280-105486-2)		1/11/18		11:30 Pacific		Water						X						1	
HVL-011118-27 (280-105486-3)		1/11/18		12:00 Pacific		Water						X						1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

<b>Possible Hazard Identification</b>				<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>			
Unconfirmed				<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
Deliverable Requested: I, II, III, IV, Other (specify)		Primary Deliverable Rank: 2		Special Instructions/QC Requirements:			

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by: <i>[Signature]</i>		Date/Time: 1/16/18 1620		Company:		Received by: <i>[Signature]</i>	
Relinquished by:		Date/Time:		Company:		Date/Time: 1/17/18 1336	
Relinquished by:		Date/Time:		Company:		Date/Time:	

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 125 10.4/10.4 °C
-------------------------------------	-------------------	-----------------------------------------------------------------

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-105486-1

**Login Number: 105486**  
**List Number: 1**  
**Creator: Pottruff, Reed W**

**List Source: TestAmerica Denver**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	False	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	False	No: Headspace larger than 1/4" in 1 or more vial; at least one vial w/o headspace.
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	



# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-105486-1

**Login Number: 105486**  
**List Number: 3**  
**Creator: Hobbs, Kenneth F**

**List Source: TestAmerica Seattle**  
**List Creation: 01/17/18 04:09 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	IR5=10.4/10.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-105486-1

**Login Number: 105486**  
**List Number: 2**  
**Creator: Taylor, Kristene N**

**List Source: TestAmerica St. Louis**  
**List Creation: 01/17/18 12:20 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	22.0,5.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Job Number: 280-107750-1  
Job Description: Hidden Valley LF

**Side-slope LDS  
Trip Blank**

For:  
SCS Engineers  
2405 140th Avenue NE  
Suite 107  
Bellevue, WA 98005-1877  
Attention: Mr. Kevin Lakey



Approved for release.  
Betsy A Sara  
Project Manager II  
4/16/2018 11:48 AM

---

Betsy A Sara, Project Manager II  
4955 Yarrow Street, Arvada, CO, 80002  
(303)736-0189  
betsy.sara@testamericainc.com  
04/16/2018

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

These data and reporting limits are being used specifically to meet the needs of this project. All RLs are supported by TestAmerica's Method Detection Limits (MDLs). Reporting limits in this report are at or above the MDL.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002  
Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)

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## CASE NARRATIVE

Client: SCS Engineers

Project: Hidden Valley LF

Report Number: 280-107750-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### Sample Receiving

The samples were received on 03/23/2018; the samples arrived on ice. The temperature of the cooler at receipt was 3.3 C.

Three of three hydrochloric preserved VOA vials for sample HVL-032218-01 and two of three hydrochloric preserved VOA vials for the TRIP BLANK contained bubbles greater than 6 mm. The laboratory proceeded with the analysis. The client was notified on 3/26/2018.

### Holding Times

All holding times were within established control limits.

### Method Blanks

All Method Blanks were within established control limits.

### Laboratory Control Samples (LCS)

The Method 350.1 LCS/LCSD exhibited RPD data outside the QC control limits for Ammonia. Both the LCS and LCSD were recovered within QC control limits, demonstrating that the laboratory performed the method within acceptable guidelines; therefore, corrective action is deemed unnecessary.

All other Laboratory Control Samples were within established control limits.

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

The Matrix Spikes and Matrix Spike Duplicates performed on samples from other clients exhibited recoveries outside control limits for Styrene Method 8260B, Sulfate Method 300.0, Total Barium, Total Nickel Method 6020 and Ammonia Method 350.1. In addition, the RPD result was outside the RPD limit for Styrene. Because the corresponding Laboratory Control Samples and the Method Blank samples were within control limits, these anomalies may be due to matrix interference and no corrective action was taken.

All other MS and MSD samples were within established control limits.

### Organics

The prepreserved hydrochloric acid preserved vials for Method 8260B analysis for the sample HVL-032218-01 exhibited pH values greater than 2. This is non-compliant with Method 8260B which requires samples to be preserved with hydrochloric acid to a pH of less than 2.

### General Comments

The analysis for Chloride and Sulfate Method 300.0 was performed at the TestAmerica's St. Louis Laboratory.  
13715 Rider Trail North  
Earth City, MO 63045  
Phone: 314-298-8566

The analysis for Iron Method 6020 was performed at the TestAmerica's Seattle Laboratory.  
5755 8th Street East  
Tacoma, WA 98424

Phone: 253-922-2310

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-107750-1

### Side-slope LDS

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-107750-1</b>	<b>HVL-032218-01</b>					
2-Hexanone		27		5.0	ug/L	8260B
Acetone		25		10	ug/L	8260B
Benzene		0.98		0.50	ug/L	8260B
cis-1,2-Dichloroethene		8.7		0.50	ug/L	8260B
Toluene		1.1		0.50	ug/L	8260B
Calcium, Total		12		0.20	mg/L	6010B
Cobalt, Total		0.033		0.010	mg/L	6010B
Magnesium, Total		16		0.10	mg/L	6010B
Potassium, Total		440		2.0	mg/L	6010B
Sodium, Total		5700		1.0	mg/L	6010B
Vanadium, Total		0.096		0.010	mg/L	6010B
Iron, Total		2.2		0.36	mg/L	6020
Antimony, Total		0.086		0.0020	mg/L	6020
Arsenic, Total		0.11		0.0050	mg/L	6020
Barium, Total		0.28		0.0050	mg/L	6020
Chromium, Total		0.028		0.0050	mg/L	6020
Copper, Total		0.081		0.010	mg/L	6020
Lead, Total		0.0053		0.0020	mg/L	6020
Manganese, Total		0.11		0.0050	mg/L	6020
Nickel, Total		0.24		0.020	mg/L	6020
Selenium, Total		0.012		0.0050	mg/L	6020
Zinc, Total		0.035		0.010	mg/L	6020
Nitrate as N		6.3		2.1	mg/L	300.0
Ammonia		460	*	4.4	mg/L	350.1
Alkalinity		6700		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		6700		5.0	mg/L	SM 2320B
Total Dissolved Solids		9800		47	mg/L	SM 2540C
Total Suspended Solids		6.8		4.0	mg/L	SM 2540D
Total Organic Carbon - Quad		780		3.1	mg/L	SM 5310B
Chloride		5700		120	mg/L	300.0
Sulfate		140		1.0	mg/L	300.0

## METHOD SUMMARY

Client: SCS Engineers

Job Number: 280-107750-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Volatile Organic Compounds (GC/MS)	TAL DEN	SW846 8260B	
Purge and Trap	TAL DEN		SW846 5030B
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Total Metals	TAL DEN		SW846 3010A
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Metals	TAL DEN		SW846 3020A
Anions, Ion Chromatography	TAL DEN	MCAWW 300.0	
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
Alkalinity	TAL DEN	SM SM 2320B	
Solids, Total Dissolved (TDS)	TAL DEN	SM SM 2540C	
Solids, Total Suspended (TSS)	TAL DEN	SM SM 2540D	
Organic Carbon, Total (TOC)	TAL DEN	SM SM 5310B	
Metals (ICP/MS)	TAL SEA	SW846 6020	
Preparation, Total Metals	TAL SEA		SW846 3010A
Anions, Ion Chromatography	TAL SL	MCAWW 300.0	

### Lab References:

TAL DEN = TestAmerica Denver

TAL SEA = TestAmerica Seattle

TAL SL = TestAmerica St. Louis

### Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.



## METHOD / ANALYST SUMMARY

Client: SCS Engineers

Job Number: 280-107750-1

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
SW846 8260B	Moan, Matthew R	MRM
SW846 6010B	Lackey, Cara M	CML
SW846 6020	Rhoades, Chris R	CRR
SW846 6020	Woo, Fred C	FCW
MCAWW 300.0	Phan, Thu L	TLP
MCAWW 350.1	Lehman, Jeffrey M	JML
SM SM 2320B	Loux, Lauren P	LPL
SM SM 2540C	Martinez, Rut S	RSM
SM SM 2540D	Cherry, Scott V	SVC
SM SM 5310B	Duplin, Alysha 1	A1D
MCAWW 300.0	Boyd, Jacob C	JCB

**SAMPLE SUMMARY**

Client: SCS Engineers

Job Number: 280-107750-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
280-107750-1	HVL-032218-01	Water	03/22/2018 0830	03/23/2018 1000
280-107750-2TB	TRIP BLANK	Water	03/22/2018 0000	03/23/2018 1000

# SAMPLE RESULTS

# Analytical Data

Client: SCS Engineers

Job Number: 280-107750-1

**Client Sample ID: HVL-032218-01**

Lab Sample ID: 280-107750-1

Date Sampled: 03/22/2018 0830

Client Matrix: Water

Date Received: 03/23/2018 1000

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-409804	Instrument ID: VMS_Z
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: Z5343.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 04/01/2018 1006		Final Weight/Volume: 20 mL
Prep Date: 04/01/2018 1006		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	27		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	25		10
Acrylonitrile	ND		20
Benzene	0.98		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	8.7		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	1.1		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-107750-1

**Client Sample ID: HVL-032218-01**

Lab Sample ID: 280-107750-1

Date Sampled: 03/22/2018 0830

Client Matrix: Water

Date Received: 03/23/2018 1000

---

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-409804	Instrument ID: VMS_Z
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: Z5343.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 04/01/2018 1006		Final Weight/Volume: 20 mL
Prep Date: 04/01/2018 1006		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	87		70 - 127
4-Bromofluorobenzene (Surr)	113		78 - 120
Dibromofluoromethane (Surr)	104		77 - 120
Toluene-d8 (Surr)	103		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-107750-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-107750-2TB

Date Sampled: 03/22/2018 0000

Client Matrix: Water

Date Received: 03/23/2018 1000

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-409804	Instrument ID: VMS_Z
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: Z5344.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 04/01/2018 1031		Final Weight/Volume: 20 mL
Prep Date: 04/01/2018 1031		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-107750-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 280-107750-2TB

Client Matrix: Water

Date Sampled: 03/22/2018 0000

Date Received: 03/23/2018 1000

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-409804	Instrument ID: VMS_Z
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: Z5344.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 04/01/2018 1031		Final Weight/Volume: 20 mL
Prep Date: 04/01/2018 1031		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	86		70 - 127
4-Bromofluorobenzene (Surr)	106		78 - 120
Dibromofluoromethane (Surr)	104		77 - 120
Toluene-d8 (Surr)	98		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-107750-1

**Client Sample ID: HVL-032218-01**

Lab Sample ID: 280-107750-1

Date Sampled: 03/22/2018 0830

Client Matrix: Water

Date Received: 03/23/2018 1000

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-359727	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	040918- 70.d
Dilution:	20			Initial Weight/Volume:	5 mL
Analysis Date:	04/10/2018 1400	Run Type:	DL4	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	140		1.0



## Analytical Data

Client: SCS Engineers

Job Number: 280-107750-1

**Client Sample ID: HVL-032218-01**

Lab Sample ID: 280-107750-1

Date Sampled: 03/22/2018 0830

Client Matrix: Water

Date Received: 03/23/2018 1000

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-359727	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	040918- 27.d
Dilution:	2000			Initial Weight/Volume:	5 mL
Analysis Date:	04/09/2018 2331	Run Type:	DL3	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	5700		120

# Analytical Data

Client: SCS Engineers

Job Number: 280-107750-1

**Client Sample ID: HVL-032218-01**

Lab Sample ID: 280-107750-1

Date Sampled: 03/22/2018 0830

Client Matrix: Water

Date Received: 03/23/2018 1000

## 6010B Metals (ICP)

Analysis Method: 6010B      Analysis Batch: 280-410117      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-409659      Lab File ID: 51B040318C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 04/04/2018 0339      Final Weight/Volume: 50 mL  
Prep Date: 03/30/2018 1036

Analyte	Result (mg/L)	Qualifier	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Calcium, Total	12		0.20
Cobalt, Total	0.033		0.010
Magnesium, Total	16		0.10
Silver, Total	ND		0.010
Vanadium, Total	0.096		0.010

Analysis Method: 6010B      Analysis Batch: 280-410272      Instrument ID: MT\_051  
Prep Method: 3010A      Prep Batch: 280-409659      Lab File ID: 51A040418A.csv  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 04/04/2018 1408      Final Weight/Volume: 50 mL  
Prep Date: 03/30/2018 1036

Analyte	Result (mg/L)	Qualifier	RL
Potassium, Total	440		2.0
Sodium, Total	5700		1.0

## 6020 Metals (ICP/MS)

Analysis Method: 6020      Analysis Batch: 280-410110      Instrument ID: MT\_078  
Prep Method: 3020A      Prep Batch: 280-409671      Lab File ID: 256SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 04/04/2018 0327      Final Weight/Volume: 50 mL  
Prep Date: 04/02/2018 0730

Analyte	Result (mg/L)	Qualifier	RL
Antimony, Total	0.086		0.0020
Arsenic, Total	0.11		0.0050
Barium, Total	0.28		0.0050
Chromium, Total	0.028		0.0050
Copper, Total	0.081		0.010
Lead, Total	0.0053		0.0020
Manganese, Total	0.11		0.0050
Nickel, Total	0.24		0.020
Selenium, Total	0.012		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	0.035		0.010

## Analytical Data

Client: SCS Engineers

Job Number: 280-107750-1

**Client Sample ID: HVL-032218-01**

Lab Sample ID: 280-107750-1

Date Sampled: 03/22/2018 0830

Client Matrix: Water

Date Received: 03/23/2018 1000

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### 6020 Metals (ICP/MS)

Analysis Method: 6020

Analysis Batch: 580-270378

Instrument ID: TAC110

Prep Method: 3010A

Prep Batch: 580-270164

Lab File ID: 175SMPL.d

Dilution: 10

Initial Weight/Volume: 50 mL

Analysis Date: 03/30/2018 1748

Final Weight/Volume: 50 mL

Prep Date: 03/29/2018 1309

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Analyte	Result (mg/L)	Qualifier	RL
Iron, Total	2.2		0.36

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Client: SCS Engineers

Job Number: 280-107750-1

General Chemistry

Client Sample ID: HVL-032218-01

Lab Sample ID: 280-107750-1

Client Matrix: Water

Date Sampled: 03/22/2018 0830

Date Received: 03/23/2018 1000

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	6.3		mg/L	2.1	50	300.0
	Analysis Batch: 280-408852		Analysis Date: 03/23/2018 1835			
Ammonia	460	*	mg/L	4.4	200	350.1
	Analysis Batch: 280-411242		Analysis Date: 04/13/2018 0831			
Alkalinity	6700		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-409576		Analysis Date: 03/29/2018 1938			
Bicarbonate Alkalinity as CaCO3	6700		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-409576		Analysis Date: 03/29/2018 1938			
Total Dissolved Solids	9800		mg/L	47	1.0	SM 2540C
	Analysis Batch: 280-409287		Analysis Date: 03/27/2018 1808			
Total Suspended Solids	6.8		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-409563		Analysis Date: 03/29/2018 1645			
Total Organic Carbon - Quad	780		mg/L	3.1	20	SM 5310B
	Analysis Batch: 280-410845		Analysis Date: 04/10/2018 1348			

## DATA REPORTING QUALIFIERS

Client: SCS Engineers

Job Number: 280-107750-1

<b>Lab Section</b>	<b>Qualifier</b>	<b>Description</b>
GC/MS VOA	F1	MS and/or MSD Recovery is outside acceptance limits.
	F2	MS/MSD RPD exceeds control limits
HPLC/IC	F1	MS and/or MSD Recovery is outside acceptance limits.
	E	Result exceeded calibration range.
Metals	F1	MS and/or MSD Recovery is outside acceptance limits.
General Chemistry	F1	MS and/or MSD Recovery is outside acceptance limits.
	*	RPD of the LCS and LCSD exceeds the control limits

# QUALITY CONTROL RESULTS

## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS VOA</b>					
<b>Analysis Batch:280-409804</b>					
LCS 280-409804/4	Lab Control Sample	T	Water	8260B	
MB 280-409804/6	Method Blank	T	Water	8260B	
280-107750-1	HVL-032218-01	T	Water	8260B	
280-107750-2TB	TRIP BLANK	T	Water	8260B	
280-107781-D-21 MS	Matrix Spike	T	Water	8260B	
280-107781-D-21 MSD	Matrix Spike Duplicate	T	Water	8260B	
<b>Report Basis</b>					
T = Total					
<b>Metals</b>					
<b>Prep Batch: 580-270164</b>					
LCS 580-270164/14-A	Lab Control Sample	T	Water	3010A	
LCSD 580-270164/15-A	Lab Control Sample Duplicate	T	Water	3010A	
MB 580-270164/13-A	Method Blank	T	Water	3010A	
580-76002-A-5-B DU	Duplicate	T	Water	3010A	
580-76002-A-5-C MS	Matrix Spike	T	Water	3010A	
580-76002-A-5-D MSD	Matrix Spike Duplicate	T	Water	3010A	
280-107750-1	HVL-032218-01	T	Water	3010A	
<b>Analysis Batch:580-270378</b>					
LCS 580-270164/14-A	Lab Control Sample	T	Water	6020	580-270164
LCSD 580-270164/15-A	Lab Control Sample Duplicate	T	Water	6020	580-270164
MB 580-270164/13-A	Method Blank	T	Water	6020	580-270164
580-76002-A-5-B DU	Duplicate	T	Water	6020	580-270164
580-76002-A-5-C MS	Matrix Spike	T	Water	6020	580-270164
580-76002-A-5-D MSD	Matrix Spike Duplicate	T	Water	6020	580-270164
280-107750-1	HVL-032218-01	T	Water	6020	580-270164
<b>Prep Batch: 280-409659</b>					
LCS 280-409659/2-A	Lab Control Sample	T	Water	3010A	
MB 280-409659/1-A	Method Blank	T	Water	3010A	
280-107717-A-1-B MS	Matrix Spike	T	Water	3010A	
280-107717-A-1-C MSD	Matrix Spike Duplicate	T	Water	3010A	
280-107750-1	HVL-032218-01	T	Water	3010A	
<b>Prep Batch: 280-409671</b>					
LCS 280-409671/2-A	Lab Control Sample	T	Water	3020A	
MB 280-409671/1-A	Method Blank	T	Water	3020A	
280-107750-1	HVL-032218-01	T	Water	3020A	
280-107822-B-5-B MS	Matrix Spike	T	Water	3020A	
280-107822-B-5-C MSD	Matrix Spike Duplicate	T	Water	3020A	
<b>Analysis Batch:280-410110</b>					

TestAmerica Denver

## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Analysis Batch:280-410110</b>					
LCS 280-409671/2-A	Lab Control Sample	T	Water	6020	280-409671
MB 280-409671/1-A	Method Blank	T	Water	6020	280-409671
280-107750-1	HVL-032218-01	T	Water	6020	280-409671
280-107822-B-5-B MS	Matrix Spike	T	Water	6020	280-409671
280-107822-B-5-C MSD	Matrix Spike Duplicate	T	Water	6020	280-409671
<b>Analysis Batch:280-410117</b>					
LCS 280-409659/2-A	Lab Control Sample	T	Water	6010B	280-409659
MB 280-409659/1-A	Method Blank	T	Water	6010B	280-409659
280-107717-A-1-B MS	Matrix Spike	T	Water	6010B	280-409659
280-107717-A-1-C MSD	Matrix Spike Duplicate	T	Water	6010B	280-409659
280-107750-1	HVL-032218-01	T	Water	6010B	280-409659
<b>Analysis Batch:280-410272</b>					
280-107750-1	HVL-032218-01	T	Water	6010B	280-409659

**Report Basis**

T = Total



## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-408852</b>					
LCS 280-408852/4	Lab Control Sample	T	Water	300.0	
LCSD 280-408852/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-408852/6	Method Blank	T	Water	300.0	
280-107725-F-2 DU	Duplicate	T	Water	300.0	
280-107725-F-2 MS	Matrix Spike	T	Water	300.0	
280-107725-F-2 MSD	Matrix Spike Duplicate	T	Water	300.0	
280-107750-1	HVL-032218-01	T	Water	300.0	
<b>Analysis Batch:280-409287</b>					
LCS 280-409287/2	Lab Control Sample	T	Water	SM 2540C	
MB 280-409287/1	Method Blank	T	Water	SM 2540C	
280-107669-A-1 DU	Duplicate	T	Water	SM 2540C	
280-107750-1	HVL-032218-01	T	Water	SM 2540C	
<b>Analysis Batch:280-409563</b>					
LCS 280-409563/1	Lab Control Sample	T	Water	SM 2540D	
MB 280-409563/2	Method Blank	T	Water	SM 2540D	
280-107750-1	HVL-032218-01	T	Water	SM 2540D	
280-107798-B-1 DU	Duplicate	T	Water	SM 2540D	
<b>Analysis Batch:280-409576</b>					
LCS 280-409576/4	Lab Control Sample	T	Water	SM 2320B	
MB 280-409576/5	Method Blank	T	Water	SM 2320B	
280-107621-B-1 DU	Duplicate	T	Water	SM 2320B	
280-107750-1	HVL-032218-01	T	Water	SM 2320B	
<b>Analysis Batch:280-410845</b>					
LCS 280-410845/61	Lab Control Sample	T	Water	SM 5310B	
MB 280-410845/62	Method Blank	T	Water	SM 5310B	
280-107750-1	HVL-032218-01	T	Water	SM 5310B	
280-107750-1MS	Matrix Spike	T	Water	SM 5310B	
280-107750-1MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
<b>Analysis Batch:280-411242</b>					
LCS 280-411242/67	Lab Control Sample	T	Water	350.1	
LCSD 280-411242/68	Lab Control Sample Duplicate	T	Water	350.1	
MB 280-411242/69	Method Blank	T	Water	350.1	
280-107747-D-1 MS	Matrix Spike	T	Water	350.1	
280-107747-D-1 MSD	Matrix Spike Duplicate	T	Water	350.1	
280-107750-1	HVL-032218-01	T	Water	350.1	

**Report Basis**

T = Total

# Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

## QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>HPLC/IC</b>					
<b>Analysis Batch:160-359727</b>					
LCS 160-359727/10	Lab Control Sample	T	Water	300.0	
MB 160-359727/9	Method Blank	T	Water	300.0	
280-107740-F-1 DU	Duplicate	T	Water	300.0	
280-107740-F-1 MS	Matrix Spike	T	Water	300.0	
280-107750-1DL3	HVL-032218-01	T	Water	300.0	
280-107750-1DL4	HVL-032218-01	T	Water	300.0	

### Report Basis

T = Total

Client: SCS Engineers

Job Number: 280-107750-1

**Surrogate Recovery Report**

**8260B Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	DBFM %Rec	TOL %Rec
280-107750-1	HVL-032218-01	87	113	104	103
280-107750-2	TRIP BLANK	86	106	104	98
MB 280-409804/6		99	113	114	110
LCS 280-409804/4		99	108	110	116
280-107781-D-21 MS		88	102	102	103
280-107781-D-21 MSD		90	100	104	102

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	70-127
BFB = 4-Bromofluorobenzene (Surr)	78-120
DBFM = Dibromofluoromethane (Surr)	77-120
TOL = Toluene-d8 (Surr)	80-125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Method Blank - Batch: 280-409804**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID:	MB 280-409804/6	Analysis Batch:	280-409804	Instrument ID:	VMS_Z
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	Z5338.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	04/01/2018 0805	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	04/01/2018 0805				
Leach Date:	N/A				

Analyte	Result	Qual	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50

# Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Method Blank - Batch: 280-409804**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID:	MB 280-409804/6	Analysis Batch:	280-409804	Instrument ID:	VMS_Z
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	Z5338.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	04/01/2018 0805	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	04/01/2018 0805				
Leach Date:	N/A				

Analyte	Result	Qual	RL
trans-1,4-Dichloro-2-butene	ND		3.0
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50
Surrogate	% Rec	Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)	99	70 - 127	
4-Bromofluorobenzene (Surr)	113	78 - 120	
Dibromofluoromethane (Surr)	114	77 - 120	
Toluene-d8 (Surr)	110	80 - 125	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Lab Control Sample - Batch: 280-409804**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: LCS 280-409804/4	Analysis Batch: 280-409804	Instrument ID: VMS_Z
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Z5337.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 04/01/2018 0741	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 04/01/2018 0741		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1,2-Tetrachloroethane	5.00	5.15	103	65 - 135	
1,1,1-Trichloroethane	5.00	4.91	98	65 - 135	
1,1,2,2-Tetrachloroethane	5.00	4.75	95	58 - 135	
1,1,2-Trichloroethane	5.00	5.11	102	64 - 135	
1,1-Dichloroethane	5.00	4.73	95	65 - 135	
1,1-Dichloroethene	5.00	4.95	99	65 - 136	
1,2,3-Trichloropropane	5.00	4.95	99	65 - 135	
1,2-Dibromo-3-Chloropropane	5.00	5.22	104	57 - 135	
1,2-Dibromoethane	5.00	4.89	98	65 - 135	
1,2-Dichlorobenzene	5.00	4.77	95	65 - 135	
1,2-Dichloroethane	5.00	4.60	92	65 - 135	
1,2-Dichloropropane	5.00	5.02	100	64 - 135	
1,4-Dichlorobenzene	5.00	4.85	97	65 - 135	
2-Butanone (MEK)	20.0	18.3	91	44 - 177	
2-Hexanone	20.0	18.2	91	57 - 139	
4-Methyl-2-pentanone (MIBK)	20.0	19.0	95	60 - 150	
Acetone	20.0	17.6	88	39 - 156	
Acrylonitrile	50.0	47.2	94	56 - 135	
Benzene	5.00	4.92	98	65 - 135	
Bromochloromethane	5.00	5.02	100	65 - 135	
Bromodichloromethane	5.00	4.78	96	65 - 135	
Bromoform	5.00	4.88	98	62 - 135	
Bromomethane	5.00	5.14	103	45 - 135	
Carbon disulfide	5.00	5.06	101	55 - 143	
Carbon tetrachloride	5.00	5.13	103	65 - 135	
Chlorobenzene	5.00	4.92	98	65 - 135	
Chloroethane	5.00	5.02	100	46 - 136	
Chloroform	5.00	4.89	98	65 - 135	
Chloromethane	5.00	5.47	109	34 - 145	
cis-1,2-Dichloroethene	5.00	4.92	98	65 - 135	
cis-1,3-Dichloropropene	5.00	5.01	100	65 - 135	
Dibromochloromethane	5.00	4.84	97	65 - 135	
Dibromomethane	5.00	4.84	97	65 - 135	
Dichlorodifluoromethane	5.00	6.52	130	43 - 142	
Ethylbenzene	5.00	4.86	97	65 - 135	
Iodomethane	5.00	5.11	102	65 - 142	
Methylene Chloride	5.00	5.24	105	54 - 141	
m-Xylene & p-Xylene	5.00	5.02	100	65 - 135	
o-Xylene	5.00	5.05	101	65 - 135	
Styrene	5.00	4.87	97	65 - 135	
Tetrachloroethene	5.00	5.04	101	65 - 135	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Lab Control Sample - Batch: 280-409804**

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: LCS 280-409804/4	Analysis Batch: 280-409804	Instrument ID: VMS_Z
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Z5337.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 04/01/2018 0741	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 04/01/2018 0741		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Toluene	5.00	4.98	100	65 - 135	
trans-1,2-Dichloroethene	5.00	5.06	101	65 - 135	
trans-1,3-Dichloropropene	5.00	4.95	99	65 - 135	
trans-1,4-Dichloro-2-butene	5.00	5.03	101	53 - 135	
Trichloroethene	5.00	4.69	94	65 - 135	
Trichlorofluoromethane	5.00	5.13	103	53 - 137	
Vinyl acetate	10.0	9.54	95	11 - 187	
Vinyl chloride	5.00	5.56	111	40 - 137	
<b>Surrogate</b>		<b>% Rec</b>		<b>Acceptance Limits</b>	
1,2-Dichloroethane-d4 (Surr)		99		70 - 127	
4-Bromofluorobenzene (Surr)		108		78 - 120	
Dibromofluoromethane (Surr)		110		77 - 120	
Toluene-d8 (Surr)		116		80 - 125	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-409804**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-107781-D-21 MS	Analysis Batch: 280-409804	Instrument ID: VMS_Z
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Z5346.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 04/01/2018 1115		Final Weight/Volume: 20 mL
Prep Date: 04/01/2018 1115		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-107781-D-21 MSD	Analysis Batch: 280-409804	Instrument ID: VMS_Z
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Z5347.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 04/01/2018 1137		Final Weight/Volume: 20 mL
Prep Date: 04/01/2018 1137		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1,1,2-Tetrachloroethane	101	101	65 - 135	0	20		
1,1,1-Trichloroethane	96	98	65 - 135	1	20		
1,1,2,2-Tetrachloroethane	97	96	58 - 135	0	20		
1,1,2-Trichloroethane	97	102	64 - 135	5	27		
1,1-Dichloroethane	96	99	65 - 135	3	21		
1,1-Dichloroethene	99	101	65 - 136	2	20		
1,2,3-Trichloropropane	101	97	65 - 135	4	23		
1,2-Dibromo-3-Chloropropane	107	108	57 - 135	1	22		
1,2-Dibromoethane	96	99	65 - 135	2	27		
1,2-Dichlorobenzene	95	96	65 - 135	1	20		
1,2-Dichloroethane	97	98	65 - 135	1	20		
1,2-Dichloropropane	99	100	64 - 135	1	20		
1,4-Dichlorobenzene	98	96	65 - 135	1	23		
2-Butanone (MEK)	94	97	44 - 177	2	32		
2-Hexanone	86	93	57 - 139	8	25		
4-Methyl-2-pentanone (MIBK)	94	105	60 - 150	11	22		
Acetone	102	100	39 - 156	1	23		
Acrylonitrile	99	101	56 - 135	1	30		
Benzene	103	102	65 - 135	1	20		
Bromochloromethane	109	104	65 - 135	4	29		
Bromodichloromethane	100	99	65 - 135	0	20		
Bromoform	97	97	62 - 135	1	27		
Bromomethane	104	109	45 - 135	5	33		
Carbon disulfide	100	102	55 - 143	2	20		
Carbon tetrachloride	96	100	65 - 135	4	21		
Chlorobenzene	97	100	65 - 135	3	20		
Chloroethane	98	103	46 - 136	5	25		
Chloroform	98	99	65 - 135	1	20		
Chloromethane	92	92	34 - 145	0	24		
cis-1,2-Dichloroethene	100	102	65 - 135	3	20		
cis-1,3-Dichloropropene	99	98	65 - 135	1	26		
Dibromochloromethane	94	98	65 - 135	3	20		



# Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-409804**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-107781-D-21 MS	Analysis Batch: 280-409804	Instrument ID: VMS_Z
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Z5346.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 04/01/2018 1115		Final Weight/Volume: 20 mL
Prep Date: 04/01/2018 1115		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-107781-D-21 MSD	Analysis Batch: 280-409804	Instrument ID: VMS_Z
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Z5347.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 04/01/2018 1137		Final Weight/Volume: 20 mL
Prep Date: 04/01/2018 1137		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Dibromomethane	97	98	65 - 135	0	26		
Dichlorodifluoromethane	129	133	43 - 142	3	30		
Ethylbenzene	94	95	65 - 135	1	20		
Iodomethane	101	104	65 - 142	3	25		
Methylene Chloride	98	100	54 - 141	2	26		
m-Xylene & p-Xylene	94	94	65 - 135	0	20		
o-Xylene	97	97	65 - 135	1	20		
Styrene	27	17	65 - 135	43	26	F1	F1 F2
Tetrachloroethene	98	99	65 - 135	1	20		
Toluene	100	102	65 - 135	2	20		
trans-1,2-Dichloroethene	103	103	65 - 135	1	24		
trans-1,3-Dichloropropene	101	101	65 - 135	0	26		
trans-1,4-Dichloro-2-butene	78	83	53 - 135	6	25		
Trichloroethene	94	99	65 - 135	5	20		
Trichlorofluoromethane	100	106	53 - 137	6	27		
Vinyl acetate	53	44	11 - 187	18	24		
Vinyl chloride	110	110	40 - 137	0	24		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	88	90	70 - 127
4-Bromofluorobenzene (Surr)	102	100	78 - 120
Dibromofluoromethane (Surr)	102	104	77 - 120
Toluene-d8 (Surr)	103	102	80 - 125

## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Method Blank - Batch: 160-359727**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 160-359727/9	Analysis Batch: 160-359727	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 040918- 9.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 04/09/2018 1911	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Result	Qual	RL
Chloride	ND		0.20
Sulfate	ND		0.20

**Lab Control Sample - Batch: 160-359727**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: LCS 160-359727/10	Analysis Batch: 160-359727	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 040918- 10.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 04/09/2018 1925	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.00	1.96	98	90 - 110	
Sulfate	8.00	7.75	97	90 - 110	

**Matrix Spike - Batch: 160-359727**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-107740-F-1 MS	Analysis Batch: 160-359727	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 040918- 23.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 04/09/2018 2233	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	3.4	2.00	5.62	109	90 - 110	E
Sulfate	11	4.00	15.6	112	90 - 110	F1

# Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

## Duplicate - Batch: 160-359727

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-107740-F-1 DU  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 04/09/2018 2204  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 160-359727  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: CIC2500  
Lab File ID: 040918- 21.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume:  
Injection Volume: 50 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	3.4	3.51	2	20	
Sulfate	11	11.3	2	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Method Blank - Batch: 280-409659**

**Method: 6010B  
Preparation: 3010A**

Lab Sample ID: MB 280-409659/1-A	Analysis Batch: 280-410117	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-409659	Lab File ID: 51B040318C.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 04/04/2018 0239	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 03/30/2018 1036		
Leach Date: N/A		

Analyte	Result	Qual	RL
Beryllium, Total	ND		0.0050
Cadmium, Total	ND		0.0050
Calcium, Total	ND		0.20
Cobalt, Total	ND		0.010
Magnesium, Total	ND		0.10
Potassium, Total	ND		2.0
Silver, Total	ND		0.010
Sodium, Total	ND		1.0
Vanadium, Total	ND		0.010

**Lab Control Sample - Batch: 280-409659**

**Method: 6010B  
Preparation: 3010A**

Lab Sample ID: LCS 280-409659/2-A	Analysis Batch: 280-410117	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-409659	Lab File ID: 51B040318C.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 04/04/2018 0242	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 03/30/2018 1036		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Beryllium, Total	0.0500	0.0476	95	89 - 113	
Cadmium, Total	0.100	0.0939	94	88 - 111	
Calcium, Total	50.0	47.1	94	90 - 111	
Cobalt, Total	0.500	0.461	92	89 - 111	
Magnesium, Total	50.0	46.7	93	90 - 113	
Potassium, Total	50.0	48.8	98	89 - 114	
Silver, Total	0.0500	0.0488	98	86 - 115	
Sodium, Total	50.0	53.2	106	90 - 115	
Vanadium, Total	0.500	0.474	95	90 - 111	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-409659**

**Method: 6010B  
Preparation: 3010A**

MS Lab Sample ID: 280-107717-A-1-B MS	Analysis Batch: 280-410117	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-409659	Lab File ID: 51B040318C.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 04/04/2018 0251		Final Weight/Volume: 50 mL
Prep Date: 03/30/2018 1036		
Leach Date: N/A		

MSD Lab Sample ID: 280-107717-A-1-C MSD	Analysis Batch: 280-410117	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-409659	Lab File ID: 51B040318C.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 04/04/2018 0254		Final Weight/Volume: 50 mL
Prep Date: 03/30/2018 1036		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Beryllium, Total	98	98	79 - 121	0	20		
Cadmium, Total	94	94	82 - 119	0	20		
Calcium, Total	90	87	48 - 153	1	20		
Cobalt, Total	93	93	82 - 119	0	20		
Magnesium, Total	98	96	62 - 146	1	20		
Potassium, Total	100	100	76 - 132	0	20		
Silver, Total	102	100	75 - 141	2	20		
Sodium, Total	108	106	70 - 203	1	20		
Vanadium, Total	97	97	85 - 120	1	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Method Blank - Batch: 580-270164**

**Method: 6020  
Preparation: 3010A**

Lab Sample ID: MB 580-270164/13-A	Analysis Batch: 580-270378	Instrument ID: TAC110
Client Matrix: Water	Prep Batch: 580-270164	Lab File ID: 152SMPL.d
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 03/30/2018 1636	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 03/29/2018 1309		
Leach Date: N/A		

Analyte	Result	Qual	RL
Iron, Total	ND		0.18

**Lab Control Sample/**

**Method: 6020  
Preparation: 3010A**

**Lab Control Sample Duplicate Recovery Report - Batch: 580-270164**

LCS Lab Sample ID: LCS 580-270164/14-A	Analysis Batch: 580-270378	Instrument ID: TAC110
Client Matrix: Water	Prep Batch: 580-270164	Lab File ID: 153SMPL.d
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 03/30/2018 1640	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 03/29/2018 1309		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 580-270164/15-A	Analysis Batch: 580-270378	Instrument ID: TAC110
Client Matrix: Water	Prep Batch: 580-270164	Lab File ID: 154SMPL.d
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 03/30/2018 1643	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 03/29/2018 1309		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Iron, Total	106	105	80 - 120	1	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-270164**

**Method: 6020  
Preparation: 3010A**

MS Lab Sample ID: 580-76002-A-5-C MS	Analysis Batch: 580-270378	Instrument ID: TAC110
Client Matrix: Water	Prep Batch: 580-270164	Lab File ID: 158SMPL.d
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 03/30/2018 1655		Final Weight/Volume: 50 mL
Prep Date: 03/29/2018 1309		
Leach Date: N/A		

MSD Lab Sample ID: 580-76002-A-5-D MSD	Analysis Batch: 580-270378	Instrument ID: TAC110
Client Matrix: Water	Prep Batch: 580-270164	Lab File ID: 159SMPL.d
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 03/30/2018 1658		Final Weight/Volume: 50 mL
Prep Date: 03/29/2018 1309		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Iron, Total	108	111	80 - 120	3	20		

**Duplicate - Batch: 580-270164**

**Method: 6020  
Preparation: 3010A**

Lab Sample ID: 580-76002-A-5-B DU	Analysis Batch: 580-270378	Instrument ID: TAC110
Client Matrix: Water	Prep Batch: 580-270164	Lab File ID: 156SMPL.d
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 03/30/2018 1649	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 03/29/2018 1309		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Iron, Total	0.54	0.586	9	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Method Blank - Batch: 280-409671**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: MB 280-409671/1-A	Analysis Batch: 280-410110	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-409671	Lab File ID: 231_BLK.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 04/04/2018 0201	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 04/02/2018 0730		
Leach Date: N/A		

Analyte	Result	Qual	RL
Antimony, Total	ND		0.0020
Arsenic, Total	ND		0.0050
Barium, Total	ND		0.0050
Chromium, Total	ND		0.0050
Copper, Total	ND		0.010
Lead, Total	ND		0.0020
Manganese, Total	ND		0.0050
Nickel, Total	ND		0.020
Selenium, Total	ND		0.0050
Thallium, Total	ND		0.0050
Zinc, Total	ND		0.010

**Lab Control Sample - Batch: 280-409671**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: LCS 280-409671/2-A	Analysis Batch: 280-410110	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-409671	Lab File ID: 232_LCS.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 04/04/2018 0205	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 04/02/2018 0730		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony, Total	0.0400	0.0423	106	85 - 115	
Arsenic, Total	0.0400	0.0379	95	85 - 117	
Barium, Total	0.0400	0.0417	104	85 - 118	
Chromium, Total	0.0400	0.0389	97	84 - 121	
Copper, Total	0.0400	0.0375	94	85 - 119	
Lead, Total	0.0400	0.0416	104	85 - 118	
Manganese, Total	0.0400	0.0384	96	85 - 117	
Nickel, Total	0.0400	0.0380	95	85 - 119	
Selenium, Total	0.0400	0.0396	99	77 - 122	
Thallium, Total	0.0400	0.0408	102	85 - 118	
Zinc, Total	0.0400	0.0392	98	83 - 122	



## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-409671**

**Method: 6020  
Preparation: 3020A**

MS Lab Sample ID: 280-107822-B-5-B MS	Analysis Batch: 280-410110	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-409671	Lab File ID: 239SMPL.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 04/04/2018 0229		Final Weight/Volume: 50 mL
Prep Date: 04/02/2018 0730		
Leach Date: N/A		

MSD Lab Sample ID: 280-107822-B-5-C MSD	Analysis Batch: 280-410110	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-409671	Lab File ID: 240SMPL.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 04/04/2018 0232		Final Weight/Volume: 50 mL
Prep Date: 04/02/2018 0730		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Antimony, Total	98	106	85 - 115	9	20		
Arsenic, Total	89	95	85 - 117	7	20		
Barium, Total	112	141	85 - 118	6	20		F1
Chromium, Total	86	94	84 - 121	9	20		
Copper, Total	86	92	85 - 119	7	20		
Lead, Total	93	97	85 - 118	5	20		
Manganese, Total	91	92	85 - 117	1	20		
Nickel, Total	84	93	85 - 119	10	20	F1	
Selenium, Total	92	95	77 - 122	3	20		
Thallium, Total	92	99	85 - 118	7	20		
Zinc, Total	92	99	83 - 122	7	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Method Blank - Batch: 280-408852**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-408852/6	Analysis Batch: 280-408852	Instrument ID: WC_IonChrom10
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Info 2_DENPC179_Anic
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 03/23/2018 1307	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Nitrate as N	ND		0.50

**Method Reporting Limit Check - Batch: 280-408852**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-408852/3	Analysis Batch: 280-408852	Instrument ID: WC_IonChrom10
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Info 2_DENPC179_Anic
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 03/23/2018 1215	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	0.200	ND	124	50 - 150	

**Lab Control Sample/**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-408852**

**Method: 300.0**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-408852/4	Analysis Batch: 280-408852	Instrument ID: WC_IonChrom10
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Info 2_DENPC179_Anic
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 03/23/2018 1232	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		5 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-408852/5	Analysis Batch: 280-408852	Instrument ID: WC_IonChrom10
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Info 2_DENPC179_Anic
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 03/23/2018 1249	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		5 uL
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Nitrate as N	95	96	90 - 110	0	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-408852**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-107725-F-2 MS	Analysis Batch: 280-408852	Instrument ID: WC_IonChrom10
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Info_2_DENPC179_Anic
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 03/23/2018 2037		Final Weight/Volume: 5 mL
Prep Date: N/A		5 uL
Leach Date: N/A		

MSD Lab Sample ID: 280-107725-F-2 MSD	Analysis Batch: 280-408852	Instrument ID: WC_IonChrom10
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Info_2_DENPC179_Anic
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 03/23/2018 2055		Final Weight/Volume: 5 mL
Prep Date: N/A		5 uL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate as N	102	105	80 - 120	2	20		

**Duplicate - Batch: 280-408852**

**Method: 300.0  
Preparation: N/A**

Lab Sample ID: 280-107725-F-2 DU	Analysis Batch: 280-408852	Instrument ID: WC_IonChrom10
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Info_2_DENPC179_Anic
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 03/23/2018 2020	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		5 uL
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate as N	ND	ND	NC	15	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Method Blank - Batch: 280-411242**

**Method: 350.1  
Preparation: N/A**

Lab Sample ID: MB 280-411242/69	Analysis Batch: 280-411242	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\041318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 04/13/2018 0819	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Ammonia	ND		0.10

**Lab Control Sample/**

**Method: 350.1  
Preparation: N/A**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-411242**

LCS Lab Sample ID: LCS 280-411242/67	Analysis Batch: 280-411242	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\041318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 04/13/2018 0815	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-411242/68	Analysis Batch: 280-411242	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\041318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 04/13/2018 0817	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ammonia	92	104	90 - 110	12	10		*

## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-411242**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-107747-D-1 MS	Analysis Batch: 280-411242	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\041318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 04/13/2018 0823		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-107747-D-1 MSD	Analysis Batch: 280-411242	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\041318.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 04/13/2018 0825		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia	118	117	90 - 110	0	10	F1	F1

## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Method Blank - Batch: 280-409576**

**Method: SM 2320B  
Preparation: N/A**

Lab Sample ID: MB 280-409576/5  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 03/29/2018 1837  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-409576  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: WC-AT3  
 Lab File ID: 0320918 halk.TXT  
 Initial Weight/Volume:  
 Final Weight/Volume:

Analyte	Result	Qual	RL
Alkalinity	ND		5.0
Bicarbonate Alkalinity as CaCO3	ND		5.0

**Lab Control Sample - Batch: 280-409576**

**Method: SM 2320B  
Preparation: N/A**

Lab Sample ID: LCS 280-409576/4  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 03/29/2018 1833  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-409576  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: WC-AT3  
 Lab File ID: 0320918 halk.TXT  
 Initial Weight/Volume:  
 Final Weight/Volume:

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	1000	972	97	90 - 110	

**Duplicate - Batch: 280-409576**

**Method: SM 2320B  
Preparation: N/A**

Lab Sample ID: 280-107621-B-1 DU  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 03/29/2018 1853  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-409576  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: WC-AT3  
 Lab File ID: 0320918 halk.TXT  
 Initial Weight/Volume:  
 Final Weight/Volume:

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity	3600	3610	0.2	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Method Blank - Batch: 280-409287**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: MB 280-409287/1	Analysis Batch: 280-409287	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 03/27/2018 1808	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Dissolved Solids	ND		10

**Lab Control Sample - Batch: 280-409287**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: LCS 280-409287/2	Analysis Batch: 280-409287	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 03/27/2018 1808	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Dissolved Solids	500	493	99	86 - 110	

**Duplicate - Batch: 280-409287**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: 280-107669-A-1 DU	Analysis Batch: 280-409287	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 25 mL
Analysis Date: 03/27/2018 1808	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Dissolved Solids	3300	3400	4	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Method Blank - Batch: 280-409563**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: MB 280-409563/2	Analysis Batch: 280-409563	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 03/29/2018 1645	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Suspended Solids	ND		4.0

**Lab Control Sample - Batch: 280-409563**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: LCS 280-409563/1	Analysis Batch: 280-409563	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 03/29/2018 1645	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Suspended Solids	100	97.2	97	86 - 114	

**Duplicate - Batch: 280-409563**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: 280-107798-B-1 DU	Analysis Batch: 280-409563	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 03/29/2018 1645	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Suspended Solids	ND	ND	NC	10	



## Quality Control Results

Client: SCS Engineers

Job Number: 280-107750-1

**Method Blank - Batch: 280-410845**

**Method: SM 5310B  
Preparation: N/A**

Lab Sample ID: MB 280-410845/62	Analysis Batch: 280-410845	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 041018.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 04/10/2018 1315	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Organic Carbon - Quad	ND		1.0

**Lab Control Sample - Batch: 280-410845**

**Method: SM 5310B  
Preparation: N/A**

Lab Sample ID: LCS 280-410845/61	Analysis Batch: 280-410845	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 041018.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 04/10/2018 1257	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Quad	25.0	25.8	103	88 - 112	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-410845**

**Method: SM 5310B  
Preparation: N/A**

MS Lab Sample ID: 280-107750-1	Analysis Batch: 280-410845	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 041018.txt
Dilution: 20	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 04/10/2018 1404		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-107750-1	Analysis Batch: 280-410845	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 041018.txt
Dilution: 20	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 04/10/2018 1420		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Total Organic Carbon - Quad	93	94	88 - 112	0	15		

# Chain of Custody Record

<b>Client Information</b> Client Contact: Sam Graber Company: SCS Engineers Address: 2405 140th Avenue NE Suite 107 City: Bellevue State: WA, 98003-1877 Phone: 602 940 2980 Email: sgrab@scsengineers.com		Lab PM: Sara, Betsy A E-Mail: betsy.sara@testamerica.com		Carrier Tracking Note(s): 4150 9261 6913		COC No: 280-21695-6848.1 Page: Page 1 of 1 Job #: 04218002.03	
Due Date Requested: Standard TAT Requested (days): PO #: 602 940 2980 Purchase Order not required Project #: 28003580-Leachate and Leak Detection Sumps SSOW#:		Field Filtered Sample (Yes or No): Perform MS/MSD (Yes or No): 92608 TOC/Ammonia NO3/Cr/TDS/Alks Total Metals (60108/6020) (Lead detector) Total Iron (TA Seattle) Cr/SeO4 (TA St. Louis) TSS		Analysis Requested Preservation Codes: M - Hexane N - None O - AsNaO2 P - H2O2S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecylhydrate U - Acetone V - MCAA W - pH 4-5 L - EDTA Other:		Total Number of containers: 9 Special Instructions/Note: 3 * Sample Reactive	
Sample Identification: HUL-032218-01 TPO Blank		Sample Date: 3/22/18 Sample Time: 030 Sample Type (C=comp, G=grab): G Matrix (W=water, S=solid, D=dewast, A=air): W		Field Filtered Sample (Yes or No): Perform MS/MSD (Yes or No): 92608 TOC/Ammonia NO3/Cr/TDS/Alks Total Metals (60108/6020) (Lead detector) Total Iron (TA Seattle) Cr/SeO4 (TA St. Louis) TSS		Special Instructions/Note: 280-107750 Chain of Custody	
Chain of Custody Identification: <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Date/Time: 3/22/18 1230 Date/Time: 3/23/18 1000 Date/Time:		Sample Disposal: (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For: Months		Date/Time: 3-23-18 10:00 Date/Time:	
Date/Time: 3/22/18 1230 Date/Time: 3/23/18 1000 Date/Time:		Date/Time: 3-23-18 10:00 Date/Time:		Date/Time: 3-23-18 10:00 Date/Time:		Date/Time: 3-23-18 10:00 Date/Time:	
Date/Time: 3/22/18 1230 Date/Time: 3/23/18 1000 Date/Time:		Date/Time: 3-23-18 10:00 Date/Time:		Date/Time: 3-23-18 10:00 Date/Time:		Date/Time: 3-23-18 10:00 Date/Time:	

437320 3.4 IRT 8 - 0.1 Transfer RR 3-23-18



**TestAmerica Denver**

4955 Yarrow Street  
Arvada, CO 80002  
Phone (303) 736-0100 Fax (303) 431-7171

**Chain of Custody Record**



**TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information (Sub Contract Lab)</b>			Sampler:	Lab PM: Sara, Betsy A	Carrier Tracking No(s):	COC No: 280-431582.1		
Client Contact: Shipping/Receiving			Phone:	E-Mail: betsy.sara@testamericainc.com	State of Origin: Washington	Page: Page 1 of 1		
Company: TestAmerica Laboratories, Inc.				Accreditations Required (See note): State Program - Washington		Job #: 280-107750-1		
Address: 5755 8th Street East,		Due Date Requested: 4/10/2018		<b>Analysis Requested</b>			<b>Preservation Codes:</b> A - HCL            M - Hexane B - NaOH          N - None C - Zn Acetate    O - AsNaO2 D - Nitric Acid    P - Na2O4S E - NaHSO4        Q - Na2SO3 F - MeOH          R - Na2S2O3 G - Amchlor        S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice              U - Acetone J - DI Water        V - MCAA K - EDTA           W - pH 4-5 L - EDA             Z - other (specify)  Other:	
City: Tacoma		TAT Requested (days):						
State, Zip: WA, 98424		PO #:						
Phone: 253-922-2310(Tel) 253-922-5047(Fax)		WO #:		Field Filtered Sample (Yes or No)			<b>Special Instructions/Note:</b>	
Email:		Project #: 28003580		Perform MS/MSD (Yes or No)				
Project Name: Hidden Valley LF		SSOW#:		6020/30/10A Total Iron (TA Seattle)				
Site:							Total Number of containers	
<b>Sample Identification - Client ID (Lab ID)</b>		<b>Sample Date</b>	<b>Sample Time</b>	<b>Sample Type (C=comp, G=grab)</b>	<b>Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)</b>			
				<b>Preservation Code:</b>				
HVL-032218-01 (280-107750-1)		3/22/18	08:30 Pacific		Water	X		1

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

<b>Possible Hazard Identification</b>		<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>	
Unconfirmed		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:	

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:	
Relinquished by: <i>[Signature]</i>		Date/Time: 3/26/18 6:55	Company:	Received by: <i>[Signature]</i>	
Relinquished by:		Date/Time:	Company:	Date/Time: 3/27-18 09:35	
Relinquished by:		Date/Time:	Company:	Date/Time:	

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Page 50 of 53	Cooler Temperature(s) °C and Other Remarks:	04/16/2018
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*IRK=0.01-0.2*

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-107750-1

**Login Number: 107750**  
**List Number: 1**  
**Creator: Pottruff, Reed W**

**List Source: TestAmerica Denver**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	False	No: Headspace larger than 1/4"
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-107750-1

**Login Number: 107750**  
**List Number: 2**  
**Creator: Hobbs, Kenneth F**

**List Source: TestAmerica Seattle**  
**List Creation: 03/27/18 11:24 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	IR4=0.0/-0.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-107750-1

**Login Number: 107750**  
**List Number: 3**  
**Creator: Taylor, Kristene N**

**List Source: TestAmerica St. Louis**  
**List Creation: 03/27/18 02:16 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Job Number: 280-113726-1  
Job Description: Hidden Valley LF

For:  
SCS Engineers  
2405 140th Avenue NE  
Suite 107  
Bellevue, WA 98005-1877  
Attention: Mr. Kevin Lakey

FM-1  
FM-2  
MW-10S  
MW-10D  
MW-13S  
MW-13D  
MW-14S  
MW-20R  
MW-26R  
Trip Blank



Approved for release.  
Betsy A Sara  
Project Manager II  
9/19/2018 1:57 PM

---

Betsy A Sara, Project Manager II  
4955 Yarrow Street, Arvada, CO, 80002  
(303)736-0189  
betsy.sara@testamericainc.com  
09/19/2018

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

These data and reporting limits are being used specifically to meet the needs of this project. All RLs are supported by TestAmerica's Method Detection Limits (MDLs). Reporting limits in this report are at or above the MDL.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002  
Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)



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## CASE NARRATIVE

Client: SCS Engineers

Project: Hidden Valley LF

Report Number: 280-113726-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### Sample Receiving

The samples were received on 08/29/2018; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 2.1° C, 2.4° C and 3.0° C.

Due to a FedEx shipping delay, the samples HVL-082818-10, HVL-082818-15 and HVL-082818-17 were received late and logged under a separate submission, 280-113849-1.

### Holding Times

All holding times were within established control limits.

### Method Blanks

All Method Blanks were within established control limits.

### Laboratory Control Samples (LCS)

All Laboratory Control Samples were within established control limits.

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

Sample HVL-082818-18 was selected to fulfill the laboratory batch quality control requirements for Method 350.1. Analysis of the laboratory generated MS/MSD for this sample exhibited recoveries of Ammonia below the lower control limit. In addition, the RPD result was outside the RPD limit for Ammonia. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, this anomaly may be due to matrix interference and no corrective action was taken.

All other MS and MSD samples were within established control limits.

### General Comments

The analysis for Chloride and Sulfate Method 300.0 was performed at the TestAmerica's St. Louis Laboratory.  
13715 Rider Trail North  
Earth City, MO 63045  
Phone: 314-298-8566

The analysis for Iron Method 6020 was performed at the TestAmerica's Seattle Laboratory.  
5755 8th Street East  
Tacoma, WA 98424  
Phone: 253-922-2310

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-113726-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-113726-1</b>	<b>HVL-082818-07</b>	<b>FM-1</b>				
Nitrate as N		1.6		0.20	mg/L	300.0
Alkalinity		98		5.0	mg/L	SM 2320B
Total Dissolved Solids		170		10	mg/L	SM 2540C
Chloride		14		0.30	mg/L	300.0
Sulfate		16		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		24		0.20	mg/L	6010B
Magnesium, Dissolved		6.3		0.10	mg/L	6010B
Potassium, Dissolved		4.3		2.0	mg/L	6010B
Sodium, Dissolved		22		1.0	mg/L	6010B
<b>280-113726-2</b>	<b>HVL-082818-08</b>	<b>MW-14S</b>				
Ammonia		0.50		0.10	mg/L	350.1
Alkalinity		110		5.0	mg/L	SM 2320B
Total Dissolved Solids		170		10	mg/L	SM 2540C
Total Organic Carbon - Quad		2.2		1.0	mg/L	SM 5310B
Chloride		21		0.60	mg/L	300.0
Sulfate		7.0		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		29		0.20	mg/L	6010B
Magnesium, Dissolved		8.4		0.10	mg/L	6010B
Potassium, Dissolved		4.3		2.0	mg/L	6010B
Sodium, Dissolved		13		1.0	mg/L	6010B
Manganese, Dissolved		0.24		0.0010	mg/L	6020
<b>280-113726-3</b>	<b>HVL-082818-09</b>	<b>FM-2</b>				
Nitrate as N		1.7		0.20	mg/L	300.0
Alkalinity		120		5.0	mg/L	SM 2320B
Total Dissolved Solids		200		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.5		1.0	mg/L	SM 5310B
Chloride		15		0.30	mg/L	300.0
Sulfate		5.4		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		26		0.20	mg/L	6010B
Magnesium, Dissolved		7.8		0.10	mg/L	6010B
Potassium, Dissolved		11		2.0	mg/L	6010B
Sodium, Dissolved		22		1.0	mg/L	6010B
Manganese, Dissolved		0.043		0.0010	mg/L	6020

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-113726-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-113726-4</b>	<b>HVL-082818-11</b>	<b>MW-26R</b>				
				10	ug/L	8260B
Alkalinity		84		5.0	mg/L	SM 2320B
Total Dissolved Solids		140		10	mg/L	SM 2540C
Chloride		4.5		0.20	mg/L	300.0
Sulfate		8.0		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		21		0.20	mg/L	6010B
Magnesium, Dissolved		8.9		0.10	mg/L	6010B
Potassium, Dissolved		2.5		2.0	mg/L	6010B
Sodium, Dissolved		6.2		1.0	mg/L	6010B
Iron, Dissolved		0.60		0.18	mg/L	6020
Manganese, Dissolved		0.39		0.0010	mg/L	6020
<b>280-113726-5</b>	<b>HVL-082818-12</b>	<b>MW-10S</b>				
Nitrate as N		0.48		0.20	mg/L	300.0
Alkalinity		99		5.0	mg/L	SM 2320B
Total Dissolved Solids		140		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.1		1.0	mg/L	SM 5310B
Chloride		6.0		0.20	mg/L	300.0
Sulfate		13		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		29		0.20	mg/L	6010B
Magnesium, Dissolved		8.5		0.10	mg/L	6010B
Sodium, Dissolved		7.7		1.0	mg/L	6010B
<b>280-113726-6</b>	<b>HVL-082818-13</b>	<b>MW-20R</b>				
Alkalinity		44		5.0	mg/L	SM 2320B
Total Dissolved Solids		92		10	mg/L	SM 2540C
Chloride		1.7		0.20	mg/L	300.0
Sulfate		3.1		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		8.1		0.20	mg/L	6010B
Magnesium, Dissolved		4.0		0.10	mg/L	6010B
Potassium, Dissolved		2.2		2.0	mg/L	6010B
Sodium, Dissolved		5.5		1.0	mg/L	6010B

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-113726-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-113726-7</b>	<b>HVL-082818-14</b>	<b>MW-10D</b>				
Nitrate as N		0.56		0.20	mg/L	300.0
Alkalinity		96		5.0	mg/L	SM 2320B
Total Dissolved Solids		160		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.1		1.0	mg/L	SM 5310B
Chloride		5.9		0.20	mg/L	300.0
Sulfate		13		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		28		0.20	mg/L	6010B
Magnesium, Dissolved		8.8		0.10	mg/L	6010B
Potassium, Dissolved		2.1		2.0	mg/L	6010B
Sodium, Dissolved		7.7		1.0	mg/L	6010B
<b>280-113726-8</b>	<b>HVL-082818-16</b>	<b>MW-13S</b>				
Alkalinity		110		5.0	mg/L	SM 2320B
Total Dissolved Solids		190		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.2		1.0	mg/L	SM 5310B
Chloride		11		0.30	mg/L	300.0
Sulfate		22		0.25	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		27		0.20	mg/L	6010B
Magnesium, Dissolved		7.3		0.10	mg/L	6010B
Potassium, Dissolved		5.0		2.0	mg/L	6010B
Sodium, Dissolved		20		1.0	mg/L	6010B
Manganese, Dissolved		0.0074		0.0010	mg/L	6020
<b>280-113726-9</b>	<b>HVL-082818-18</b>	<b>MW-13D</b>				
Nitrate as N		0.24		0.20	mg/L	300.0
Alkalinity		130		5.0	mg/L	SM 2320B
Total Dissolved Solids		98		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.1		1.0	mg/L	SM 5310B
Chloride		12		0.30	mg/L	300.0
Sulfate		19		0.25	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		32		0.20	mg/L	6010B
Magnesium, Dissolved		11		0.10	mg/L	6010B
Potassium, Dissolved		4.5		2.0	mg/L	6010B
Sodium, Dissolved		19		1.0	mg/L	6010B

## METHOD SUMMARY

Client: SCS Engineers

Job Number: 280-113726-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Volatile Organic Compounds (GC/MS)	TAL DEN	SW846 8260B	
Purge and Trap	TAL DEN		SW846 5030B
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Anions, Ion Chromatography	TAL DEN	MCAWW 300.0	
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
Alkalinity	TAL DEN	SM SM 2320B	
Solids, Total Dissolved (TDS)	TAL DEN	SM SM 2540C	
Solids, Total Suspended (TSS)	TAL DEN	SM SM 2540D	
Organic Carbon, Total (TOC)	TAL DEN	SM SM 5310B	
Metals (ICP/MS)	TAL SEA	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL SEA		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Anions, Ion Chromatography	TAL SL	MCAWW 300.0	

### Lab References:

TAL DEN = TestAmerica Denver

TAL SEA = TestAmerica Seattle

TAL SL = TestAmerica St. Louis

### Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

## METHOD / ANALYST SUMMARY

Client: SCS Engineers

Job Number: 280-113726-1

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
SW846 8260B	Newcome, Robin S	RSN
SW846 8260B	Nwanguma, Frankline C	FCN
SW846 6010B	Lackey, Cara M	CML
SW846 6020	Trudell, Lynn-Anne M	LMT
SW846 6020	Woo, Fred C	FCW
MCAWW 300.0	Phan, Thu L	TLP
MCAWW 350.1	Pedrick, Joshua A	JAP
SM SM 2320B	Barker, Scott G	SGB
SM SM 2540C	Barker, Scott G	SGB
SM SM 2540D	Patadia, Bansari J	BJP
SM SM 5310B	Duplin, Alysha 1	A1D
MCAWW 300.0	Boyd, Jacob C	JCB

# SAMPLE SUMMARY

Client: SCS Engineers

Job Number: 280-113726-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
280-113726-1	HVL-082818-07	Water	08/28/2018 1025	08/29/2018 0900
280-113726-2	HVL-082818-08	Water	08/28/2018 0959	08/29/2018 0900
280-113726-3	HVL-082818-09	Water	08/28/2018 1153	08/29/2018 0900
280-113726-4	HVL-082818-11	Water	08/28/2018 1310	08/29/2018 0900
280-113726-5	HVL-082818-12	Water	08/28/2018 1145	08/29/2018 0900
280-113726-6	HVL-082818-13	Water	08/28/2018 1402	08/29/2018 0900
280-113726-7	HVL-082818-14	Water	08/28/2018 1230	08/29/2018 0900
280-113726-8	HVL-082818-16	Water	08/28/2018 1330	08/29/2018 0900
280-113726-9	HVL-082818-18	Water	08/28/2018 1420	08/29/2018 0900
280-113726-10	TRIP BLANK	Water	08/28/2018 0000	08/29/2018 0900



# SAMPLE RESULTS

# Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-07**

Lab Sample ID: 280-113726-1

Date Sampled: 08/28/2018 1025

Client Matrix: Water

Date Received: 08/29/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_6604.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 0221		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 0221		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-07**

Lab Sample ID: 280-113726-1

Date Sampled: 08/28/2018 1025

Client Matrix: Water

Date Received: 08/29/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_6604.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 0221		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 0221		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	91		70 - 127
4-Bromofluorobenzene (Surr)	95		78 - 120
Dibromofluoromethane (Surr)	101		77 - 120
Toluene-d8 (Surr)	104		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-08**

Lab Sample ID: 280-113726-2

Date Sampled: 08/28/2018 0959

Client Matrix: Water

Date Received: 08/29/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_6605.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 0241		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 0241		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-08**

Lab Sample ID: 280-113726-2

Date Sampled: 08/28/2018 0959

Client Matrix: Water

Date Received: 08/29/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_6605.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 0241		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 0241		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	89		70 - 127
4-Bromofluorobenzene (Surr)	95		78 - 120
Dibromofluoromethane (Surr)	97		77 - 120
Toluene-d8 (Surr)	102		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-09**

Lab Sample ID: 280-113726-3

Date Sampled: 08/28/2018 1153

Client Matrix: Water

Date Received: 08/29/2018 0900

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_6606.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 0301		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 0301		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-09**

Lab Sample ID: 280-113726-3

Date Sampled: 08/28/2018 1153

Client Matrix: Water

Date Received: 08/29/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_6606.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 0301		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 0301		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	88		70 - 127
4-Bromofluorobenzene (Surr)	95		78 - 120
Dibromofluoromethane (Surr)	97		77 - 120
Toluene-d8 (Surr)	101		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-11**

Lab Sample ID: 280-113726-4

Date Sampled: 08/28/2018 1310

Client Matrix: Water

Date Received: 08/29/2018 0900

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_6607.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 0321		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 0321		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	27		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0



# Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-11**

Lab Sample ID: 280-113726-4

Date Sampled: 08/28/2018 1310

Client Matrix: Water

Date Received: 08/29/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_6607.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 0321		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 0321		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	91		70 - 127
4-Bromofluorobenzene (Surr)	95		78 - 120
Dibromofluoromethane (Surr)	97		77 - 120
Toluene-d8 (Surr)	100		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-12**

Lab Sample ID: 280-113726-5

Date Sampled: 08/28/2018 1145

Client Matrix: Water

Date Received: 08/29/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_6608.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 0342		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 0342		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-12**

Lab Sample ID: 280-113726-5

Date Sampled: 08/28/2018 1145

Client Matrix: Water

Date Received: 08/29/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_6608.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 0342		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 0342		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	91		70 - 127
4-Bromofluorobenzene (Surr)	94		78 - 120
Dibromofluoromethane (Surr)	99		77 - 120
Toluene-d8 (Surr)	102		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-13**

Lab Sample ID: 280-113726-6

Date Sampled: 08/28/2018 1402

Client Matrix: Water

Date Received: 08/29/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_6609.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 0402		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 0402		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-13**

Lab Sample ID: 280-113726-6

Date Sampled: 08/28/2018 1402

Client Matrix: Water

Date Received: 08/29/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_6609.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 0402		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 0402		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	91		70 - 127
4-Bromofluorobenzene (Surr)	98		78 - 120
Dibromofluoromethane (Surr)	98		77 - 120
Toluene-d8 (Surr)	102		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-14**

Lab Sample ID: 280-113726-7

Date Sampled: 08/28/2018 1230

Client Matrix: Water

Date Received: 08/29/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_6610.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 0422		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 0422		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-14**

Lab Sample ID: 280-113726-7

Date Sampled: 08/28/2018 1230

Client Matrix: Water

Date Received: 08/29/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS1_6610.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 0422		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 0422		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	92		70 - 127
4-Bromofluorobenzene (Surr)	96		78 - 120
Dibromofluoromethane (Surr)	97		77 - 120
Toluene-d8 (Surr)	100		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-16**

Lab Sample ID: 280-113726-8

Date Sampled: 08/28/2018 1330

Client Matrix: Water

Date Received: 08/29/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: Q7293.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0114		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0114		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0



# Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

Client Sample ID: HVL-082818-16

Lab Sample ID: 280-113726-8

Date Sampled: 08/28/2018 1330

Client Matrix: Water

Date Received: 08/29/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: Q7293.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0114		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0114		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	95		70 - 127
4-Bromofluorobenzene (Surr)	107		78 - 120
Dibromofluoromethane (Surr)	95		77 - 120
Toluene-d8 (Surr)	91		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-18**

Lab Sample ID: 280-113726-9

Date Sampled: 08/28/2018 1420

Client Matrix: Water

Date Received: 08/29/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: Q7294.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0137		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0137		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-18**

Lab Sample ID: 280-113726-9

Date Sampled: 08/28/2018 1420

Client Matrix: Water

Date Received: 08/29/2018 0900

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: Q7294.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0137		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0137		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	95		70 - 127
4-Bromofluorobenzene (Surr)	104		78 - 120
Dibromofluoromethane (Surr)	97		77 - 120
Toluene-d8 (Surr)	93		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-113726-10

Date Sampled: 08/28/2018 0000

Client Matrix: Water

Date Received: 08/29/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: Q7295.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0159		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0159		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 280-113726-10

Date Sampled: 08/28/2018 0000

Client Matrix: Water

Date Received: 08/29/2018 0900

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: Q7295.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0159		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0159		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		70 - 127
4-Bromofluorobenzene (Surr)	113		78 - 120
Dibromofluoromethane (Surr)	101		77 - 120
Toluene-d8 (Surr)	94		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-07**

Lab Sample ID: 280-113726-1

Date Sampled: 08/28/2018 1025

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 18.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/05/2018 1846

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	16		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-07**

Lab Sample ID: 280-113726-1

Date Sampled: 08/28/2018 1025

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 58.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1449	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	14		0.30

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-08**

Lab Sample ID: 280-113726-2

Date Sampled: 08/28/2018 0959

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 21.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/05/2018 1933

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	7.0		0.20



## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-08**

Lab Sample ID: 280-113726-2

Date Sampled: 08/28/2018 0959

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 59.d
Dilution:	10			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1504	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	21		0.60

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-09**

Lab Sample ID: 280-113726-3

Date Sampled: 08/28/2018 1153

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 22.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/05/2018 1948

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	5.4		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-09**

Lab Sample ID: 280-113726-3

Date Sampled: 08/28/2018 1153

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 60.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1520	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	15		0.30

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-11**

Lab Sample ID: 280-113726-4

Date Sampled: 08/28/2018 1310

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 23.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/05/2018 2003

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	4.5		0.20
Sulfate	8.0		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-12**

Lab Sample ID: 280-113726-5

Date Sampled: 08/28/2018 1145

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 24.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/05/2018 2019

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	13		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-12**

Lab Sample ID: 280-113726-5

Date Sampled: 08/28/2018 1145

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 61.d
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1535	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	6.0		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-13**

Lab Sample ID: 280-113726-6

Date Sampled: 08/28/2018 1402

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 25.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/05/2018 2034

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	1.7		0.20
Sulfate	3.1		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-14**

Lab Sample ID: 280-113726-7

Date Sampled: 08/28/2018 1230

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 26.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/05/2018 2050

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	13		0.20



## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-14**

Lab Sample ID: 280-113726-7

Date Sampled: 08/28/2018 1230

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 64.d
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1621	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	5.9		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-16**

Lab Sample ID: 280-113726-8

Date Sampled: 08/28/2018 1330

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 65.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1637	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	11		0.30
Sulfate	22		0.25

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-18**

Lab Sample ID: 280-113726-9

Date Sampled: 08/28/2018 1420

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 66.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1652	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	12		0.30
Sulfate	19		0.25

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-07**

Lab Sample ID: 280-113726-1

Date Sampled: 08/28/2018 1025

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428392      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-428015      Lab File ID: 51a083118Bb.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/01/2018 0259      Final Weight/Volume: 50 mL  
Prep Date: 08/30/2018 0743

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	24		0.20
Magnesium, Dissolved	6.3		0.10
Potassium, Dissolved	4.3		2.0
Sodium, Dissolved	22		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428396      Instrument ID: MT\_077  
Prep Method: 3005A      Prep Batch: 280-428036      Lab File ID: 134SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 1838      Final Weight/Volume: 50 mL  
Prep Date: 08/30/2018 0743

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020      Analysis Batch: 580-284304      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-284034      Lab File ID: 098SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/18/2018 2341      Final Weight/Volume: 50 mL  
Prep Date: 09/14/2018 1748

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-08**

Lab Sample ID: 280-113726-2

Date Sampled: 08/28/2018 0959

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428392      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-428015      Lab File ID: 51a083118Bb.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/01/2018 0302      Final Weight/Volume: 50 mL  
Prep Date: 08/30/2018 0743

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	29		0.20
Magnesium, Dissolved	8.4		0.10
Potassium, Dissolved	4.3		2.0
Sodium, Dissolved	13		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428396      Instrument ID: MT\_077  
Prep Method: 3005A      Prep Batch: 280-428036      Lab File ID: 141SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 1904      Final Weight/Volume: 50 mL  
Prep Date: 08/30/2018 0743

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.24		0.0010

Analysis Method: 6020      Analysis Batch: 580-284304      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-284034      Lab File ID: 107SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/19/2018 0019      Final Weight/Volume: 50 mL  
Prep Date: 09/14/2018 1748

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-09**

Lab Sample ID: 280-113726-3

Date Sampled: 08/28/2018 1153

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428392      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-428015      Lab File ID: 51a083118Bb.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/01/2018 0306      Final Weight/Volume: 50 mL  
Prep Date: 08/30/2018 0743

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	26		0.20
Magnesium, Dissolved	7.8		0.10
Potassium, Dissolved	11		2.0
Sodium, Dissolved	22		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428396      Instrument ID: MT\_077  
Prep Method: 3005A      Prep Batch: 280-428036      Lab File ID: 142SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 1908      Final Weight/Volume: 50 mL  
Prep Date: 08/30/2018 0743

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.043		0.0010

Analysis Method: 6020      Analysis Batch: 580-284304      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-284034      Lab File ID: 108SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/19/2018 0024      Final Weight/Volume: 50 mL  
Prep Date: 09/14/2018 1748

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-11**

Lab Sample ID: 280-113726-4

Date Sampled: 08/28/2018 1310

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428392      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-428015      Lab File ID: 51a083118Bb.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/01/2018 0309      Final Weight/Volume: 50 mL  
Prep Date: 08/30/2018 0743

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	21		0.20
Magnesium, Dissolved	8.9		0.10
Potassium, Dissolved	2.5		2.0
Sodium, Dissolved	6.2		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428396      Instrument ID: MT\_077  
Prep Method: 3005A      Prep Batch: 280-428036      Lab File ID: 143SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 1912      Final Weight/Volume: 50 mL  
Prep Date: 08/30/2018 0743

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.39		0.0010

Analysis Method: 6020      Analysis Batch: 580-284304      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-284034      Lab File ID: 109SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/19/2018 0028      Final Weight/Volume: 50 mL  
Prep Date: 09/14/2018 1748

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	0.60		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-12**

Lab Sample ID: 280-113726-5

Date Sampled: 08/28/2018 1145

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428392      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-428015      Lab File ID: 51a083118Bb.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/01/2018 0326      Final Weight/Volume: 50 mL  
Prep Date: 08/30/2018 0743

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	29		0.20
Magnesium, Dissolved	8.5		0.10
Potassium, Dissolved	ND		2.0
Sodium, Dissolved	7.7		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428396      Instrument ID: MT\_077  
Prep Method: 3005A      Prep Batch: 280-428036      Lab File ID: 144SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 1916      Final Weight/Volume: 50 mL  
Prep Date: 08/30/2018 0743

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020      Analysis Batch: 580-284304      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-284034      Lab File ID: 110SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/19/2018 0032      Final Weight/Volume: 50 mL  
Prep Date: 09/14/2018 1748

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18



## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-13**

Lab Sample ID: 280-113726-6

Date Sampled: 08/28/2018 1402

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B	Analysis Batch: 280-428392	Instrument ID: MT_051
Prep Method: 3005A	Prep Batch: 280-428015	Lab File ID: 51a083118Bb.csv
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 09/01/2018 0330		Final Weight/Volume: 50 mL
Prep Date: 08/30/2018 0743		

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	8.1		0.20
Magnesium, Dissolved	4.0		0.10
Potassium, Dissolved	2.2		2.0
Sodium, Dissolved	5.5		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020	Analysis Batch: 280-428396	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-428036	Lab File ID: 145SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 08/30/2018 1919		Final Weight/Volume: 50 mL
Prep Date: 08/30/2018 0743		

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020	Analysis Batch: 580-284304	Instrument ID: SEA044
Prep Method: 3005A	Prep Batch: 580-284034	Lab File ID: 111SMPL.D
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 09/19/2018 0036		Final Weight/Volume: 50 mL
Prep Date: 09/14/2018 1748		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-14**

Lab Sample ID: 280-113726-7

Date Sampled: 08/28/2018 1230

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428392      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-428015      Lab File ID: 51a083118Bb.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/01/2018 0333      Final Weight/Volume: 50 mL  
Prep Date: 08/30/2018 0743

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	28		0.20
Magnesium, Dissolved	8.8		0.10
Potassium, Dissolved	2.1		2.0
Sodium, Dissolved	7.7		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428396      Instrument ID: MT\_077  
Prep Method: 3005A      Prep Batch: 280-428036      Lab File ID: 146SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 1923      Final Weight/Volume: 50 mL  
Prep Date: 08/30/2018 0743

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020      Analysis Batch: 580-284304      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-284034      Lab File ID: 112SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/19/2018 0041      Final Weight/Volume: 50 mL  
Prep Date: 09/14/2018 1748

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-16**

Lab Sample ID: 280-113726-8

Date Sampled: 08/28/2018 1330

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428392      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-428015      Lab File ID: 51a083118Bb.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/01/2018 0336      Final Weight/Volume: 50 mL  
Prep Date: 08/30/2018 0743

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	27		0.20
Magnesium, Dissolved	7.3		0.10
Potassium, Dissolved	5.0		2.0
Sodium, Dissolved	20		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428396      Instrument ID: MT\_077  
Prep Method: 3005A      Prep Batch: 280-428036      Lab File ID: 147SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 1927      Final Weight/Volume: 50 mL  
Prep Date: 08/30/2018 0743

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.0074		0.0010

Analysis Method: 6020      Analysis Batch: 580-284304      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-284034      Lab File ID: 113SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/19/2018 0045      Final Weight/Volume: 50 mL  
Prep Date: 09/14/2018 1748

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-113726-1

**Client Sample ID: HVL-082818-18**

Lab Sample ID: 280-113726-9

Date Sampled: 08/28/2018 1420

Client Matrix: Water

Date Received: 08/29/2018 0900

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428392      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-428015      Lab File ID: 51a083118Bb.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/01/2018 0340      Final Weight/Volume: 50 mL  
Prep Date: 08/30/2018 0743

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	32		0.20
Magnesium, Dissolved	11		0.10
Potassium, Dissolved	4.5		2.0
Sodium, Dissolved	19		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428396      Instrument ID: MT\_077  
Prep Method: 3005A      Prep Batch: 280-428036      Lab File ID: 148SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 1931      Final Weight/Volume: 50 mL  
Prep Date: 08/30/2018 0743

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020      Analysis Batch: 580-284304      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-284034      Lab File ID: 114SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/19/2018 0049      Final Weight/Volume: 50 mL  
Prep Date: 09/14/2018 1748

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

Client: SCS Engineers

Job Number: 280-113726-1

**General Chemistry**

**Client Sample ID: HVL-082818-07**

Lab Sample ID: 280-113726-1

Date Sampled: 08/28/2018 1025

Client Matrix: Water

Date Received: 08/29/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	1.6		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-427923		Analysis Date: 08/29/2018 1823			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429118		Analysis Date: 09/10/2018 1313			
Alkalinity	98		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-428436		Analysis Date: 08/31/2018 1758			
Total Dissolved Solids	170		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428455		Analysis Date: 09/04/2018 1215			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-428183		Analysis Date: 08/30/2018 1751			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428424		Analysis Date: 08/31/2018 1949			

Client: SCS Engineers

Job Number: 280-113726-1

**General Chemistry**

**Client Sample ID: HVL-082818-08**

Lab Sample ID: 280-113726-2

Date Sampled: 08/28/2018 0959

Client Matrix: Water

Date Received: 08/29/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	ND		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-427923		Analysis Date: 08/29/2018 1934			
Ammonia	0.50		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429118		Analysis Date: 09/10/2018 1315			
Alkalinity	110		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-428436		Analysis Date: 08/31/2018 1805			
Total Dissolved Solids	170		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428455		Analysis Date: 09/04/2018 1215			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-428183		Analysis Date: 08/30/2018 1751			
Total Organic Carbon - Quad	2.2		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428424		Analysis Date: 08/31/2018 2006			

Client: SCS Engineers

Job Number: 280-113726-1

**General Chemistry**

**Client Sample ID: HVL-082818-09**

Lab Sample ID: 280-113726-3

Date Sampled: 08/28/2018 1153

Client Matrix: Water

Date Received: 08/29/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	1.7		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-427923		Analysis Date: 08/29/2018 1952			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429118		Analysis Date: 09/10/2018 1317			
Alkalinity	120		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-428436		Analysis Date: 08/31/2018 1812			
Total Dissolved Solids	200		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428455		Analysis Date: 09/04/2018 1215			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-428183		Analysis Date: 08/30/2018 1751			
Total Organic Carbon - Quad	1.5		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428424		Analysis Date: 08/31/2018 2023			

Client: SCS Engineers

Job Number: 280-113726-1

**General Chemistry**

**Client Sample ID: HVL-082818-11**

Lab Sample ID: 280-113726-4

Date Sampled: 08/28/2018 1310

Client Matrix: Water

Date Received: 08/29/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	ND		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-427923		Analysis Date: 08/29/2018 2010			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429118		Analysis Date: 09/10/2018 1319			
Alkalinity	84		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-428436		Analysis Date: 08/31/2018 1819			
Total Dissolved Solids	140		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428455		Analysis Date: 09/04/2018 1215			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-428183		Analysis Date: 08/30/2018 1751			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428424		Analysis Date: 08/31/2018 2040			



Client: SCS Engineers

Job Number: 280-113726-1

**General Chemistry**

**Client Sample ID: HVL-082818-12**

Lab Sample ID: 280-113726-5

Date Sampled: 08/28/2018 1145

Client Matrix: Water

Date Received: 08/29/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	0.48		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-427923		Analysis Date: 08/29/2018 2028			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429246		Analysis Date: 09/11/2018 1021			
Alkalinity	99		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-428436		Analysis Date: 08/31/2018 1827			
Total Dissolved Solids	140		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428455		Analysis Date: 09/04/2018 1215			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-428183		Analysis Date: 08/30/2018 1751			
Total Organic Carbon - Quad	1.1		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428424		Analysis Date: 08/31/2018 2058			

Client: SCS Engineers

Job Number: 280-113726-1

**General Chemistry**

**Client Sample ID: HVL-082818-13**

Lab Sample ID: 280-113726-6

Date Sampled: 08/28/2018 1402

Client Matrix: Water

Date Received: 08/29/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	ND		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-427923		Analysis Date: 08/29/2018 2157			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429246		Analysis Date: 09/11/2018 1023			
Alkalinity	44		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-428436		Analysis Date: 08/31/2018 1834			
Total Dissolved Solids	92		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428455		Analysis Date: 09/04/2018 1215			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-428183		Analysis Date: 08/30/2018 1751			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428424		Analysis Date: 08/31/2018 2115			

Client: SCS Engineers

Job Number: 280-113726-1

General Chemistry

Client Sample ID: HVL-082818-14

Lab Sample ID: 280-113726-7

Date Sampled: 08/28/2018 1230

Client Matrix: Water

Date Received: 08/29/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	0.56		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-427923		Analysis Date: 08/29/2018 2214			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429246		Analysis Date: 09/11/2018 1025			
Alkalinity	96		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-428436		Analysis Date: 08/31/2018 1858			
Total Dissolved Solids	160		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428455		Analysis Date: 09/04/2018 1215			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-428183		Analysis Date: 08/30/2018 1751			
Total Organic Carbon - Quad	1.1		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428424		Analysis Date: 08/31/2018 2209			

Client: SCS Engineers

Job Number: 280-113726-1

General Chemistry

Client Sample ID: HVL-082818-16

Lab Sample ID: 280-113726-8

Client Matrix: Water

Date Sampled: 08/28/2018 1330

Date Received: 08/29/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	ND		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-427923		Analysis Date: 08/29/2018 2232			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429246		Analysis Date: 09/11/2018 1039			
Alkalinity	110		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-428436		Analysis Date: 08/31/2018 1906			
Total Dissolved Solids	190		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428455		Analysis Date: 09/04/2018 1215			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-428183		Analysis Date: 08/30/2018 1751			
Total Organic Carbon - Quad	1.2		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428424		Analysis Date: 08/31/2018 2245			

Client: SCS Engineers

Job Number: 280-113726-1

**General Chemistry**

**Client Sample ID: HVL-082818-18**

Lab Sample ID: 280-113726-9

Date Sampled: 08/28/2018 1420

Client Matrix: Water

Date Received: 08/29/2018 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	0.24		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-427923		Analysis Date: 08/29/2018 2250			
Ammonia	ND	F1 F2	mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429246		Analysis Date: 09/11/2018 1041			
Alkalinity	130		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-428436		Analysis Date: 08/31/2018 1913			
Total Dissolved Solids	98		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428455		Analysis Date: 09/04/2018 1215			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-428183		Analysis Date: 08/30/2018 1751			
Total Organic Carbon - Quad	1.1		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428424		Analysis Date: 08/31/2018 2228			

## DATA REPORTING QUALIFIERS

Client: SCS Engineers

Job Number: 280-113726-1

<b>Lab Section</b>	<b>Qualifier</b>	<b>Description</b>
General Chemistry	F1	MS and/or MSD Recovery is outside acceptance limits.
	F2	MS/MSD RPD exceeds control limits

# QUALITY CONTROL RESULTS

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS VOA</b>					
<b>Analysis Batch:280-428799</b>					
LCS 280-428799/4	Lab Control Sample	T	Water	8260B	
MB 280-428799/8	Method Blank	T	Water	8260B	
280-113726-1	HVL-082818-07	T	Water	8260B	
280-113726-2	HVL-082818-08	T	Water	8260B	
280-113726-3	HVL-082818-09	T	Water	8260B	
280-113726-4	HVL-082818-11	T	Water	8260B	
280-113726-5	HVL-082818-12	T	Water	8260B	
280-113726-6	HVL-082818-13	T	Water	8260B	
280-113726-7	HVL-082818-14	T	Water	8260B	
280-113733-A-5 MS	Matrix Spike	T	Water	8260B	
280-113733-A-5 MSD	Matrix Spike Duplicate	T	Water	8260B	
<b>Analysis Batch:280-428964</b>					
LCS 280-428964/4	Lab Control Sample	T	Water	8260B	
MB 280-428964/6	Method Blank	T	Water	8260B	
280-113726-8	HVL-082818-16	T	Water	8260B	
280-113726-9	HVL-082818-18	T	Water	8260B	
280-113726-10	TRIP BLANK	T	Water	8260B	
280-113827-B-1 MS	Matrix Spike	T	Water	8260B	
280-113827-B-1 MSD	Matrix Spike Duplicate	T	Water	8260B	

**Report Basis**

T = Total



# Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

## QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 580-284034</b>					
LCS 580-284034/23-A	Lab Control Sample	R	Water	3005A	
LCSD 580-284034/24-A	Lab Control Sample Duplicate	R	Water	3005A	
MB 580-284034/22-A	Method Blank	R	Water	3005A	
280-113726-1	HVL-082818-07	D	Water	3005A	
280-113726-1DU	Duplicate	D	Water	3005A	
280-113726-1MS	Matrix Spike	D	Water	3005A	
280-113726-1MSD	Matrix Spike Duplicate	D	Water	3005A	
280-113726-2	HVL-082818-08	D	Water	3005A	
280-113726-3	HVL-082818-09	D	Water	3005A	
280-113726-4	HVL-082818-11	D	Water	3005A	
280-113726-5	HVL-082818-12	D	Water	3005A	
280-113726-6	HVL-082818-13	D	Water	3005A	
280-113726-7	HVL-082818-14	D	Water	3005A	
280-113726-8	HVL-082818-16	D	Water	3005A	
280-113726-9	HVL-082818-18	D	Water	3005A	
<b>Analysis Batch:580-284304</b>					
LCS 580-284034/23-A	Lab Control Sample	R	Water	6020	580-284034
LCSD 580-284034/24-A	Lab Control Sample Duplicate	R	Water	6020	580-284034
MB 580-284034/22-A	Method Blank	R	Water	6020	580-284034
280-113726-1	HVL-082818-07	D	Water	6020	580-284034
280-113726-1DU	Duplicate	D	Water	6020	580-284034
280-113726-1MS	Matrix Spike	D	Water	6020	580-284034
280-113726-1MSD	Matrix Spike Duplicate	D	Water	6020	580-284034
280-113726-2	HVL-082818-08	D	Water	6020	580-284034
280-113726-3	HVL-082818-09	D	Water	6020	580-284034
280-113726-4	HVL-082818-11	D	Water	6020	580-284034
280-113726-5	HVL-082818-12	D	Water	6020	580-284034
280-113726-6	HVL-082818-13	D	Water	6020	580-284034
280-113726-7	HVL-082818-14	D	Water	6020	580-284034
280-113726-8	HVL-082818-16	D	Water	6020	580-284034
280-113726-9	HVL-082818-18	D	Water	6020	580-284034

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 280-428015</b>					
LCS 280-428015/2-A	Lab Control Sample	R	Water	3005A	
MB 280-428015/1-A	Method Blank	R	Water	3005A	
280-113726-1	HVL-082818-07	D	Water	3005A	
280-113726-2	HVL-082818-08	D	Water	3005A	
280-113726-3	HVL-082818-09	D	Water	3005A	
280-113726-4	HVL-082818-11	D	Water	3005A	
280-113726-5	HVL-082818-12	D	Water	3005A	
280-113726-6	HVL-082818-13	D	Water	3005A	
280-113726-7	HVL-082818-14	D	Water	3005A	
280-113726-8	HVL-082818-16	D	Water	3005A	
280-113726-9	HVL-082818-18	D	Water	3005A	
280-113745-D-1-B MS	Matrix Spike	D	Water	3005A	
280-113745-D-1-C MSD	Matrix Spike Duplicate	D	Water	3005A	
<b>Prep Batch: 280-428036</b>					
LCS 280-428036/2-A	Lab Control Sample	R	Water	3005A	
MB 280-428036/1-A	Method Blank	R	Water	3005A	
280-113726-1	HVL-082818-07	D	Water	3005A	
280-113726-1MS	Matrix Spike	D	Water	3005A	
280-113726-1MSD	Matrix Spike Duplicate	D	Water	3005A	
280-113726-2	HVL-082818-08	D	Water	3005A	
280-113726-3	HVL-082818-09	D	Water	3005A	
280-113726-4	HVL-082818-11	D	Water	3005A	
280-113726-5	HVL-082818-12	D	Water	3005A	
280-113726-6	HVL-082818-13	D	Water	3005A	
280-113726-7	HVL-082818-14	D	Water	3005A	
280-113726-8	HVL-082818-16	D	Water	3005A	
280-113726-9	HVL-082818-18	D	Water	3005A	
<b>Analysis Batch:280-428392</b>					
LCS 280-428015/2-A	Lab Control Sample	R	Water	6010B	280-428015
MB 280-428015/1-A	Method Blank	R	Water	6010B	280-428015
280-113726-1	HVL-082818-07	D	Water	6010B	280-428015
280-113726-2	HVL-082818-08	D	Water	6010B	280-428015
280-113726-3	HVL-082818-09	D	Water	6010B	280-428015
280-113726-4	HVL-082818-11	D	Water	6010B	280-428015
280-113726-5	HVL-082818-12	D	Water	6010B	280-428015
280-113726-6	HVL-082818-13	D	Water	6010B	280-428015
280-113726-7	HVL-082818-14	D	Water	6010B	280-428015
280-113726-8	HVL-082818-16	D	Water	6010B	280-428015
280-113726-9	HVL-082818-18	D	Water	6010B	280-428015
280-113745-D-1-B MS	Matrix Spike	D	Water	6010B	280-428015
280-113745-D-1-C MSD	Matrix Spike Duplicate	D	Water	6010B	280-428015

TestAmerica Denver

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Analysis Batch:280-428396</b>					
LCS 280-428036/2-A	Lab Control Sample	R	Water	6020	280-428036
MB 280-428036/1-A	Method Blank	R	Water	6020	280-428036
280-113726-1	HVL-082818-07	D	Water	6020	280-428036
280-113726-1MS	Matrix Spike	D	Water	6020	280-428036
280-113726-1MSD	Matrix Spike Duplicate	D	Water	6020	280-428036
280-113726-2	HVL-082818-08	D	Water	6020	280-428036
280-113726-3	HVL-082818-09	D	Water	6020	280-428036
280-113726-4	HVL-082818-11	D	Water	6020	280-428036
280-113726-5	HVL-082818-12	D	Water	6020	280-428036
280-113726-6	HVL-082818-13	D	Water	6020	280-428036
280-113726-7	HVL-082818-14	D	Water	6020	280-428036
280-113726-8	HVL-082818-16	D	Water	6020	280-428036
280-113726-9	HVL-082818-18	D	Water	6020	280-428036

#### Report Basis

D = Dissolved

R = Total Recoverable

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

## QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-427923</b>					
LCS 280-427923/4	Lab Control Sample	T	Water	300.0	
LCSD 280-427923/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-427923/6	Method Blank	T	Water	300.0	
280-113726-1	HVL-082818-07	T	Water	300.0	
280-113726-1DU	Duplicate	T	Water	300.0	
280-113726-1MS	Matrix Spike	T	Water	300.0	
280-113726-1MSD	Matrix Spike Duplicate	T	Water	300.0	
280-113726-2	HVL-082818-08	T	Water	300.0	
280-113726-3	HVL-082818-09	T	Water	300.0	
280-113726-4	HVL-082818-11	T	Water	300.0	
280-113726-5	HVL-082818-12	T	Water	300.0	
280-113726-6	HVL-082818-13	T	Water	300.0	
280-113726-7	HVL-082818-14	T	Water	300.0	
280-113726-8	HVL-082818-16	T	Water	300.0	
280-113726-9	HVL-082818-18	T	Water	300.0	
<b>Analysis Batch:280-428183</b>					
LCS 280-428183/2	Lab Control Sample	T	Water	SM 2540D	
MB 280-428183/1	Method Blank	T	Water	SM 2540D	
280-113726-1	HVL-082818-07	T	Water	SM 2540D	
280-113726-1DU	Duplicate	T	Water	SM 2540D	
280-113726-2	HVL-082818-08	T	Water	SM 2540D	
280-113726-3	HVL-082818-09	T	Water	SM 2540D	
280-113726-4	HVL-082818-11	T	Water	SM 2540D	
280-113726-5	HVL-082818-12	T	Water	SM 2540D	
280-113726-6	HVL-082818-13	T	Water	SM 2540D	
280-113726-7	HVL-082818-14	T	Water	SM 2540D	
280-113726-8	HVL-082818-16	T	Water	SM 2540D	
280-113726-9	HVL-082818-18	T	Water	SM 2540D	
<b>Analysis Batch:280-428424</b>					
LCS 280-428424/3	Lab Control Sample	T	Water	SM 5310B	
MB 280-428424/4	Method Blank	T	Water	SM 5310B	
280-113726-1	HVL-082818-07	T	Water	SM 5310B	
280-113726-2	HVL-082818-08	T	Water	SM 5310B	
280-113726-3	HVL-082818-09	T	Water	SM 5310B	
280-113726-4	HVL-082818-11	T	Water	SM 5310B	
280-113726-5	HVL-082818-12	T	Water	SM 5310B	
280-113726-6	HVL-082818-13	T	Water	SM 5310B	
280-113726-7	HVL-082818-14	T	Water	SM 5310B	
280-113726-8	HVL-082818-16	T	Water	SM 5310B	
280-113726-8MS	Matrix Spike	T	Water	SM 5310B	
280-113726-8MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
280-113726-9	HVL-082818-18	T	Water	SM 5310B	

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## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-428436</b>					
LCS 280-428436/4	Lab Control Sample	T	Water	SM 2320B	
MB 280-428436/5	Method Blank	T	Water	SM 2320B	
280-113726-1	HVL-082818-07	T	Water	SM 2320B	
280-113726-2	HVL-082818-08	T	Water	SM 2320B	
280-113726-3	HVL-082818-09	T	Water	SM 2320B	
280-113726-4	HVL-082818-11	T	Water	SM 2320B	
280-113726-5	HVL-082818-12	T	Water	SM 2320B	
280-113726-6	HVL-082818-13	T	Water	SM 2320B	
280-113726-7	HVL-082818-14	T	Water	SM 2320B	
280-113726-8	HVL-082818-16	T	Water	SM 2320B	
280-113726-9	HVL-082818-18	T	Water	SM 2320B	
280-113761-B-2 DU	Duplicate	T	Water	SM 2320B	
<b>Analysis Batch:280-428455</b>					
LCS 280-428455/2	Lab Control Sample	T	Water	SM 2540C	
MB 280-428455/1	Method Blank	T	Water	SM 2540C	
280-113724-A-2 DU	Duplicate	T	Water	SM 2540C	
280-113726-1	HVL-082818-07	T	Water	SM 2540C	
280-113726-2	HVL-082818-08	T	Water	SM 2540C	
280-113726-3	HVL-082818-09	T	Water	SM 2540C	
280-113726-4	HVL-082818-11	T	Water	SM 2540C	
280-113726-5	HVL-082818-12	T	Water	SM 2540C	
280-113726-6	HVL-082818-13	T	Water	SM 2540C	
280-113726-7	HVL-082818-14	T	Water	SM 2540C	
280-113726-8	HVL-082818-16	T	Water	SM 2540C	
280-113726-9	HVL-082818-18	T	Water	SM 2540C	
<b>Analysis Batch:280-429118</b>					
LCS 280-429118/62	Lab Control Sample	T	Water	350.1	
MB 280-429118/63	Method Blank	T	Water	350.1	
280-113726-1	HVL-082818-07	T	Water	350.1	
280-113726-2	HVL-082818-08	T	Water	350.1	
280-113726-3	HVL-082818-09	T	Water	350.1	
280-113726-4	HVL-082818-11	T	Water	350.1	
280-113928-C-1 MS	Matrix Spike	T	Water	350.1	
280-113928-C-1 MSD	Matrix Spike Duplicate	T	Water	350.1	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-429246</b>					
LCS 280-429246/18	Lab Control Sample	T	Water	350.1	
MB 280-429246/19	Method Blank	T	Water	350.1	
280-113726-5	HVL-082818-12	T	Water	350.1	
280-113726-6	HVL-082818-13	T	Water	350.1	
280-113726-7	HVL-082818-14	T	Water	350.1	
280-113726-8	HVL-082818-16	T	Water	350.1	
280-113726-9	HVL-082818-18	T	Water	350.1	
280-113726-9MS	Matrix Spike	T	Water	350.1	
280-113726-9MSD	Matrix Spike Duplicate	T	Water	350.1	

#### Report Basis

T = Total

### HPLC/IC

<b>Analysis Batch:160-387239</b>					
LCS 160-387239/10	Lab Control Sample	T	Water	300.0	
MB 160-387239/9	Method Blank	T	Water	300.0	
280-113694-E-1 DU	Duplicate	T	Water	300.0	
280-113694-E-1 DUDL	Duplicate	T	Water	300.0	
280-113694-E-1 MS	Matrix Spike	T	Water	300.0	
280-113694-E-1 MSDL	Matrix Spike	T	Water	300.0	
280-113726-1	HVL-082818-07	T	Water	300.0	
280-113726-1DL	HVL-082818-07	T	Water	300.0	
280-113726-2	HVL-082818-08	T	Water	300.0	
280-113726-2DL	HVL-082818-08	T	Water	300.0	
280-113726-3	HVL-082818-09	T	Water	300.0	
280-113726-3DL	HVL-082818-09	T	Water	300.0	
280-113726-4	HVL-082818-11	T	Water	300.0	
280-113726-5	HVL-082818-12	T	Water	300.0	
280-113726-5DL	HVL-082818-12	T	Water	300.0	
280-113726-6	HVL-082818-13	T	Water	300.0	
280-113726-7	HVL-082818-14	T	Water	300.0	
280-113726-7DL	HVL-082818-14	T	Water	300.0	
280-113726-8	HVL-082818-16	T	Water	300.0	
280-113726-8DL	HVL-082818-16	T	Water	300.0	
280-113726-9	HVL-082818-18	T	Water	300.0	
280-113726-9DL	HVL-082818-18	T	Water	300.0	

#### Report Basis

T = Total

TestAmerica Denver

Client: SCS Engineers

Job Number: 280-113726-1

**Surrogate Recovery Report**

**8260B Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	DBFM %Rec	TOL %Rec
280-113726-1	HVL-082818-07	91	95	101	104
280-113726-2	HVL-082818-08	89	95	97	102
280-113726-3	HVL-082818-09	88	95	97	101
280-113726-4	HVL-082818-11	91	95	97	100
280-113726-5	HVL-082818-12	91	94	99	102
280-113726-6	HVL-082818-13	91	98	98	102
280-113726-7	HVL-082818-14	92	96	97	100
280-113726-8	HVL-082818-16	95	107	95	91
280-113726-9	HVL-082818-18	95	104	97	93
280-113726-10	TRIP BLANK	100	113	101	94
MB 280-428799/8		103	102	105	107
MB 280-428964/6		96	108	97	91
LCS 280-428799/4		96	98	98	101
LCS 280-428964/4		101	114	100	96
280-113733-A-5 MS		98	99	101	106
280-113827-B-1 MS		97	109	99	96
280-113733-A-5 MSD		91	92	95	96
280-113827-B-1 MSD		96	119	97	99

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	70-127
BFB = 4-Bromofluorobenzene (Surr)	78-120
DBFM = Dibromofluoromethane (Surr)	77-120
TOL = Toluene-d8 (Surr)	80-125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Method Blank - Batch: 280-428799**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: MB 280-428799/8  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/06/2018 1943  
 Prep Date: 09/06/2018 1943  
 Leach Date: N/A

Analysis Batch: 280-428799  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: VMS\_MS1  
 Lab File ID: MS1\_6585.D  
 Initial Weight/Volume: 20 mL  
 Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50



# Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

## Method Blank - Batch: 280-428799

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: MB 280-428799/8  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/06/2018 1943  
Prep Date: 09/06/2018 1943  
Leach Date: N/A

Analysis Batch: 280-428799  
Prep Batch: N/A  
Leach Batch: N/A  
Units: ug/L

Instrument ID: VMS\_MS1  
Lab File ID: MS1\_6585.D  
Initial Weight/Volume: 20 mL  
Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
trans-1,4-Dichloro-2-butene	ND		3.0
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50
Surrogate	% Rec		Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		70 - 127
4-Bromofluorobenzene (Surr)	102		78 - 120
Dibromofluoromethane (Surr)	105		77 - 120
Toluene-d8 (Surr)	107		80 - 125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Lab Control Sample - Batch: 280-428799**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID:	LCS 280-428799/4	Analysis Batch:	280-428799	Instrument ID:	VMS_MS1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	MS1_6584.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	09/06/2018 1923	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	09/06/2018 1923				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1,2-Tetrachloroethane	5.00	4.48	90	65 - 135	
1,1,1-Trichloroethane	5.00	4.99	100	65 - 135	
1,1,2,2-Tetrachloroethane	5.00	4.78	96	58 - 135	
1,1,2-Trichloroethane	5.00	4.55	91	64 - 135	
1,1-Dichloroethane	5.00	4.94	99	65 - 135	
1,1-Dichloroethene	5.00	3.83	77	65 - 136	
1,2,3-Trichloropropane	5.00	4.77	95	65 - 135	
1,2-Dibromo-3-Chloropropane	5.00	4.00	80	57 - 135	
1,2-Dibromoethane	5.00	4.37	87	65 - 135	
1,2-Dichlorobenzene	5.00	4.78	96	65 - 135	
1,2-Dichloroethane	5.00	5.17	103	65 - 135	
1,2-Dichloropropane	5.00	4.90	98	64 - 135	
1,4-Dichlorobenzene	5.00	4.60	92	65 - 135	
2-Butanone (MEK)	20.0	22.8	114	44 - 177	
2-Hexanone	20.0	16.4	82	57 - 139	
4-Methyl-2-pentanone (MIBK)	20.0	17.2	86	60 - 150	
Acetone	20.0	20.1	101	39 - 156	
Acrylonitrile	50.0	49.4	99	56 - 135	
Benzene	5.00	4.40	88	65 - 135	
Bromochloromethane	5.00	4.24	85	65 - 135	
Bromodichloromethane	5.00	4.94	99	65 - 135	
Bromoform	5.00	4.11	82	62 - 135	
Bromomethane	5.00	5.13	103	45 - 135	
Carbon disulfide	5.00	3.52	70	55 - 143	
Carbon tetrachloride	5.00	4.77	95	65 - 135	
Chlorobenzene	5.00	4.41	88	65 - 135	
Chloroethane	5.00	4.95	99	46 - 136	
Chloroform	5.00	4.93	99	65 - 135	
Chloromethane	5.00	4.38	88	34 - 145	
cis-1,2-Dichloroethene	5.00	4.26	85	65 - 135	
cis-1,3-Dichloropropene	5.00	4.65	93	65 - 135	
Dibromochloromethane	5.00	4.41	88	65 - 135	
Dibromomethane	5.00	4.52	90	65 - 135	
Dichlorodifluoromethane	5.00	3.61	72	43 - 142	
Ethylbenzene	5.00	4.36	87	65 - 135	
Iodomethane	5.00	3.94	79	65 - 142	
Methylene Chloride	5.00	3.91	78	54 - 141	
m-Xylene & p-Xylene	5.00	4.49	90	65 - 135	
o-Xylene	5.00	4.62	92	65 - 135	
Styrene	5.00	4.16	83	65 - 135	
Tetrachloroethene	5.00	3.97	79	65 - 135	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Lab Control Sample - Batch: 280-428799**

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: LCS 280-428799/4	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_6584.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/06/2018 1923	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 09/06/2018 1923		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Toluene	5.00	4.58	92	65 - 135	
trans-1,2-Dichloroethene	5.00	4.16	83	65 - 135	
trans-1,3-Dichloropropene	5.00	4.58	92	65 - 135	
trans-1,4-Dichloro-2-butene	5.00	5.57	111	53 - 135	
Trichloroethene	5.00	4.22	84	65 - 135	
Trichlorofluoromethane	5.00	4.95	99	53 - 137	
Vinyl acetate	10.0	11.4	114	11 - 187	
Vinyl chloride	5.00	4.60	92	40 - 137	
Surrogate		% Rec		Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		96		70 - 127	
4-Bromofluorobenzene (Surr)		98		78 - 120	
Dibromofluoromethane (Surr)		98		77 - 120	
Toluene-d8 (Surr)		101		80 - 125	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428799**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-113733-A-5 MS	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_6591.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/06/2018 2158		Final Weight/Volume: 20 mL
Prep Date: 09/06/2018 2158		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-113733-A-5 MSD	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_6592.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/06/2018 2218		Final Weight/Volume: 20 mL
Prep Date: 09/06/2018 2218		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1,1,2-Tetrachloroethane	91	86	65 - 135	6	20		
1,1,1-Trichloroethane	96	100	65 - 135	5	20		
1,1,2,2-Tetrachloroethane	101	96	58 - 135	5	20		
1,1,2-Trichloroethane	93	91	64 - 135	3	27		
1,1-Dichloroethane	98	95	65 - 135	3	21		
1,1-Dichloroethene	76	84	65 - 136	9	20		
1,2,3-Trichloropropane	101	93	65 - 135	8	23		
1,2-Dibromo-3-Chloropropane	90	84	57 - 135	6	22		
1,2-Dibromoethane	95	90	65 - 135	5	27		
1,2-Dichlorobenzene	92	89	65 - 135	4	20		
1,2-Dichloroethane	104	98	65 - 135	6	20		
1,2-Dichloropropane	100	96	64 - 135	4	20		
1,4-Dichlorobenzene	92	87	65 - 135	5	23		
2-Butanone (MEK)	117	124	44 - 177	6	32		
2-Hexanone	90	87	57 - 139	4	25		
4-Methyl-2-pentanone (MIBK)	93	91	60 - 150	2	22		
Acetone	102	116	39 - 156	9	23		
Acrylonitrile	105	102	56 - 135	3	30		
Benzene	87	86	65 - 135	1	20		
Bromochloromethane	87	83	65 - 135	4	29		
Bromodichloromethane	96	93	65 - 135	4	20		
Bromoform	88	84	62 - 135	4	27		
Bromomethane	94	87	45 - 135	8	33		
Carbon disulfide	70	73	55 - 143	4	20		
Carbon tetrachloride	93	97	65 - 135	5	21		
Chlorobenzene	91	86	65 - 135	6	20		
Chloroethane	92	82	46 - 136	11	25		
Chloroform	97	93	65 - 135	5	20		
Chloromethane	81	73	34 - 145	10	24		
cis-1,2-Dichloroethene	86	84	65 - 135	2	20		
cis-1,3-Dichloropropene	95	88	65 - 135	8	26		
Dibromochloromethane	91	86	65 - 135	6	20		

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428799**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-113733-A-5 MS	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_6591.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/06/2018 2158		Final Weight/Volume: 20 mL
Prep Date: 09/06/2018 2158		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-113733-A-5 MSD	Analysis Batch: 280-428799	Instrument ID: VMS_MS1
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS1_6592.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/06/2018 2218		Final Weight/Volume: 20 mL
Prep Date: 09/06/2018 2218		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Dibromomethane	93	87	65 - 135	6	26		
Dichlorodifluoromethane	66	58	43 - 142	13	30		
Ethylbenzene	88	84	65 - 135	5	20		
Iodomethane	79	77	65 - 142	2	25		
Methylene Chloride	75	73	54 - 141	4	26		
m-Xylene & p-Xylene	90	88	65 - 135	2	20		
o-Xylene	93	88	65 - 135	6	20		
Styrene	86	80	65 - 135	7	26		
Tetrachloroethene	83	83	65 - 135	0	20		
Toluene	89	89	65 - 135	1	20		
trans-1,2-Dichloroethene	82	84	65 - 135	2	24		
trans-1,3-Dichloropropene	96	92	65 - 135	4	26		
trans-1,4-Dichloro-2-butene	108	105	53 - 135	3	25		
Trichloroethene	85	85	65 - 135	0	20		
Trichlorofluoromethane	91	79	53 - 137	13	27		
Vinyl acetate	109	114	11 - 187	4	24		
Vinyl chloride	84	74	40 - 137	12	24		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98	91	70 - 127
4-Bromofluorobenzene (Surr)	99	92	78 - 120
Dibromofluoromethane (Surr)	101	95	77 - 120
Toluene-d8 (Surr)	106	96	80 - 125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Method Blank - Batch: 280-428964**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: MB 280-428964/6  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/07/2018 2319  
 Prep Date: 09/07/2018 2319  
 Leach Date: N/A

Analysis Batch: 280-428964  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: VMS\_Q  
 Lab File ID: Q7288.D  
 Initial Weight/Volume: 20 mL  
 Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Method Blank - Batch: 280-428964**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: MB 280-428964/6	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Q7288.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 2319	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 2319		
Leach Date: N/A		

Analyte	Result	Qual	RL
trans-1,4-Dichloro-2-butene	ND		3.0
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	96	70 - 127
4-Bromofluorobenzene (Surr)	108	78 - 120
Dibromofluoromethane (Surr)	97	77 - 120
Toluene-d8 (Surr)	91	80 - 125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Lab Control Sample - Batch: 280-428964**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID:	LCS 280-428964/4	Analysis Batch:	280-428964	Instrument ID:	VMS_Q
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	Q7286.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	09/07/2018 2234	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	09/07/2018 2234				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1,2-Tetrachloroethane	5.00	4.99	100	65 - 135	
1,1,1-Trichloroethane	5.00	5.42	108	65 - 135	
1,1,2,2-Tetrachloroethane	5.00	4.58	92	58 - 135	
1,1,2-Trichloroethane	5.00	4.97	99	64 - 135	
1,1-Dichloroethane	5.00	5.13	103	65 - 135	
1,1-Dichloroethene	5.00	4.56	91	65 - 136	
1,2,3-Trichloropropane	5.00	4.55	91	65 - 135	
1,2-Dibromo-3-Chloropropane	5.00	4.18	84	57 - 135	
1,2-Dibromoethane	5.00	4.41	88	65 - 135	
1,2-Dichlorobenzene	5.00	4.94	99	65 - 135	
1,2-Dichloroethane	5.00	4.87	97	65 - 135	
1,2-Dichloropropane	5.00	4.98	100	64 - 135	
1,4-Dichlorobenzene	5.00	5.13	103	65 - 135	
2-Butanone (MEK)	20.0	21.6	108	44 - 177	
2-Hexanone	20.0	20.0	100	57 - 139	
4-Methyl-2-pentanone (MIBK)	20.0	20.5	102	60 - 150	
Acetone	20.0	23.0	115	39 - 156	
Acrylonitrile	50.0	48.9	98	56 - 135	
Benzene	5.00	4.99	100	65 - 135	
Bromochloromethane	5.00	5.01	100	65 - 135	
Bromodichloromethane	5.00	4.93	99	65 - 135	
Bromoform	5.00	4.06	81	62 - 135	
Bromomethane	5.00	5.09	102	45 - 135	
Carbon disulfide	5.00	4.30	86	55 - 143	
Carbon tetrachloride	5.00	5.28	106	65 - 135	
Chlorobenzene	5.00	4.94	99	65 - 135	
Chloroethane	5.00	4.94	99	46 - 136	
Chloroform	5.00	5.23	105	65 - 135	
Chloromethane	5.00	4.27	85	34 - 145	
cis-1,2-Dichloroethene	5.00	4.98	100	65 - 135	
cis-1,3-Dichloropropene	5.00	4.63	93	65 - 135	
Dibromochloromethane	5.00	4.54	91	65 - 135	
Dibromomethane	5.00	4.79	96	65 - 135	
Dichlorodifluoromethane	5.00	4.14	83	43 - 142	
Ethylbenzene	5.00	5.30	106	65 - 135	
Iodomethane	5.00	4.52	90	65 - 142	
Methylene Chloride	5.00	4.84	97	54 - 141	
m-Xylene & p-Xylene	5.00	5.22	104	65 - 135	
o-Xylene	5.00	5.31	106	65 - 135	
Styrene	5.00	5.16	103	65 - 135	
Tetrachloroethene	5.00	4.78	96	65 - 135	



## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Lab Control Sample - Batch: 280-428964**

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: LCS 280-428964/4	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Q7286.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 2234	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 2234		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Toluene	5.00	5.30	106	65 - 135	
trans-1,2-Dichloroethene	5.00	4.93	99	65 - 135	
trans-1,3-Dichloropropene	5.00	5.08	102	65 - 135	
trans-1,4-Dichloro-2-butene	5.00	4.88	98	53 - 135	
Trichloroethene	5.00	4.91	98	65 - 135	
Trichlorofluoromethane	5.00	5.53	111	53 - 137	
Vinyl acetate	10.0	9.20	92	11 - 187	
Vinyl chloride	5.00	4.52	90	40 - 137	
Surrogate		% Rec		Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		101		70 - 127	
4-Bromofluorobenzene (Surr)		114		78 - 120	
Dibromofluoromethane (Surr)		100		77 - 120	
Toluene-d8 (Surr)		96		80 - 125	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428964**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-113827-B-1 MS	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Q7290.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0005		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0005		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-113827-B-1 MSD	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Q7291.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0028		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0028		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1,1,2-Tetrachloroethane	96	97	65 - 135	2	20		
1,1,1-Trichloroethane	103	98	65 - 135	5	20		
1,1,2,2-Tetrachloroethane	86	95	58 - 135	10	20		
1,1,2-Trichloroethane	92	91	64 - 135	0	27		
1,1-Dichloroethane	97	97	65 - 135	0	21		
1,1-Dichloroethene	87	82	65 - 136	6	20		
1,2,3-Trichloropropane	85	92	65 - 135	7	23		
1,2-Dibromo-3-Chloropropane	70	80	57 - 135	13	22		
1,2-Dibromoethane	82	85	65 - 135	4	27		
1,2-Dichlorobenzene	92	96	65 - 135	4	20		
1,2-Dichloroethane	92	96	65 - 135	4	20		
1,2-Dichloropropane	95	96	64 - 135	2	20		
1,4-Dichlorobenzene	98	101	65 - 135	3	23		
2-Butanone (MEK)	93	91	44 - 177	2	32		
2-Hexanone	83	88	57 - 139	6	25		
4-Methyl-2-pentanone (MIBK)	89	91	60 - 150	2	22		
Acetone	106	95	39 - 156	11	23		
Acrylonitrile	88	82	56 - 135	6	30		
Benzene	94	97	65 - 135	3	20		
Bromochloromethane	91	91	65 - 135	1	29		
Bromodichloromethane	96	96	65 - 135	0	20		
Bromoform	74	79	62 - 135	6	27		
Bromomethane	97	91	45 - 135	6	33		
Carbon disulfide	80	75	55 - 143	7	20		
Carbon tetrachloride	100	97	65 - 135	3	21		
Chlorobenzene	93	97	65 - 135	4	20		
Chloroethane	93	85	46 - 136	9	25		
Chloroform	103	102	65 - 135	1	20		
Chloromethane	79	75	34 - 145	6	24		
cis-1,2-Dichloroethene	96	92	65 - 135	4	20		
cis-1,3-Dichloropropene	87	94	65 - 135	8	26		
Dibromochloromethane	85	90	65 - 135	6	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428964**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-113827-B-1 MS	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Q7290.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0005		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0005		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-113827-B-1 MSD	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Q7291.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0028		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0028		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Dibromomethane	87	86	65 - 135	1	26		
Dichlorodifluoromethane	80	78	43 - 142	2	30		
Ethylbenzene	97	103	65 - 135	6	20		
Iodomethane	83	79	65 - 142	4	25		
Methylene Chloride	87	81	54 - 141	7	26		
m-Xylene & p-Xylene	98	104	65 - 135	6	20		
o-Xylene	99	103	65 - 135	4	20		
Styrene	94	98	65 - 135	4	26		
Tetrachloroethene	96	101	65 - 135	5	20		
Toluene	100	102	65 - 135	3	20		
trans-1,2-Dichloroethene	94	90	65 - 135	4	24		
trans-1,3-Dichloropropene	90	93	65 - 135	4	26		
trans-1,4-Dichloro-2-butene	84	97	53 - 135	14	25		
Trichloroethene	95	99	65 - 135	3	20		
Trichlorofluoromethane	109	102	53 - 137	6	27		
Vinyl acetate	82	86	11 - 187	5	24		
Vinyl chloride	89	83	40 - 137	7	24		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	97	96	70 - 127
4-Bromofluorobenzene (Surr)	109	119	78 - 120
Dibromofluoromethane (Surr)	99	97	77 - 120
Toluene-d8 (Surr)	96	99	80 - 125

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Method Blank - Batch: 160-387239**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 160-387239/9	Analysis Batch: 160-387239	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090518- 9.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/05/2018 1628	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Result	Qual	RL
Chloride	ND		0.20
Sulfate	ND		0.20

**Lab Control Sample - Batch: 160-387239**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: LCS 160-387239/10	Analysis Batch: 160-387239	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090518- 10.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/05/2018 1643	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.00	1.94	97	90 - 110	
Sulfate	8.00	7.70	96	90 - 110	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

## Matrix Spike - Batch: 160-387239

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-113694-E-1 MS  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/05/2018 1729  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 160-387239  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: CIC2500  
Lab File ID: 090518- 13.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume:  
Injection Volume: 50 uL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	11	4.00	15.3	110	90 - 110	

## Matrix Spike - Batch: 160-387239

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-113694-E-1 MSDL  
Client Matrix: Water  
Dilution: 5.0  
Analysis Date: 09/06/2018 1347  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 160-387239  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L  
Run Type: DL

Instrument ID: CIC2500  
Lab File ID: 090518- 54.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume:  
Injection Volume: 50 uL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	14	10.0	24.1	101	90 - 110	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

## Duplicate - Batch: 160-387239

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID:	280-113694-E-1 DU	Analysis Batch:	160-387239	Instrument ID:	CIC2500
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	090518- 12.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	09/05/2018 1714	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Sulfate	11	11.4	4	20	

## Duplicate - Batch: 160-387239

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID:	280-113694-E-1 DUDL	Analysis Batch:	160-387239	Instrument ID:	CIC2500
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	090518- 53.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1332	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A	Run Type:	DL	Injection Volume:	50 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	14	14.0	0.7	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Method Blank - Batch: 280-428015**

Lab Sample ID: MB 280-428015/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/01/2018 0252  
 Prep Date: 08/30/2018 0743  
 Leach Date: N/A

Analysis Batch: 280-428392  
 Prep Batch: 280-428015  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_051  
 Lab File ID: 51a083118Bb.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Calcium, Dissolved	ND		0.20
Magnesium, Dissolved	ND		0.10
Potassium, Dissolved	ND		2.0
Sodium, Dissolved	ND		1.0

**Lab Control Sample - Batch: 280-428015**

Lab Sample ID: LCS 280-428015/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/01/2018 0256  
 Prep Date: 08/30/2018 0743  
 Leach Date: N/A

Analysis Batch: 280-428392  
 Prep Batch: 280-428015  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_051  
 Lab File ID: 51a083118Bb.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Calcium, Dissolved	50.0	51.4	103	90 - 111	
Magnesium, Dissolved	50.0	50.1	100	90 - 113	
Potassium, Dissolved	50.0	51.1	102	89 - 114	
Sodium, Dissolved	50.0	52.8	106	90 - 115	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428015**

**Method: 6010B  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-113745-D-1-B MS	Analysis Batch: 280-428392	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-428015	Lab File ID: 51a083118Bb.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/01/2018 0350		Final Weight/Volume: 50 mL
Prep Date: 08/30/2018 0743		
Leach Date: N/A		

MSD Lab Sample ID: 280-113745-D-1-C MSD	Analysis Batch: 280-428392	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-428015	Lab File ID: 51a083118Bb.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/01/2018 0353		Final Weight/Volume: 50 mL
Prep Date: 08/30/2018 0743		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Calcium, Dissolved	101	104	48 - 153	2	20		
Magnesium, Dissolved	100	103	62 - 146	2	20		
Potassium, Dissolved	102	104	76 - 132	2	20		
Sodium, Dissolved	105	115	70 - 203	3	20		



## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Method Blank - Batch: 580-284034**

Lab Sample ID: MB 580-284034/22-A  
 Client Matrix: Water  
 Dilution: 5.0  
 Analysis Date: 09/18/2018 2328  
 Prep Date: 09/14/2018 1748  
 Leach Date: N/A

Analysis Batch: 580-284304  
 Prep Batch: 580-284034  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA044  
 Lab File ID: 095SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Iron, Dissolved	ND		0.18

**Lab Control Sample/  
 Lab Control Sample Duplicate Recovery Report - Batch: 580-284034**

LCS Lab Sample ID: LCS 580-284034/23-A  
 Client Matrix: Water  
 Dilution: 50  
 Analysis Date: 09/18/2018 2332  
 Prep Date: 09/14/2018 1748  
 Leach Date: N/A

Analysis Batch: 580-284304  
 Prep Batch: 580-284034  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA044  
 Lab File ID: 096SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-284034/24-A  
 Client Matrix: Water  
 Dilution: 50  
 Analysis Date: 09/18/2018 2337  
 Prep Date: 09/14/2018 1748  
 Leach Date: N/A

Analysis Batch: 580-284304  
 Prep Batch: 580-284034  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: SEA044  
 Lab File ID: 097SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Iron, Dissolved	100	104	80 - 120	4	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-284034**

**Method: 6020  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-113726-1  
Client Matrix: Water  
Dilution: 50  
Analysis Date: 09/18/2018 2354  
Prep Date: 09/14/2018 1748  
Leach Date: N/A

Analysis Batch: 580-284304  
Prep Batch: 580-284034  
Leach Batch: N/A

Instrument ID: SEA044  
Lab File ID: 101SMPL.D  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-113726-1  
Client Matrix: Water  
Dilution: 50  
Analysis Date: 09/18/2018 2358  
Prep Date: 09/14/2018 1748  
Leach Date: N/A

Analysis Batch: 580-284304  
Prep Batch: 580-284034  
Leach Batch: N/A

Instrument ID: SEA044  
Lab File ID: 102SMPL.D  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Iron, Dissolved	108	107	80 - 120	1	20		

**Duplicate - Batch: 580-284034**

**Method: 6020  
Preparation: 3005A  
Dissolved**

Lab Sample ID: 280-113726-1  
Client Matrix: Water  
Dilution: 5.0  
Analysis Date: 09/18/2018 2345  
Prep Date: 09/14/2018 1748  
Leach Date: N/A

Analysis Batch: 580-284304  
Prep Batch: 580-284034  
Leach Batch: N/A  
Units: mg/L

Instrument ID: SEA044  
Lab File ID: 099SMPL.D  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Iron, Dissolved	ND	ND	NC	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Method Blank - Batch: 280-428036**

Lab Sample ID: MB 280-428036/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/30/2018 1830  
 Prep Date: 08/30/2018 0743  
 Leach Date: N/A

Analysis Batch: 280-428396  
 Prep Batch: 280-428036  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_077  
 Lab File ID: 132\_BLK.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Manganese, Dissolved	ND		0.0010

**Lab Control Sample - Batch: 280-428036**

Lab Sample ID: LCS 280-428036/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/30/2018 1834  
 Prep Date: 08/30/2018 0743  
 Leach Date: N/A

Analysis Batch: 280-428396  
 Prep Batch: 280-428036  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_077  
 Lab File ID: 133\_LCS.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Manganese, Dissolved	0.0400	0.0401	100	85 - 117	

**Matrix Spike/  
 Matrix Spike Duplicate Recovery Report - Batch: 280-428036**

MS Lab Sample ID: 280-113726-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/30/2018 1845  
 Prep Date: 08/30/2018 0743  
 Leach Date: N/A

Analysis Batch: 280-428396  
 Prep Batch: 280-428036  
 Leach Batch: N/A

**Method: 6020  
 Preparation: 3005A  
 Dissolved**

Instrument ID: MT\_077  
 Lab File ID: 136SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-113726-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/30/2018 1849  
 Prep Date: 08/30/2018 0743  
 Leach Date: N/A

Analysis Batch: 280-428396  
 Prep Batch: 280-428036  
 Leach Batch: N/A

Instrument ID: MT\_077  
 Lab File ID: 137SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Manganese, Dissolved	96	97	85 - 117	0	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Method Blank - Batch: 280-427923**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-427923/6	Analysis Batch: 280-427923	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 06.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/29/2018 1805	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Nitrate as N	ND		0.20

**Method Reporting Limit Check - Batch: 280-427923**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-427923/3	Analysis Batch: 280-427923	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 03.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/29/2018 1626	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	0.200	ND	108	50 - 150	

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-427923**

**Method: 300.0**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-427923/4	Analysis Batch: 280-427923	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 04.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/29/2018 1644	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-427923/5	Analysis Batch: 280-427923	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 05.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/29/2018 1747	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Nitrate as N	95	94	90 - 110	0	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-427923**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-113726-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 08/29/2018 1859  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-427923  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom7  
Lab File ID: 09.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

MSD Lab Sample ID: 280-113726-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 08/29/2018 1916  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-427923  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom7  
Lab File ID: 10.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate as N	90	92	80 - 120	2	20		

**Duplicate - Batch: 280-427923**

**Method: 300.0  
Preparation: N/A**

Lab Sample ID: 280-113726-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 08/29/2018 1841  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-427923  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: WC\_IonChrom7  
Lab File ID: 08.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate as N	1.6	1.57	3	15	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Method Blank - Batch: 280-429118**

**Method: 350.1**  
**Preparation: N/A**

Lab Sample ID: MB 280-429118/63	Analysis Batch: 280-429118	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091018.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/10/2018 1259	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Ammonia	ND		0.10

**Lab Control Sample - Batch: 280-429118**

**Method: 350.1**  
**Preparation: N/A**

Lab Sample ID: LCS 280-429118/62	Analysis Batch: 280-429118	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091018.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/10/2018 1257	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	2.50	2.57	103	90 - 110	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-429118**

**Method: 350.1**  
**Preparation: N/A**

MS Lab Sample ID: 280-113928-C-1 MS	Analysis Batch: 280-429118	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091018.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 09/10/2018 1303		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-113928-C-1 MSD	Analysis Batch: 280-429118	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091018.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 09/10/2018 1305		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia	90	100	90 - 110	10	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Method Blank - Batch: 280-429246**

**Method: 350.1**  
**Preparation: N/A**

Lab Sample ID: MB 280-429246/19	Analysis Batch: 280-429246	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091118.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/11/2018 0933	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Ammonia	ND		0.10

**Lab Control Sample - Batch: 280-429246**

**Method: 350.1**  
**Preparation: N/A**

Lab Sample ID: LCS 280-429246/18	Analysis Batch: 280-429246	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091118.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/11/2018 0931	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	2.50	2.41	96	90 - 110	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-429246**

**Method: 350.1**  
**Preparation: N/A**

MS Lab Sample ID: 280-113726-9	Analysis Batch: 280-429246	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091118.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 09/11/2018 1043		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-113726-9	Analysis Batch: 280-429246	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091118.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 09/11/2018 1045		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia	84	99	90 - 110	16	10	F1	F2

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Method Blank - Batch: 280-428436**

**Method: SM 2320B  
Preparation: N/A**

Lab Sample ID: MB 280-428436/5	Analysis Batch: 280-428436	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 083118.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/31/2018 1719	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Alkalinity	ND		5.0

**Lab Control Sample - Batch: 280-428436**

**Method: SM 2320B  
Preparation: N/A**

Lab Sample ID: LCS 280-428436/4	Analysis Batch: 280-428436	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 083118.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/31/2018 1712	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	200	191	95	90 - 110	

**Duplicate - Batch: 280-428436**

**Method: SM 2320B  
Preparation: N/A**

Lab Sample ID: 280-113761-B-2 DU	Analysis Batch: 280-428436	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 083118.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/31/2018 1735	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity	170	174	0.1	10	



## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Method Blank - Batch: 280-428455**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: MB 280-428455/1	Analysis Batch: 280-428455	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/04/2018 1215	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Dissolved Solids	ND		10

**Lab Control Sample - Batch: 280-428455**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: LCS 280-428455/2	Analysis Batch: 280-428455	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/04/2018 1215	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Dissolved Solids	501	504	101	86 - 110	

**Duplicate - Batch: 280-428455**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: 280-113724-A-2 DU	Analysis Batch: 280-428455	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 25 mL
Analysis Date: 09/04/2018 1215	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Dissolved Solids	1800	1690	NC	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Method Blank - Batch: 280-428183**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: MB 280-428183/1	Analysis Batch: 280-428183	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 08/30/2018 1751	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Suspended Solids	ND		4.0

**Lab Control Sample - Batch: 280-428183**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: LCS 280-428183/2	Analysis Batch: 280-428183	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 08/30/2018 1751	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Suspended Solids	100	90.8	91	86 - 114	

**Duplicate - Batch: 280-428183**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: 280-113726-1	Analysis Batch: 280-428183	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 08/30/2018 1751	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Suspended Solids	ND	ND	NC	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113726-1

**Method Blank - Batch: 280-428424**

**Method: SM 5310B  
Preparation: N/A**

Lab Sample ID: MB 280-428424/4	Analysis Batch: 280-428424	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090418.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/31/2018 1822	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Organic Carbon - Quad	ND		1.0

**Lab Control Sample - Batch: 280-428424**

**Method: SM 5310B  
Preparation: N/A**

Lab Sample ID: LCS 280-428424/3	Analysis Batch: 280-428424	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090418.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/31/2018 1805	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Quad	25.0	24.2	97	88 - 112	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428424**

**Method: SM 5310B  
Preparation: N/A**

MS Lab Sample ID: 280-113726-8	Analysis Batch: 280-428424	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090418.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/31/2018 2302		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-113726-8	Analysis Batch: 280-428424	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090418.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/31/2018 2321		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Total Organic Carbon - Quad	90	93	88 - 112	3	15		

**Chain of Custody Record**

4445 6530 1120  
 4445 6530 1131

<b>Client Information</b> Company: SCS Engineers Address: 2405 140th Avenue NE Suite 107 City: Bellevue State, Zip: WA, 98005-1877 Phone: _____ Email: S.Graber@scsengineers.com Project Name: Hidden Valley Landfill Site: _____		Lab PM: Sara, Betsy A E-Mail: betsy.sara@testamericainc.com Project #: 28003580-Quarterly Groundwater Wells SSOW#: _____		Sampler: Sam G. Phone: 425-766-3362		Carrier Tracking No(s): 44456530 1142 44456530 1153		GOC No: 280-21691-6019.1 Page: 1 of 2 Job #: 04212022-03	
Due Date Requested: Standard TAT Requested (days): _____ PO #: _____ Purchase Order not required WO #: _____		Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Dissolved Metals (6010B/6020) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Dissolved Iron (TA Seattle) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No TDS/Alk/NO3(C) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No CUSO4 (TA St. Louis) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Ammonia/TOC <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No TSS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Analysis Requested Total Number of Containers: 9		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: _____ M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)		Special Instructions/Note: Short Hold: NO3(C)	
<b>Sample Identification</b> Sample Date   Sample Time   Sample Type (C=Comp, G=grab)   Matrix (Water, Solid, Other)   Preservation Code HVL-082818-07   8/28/18   G   W   W HVL-082818-08   0959   G   W   W HVL-082818-09   1153   G   W   W HVL-082818-10   1050   G   W   W HVL-082818-11   1310   G   W   W HVL-082818-12   1145   G   W   W HVL-082818-13   1402   G   W   W HVL-082818-14   1230   G   W   W HVL-082818-15   1525   G   W   W HVL-082818-16   1330   G   W   W HVL-082818-17   1620   G   W   W		Barcode: 280-113726 Chain of Custody		Special Instructions/Note: Short Hold: NO3(C)					
<b>Possible Hazard Identification</b> <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Deliverable Requested: I, II, III, IV, Other (specify) _____		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Empty Kit Relinquished by: _____ Date: _____		Relinquished by: _____ Date: 8/28/18 1800 Relinquished by: _____ Date: _____ Relinquished by: _____ Date: _____		Method of Shipment: _____					
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.: 552543, 552544, 552600, 552601		Relinquished by: _____ Date: _____ Relinquished by: _____ Date: _____ Relinquished by: _____ Date: _____		Date/Time: 8/29/18 0900 Date/Time: _____ Date/Time: _____					

Chain of Custody Record

<b>Client Information</b> Client Contact: Sam Graber Company: SCS Engineers Address: 2405 140th Avenue NE Suite 107 City: Bellevue State, Zip: WA, 98005-1877 Phone: Email: S.Graber@scsengineers.com Project Name: Hidden Valley Landfill Site:		Sampler: Sam G. Lab PM: Sara, Betsy A Phone: 425-760-3362 E-Mail: betsy.sara@testamericainc.com		Carrier Tracking No(s): same as ps. 1 COC No: 280-21691-6019.1 Page: 2 of 2 Job #: 04218002,03	
Due Date Requested: TAT Requested (days): PO #: Purchase Order not required WO #:		<b>Analysis Requested</b>			
Project #: 28003560-Quarterly Groundwater Wells SSOW#:		Total Number of Containers:			
Sample Identification HVL-082818-18 Trip blank *		Sample Date: 8/28/18 Sample Time: 1420 Sample Type (C=Comp, G=grab): G Matrix (W=water, S=solid, O=wastewater, A=Air): W		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
Sample Date Requested: 8/28/18 Sample Time Requested:		Field Filtered Sample (Yes or No): Dissolved Metals (6010B/6020): Dissolved Iron (TA Seattle): TDS/Ai/ks/NO3(C): C/SO4 (TA St. Louis): Ammonia/TOC: TSS:		Special Instructions/Note: Short Hold: NO3(C) * Trip blank is distilled water from facility store	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:			
Empty Kit Relinquished by:		Time:			
Relinquished by: [Signature] Date/Time: 8/28/18 1300 Company: SCS		Method of Shipment:			
Relinquished by: [Signature] Date/Time: 8/29/18 0900 Company: APEN		Received by: [Signature] Date/Time: 8/29/18 0900 Company: APEN			
Relinquished by: [Signature] Date/Time:		Received by: [Signature] Date/Time:			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.: Same as page 1		Cooler Temperature(s) °C and Other Remarks:			

Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Sampler: Sara, Betsy A	Lab Pmt: Sara, Betsy A	Carrier Tracking No(s):	COC No: 280-452856.1
Shipping/Receiving		Phone:	E-Mail: betsy.sara@testamericainc.com	State of Origin: Washington	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Washington		Job #: 280-113726-1	Preservation Codes:
Address: 13715 Rider Trail North,		Due Date Requested: 9/18/2018	Analysis Requested		
City: Earth City		TAT Requested (days):	A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:		
State, Zip: MO, 63045		PO #:	M - Hexane N - None O - AsHClO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)		
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		WO #:	Total Number of containers		
Email:		Project #:	Field Filtered Sample (Yes or No)		
Project Name: Hidden Valley LF		SSOW#:	Perform MS/MSD (Yes or No)		
Site:		SSOW#:	100 ORGFM_28DR (MOD) Sulfate/Chloride (TA ST)		
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=soil, BT=Tissue, A=air)
HVL-082818-07 (280-113726-1)	8/28/18	10:25 Pacific	Water	X	
HVL-082818-08 (280-113726-2)	8/28/18	09:59 Pacific	Water	X	
HVL-082818-09 (280-113726-3)	8/28/18	11:53 Pacific	Water	X	
HVL-082818-11 (280-113726-4)	8/28/18	13:10 Pacific	Water	X	
HVL-082818-12 (280-113726-5)	8/28/18	11:45 Pacific	Water	X	
HVL-082818-13 (280-113726-6)	8/28/18	14:02 Pacific	Water	X	
HVL-082818-14 (280-113726-7)	8/28/18	12:30 Pacific	Water	X	
HVL-082818-16 (280-113726-8)	8/28/18	13:30 Pacific	Water	X	
HVL-082818-18 (280-113726-9)	8/28/18	14:20 Pacific	Water	X	
<p>Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte &amp; accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other institutions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.</p>					
<b>Possible Hazard Identification</b>					
Unconfirmed					
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2					
Empty Kit Relinquished by:					
Relinquished by: [Signature]					
Date: 8-20-18 16:11					
Relinquished by: [Signature]					
Date: 8-31-18 09:20					
Relinquished by: [Signature]					
Date: [Blank]					
Custody Seal No.: [Blank]					
Custody Seals Intact: [Blank]					
Cooler Temperature(s) °C and Other Remarks: [Blank]					
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For <input type="checkbox"/> Months					
Special Instructions/QC Requirements:					
Method of Shipment:					
Received by: [Signature]					
Date/Time: 8/31/18 09:20					
Company: TA STL					
Received by: [Blank]					
Date/Time: [Blank]					
Company: [Blank]					
Received by: [Blank]					
Date/Time: [Blank]					
Company: [Blank]					

**TestAmerica Denver**

4955 Yarrow Street  
 Arvada, CO 80002  
 Phone (303) 736-0100 Fax (303) 431-7171

**Chain of Custody Record**



**TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information (Sub Contract Lab)</b>		Sampler:		Lab PM: Sara, Betsy A		Carrier Tracking No(s):		COC No: 280-452855.1		
Client Contact: Shipping/Receiving		Phone:		E-Mail: betsy.sara@testamericainc.com		State of Origin: Washington		Page: Page 1 of 1		
Company: TestAmerica Laboratories, Inc.				Accreditations Required (See note): State Program - Washington				Job #: 280-113726-1		
Address: 5755 8th Street East,		Due Date Requested: 9/17/2018		<b>Analysis Requested</b>				<b>Preservation Codes:</b> A - HCL                      M - Hexane B - NaOH                    N - None C - Zn Acetate            O - AsNaO2 D - Nitric Acid            P - Na2O4S E - NaHSC4                Q - Na2SO3 F - MeOH                    R - Na2S2O3 G - Amchlor                S - H2SO4 H - Ascorbic Acid        T - TSP Dodecahydrate I - Ice                        U - Acetone J - DI Water                V - MCAA K - EDTA                    W - pH 4-5 L - EDA                      Z - other (specify)		
City: Tacoma		TAT Requested (days):								
State, Zip: WA, 98424		PO #:		Field Filtered Sample (Yes or No)		Perform: MS/MSD (Yes or No)		Total Number of containers		
Phone: 253-922-2310(Tel) 253-922-5047(Fax)		WO #:		6020/FIELD_FLTRD (MOD) Iron						
Email:		Project #: 28003580								
Project Name: Hidden Valley LF		SSOW#:								
Site:										
<b>Sample Identification - Client ID (Lab ID)</b>		<b>Sample Date</b>	<b>Sample Time</b>	<b>Sample Type (C=comp, G=grab)</b>	<b>Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)</b>	Field Filtered Sample (Yes or No)	Perform: MS/MSD (Yes or No)	6020/FIELD_FLTRD (MOD) Iron	Total Number of containers	<b>Special Instructions/Note:</b>
HVL-082818-07 (280-113726-1)		8/28/18	10:25 Pacific		Water		X		1	
HVL-082818-08 (280-113726-2)		8/28/18	09:59 Pacific		Water		X		1	
HVL-082818-09 (280-113726-3)		8/28/18	11:53 Pacific		Water		X		1	
HVL-082818-11 (280-113726-4)		8/28/18	13:10 Pacific		Water		X		1	
HVL-082818-12 (280-113726-5)		8/28/18	11:45 Pacific		Water		X		1	
HVL-082818-13 (280-113726-6)		8/28/18	14:02 Pacific		Water		X		1	
HVL-082818-14 (280-113726-7)		8/28/18	12:30 Pacific		Water		X		1	
HVL-082818-16 (280-113726-8)		8/28/18	13:30 Pacific		Water		X		1	
HVL-082818-18 (280-113726-9)		8/28/18	14:20 Pacific		Water		X		1	
<p>Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte &amp; accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.</p>										
<b>Possible Hazard Identification</b>					<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>					
Unconfirmed					<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (specify)			Primary Deliverable Rank: 2		Special Instructions/QC Requirements:					
Empty Kit Relinquished by:			Date:		Time:		Method of Shipment:			
Relinquished by: <i>[Signature]</i>			Date/Time: 8-30-2018 1642		Company: PALDEN		Received by: <i>[Signature]</i>			
Relinquished by:			Date/Time:		Company:		Received by:			
Relinquished by:			Date/Time:		Company:		Received by:			
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks: A2=10/0.9			09/19/2018		

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-113726-1

**Login Number: 113726**  
**List Number: 1**  
**Creator: Quint, Jessica A**

**List Source: TestAmerica Denver**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	False	Refer to job narrative for details
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	



# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-113726-1

**Login Number: 113726**  
**List Number: 2**  
**Creator: Gall, Brandon A**

**List Source: TestAmerica Seattle**  
**List Creation: 08/31/18 12:25 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	A2=1.0/0.9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-113726-1

**Login Number: 113726**  
**List Number: 3**  
**Creator: Hellm, Michael**

**List Source: TestAmerica St. Louis**  
**List Creation: 08/31/18 03:52 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Job Number: 280-113849-1  
Job Description: Hidden Valley LF

**MW-12S**  
**MW-12D**  
**MW-14D**

For:  
SCS Engineers  
2405 140th Avenue NE  
Suite 107  
Bellevue, WA 98005-1877  
Attention: Mr. Kevin Lakey



Approved for release.  
Betsy A Sara  
Project Manager II  
9/20/2018 12:17 PM

---

Betsy A Sara, Project Manager II  
4955 Yarrow Street, Arvada, CO, 80002  
(303)736-0189  
betsy.sara@testamericainc.com  
09/20/2018

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

These data and reporting limits are being used specifically to meet the needs of this project. All RLs are supported by TestAmerica's Method Detection Limits (MDLs). Reporting limits in this report are at or above the MDL.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002  
Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)

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## CASE NARRATIVE

Client: SCS Engineers

Project: Hidden Valley LF

Report Number: 280-113849-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### Sample Receiving

The samples were received on 08/31/2018; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.2 C.

The samples HVL-082818-10, HVL-082818-15 and HVL-082818-17 arrived separately on 8/31/2018 due to a delay in FedEx delivery. All other samples arrived on 8/29/2018 and were reported in job 280-113726.

### Holding Times

Due to a FedEx shipping delay, the Nitrate Method 300.0 analysis expired prior to the 48-hour holding time. The client was notified and instructed the laboratory to analyze Nitrate\_Nitrite.

All other holding times were within established control limits.

### Method Blanks

All Method Blanks were within established control limits.

### Laboratory Control Samples (LCS)

All Laboratory Control Samples were within established control limits.

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

The Matrix Spike and Matrix Spike Duplicate performed on a sample from another client exhibited recoveries outside control limits for Nitrate+Nitrite Method 353.2. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, this anomaly may be due to matrix interference and no corrective action was taken.

All other MS and MSD samples were within established control limits.

### Sample Duplicate

The RPD for Alkalinity Method 2320B performed on a sample from another client was outside control limits. Because all other QC and calibration criteria were met no corrective action was needed.

The RPD for Total Suspended Solids (TSS) performed on a sample from another client was outside control limits. Because all other QC and calibration criteria were met no corrective action was needed.

### General Chemistry

The samples HVL-082818-10, HVL-082818-15 and HVL-082818-17 in Anion batch 160-387239 were bracketed by an ending continuing calibration blank (CCB) that had a detection for Chloride slightly above the reporting limit (RL). Because these samples have Chloride results greater than ten times the concentration found in the bracketing CCB corrective action was deemed unnecessary.

### General Comments

The analysis for Chloride and Sulfate Method 300.0 was performed at the TestAmerica's St. Louis Laboratory.

13715 Rider Trail North  
Earth City, MO 63045  
Phone: 314-298-8566

The analysis for Iron Method 6020 was performed at the TestAmerica's Seattle Laboratory.  
5755 8th Street East  
Tacoma, WA 98424  
Phone: 253-922-2310

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-113849-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-113849-1</b>	<b>HVL-082818-10</b>	<b>MW-14D</b>				
Ammonia		3.9		0.10	mg/L	350.1
Alkalinity		90		5.0	mg/L	SM 2320B
Total Dissolved Solids		150		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.6		1.0	mg/L	SM 5310B
Chloride		9.0	^	0.20	mg/L	300.0
Sulfate		13		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		17		0.20	mg/L	6010B
Magnesium, Dissolved		5.2		0.10	mg/L	6010B
Potassium, Dissolved		7.3		2.0	mg/L	6010B
Sodium, Dissolved		12		1.0	mg/L	6010B
Iron, Dissolved		2.7		0.18	mg/L	6020
Manganese, Dissolved		1.1		0.0010	mg/L	6020
<b>280-113849-2</b>	<b>HVL-082818-15</b>	<b>MW-12S</b>				
Nitrate as N		1.4	H	0.20	mg/L	300.0
Ammonia		2.9		0.10	mg/L	350.1
Nitrate Nitrite as N		1.0		0.10	mg/L	353.2
Alkalinity		140		5.0	mg/L	SM 2320B
Total Dissolved Solids		210		10	mg/L	SM 2540C
Total Suspended Solids		17		4.0	mg/L	SM 2540D
Total Organic Carbon - Quad		2.2		1.0	mg/L	SM 5310B
Chloride		11	^	0.30	mg/L	300.0
Sulfate		0.81		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		26		0.20	mg/L	6010B
Magnesium, Dissolved		7.4		0.10	mg/L	6010B
Potassium, Dissolved		13		2.0	mg/L	6010B
Sodium, Dissolved		22		1.0	mg/L	6010B
Manganese, Dissolved		0.84		0.0010	mg/L	6020

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-113849-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-113849-3</b>	<b>HVL-082818-17</b>	<b>MW-12D</b>				
Nitrate as N		1.3	H	0.20	mg/L	300.0
Nitrate Nitrite as N		1.5		0.10	mg/L	353.2
Alkalinity		120		5.0	mg/L	SM 2320B
Total Dissolved Solids		180		10	mg/L	SM 2540C
Chloride		8.4	^	0.20	mg/L	300.0
Sulfate		7.6		0.20	mg/L	300.0
<b><i>Dissolved</i></b>						
Calcium, Dissolved		25		0.20	mg/L	6010B
Magnesium, Dissolved		9.9		0.10	mg/L	6010B
Potassium, Dissolved		3.1		2.0	mg/L	6010B
Sodium, Dissolved		17		1.0	mg/L	6010B



## METHOD SUMMARY

Client: SCS Engineers

Job Number: 280-113849-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Volatile Organic Compounds (GC/MS)	TAL DEN	SW846 8260B	
Purge and Trap	TAL DEN		SW846 5030B
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Anions, Ion Chromatography	TAL DEN	MCAWW 300.0	
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
Nitrogen, Nitrate-Nitrite	TAL DEN	MCAWW 353.2	
Alkalinity	TAL DEN	SM SM 2320B	
Solids, Total Dissolved (TDS)	TAL DEN	SM SM 2540C	
Solids, Total Suspended (TSS)	TAL DEN	SM SM 2540D	
Organic Carbon, Total (TOC)	TAL DEN	SM SM 5310B	
Metals (ICP/MS)	TAL SEA	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL SEA		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Anions, Ion Chromatography	TAL SL	MCAWW 300.0	

### Lab References:

TAL DEN = TestAmerica Denver

TAL SEA = TestAmerica Seattle

TAL SL = TestAmerica St. Louis

### Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

## METHOD / ANALYST SUMMARY

Client: SCS Engineers

Job Number: 280-113849-1

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
SW846 8260B	Newcome, Robin S	RSN
SW846 6010B	Scott, Samantha J	SJS
SW846 6020	Trudell, Lynn-Anne M	LMT
SW846 6020	Woo, Fred C	FCW
MCAWW 300.0	Phan, Thu L	TLP
MCAWW 350.1	Pedrick, Joshua A	JAP
MCAWW 353.2	Cherry, Scott V	SVC
SM SM 2320B	Barker, Scott G	SGB
SM SM 2540C	Moser, Angela R	ARM
SM SM 2540D	Patadia, Bansari J	BJP
SM SM 5310B	Duplin, Alysha 1	A1D
SM SM 5310B	Loux, Lauren P	LPL
MCAWW 300.0	Boyd, Jacob C	JCB

# SAMPLE SUMMARY

Client: SCS Engineers

Job Number: 280-113849-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
280-113849-1	HVL-082818-10	Water	08/28/2018 1050	08/31/2018 0915
280-113849-2	HVL-082818-15	Water	08/28/2018 1525	08/31/2018 0915
280-113849-3	HVL-082818-17	Water	08/28/2018 1620	08/31/2018 0915

# SAMPLE RESULTS

# Analytical Data

Client: SCS Engineers

Job Number: 280-113849-1

**Client Sample ID: HVL-082818-10**

Lab Sample ID: 280-113849-1

Date Sampled: 08/28/2018 1050

Client Matrix: Water

Date Received: 08/31/2018 0915

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: Q7296.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0222		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0222		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113849-1

**Client Sample ID: HVL-082818-10**

Lab Sample ID: 280-113849-1

Date Sampled: 08/28/2018 1050

Client Matrix: Water

Date Received: 08/31/2018 0915

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: Q7296.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0222		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0222		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 127
4-Bromofluorobenzene (Surr)	106		78 - 120
Dibromofluoromethane (Surr)	100		77 - 120
Toluene-d8 (Surr)	98		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-113849-1

**Client Sample ID: HVL-082818-15**

Lab Sample ID: 280-113849-2

Date Sampled: 08/28/2018 1525

Client Matrix: Water

Date Received: 08/31/2018 0915

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: Q7297.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0245		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0245		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113849-1

**Client Sample ID: HVL-082818-15**

Lab Sample ID: 280-113849-2

Date Sampled: 08/28/2018 1525

Client Matrix: Water

Date Received: 08/31/2018 0915

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: Q7297.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0245		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0245		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 127
4-Bromofluorobenzene (Surr)	111		78 - 120
Dibromofluoromethane (Surr)	98		77 - 120
Toluene-d8 (Surr)	93		80 - 125



# Analytical Data

Client: SCS Engineers

Job Number: 280-113849-1

**Client Sample ID: HVL-082818-17**

Lab Sample ID: 280-113849-3

Date Sampled: 08/28/2018 1620

Client Matrix: Water

Date Received: 08/31/2018 0915

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: Q7298.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0308		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0308		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113849-1

**Client Sample ID: HVL-082818-17**

Lab Sample ID: 280-113849-3

Date Sampled: 08/28/2018 1620

Client Matrix: Water

Date Received: 08/31/2018 0915

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: Q7298.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0308		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0308		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		70 - 127
4-Bromofluorobenzene (Surr)	107		78 - 120
Dibromofluoromethane (Surr)	101		77 - 120
Toluene-d8 (Surr)	94		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-113849-1

**Client Sample ID: HVL-082818-10**

Lab Sample ID: 280-113849-1

Date Sampled: 08/28/2018 1050

Client Matrix: Water

Date Received: 08/31/2018 0915

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 45.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/06/2018 0143

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	13		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113849-1

**Client Sample ID: HVL-082818-10**

Lab Sample ID: 280-113849-1

Date Sampled: 08/28/2018 1050

Client Matrix: Water

Date Received: 08/31/2018 0915

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 77.d
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1942	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	9.0	^	0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113849-1

**Client Sample ID: HVL-082818-15**

Lab Sample ID: 280-113849-2

Date Sampled: 08/28/2018 1525

Client Matrix: Water

Date Received: 08/31/2018 0915

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 46.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/06/2018 0158

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	0.81		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113849-1

**Client Sample ID: HVL-082818-15**

Lab Sample ID: 280-113849-2

Date Sampled: 08/28/2018 1525

Client Matrix: Water

Date Received: 08/31/2018 0915

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 78.d

Dilution: 5.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/06/2018 1957

Run Type: DL

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

---

Analyte	Result (mg/L)	Qualifier	RL
Chloride	11	^	0.30

---

## Analytical Data

Client: SCS Engineers

Job Number: 280-113849-1

**Client Sample ID: HVL-082818-17**

Lab Sample ID: 280-113849-3

Date Sampled: 08/28/2018 1620

Client Matrix: Water

Date Received: 08/31/2018 0915

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 47.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/06/2018 0214

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

---

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	7.6		0.20

---

## Analytical Data

Client: SCS Engineers

Job Number: 280-113849-1

**Client Sample ID: HVL-082818-17**

Lab Sample ID: 280-113849-3

Date Sampled: 08/28/2018 1620

Client Matrix: Water

Date Received: 08/31/2018 0915

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 79.d
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 2013	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	8.4	^	0.20



## Analytical Data

Client: SCS Engineers

Job Number: 280-113849-1

**Client Sample ID: HVL-082818-10**

Lab Sample ID: 280-113849-1

Date Sampled: 08/28/2018 1050

Client Matrix: Water

Date Received: 08/31/2018 0915

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428702      Instrument ID: MT\_025  
Prep Method: 3005A      Prep Batch: 280-428328      Lab File ID: 25a090518dd.asc  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/05/2018 2301      Final Weight/Volume: 50 mL  
Prep Date: 09/04/2018 0742

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	17		0.20
Magnesium, Dissolved	5.2		0.10
Potassium, Dissolved	7.3		2.0
Sodium, Dissolved	12		1.0

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### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428591      Instrument ID: MT\_077  
Prep Method: 3005A      Prep Batch: 280-428347      Lab File ID: 361SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/05/2018 0857      Final Weight/Volume: 50 mL  
Prep Date: 09/04/2018 1630

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	1.1		0.0010

Analysis Method: 6020      Analysis Batch: 580-284303      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-284178      Lab File ID: 053SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/18/2018 2031      Final Weight/Volume: 50 mL  
Prep Date: 09/17/2018 1606

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	2.7		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-113849-1

**Client Sample ID: HVL-082818-15**

Lab Sample ID: 280-113849-2

Date Sampled: 08/28/2018 1525

Client Matrix: Water

Date Received: 08/31/2018 0915

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428702      Instrument ID: MT\_025  
Prep Method: 3005A      Prep Batch: 280-428328      Lab File ID: 25a090518dd.asc  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/05/2018 2303      Final Weight/Volume: 50 mL  
Prep Date: 09/04/2018 0742

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	26		0.20
Magnesium, Dissolved	7.4		0.10
Potassium, Dissolved	13		2.0
Sodium, Dissolved	22		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428591      Instrument ID: MT\_077  
Prep Method: 3005A      Prep Batch: 280-428347      Lab File ID: 362SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/05/2018 0901      Final Weight/Volume: 50 mL  
Prep Date: 09/04/2018 1630

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.84		0.0010

Analysis Method: 6020      Analysis Batch: 580-284303      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-284178      Lab File ID: 054SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/18/2018 2035      Final Weight/Volume: 50 mL  
Prep Date: 09/17/2018 1606

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-113849-1

**Client Sample ID: HVL-082818-17**

Lab Sample ID: 280-113849-3

Date Sampled: 08/28/2018 1620

Client Matrix: Water

Date Received: 08/31/2018 0915

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428702      Instrument ID: MT\_025  
Prep Method: 3005A      Prep Batch: 280-428328      Lab File ID: 25a090518dd.asc  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/05/2018 2306      Final Weight/Volume: 50 mL  
Prep Date: 09/04/2018 0742

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	25		0.20
Magnesium, Dissolved	9.9		0.10
Potassium, Dissolved	3.1		2.0
Sodium, Dissolved	17		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428591      Instrument ID: MT\_077  
Prep Method: 3005A      Prep Batch: 280-428347      Lab File ID: 363SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/05/2018 0906      Final Weight/Volume: 50 mL  
Prep Date: 09/04/2018 1630

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020      Analysis Batch: 580-284303      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-284178      Lab File ID: 055SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/18/2018 2039      Final Weight/Volume: 50 mL  
Prep Date: 09/17/2018 1606

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

Client: SCS Engineers

Job Number: 280-113849-1

General Chemistry

Client Sample ID: HVL-082818-10

Lab Sample ID: 280-113849-1

Date Sampled: 08/28/2018 1050

Client Matrix: Water

Date Received: 08/31/2018 0915

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	ND	H	mg/L	0.20	1.0	300.0
	Analysis Batch: 280-428304	Analysis Date: 08/31/2018	1923			
Ammonia	3.9		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429404	Analysis Date: 09/12/2018	1221			
Nitrate Nitrite as N	ND		mg/L	0.10	1.0	353.2
	Analysis Batch: 280-430099	Analysis Date: 09/18/2018	2029			
Alkalinity	90		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-429251	Analysis Date: 09/10/2018	2234			
Total Dissolved Solids	150		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428525	Analysis Date: 09/04/2018	2038			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-428375	Analysis Date: 09/03/2018	1811			
Total Organic Carbon - Quad	1.6		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-429570	Analysis Date: 09/12/2018	1230			

Client: SCS Engineers

Job Number: 280-113849-1

**General Chemistry**

**Client Sample ID: HVL-082818-15**

Lab Sample ID: 280-113849-2

Date Sampled: 08/28/2018 1525

Client Matrix: Water

Date Received: 08/31/2018 0915

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	1.4	H	mg/L	0.20	1.0	300.0
	Analysis Batch: 280-428304		Analysis Date: 08/31/2018 2052			
Ammonia	2.9		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429404		Analysis Date: 09/12/2018 1231			
Nitrate Nitrite as N	1.0		mg/L	0.10	1.0	353.2
	Analysis Batch: 280-430099		Analysis Date: 09/18/2018 2031			
Alkalinity	140		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-429070		Analysis Date: 09/07/2018 2048			
Total Dissolved Solids	210		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428525		Analysis Date: 09/04/2018 2038			
Total Suspended Solids	17		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-428375		Analysis Date: 09/03/2018 1811			
Total Organic Carbon - Quad	2.2		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-429570		Analysis Date: 09/12/2018 1316			

Client: SCS Engineers

Job Number: 280-113849-1

General Chemistry

Client Sample ID: HVL-082818-17

Lab Sample ID: 280-113849-3

Date Sampled: 08/28/2018 1620

Client Matrix: Water

Date Received: 08/31/2018 0915

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	1.3	H	mg/L	0.20	1.0	300.0
	Analysis Batch: 280-428304	Analysis Date: 08/31/2018	2114			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429404	Analysis Date: 09/12/2018	1233			
Nitrate Nitrite as N	1.5		mg/L	0.10	1.0	353.2
	Analysis Batch: 280-430099	Analysis Date: 09/18/2018	2045			
Alkalinity	120		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-429251	Analysis Date: 09/10/2018	2312			
Total Dissolved Solids	180		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428525	Analysis Date: 09/04/2018	2038			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-428375	Analysis Date: 09/03/2018	1811			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428694	Analysis Date: 09/06/2018	0313			

## DATA REPORTING QUALIFIERS

Client: SCS Engineers

Job Number: 280-113849-1

Lab Section	Qualifier	Description
HPLC/IC		
	^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
	E	Result exceeded calibration range.
General Chemistry		
	F3	Duplicate RPD exceeds the control limit
	F1	MS and/or MSD Recovery is outside acceptance limits.
	H	Sample was prepped or analyzed beyond the specified holding time

# QUALITY CONTROL RESULTS



## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS VOA</b>					
<b>Analysis Batch:280-428964</b>					
LCS 280-428964/4	Lab Control Sample	T	Water	8260B	
MB 280-428964/6	Method Blank	T	Water	8260B	
280-113827-B-1 MS	Matrix Spike	T	Water	8260B	
280-113827-B-1 MSD	Matrix Spike Duplicate	T	Water	8260B	
280-113849-1	HVL-082818-10	T	Water	8260B	
280-113849-2	HVL-082818-15	T	Water	8260B	
280-113849-3	HVL-082818-17	T	Water	8260B	
<b>Report Basis</b>					
T = Total					
<b>Metals</b>					
<b>Prep Batch: 580-284178</b>					
LCS 580-284178/23-A	Lab Control Sample	R	Water	3005A	
LCSD 580-284178/24-A	Lab Control Sample Duplicate	R	Water	3005A	
MB 580-284178/22-A	Method Blank	R	Water	3005A	
580-80295-B-1-B DU	Duplicate	R	Water	3005A	
580-80295-B-1-C MS	Matrix Spike	R	Water	3005A	
580-80295-B-1-D MSD	Matrix Spike Duplicate	R	Water	3005A	
280-113849-1	HVL-082818-10	D	Water	3005A	
280-113849-2	HVL-082818-15	D	Water	3005A	
280-113849-3	HVL-082818-17	D	Water	3005A	
<b>Analysis Batch:580-284303</b>					
LCS 580-284178/23-A	Lab Control Sample	R	Water	6020	580-284178
LCSD 580-284178/24-A	Lab Control Sample Duplicate	R	Water	6020	580-284178
MB 580-284178/22-A	Method Blank	R	Water	6020	580-284178
580-80295-B-1-B DU	Duplicate	R	Water	6020	580-284178
580-80295-B-1-C MS	Matrix Spike	R	Water	6020	580-284178
580-80295-B-1-D MSD	Matrix Spike Duplicate	R	Water	6020	580-284178
280-113849-1	HVL-082818-10	D	Water	6020	580-284178
280-113849-2	HVL-082818-15	D	Water	6020	580-284178
280-113849-3	HVL-082818-17	D	Water	6020	580-284178
<b>Prep Batch: 280-428328</b>					
LCS 280-428328/2-A	Lab Control Sample	R	Water	3005A	
MB 280-428328/1-A	Method Blank	R	Water	3005A	
280-113846-E-1-B MS	Matrix Spike	D	Water	3005A	
280-113846-E-1-C MSD	Matrix Spike Duplicate	D	Water	3005A	
280-113849-1	HVL-082818-10	D	Water	3005A	
280-113849-2	HVL-082818-15	D	Water	3005A	
280-113849-3	HVL-082818-17	D	Water	3005A	
<b>Prep Batch: 280-428347</b>					
LCS 280-428347/2-A	Lab Control Sample	R	Water	3005A	

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# Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

## QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 280-428347</b>					
MB 280-428347/1-A	Method Blank	R	Water	3005A	
280-113832-A-1-E MS	Matrix Spike	D	Water	3005A	
280-113832-A-1-F MSD	Matrix Spike Duplicate	D	Water	3005A	
280-113849-1	HVL-082818-10	D	Water	3005A	
280-113849-2	HVL-082818-15	D	Water	3005A	
280-113849-3	HVL-082818-17	D	Water	3005A	
<b>Analysis Batch:280-428591</b>					
LCS 280-428347/2-A	Lab Control Sample	R	Water	6020	280-428347
MB 280-428347/1-A	Method Blank	R	Water	6020	280-428347
280-113832-A-1-E MS	Matrix Spike	D	Water	6020	280-428347
280-113832-A-1-F MSD	Matrix Spike Duplicate	D	Water	6020	280-428347
280-113849-1	HVL-082818-10	D	Water	6020	280-428347
280-113849-2	HVL-082818-15	D	Water	6020	280-428347
280-113849-3	HVL-082818-17	D	Water	6020	280-428347
<b>Analysis Batch:280-428702</b>					
LCS 280-428328/2-A	Lab Control Sample	R	Water	6010B	280-428328
MB 280-428328/1-A	Method Blank	R	Water	6010B	280-428328
280-113846-E-1-B MS	Matrix Spike	D	Water	6010B	280-428328
280-113846-E-1-C MSD	Matrix Spike Duplicate	D	Water	6010B	280-428328
280-113849-1	HVL-082818-10	D	Water	6010B	280-428328
280-113849-2	HVL-082818-15	D	Water	6010B	280-428328
280-113849-3	HVL-082818-17	D	Water	6010B	280-428328

### Report Basis

D = Dissolved

R = Total Recoverable

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-428304</b>					
LCS 280-428304/4	Lab Control Sample	T	Water	300.0	
LCSD 280-428304/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-428304/6	Method Blank	T	Water	300.0	
280-113849-1	HVL-082818-10	T	Water	300.0	
280-113849-1DU	Duplicate	T	Water	300.0	
280-113849-1MS	Matrix Spike	T	Water	300.0	
280-113849-1MSD	Matrix Spike Duplicate	T	Water	300.0	
280-113849-2	HVL-082818-15	T	Water	300.0	
280-113849-3	HVL-082818-17	T	Water	300.0	
<b>Analysis Batch:280-428375</b>					
LCS 280-428375/2	Lab Control Sample	T	Water	SM 2540D	
MB 280-428375/1	Method Blank	T	Water	SM 2540D	
280-113830-B-1 DU	Duplicate	T	Water	SM 2540D	
280-113849-1	HVL-082818-10	T	Water	SM 2540D	
280-113849-2	HVL-082818-15	T	Water	SM 2540D	
280-113849-3	HVL-082818-17	T	Water	SM 2540D	
<b>Analysis Batch:280-428525</b>					
LCS 280-428525/2	Lab Control Sample	T	Water	SM 2540C	
MB 280-428525/1	Method Blank	T	Water	SM 2540C	
280-113849-1	HVL-082818-10	T	Water	SM 2540C	
280-113849-2	HVL-082818-15	T	Water	SM 2540C	
280-113849-3	HVL-082818-17	T	Water	SM 2540C	
280-113849-3DU	Duplicate	T	Water	SM 2540C	
<b>Analysis Batch:280-428694</b>					
LCS 280-428694/29	Lab Control Sample	T	Water	SM 5310B	
MB 280-428694/30	Method Blank	T	Water	SM 5310B	
280-113849-3	HVL-082818-17	T	Water	SM 5310B	
280-113849-3MS	Matrix Spike	T	Water	SM 5310B	
280-113849-3MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
<b>Analysis Batch:280-429070</b>					
LCS 280-429070/9	Lab Control Sample	T	Water	SM 2320B	
MB 280-429070/10	Method Blank	T	Water	SM 2320B	
280-113849-2	HVL-082818-15	T	Water	SM 2320B	
280-113882-B-1 DU	Duplicate	T	Water	SM 2320B	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-429251</b>					
LCS 280-429251/12	Lab Control Sample	T	Water	SM 2320B	
LCS 280-429251/38	Lab Control Sample	T	Water	SM 2320B	
MB 280-429251/13	Method Blank	T	Water	SM 2320B	
MB 280-429251/39	Method Blank	T	Water	SM 2320B	
280-113849-1	HVL-082818-10	T	Water	SM 2320B	
280-113849-A-2 DUDU	Duplicate		Water	SM 2320B	
280-113849-3	HVL-082818-17	T	Water	SM 2320B	
<b>Analysis Batch:280-429404</b>					
LCS 280-429404/18	Lab Control Sample	T	Water	350.1	
LCS 280-429404/87	Lab Control Sample	T	Water	350.1	
LCSD 280-429404/19	Lab Control Sample Duplicate	T	Water	350.1	
MB 280-429404/65	Method Blank	T	Water	350.1	
280-113849-1	HVL-082818-10	T	Water	350.1	
280-113849-2	HVL-082818-15	T	Water	350.1	
280-113849-3	HVL-082818-17	T	Water	350.1	
280-113850-B-1 MS	Matrix Spike	T	Water	350.1	
280-113850-B-1 MSD	Matrix Spike Duplicate	T	Water	350.1	
<b>Analysis Batch:280-429570</b>					
LCS 280-429570/3	Lab Control Sample	T	Water	SM 5310B	
LCSD 280-429570/4	Lab Control Sample Duplicate	T	Water	SM 5310B	
MB 280-429570/5	Method Blank	T	Water	SM 5310B	
280-113849-1	HVL-082818-10	T	Water	SM 5310B	
280-113849-1MS	Matrix Spike	T	Water	SM 5310B	
280-113849-1MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
280-113849-2	HVL-082818-15	T	Water	SM 5310B	
<b>Analysis Batch:280-429571</b>					
LCS 280-429571/3	Lab Control Sample	T	Water	SM 5310B	
LCSD 280-429571/4	Lab Control Sample Duplicate	T	Water	SM 5310B	
MB 280-429571/5	Method Blank	T	Water	SM 5310B	
280-113849-1	HVL-082818-10	T	Water	SM 5310B	
280-113849-1MS	Matrix Spike	T	Water	SM 5310B	
280-113849-1MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
280-113849-2	HVL-082818-15	T	Water	SM 5310B	
<b>Analysis Batch:280-430099</b>					
LCS 280-430099/21	Lab Control Sample	T	Water	353.2	
MB 280-430099/22	Method Blank	T	Water	353.2	
280-113816-A-2 MS	Matrix Spike	T	Water	353.2	
280-113816-A-2 MSD	Matrix Spike Duplicate	T	Water	353.2	
280-113849-1	HVL-082818-10	T	Water	353.2	
280-113849-2	HVL-082818-15	T	Water	353.2	
280-113849-3	HVL-082818-17	T	Water	353.2	

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# Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

## QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
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### Report Basis

T = Total

### HPLC/IC

#### Analysis Batch:160-387239

LCS 160-387239/40	Lab Control Sample	T	Water	300.0	
MB 160-387239/39	Method Blank	T	Water	300.0	
280-113806-E-1 DU	Duplicate	T	Water	300.0	
280-113806-E-1 DUDL	Duplicate	T	Water	300.0	
280-113806-E-1 MS	Matrix Spike	T	Water	300.0	
280-113806-E-1 MSDL	Matrix Spike	T	Water	300.0	
280-113849-1	HVL-082818-10	T	Water	300.0	
280-113849-1DL	HVL-082818-10	T	Water	300.0	
280-113849-2	HVL-082818-15	T	Water	300.0	
280-113849-2DL	HVL-082818-15	T	Water	300.0	
280-113849-3	HVL-082818-17	T	Water	300.0	
280-113849-3DL	HVL-082818-17	T	Water	300.0	

### Report Basis

T = Total

Client: SCS Engineers

Job Number: 280-113849-1

**Surrogate Recovery Report**

**8260B Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	DBFM %Rec	TOL %Rec
280-113849-1	HVL-082818-10	99	106	100	98
280-113849-2	HVL-082818-15	98	111	98	93
280-113849-3	HVL-082818-17	101	107	101	94
MB 280-428964/6		96	108	97	91
LCS 280-428964/4		101	114	100	96
280-113827-B-1 MS		97	109	99	96
280-113827-B-1 MSD		96	119	97	99

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	70-127
BFB = 4-Bromofluorobenzene (Surr)	78-120
DBFM = Dibromofluoromethane (Surr)	77-120
TOL = Toluene-d8 (Surr)	80-125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Method Blank - Batch: 280-428964**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: MB 280-428964/6  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/07/2018 2319  
 Prep Date: 09/07/2018 2319  
 Leach Date: N/A

Analysis Batch: 280-428964  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: VMS\_Q  
 Lab File ID: Q7288.D  
 Initial Weight/Volume: 20 mL  
 Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

## Method Blank - Batch: 280-428964

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID:	MB 280-428964/6	Analysis Batch:	280-428964	Instrument ID:	VMS_Q
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	Q7288.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	09/07/2018 2319	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	09/07/2018 2319				
Leach Date:	N/A				

Analyte	Result	Qual	RL
trans-1,4-Dichloro-2-butene	ND		3.0
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	96	70 - 127
4-Bromofluorobenzene (Surr)	108	78 - 120
Dibromofluoromethane (Surr)	97	77 - 120
Toluene-d8 (Surr)	91	80 - 125



# Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Lab Control Sample - Batch: 280-428964**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: LCS 280-428964/4	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Q7286.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 2234	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 2234		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1,2-Tetrachloroethane	5.00	4.99	100	65 - 135	
1,1,1-Trichloroethane	5.00	5.42	108	65 - 135	
1,1,2,2-Tetrachloroethane	5.00	4.58	92	58 - 135	
1,1,2-Trichloroethane	5.00	4.97	99	64 - 135	
1,1-Dichloroethane	5.00	5.13	103	65 - 135	
1,1-Dichloroethene	5.00	4.56	91	65 - 136	
1,2,3-Trichloropropane	5.00	4.55	91	65 - 135	
1,2-Dibromo-3-Chloropropane	5.00	4.18	84	57 - 135	
1,2-Dibromoethane	5.00	4.41	88	65 - 135	
1,2-Dichlorobenzene	5.00	4.94	99	65 - 135	
1,2-Dichloroethane	5.00	4.87	97	65 - 135	
1,2-Dichloropropane	5.00	4.98	100	64 - 135	
1,4-Dichlorobenzene	5.00	5.13	103	65 - 135	
2-Butanone (MEK)	20.0	21.6	108	44 - 177	
2-Hexanone	20.0	20.0	100	57 - 139	
4-Methyl-2-pentanone (MIBK)	20.0	20.5	102	60 - 150	
Acetone	20.0	23.0	115	39 - 156	
Acrylonitrile	50.0	48.9	98	56 - 135	
Benzene	5.00	4.99	100	65 - 135	
Bromochloromethane	5.00	5.01	100	65 - 135	
Bromodichloromethane	5.00	4.93	99	65 - 135	
Bromoform	5.00	4.06	81	62 - 135	
Bromomethane	5.00	5.09	102	45 - 135	
Carbon disulfide	5.00	4.30	86	55 - 143	
Carbon tetrachloride	5.00	5.28	106	65 - 135	
Chlorobenzene	5.00	4.94	99	65 - 135	
Chloroethane	5.00	4.94	99	46 - 136	
Chloroform	5.00	5.23	105	65 - 135	
Chloromethane	5.00	4.27	85	34 - 145	
cis-1,2-Dichloroethene	5.00	4.98	100	65 - 135	
cis-1,3-Dichloropropene	5.00	4.63	93	65 - 135	
Dibromochloromethane	5.00	4.54	91	65 - 135	
Dibromomethane	5.00	4.79	96	65 - 135	
Dichlorodifluoromethane	5.00	4.14	83	43 - 142	
Ethylbenzene	5.00	5.30	106	65 - 135	
Iodomethane	5.00	4.52	90	65 - 142	
Methylene Chloride	5.00	4.84	97	54 - 141	
m-Xylene & p-Xylene	5.00	5.22	104	65 - 135	
o-Xylene	5.00	5.31	106	65 - 135	
Styrene	5.00	5.16	103	65 - 135	
Tetrachloroethene	5.00	4.78	96	65 - 135	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Lab Control Sample - Batch: 280-428964**

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: LCS 280-428964/4	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Q7286.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 2234	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 2234		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Toluene	5.00	5.30	106	65 - 135	
trans-1,2-Dichloroethene	5.00	4.93	99	65 - 135	
trans-1,3-Dichloropropene	5.00	5.08	102	65 - 135	
trans-1,4-Dichloro-2-butene	5.00	4.88	98	53 - 135	
Trichloroethene	5.00	4.91	98	65 - 135	
Trichlorofluoromethane	5.00	5.53	111	53 - 137	
Vinyl acetate	10.0	9.20	92	11 - 187	
Vinyl chloride	5.00	4.52	90	40 - 137	
Surrogate		% Rec		Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		101		70 - 127	
4-Bromofluorobenzene (Surr)		114		78 - 120	
Dibromofluoromethane (Surr)		100		77 - 120	
Toluene-d8 (Surr)		96		80 - 125	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428964**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-113827-B-1 MS	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Q7290.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0005		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0005		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-113827-B-1 MSD	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Q7291.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0028		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0028		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1,1,2-Tetrachloroethane	96	97	65 - 135	2	20		
1,1,1-Trichloroethane	103	98	65 - 135	5	20		
1,1,2,2-Tetrachloroethane	86	95	58 - 135	10	20		
1,1,2-Trichloroethane	92	91	64 - 135	0	27		
1,1-Dichloroethane	97	97	65 - 135	0	21		
1,1-Dichloroethene	87	82	65 - 136	6	20		
1,2,3-Trichloropropane	85	92	65 - 135	7	23		
1,2-Dibromo-3-Chloropropane	70	80	57 - 135	13	22		
1,2-Dibromoethane	82	85	65 - 135	4	27		
1,2-Dichlorobenzene	92	96	65 - 135	4	20		
1,2-Dichloroethane	92	96	65 - 135	4	20		
1,2-Dichloropropane	95	96	64 - 135	2	20		
1,4-Dichlorobenzene	98	101	65 - 135	3	23		
2-Butanone (MEK)	93	91	44 - 177	2	32		
2-Hexanone	83	88	57 - 139	6	25		
4-Methyl-2-pentanone (MIBK)	89	91	60 - 150	2	22		
Acetone	106	95	39 - 156	11	23		
Acrylonitrile	88	82	56 - 135	6	30		
Benzene	94	97	65 - 135	3	20		
Bromochloromethane	91	91	65 - 135	1	29		
Bromodichloromethane	96	96	65 - 135	0	20		
Bromoform	74	79	62 - 135	6	27		
Bromomethane	97	91	45 - 135	6	33		
Carbon disulfide	80	75	55 - 143	7	20		
Carbon tetrachloride	100	97	65 - 135	3	21		
Chlorobenzene	93	97	65 - 135	4	20		
Chloroethane	93	85	46 - 136	9	25		
Chloroform	103	102	65 - 135	1	20		
Chloromethane	79	75	34 - 145	6	24		
cis-1,2-Dichloroethene	96	92	65 - 135	4	20		
cis-1,3-Dichloropropene	87	94	65 - 135	8	26		
Dibromochloromethane	85	90	65 - 135	6	20		

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428964**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-113827-B-1 MS	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Q7290.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0005		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0005		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-113827-B-1 MSD	Analysis Batch: 280-428964	Instrument ID: VMS_Q
Client Matrix: Water	Prep Batch: N/A	Lab File ID: Q7291.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/08/2018 0028		Final Weight/Volume: 20 mL
Prep Date: 09/08/2018 0028		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Dibromomethane	87	86	65 - 135	1	26		
Dichlorodifluoromethane	80	78	43 - 142	2	30		
Ethylbenzene	97	103	65 - 135	6	20		
Iodomethane	83	79	65 - 142	4	25		
Methylene Chloride	87	81	54 - 141	7	26		
m-Xylene & p-Xylene	98	104	65 - 135	6	20		
o-Xylene	99	103	65 - 135	4	20		
Styrene	94	98	65 - 135	4	26		
Tetrachloroethene	96	101	65 - 135	5	20		
Toluene	100	102	65 - 135	3	20		
trans-1,2-Dichloroethene	94	90	65 - 135	4	24		
trans-1,3-Dichloropropene	90	93	65 - 135	4	26		
trans-1,4-Dichloro-2-butene	84	97	53 - 135	14	25		
Trichloroethene	95	99	65 - 135	3	20		
Trichlorofluoromethane	109	102	53 - 137	6	27		
Vinyl acetate	82	86	11 - 187	5	24		
Vinyl chloride	89	83	40 - 137	7	24		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	97	96	70 - 127
4-Bromofluorobenzene (Surr)	109	119	78 - 120
Dibromofluoromethane (Surr)	99	97	77 - 120
Toluene-d8 (Surr)	96	99	80 - 125

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Method Blank - Batch: 160-387239**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 160-387239/39	Analysis Batch: 160-387239	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090518- 39.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/06/2018 0010	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Result	Qual	RL
Chloride	ND		0.20
Sulfate	ND		0.20

**Lab Control Sample - Batch: 160-387239**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: LCS 160-387239/40	Analysis Batch: 160-387239	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090518- 40.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/06/2018 0026	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.00	2.00	100	90 - 110	
Sulfate	8.00	7.92	99	90 - 110	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

## Matrix Spike - Batch: 160-387239

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-113806-E-1 MS  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/06/2018 0112  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 160-387239  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: CIC2500  
Lab File ID: 090518- 43.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume:  
Injection Volume: 50 uL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	11	4.00	15.3	105	90 - 110	

## Matrix Spike - Batch: 160-387239

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-113806-E-1 MSDL  
Client Matrix: Water  
Dilution: 2.0  
Analysis Date: 09/06/2018 1911  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 160-387239  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L  
Run Type: DL

Instrument ID: CIC2500  
Lab File ID: 090518- 75.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume:  
Injection Volume: 50 uL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	6.4	4.00	10.2	95	90 - 110	E

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

## Duplicate - Batch: 160-387239

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID:	280-113806-E-1 DU	Analysis Batch:	160-387239	Instrument ID:	CIC2500
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	090518- 42.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 0056	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Sulfate	11	11.1	0.1	20	

## Duplicate - Batch: 160-387239

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID:	280-113806-E-1 DUDL	Analysis Batch:	160-387239	Instrument ID:	CIC2500
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	090518- 74.d
Dilution:	2.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1855	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A	Run Type:	DL	Injection Volume:	50 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	6.4	6.43	0.9	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Method Blank - Batch: 280-428328**

Lab Sample ID: MB 280-428328/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/05/2018 2207  
 Prep Date: 09/04/2018 0742  
 Leach Date: N/A

Analysis Batch: 280-428702  
 Prep Batch: 280-428328  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_025  
 Lab File ID: 25a090518dd.asc  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Calcium, Dissolved	ND		0.20
Magnesium, Dissolved	ND		0.10
Potassium, Dissolved	ND		2.0
Sodium, Dissolved	ND		1.0

**Lab Control Sample - Batch: 280-428328**

Lab Sample ID: LCS 280-428328/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/05/2018 2210  
 Prep Date: 09/04/2018 0742  
 Leach Date: N/A

Analysis Batch: 280-428702  
 Prep Batch: 280-428328  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_025  
 Lab File ID: 25a090518dd.asc  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Calcium, Dissolved	50.0	49.6	99	90 - 111	
Magnesium, Dissolved	50.0	51.1	102	90 - 113	
Potassium, Dissolved	50.0	50.9	102	89 - 114	
Sodium, Dissolved	50.0	51.6	103	90 - 115	



## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428328**

**Method: 6010B  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-113846-E-1-B MS	Analysis Batch: 280-428702	Instrument ID: MT_025
Client Matrix: Water	Prep Batch: 280-428328	Lab File ID: 25a090518dd.asc
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/05/2018 2220		Final Weight/Volume: 50 mL
Prep Date: 09/04/2018 0742		
Leach Date: N/A		

MSD Lab Sample ID: 280-113846-E-1-C MSD	Analysis Batch: 280-428702	Instrument ID: MT_025
Client Matrix: Water	Prep Batch: 280-428328	Lab File ID: 25a090518dd.asc
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/05/2018 2222		Final Weight/Volume: 50 mL
Prep Date: 09/04/2018 0742		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Calcium, Dissolved	99	101	48 - 153	1	20		
Magnesium, Dissolved	101	102	62 - 146	1	20		
Potassium, Dissolved	102	103	76 - 132	1	20		
Sodium, Dissolved	102	104	70 - 203	1	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Method Blank - Batch: 580-284178**

Lab Sample ID: MB 580-284178/22-A  
 Client Matrix: Water  
 Dilution: 5.0  
 Analysis Date: 09/18/2018 1919  
 Prep Date: 09/17/2018 1606  
 Leach Date: N/A

Analysis Batch: 580-284303  
 Prep Batch: 580-284178  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA044  
 Lab File ID: 036SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Iron, Dissolved	ND		0.18

**Lab Control Sample/  
 Lab Control Sample Duplicate Recovery Report - Batch: 580-284178**

LCS Lab Sample ID: LCS 580-284178/23-A  
 Client Matrix: Water  
 Dilution: 50  
 Analysis Date: 09/18/2018 1923  
 Prep Date: 09/17/2018 1606  
 Leach Date: N/A

Analysis Batch: 580-284303  
 Prep Batch: 580-284178  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA044  
 Lab File ID: 037SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-284178/24-A  
 Client Matrix: Water  
 Dilution: 50  
 Analysis Date: 09/18/2018 1927  
 Prep Date: 09/17/2018 1606  
 Leach Date: N/A

Analysis Batch: 580-284303  
 Prep Batch: 580-284178  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: SEA044  
 Lab File ID: 038SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Iron, Dissolved	103	102	80 - 120	1	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-284178**

**Method: 6020  
Preparation: 3005A  
Total Recoverable**

MS Lab Sample ID: 580-80295-B-1-C MS	Analysis Batch: 580-284303	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-284178	Lab File ID: 043SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/18/2018 1948		Final Weight/Volume: 50 mL
Prep Date: 09/17/2018 1606		
Leach Date: N/A		

MSD Lab Sample ID: 580-80295-B-1-D MSD	Analysis Batch: 580-284303	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-284178	Lab File ID: 044SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/18/2018 1953		Final Weight/Volume: 50 mL
Prep Date: 09/17/2018 1606		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Iron, Dissolved	103	105	80 - 120	2	20		

**Duplicate - Batch: 580-284178**

**Method: 6020  
Preparation: 3005A  
Total Recoverable**

Lab Sample ID: 580-80295-B-1-B DU	Analysis Batch: 580-284303	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-284178	Lab File ID: 041SMPL.D
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/18/2018 1940	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 09/17/2018 1606		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Iron, Dissolved	ND	ND	NC	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Method Blank - Batch: 280-428347**

Lab Sample ID: MB 280-428347/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/05/2018 0814  
 Prep Date: 09/04/2018 1630  
 Leach Date: N/A

Analysis Batch: 280-428591  
 Prep Batch: 280-428347  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_077  
 Lab File ID: 350\_BLK.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Manganese, Dissolved	ND		0.0010

**Lab Control Sample - Batch: 280-428347**

Lab Sample ID: LCS 280-428347/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/05/2018 0818  
 Prep Date: 09/04/2018 1630  
 Leach Date: N/A

Analysis Batch: 280-428591  
 Prep Batch: 280-428347  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_077  
 Lab File ID: 351\_LCS.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Manganese, Dissolved	0.0400	0.0415	104	85 - 117	

**Matrix Spike/  
 Matrix Spike Duplicate Recovery Report - Batch: 280-428347**

MS Lab Sample ID: 280-113832-A-1-E MS  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/05/2018 0829  
 Prep Date: 09/04/2018 1630  
 Leach Date: N/A

Analysis Batch: 280-428591  
 Prep Batch: 280-428347  
 Leach Batch: N/A

**Method: 6020  
 Preparation: 3005A  
 Dissolved**

Instrument ID: MT\_077  
 Lab File ID: 354SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-113832-A-1-F MSD  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/05/2018 0833  
 Prep Date: 09/04/2018 1630  
 Leach Date: N/A

Analysis Batch: 280-428591  
 Prep Batch: 280-428347  
 Leach Batch: N/A

Instrument ID: MT\_077  
 Lab File ID: 355SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Manganese, Dissolved	103	96	85 - 117	7	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Method Blank - Batch: 280-428304**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-428304/6	Analysis Batch: 280-428304	Instrument ID: WC_IonChrom12
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 06.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/31/2018 1901	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Nitrate as N	ND		0.20

**Method Reporting Limit Check - Batch: 280-428304**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-428304/3	Analysis Batch: 280-428304	Instrument ID: WC_IonChrom12
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 03.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/31/2018 1754	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	0.200	ND	109	50 - 150	

**Lab Control Sample/**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-428304**

**Method: 300.0**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-428304/4	Analysis Batch: 280-428304	Instrument ID: WC_IonChrom12
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 04.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/31/2018 1816	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-428304/5	Analysis Batch: 280-428304	Instrument ID: WC_IonChrom12
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 05.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/31/2018 1838	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Nitrate as N	101	101	90 - 110	0	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428304**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-113849-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 08/31/2018 2007  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-428304  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom12  
Lab File ID: 09.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

MSD Lab Sample ID: 280-113849-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 08/31/2018 2030  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-428304  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom12  
Lab File ID: 10.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate as N	100	100	80 - 120	0	20		

**Duplicate - Batch: 280-428304**

**Method: 300.0  
Preparation: N/A**

Lab Sample ID: 280-113849-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 08/31/2018 1945  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-428304  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: WC\_IonChrom12  
Lab File ID: 08.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate as N	ND	ND	NC	15	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Method Blank - Batch: 280-429404**

**Method: 350.1**  
**Preparation: N/A**

Lab Sample ID: MB 280-429404/65	Analysis Batch: 280-429404	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091218.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/12/2018 1139	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Ammonia	ND		0.10

**Lab Control Sample - Batch: 280-429404**

**Method: 350.1**  
**Preparation: N/A**

Lab Sample ID: LCS 280-429404/87	Analysis Batch: 280-429404	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091218.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/12/2018 1229	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	2.50	2.56	102	90 - 110	

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-429404**

**Method: 350.1**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-429404/18	Analysis Batch: 280-429404	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091218.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/12/2018 1000	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-429404/19	Analysis Batch: 280-429404	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091218.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/12/2018 1002	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ammonia	99	101	90 - 110	2	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-429404**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-113850-B-1 MS	Analysis Batch: 280-429404	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091218.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 09/12/2018 1143		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-113850-B-1 MSD	Analysis Batch: 280-429404	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091218.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 09/12/2018 1145		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia	95	103	90 - 110	8	10		



## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Method Blank - Batch: 280-430099**

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID: MB 280-430099/22	Analysis Batch: 280-430099	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091818.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/18/2018 1939	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Nitrate Nitrite as N	ND		0.10

**Lab Control Sample - Batch: 280-430099**

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID: LCS 280-430099/21	Analysis Batch: 280-430099	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091818.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/18/2018 1937	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N	5.00	4.86	97	90 - 110	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-430099**

**Method: 353.2**  
**Preparation: N/A**

MS Lab Sample ID: 280-113816-A-2 MS	Analysis Batch: 280-430099	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091818.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/18/2018 2019		Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-113816-A-2 MSD	Analysis Batch: 280-430099	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091818.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/18/2018 2021		Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate Nitrite as N	113	113	90 - 110	0	10	F1	F1

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Method Blank - Batch: 280-429070**

**Method: SM 2320B  
Preparation: N/A**

Lab Sample ID: MB 280-429070/10	Analysis Batch: 280-429070	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 090718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/07/2018 1747	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Alkalinity	ND		5.0

**Lab Control Sample - Batch: 280-429070**

**Method: SM 2320B  
Preparation: N/A**

Lab Sample ID: LCS 280-429070/9	Analysis Batch: 280-429070	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 090718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/07/2018 1739	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	200	195	98	90 - 110	

**Duplicate - Batch: 280-429070**

**Method: SM 2320B  
Preparation: N/A**

Lab Sample ID: 280-113882-B-1 DU	Analysis Batch: 280-429070	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 090718.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/07/2018 1803	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity	140	121	13	10	F3

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

## Method Blank - Batch: 280-429251

Method: SM 2320B

Preparation: N/A

Lab Sample ID: MB 280-429251/13  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/10/2018 2027  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-429251  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: WC-AT3  
Lab File ID: ph 091018b.txt  
Initial Weight/Volume:  
Final Weight/Volume:

Analyte	Result	Qual	RL
Alkalinity	ND		5.0

## Method Blank - Batch: 280-429251

Method: SM 2320B

Preparation: N/A

Lab Sample ID: MB 280-429251/39  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/10/2018 2255  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-429251  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: WC-AT3  
Lab File ID: ph 091018b.txt  
Initial Weight/Volume:  
Final Weight/Volume:

Analyte	Result	Qual	RL
Alkalinity	ND		5.0

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Lab Control Sample - Batch: 280-429251**

**Method: SM 2320B**  
**Preparation: N/A**

Lab Sample ID: LCS 280-429251/12	Analysis Batch: 280-429251	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: ph 091018b.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/10/2018 2023	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	200	211	106	90 - 110	

**Lab Control Sample - Batch: 280-429251**

**Method: SM 2320B**  
**Preparation: N/A**

Lab Sample ID: LCS 280-429251/38	Analysis Batch: 280-429251	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: ph 091018b.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/10/2018 2250	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	200	204	102	90 - 110	

**Duplicate - Batch: 280-429251**

**Method: SM 2320B**

Lab Sample ID: 280-113849-A-2 DU	Analysis Batch: 280-429251	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: ph 091018b.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/10/2018 2306	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity	150	147	1	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Method Blank - Batch: 280-428525**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: MB 280-428525/1	Analysis Batch: 280-428525	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/04/2018 2038	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Dissolved Solids	ND		10

**Lab Control Sample - Batch: 280-428525**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: LCS 280-428525/2	Analysis Batch: 280-428525	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/04/2018 2038	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Dissolved Solids	501	502	100	86 - 110	

**Duplicate - Batch: 280-428525**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: 280-113849-3	Analysis Batch: 280-428525	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/04/2018 2038	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Dissolved Solids	180	177	3	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Method Blank - Batch: 280-428375**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: MB 280-428375/1	Analysis Batch: 280-428375	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 09/03/2018 1811	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Suspended Solids	ND		4.0

**Lab Control Sample - Batch: 280-428375**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: LCS 280-428375/2	Analysis Batch: 280-428375	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 09/03/2018 1811	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Suspended Solids	100	86.8	87	86 - 114	

**Duplicate - Batch: 280-428375**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: 280-113830-B-1 DU	Analysis Batch: 280-428375	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 09/03/2018 1811	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Suspended Solids	28	37.2	28	10	F3

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Method Blank - Batch: 280-428694**

**Method: SM 5310B  
Preparation: N/A**

Lab Sample ID: MB 280-428694/30	Analysis Batch: 280-428694	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090618.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/05/2018 2348	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Organic Carbon - Quad	ND		1.0

**Lab Control Sample - Batch: 280-428694**

**Method: SM 5310B  
Preparation: N/A**

Lab Sample ID: LCS 280-428694/29	Analysis Batch: 280-428694	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090618.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/05/2018 2328	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Quad	25.0	24.5	98	88 - 112	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428694**

**Method: SM 5310B  
Preparation: N/A**

MS Lab Sample ID: 280-113849-3	Analysis Batch: 280-428694	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090618.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/06/2018 0333		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-113849-3	Analysis Batch: 280-428694	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090618.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/06/2018 0353		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Total Organic Carbon - Quad	97	98	88 - 112	1	15		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Method Blank - Batch: 280-429570**

**Method: SM 5310B**

**Preparation: N/A**

Lab Sample ID: MB 280-429570/5	Analysis Batch: 280-429570	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 091318.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/12/2018 1150	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Organic Carbon - Quad	ND		1.0

**Lab Control Sample/**

**Method: SM 5310B**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-429570**

**Preparation: N/A**

LCS Lab Sample ID: LCS 280-429570/3	Analysis Batch: 280-429570	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 091318.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/12/2018 1117	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-429570/4	Analysis Batch: 280-429570	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 091318.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/12/2018 1134	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Total Organic Carbon - Quad	101	101	88 - 112	1	15		



## Quality Control Results

Client: SCS Engineers

Job Number: 280-113849-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-429570**

**Method: SM 5310B  
Preparation: N/A**

MS Lab Sample ID: 280-113849-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/12/2018 1245  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-429570  
 Prep Batch: N/A  
 Leach Batch: N/A

Instrument ID: WC\_SHI3  
 Lab File ID: 091318.txt  
 Initial Weight/Volume:  
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-113849-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/12/2018 1259  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-429570  
 Prep Batch: N/A  
 Leach Batch: N/A

Instrument ID: WC\_SHI3  
 Lab File ID: 091318.txt  
 Initial Weight/Volume:  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Total Organic Carbon - Quad	101	102	88 - 112	1	15		

TestAmerica Denver  
 4956 Yarrow Street  
 Arvada, CO 80002  
 Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

4445 6530 1120  
 4445 6530 1131

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 THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information</b> Client Contact: Sam Graber Company: SCS Engineers Address: 2405 140th Avenue NE Suite 107 City: Bellevue State, Zip: WA, 98005-1877 Phone: [redacted] Email: SGrabert@scsengineers.com Project Name: Hidden Valley Landfill Site: [redacted]		Lab PM: Sara, Betsy A E-Mail: betsy.sara@testamericainc.com Phone: 425-766-3762 Due Date Requested: Standard TAT Requested (days): [redacted]		Sampler: Sam G. Lab PM: Sara, Betsy A E-Mail: betsy.sara@testamericainc.com Phone: 425-766-3762		Carrier (tracking No.): 4445 6530 1142 Job #: 04212002-03 Page: 1 of 2		COC No: 280-21691-6019.1 Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Ammonia H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecylhydralia U - Acetone V - MCAA W - 9th-4-5 Z - other (specify)			
Analysis Requested Dissolved Metals (8818B/8020) [ ] Dissolved Iron (TA Sealing) [ ] TSS/Manganese [ ] CIS04 (TA St. Louis) [ ] Ammonia/TC [ ] TSS [ ]		Total Number of Containers: [ ] Special Instructions/Note: Short Hold: NO3(C)		Barcode: [ ] 280-113849 Chain of Custody		Analysis Requested Dissolved Metals (8818B/8020) [ ] Dissolved Iron (TA Sealing) [ ] TSS/Manganese [ ] CIS04 (TA St. Louis) [ ] Ammonia/TC [ ] TSS [ ]		Total Number of Containers: [ ] Special Instructions/Note: Short Hold: NO3(C)			
Sample Identification HVL-082818-07 HVL-082818-08 HVL-082818-09 HVL-082818-10 HVL-082818-11 HVL-082818-12 HVL-082818-13 HVL-082818-14 HVL-082818-15 HVL-082818-16 HVL-082818-17		Sample Date 8/28/18 8/29/18 9/5/18 9/10/18 9/14/18 9/14/18 9/20/18 9/25/18 9/30/18 10/20/18		Sample Time 1025 0959 1153 1050 1310 1145 1402 1730 1525 1330 1620		Sample Type G W G G G G G G G G G G G G G		Matrix Water Sediment Other Other Other Other Other Other Other Other Other Other Other Other Other			
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Deliverable Requested: I, II, III, IV, Other (specify)		Empty Kit Relinquished by: [redacted]		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Special Instructions/QC Requirements:			
Relinquished by: [redacted]		Date/Time: 8/28/18 1800		Company: SCS		Received by: [redacted]		Date/Time: 8/28/18 0900		Company: [redacted]	
Relinquished by: [redacted]		Date/Time: [redacted]		Company: [redacted]		Received by: [redacted]		Date/Time: 8-31-18 0918		Company: [redacted]	
Relinquished by: [redacted]		Date/Time: [redacted]		Company: [redacted]		Received by: [redacted]		Date/Time: [redacted]		Company: [redacted]	
Custody Seal Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: 552598, 552599, 552600, 552601		Cooler Temperature(s) °C and Other Comments: 20, 13, 1.6 to 4.0 inside JAR		Relinquished by: [redacted]		Date/Time: [redacted]		Company: [redacted]	

4955 Yarrow Street  
 Avada, CO 80002  
 Phone (303) 736-0100 Fax (303) 431-7171

**Chain of Custody Record**



**Client Information (Sub Contract Lab)**

Client Contact: **Shipping/Receiving** Phone: \_\_\_\_\_ Lab P/N: Sara, Betsy A  
 Company: **TestAmerica Laboratories, Inc.** E-Mail: [betsy.sara@testamericainc.com](mailto:betsy.sara@testamericainc.com) Career Tracking Note: \_\_\_\_\_  
 Address: **13715 Rider Trail North,** State of Origin: **Washington**  
 City: **Earth City** State Program - Washington  
 Due Date Requested: **9/20/2018**

Analysis Requested  
 TAT Requested (days): \_\_\_\_\_  
 Job #: **280-113849-1**  
 Preservation Codes:  
 A - HCL M - Hexane  
 B - NaOH N - None  
 C - Zn Acetate O - As<sub>2</sub>O<sub>3</sub>  
 D - Nitric Acid P - Na<sub>2</sub>O<sub>4</sub>S  
 E - NaHSO<sub>4</sub> Q - Na<sub>2</sub>SO<sub>3</sub>  
 F - MeOH R - Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
 G - Amilor S - H<sub>2</sub>SO<sub>4</sub>  
 H - Acetic Acid T - TSP Dodecahydrate  
 I - Ice U - Acetone  
 J - DI Water V - MCAA  
 K - EDTA W - pH 4.5  
 L - EDTA Z - other (specify)  
 Other: \_\_\_\_\_

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water, S=Soil, O=Other)	Preservation Code: (B=Trans, A=Lab)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300_ORGFM_280I (MOD) Sulfate/Chloride (TA St. Louis)	Total Number of containers	Special Instructions/Note:
HVL-082818-10 (280-113849-1)	8/28/18	10:50 Pacific		Water					1	
HVL-082818-15 (280-113849-2)	8/28/18	15:25 Pacific		Water					1	
HVL-082818-17 (280-113849-3)	8/28/18	16:20 Pacific		Water				X	1	

**Deliverable Requested:** I, II, III, IV, Other (specify) \_\_\_\_\_ **Primary Deliverable Rank:** 2  
**Empty Kit Relinquished by:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Time:** \_\_\_\_\_ **Method of Shipment:** \_\_\_\_\_  
**Relinquished by:** *[Signature]* **Date/Time:** *8/29/18 16:26* **Received by:** *Michael Stern* **Date/Time:** *9/5/18 09:35*  
**Relinquished by:** \_\_\_\_\_ **Date/Time:** \_\_\_\_\_ **Received by:** \_\_\_\_\_ **Date/Time:** \_\_\_\_\_  
**Custody Seats Intact:**  Yes  No **Custody Seal No.:** \_\_\_\_\_ **Cooler Temperature(s) °C and Other Remarks:** \_\_\_\_\_

Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>	Sampler:	Lab PM: Sara, Betsy A	Carrier Tracking No(s):	COC No: 280-453152.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: betsy.sara@testamericainc.com	State of Origin: Washington	Page: Page 1 of 1

Company: TestAmerica Laboratories, Inc.	Accreditations Required (See note): State Program - Washington	Job #: 280-113849-1
--------------------------------------------	-------------------------------------------------------------------	------------------------

Address: 5755 8th Street East,	Due Date Requested: 9/19/2018	<b>Analysis Requested</b>	<b>Preservation Codes:</b> A - HCL                      M - Hexane B - NaOH                    N - None C - Zn Acetate              O - AsNaO2 D - Nitric Acid              P - Na2O4S E - NaHSO4                 Q - Na2SO3 F - MeOH                    R - Na2S2O3 G - Amchlor                S - H2SO4 H - Ascorbic Acid          T - TSP Dodecahydrate I - Ice                         U - Acetone J - DI Water                 V - MCAA K - EDTA                    W - pH 4-5 L - EDA                      Z - other (specify)
City: Tacoma	TAT Requested (days):		
State, Zip: WA, 98424	PO #:		
Phone: 253-922-2310(Tel) 253-922-5047(Fax)	WO #:		
Email:	Project #: 28003580	Other:	
Project Name: Hidden Valley LF	SSOW#:		
Site:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oi, BT=tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020FIELD_FLTRD (MOD) Iron	Total Number of Containers	Special Instructions/Note:
HVL-082818-10 (280-113849-1)	8/28/18	10:50 Pacific		Water			X	1	
HVL-082818-15 (280-113849-2)	8/28/18	15:25 Pacific		Water			X	1	
HVL-082818-17 (280-113849-3)	8/28/18	16:20 Pacific		Water			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

<b>Possible Hazard Identification</b> Unconfirmed	<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b> <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2
Special Instructions/QC Requirements:	

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: <i>[Signature]</i>	Date/Time: 9-9-2018 1605	Company: JALDEN	Received by: <i>[Signature]</i>
Relinquished by:	Date/Time:	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Received by:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: IR5-3.2/3.2 WLS.
-------------------------------------	-------------------	-----------------------------------------------------------------

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-113849-1

**Login Number: 113849**  
**List Number: 1**  
**Creator: Diffendall, Jessica L**

**List Source: TestAmerica Denver**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	False	Original COC with job 280-113726
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	False	FedEx delay
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-113849-1

**Login Number: 113849**  
**List Number: 2**  
**Creator: Gall, Brandon A**

**List Source: TestAmerica Seattle**  
**List Creation: 09/05/18 12:06 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	IR5=3.2/3.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	False	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Job Number: 280-113804-1  
Job Description: Hidden Valley LF

For:  
SCS Engineers  
2405 140th Avenue NE  
Suite 107  
Bellevue, WA 98005-1877  
Attention: Mr. Kevin Lakey

**MW-18S**  
**MW-18D**  
**MW-29S**  
**MW-29S dupl**  
**Field Blank**  
**Trip Blank**



Approved for release.  
Betsy A Sara  
Project Manager II  
9/20/2018 8:56 AM

---

Betsy A Sara, Project Manager II  
4955 Yarrow Street, Arvada, CO, 80002  
(303)736-0189  
betsy.sara@testamericainc.com  
09/20/2018

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

These data and reporting limits are being used specifically to meet the needs of this project. All RLs are supported by TestAmerica's Method Detection Limits (MDLs). Reporting limits in this report are at or above the MDL.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002  
Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)

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## CASE NARRATIVE

Client: SCS Engineers

Project: Hidden Valley LF

Report Number: 280-113804-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### Sample Receiving

The samples were received on 08/30/2018; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 0.8° C and 2.0° C.

### Holding Times

All holding times were within established control limits.

### Method Blanks

All Method Blanks were within established control limits.

### Laboratory Control Samples (LCS)

All Laboratory Control Samples were within established control limits.

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

The Method 8260B MS/MSD performed on the sample HVL-082918-23 (113806) exhibited a RPD result outside the RPD limit for 1,2-Dibromo-3-Chloropropane. Because the corresponding Matrix Spike and Matrix Spike Duplicate recoveries, Laboratory Control Sample, and Method Blank sample were within control limits, this anomaly is considered to be due to matrix interference and no corrective action was taken.

All other MS and MSD samples were within established control limits.

### General Comments

The analysis for Chloride and Sulfate Method 300.0 was performed at the TestAmerica's St. Louis Laboratory.  
13715 Rider Trail North  
Earth City, MO 63045  
Phone: 314-298-8566

The analysis for Iron Method 6020 was performed at the TestAmerica's Seattle Laboratory.  
5755 8th Street East  
Tacoma, WA 98424  
Phone: 253-922-2310

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-113804-1

Lab Sample ID	Client Sample ID		Reporting		
Analyte		Result	Qualifier	Limit	Units Method
<b>280-113804-1</b>	<b>HVL-082918-19</b>	<b>MW-18D</b>			
Nitrate as N		1.6		0.20	mg/L 300.0
Alkalinity		100		5.0	mg/L SM 2320B
Total Dissolved Solids		190		10	mg/L SM 2540C
Chloride		7.4		0.20	mg/L 300.0
Sulfate		7.8		0.20	mg/L 300.0
<i>Dissolved</i>					
Calcium, Dissolved		23		0.20	mg/L 6010B
Magnesium, Dissolved		9.9		0.10	mg/L 6010B
Potassium, Dissolved		3.3		2.0	mg/L 6010B
Sodium, Dissolved		13		1.0	mg/L 6010B
<b>280-113804-2</b>	<b>HVL-082918-20</b>	<b>MW-18S</b>			
				10	ug/L 8260B
Nitrate as N		0.28		0.20	mg/L 300.0
Alkalinity		130		5.0	mg/L SM 2320B
Total Dissolved Solids		210		10	mg/L SM 2540C
Total Organic Carbon - Quad		1.5		1.0	mg/L SM 5310B
Chloride		14		0.30	mg/L 300.0
Sulfate		4.0		0.20	mg/L 300.0
<i>Dissolved</i>					
Calcium, Dissolved		25		0.20	mg/L 6010B
Magnesium, Dissolved		7.9		0.10	mg/L 6010B
Potassium, Dissolved		9.4		2.0	mg/L 6010B
Sodium, Dissolved		24		1.0	mg/L 6010B
<b>280-113804-3</b>	<b>HVL-082918-21</b>	<b>MW-29S</b>			
Alkalinity		140		5.0	mg/L SM 2320B
Total Dissolved Solids		250		10	mg/L SM 2540C
Total Organic Carbon - Quad		1.5		1.0	mg/L SM 5310B
Chloride		15		0.30	mg/L 300.0
Sulfate		16		0.20	mg/L 300.0
<i>Dissolved</i>					
Calcium, Dissolved		29		0.20	mg/L 6010B
Magnesium, Dissolved		8.5		0.10	mg/L 6010B
Potassium, Dissolved		4.2		2.0	mg/L 6010B
Sodium, Dissolved		29		1.0	mg/L 6010B
Iron, Dissolved		0.50		0.18	mg/L 6020
Manganese, Dissolved		1.2		0.0010	mg/L 6020

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-113804-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-113804-4</b>	<b>HVL-082918-22</b>	<b>MW-29S dupl</b>				
Alkalinity		140		5.0	mg/L	SM 2320B
Total Dissolved Solids		250		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.7		1.0	mg/L	SM 5310B
Chloride		15		0.30	mg/L	300.0
Sulfate		16		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		29		0.20	mg/L	6010B
Magnesium, Dissolved		8.8		0.10	mg/L	6010B
Potassium, Dissolved		4.3		2.0	mg/L	6010B
Sodium, Dissolved		30		1.0	mg/L	6010B
Iron, Dissolved		0.49		0.18	mg/L	6020
Manganese, Dissolved		1.2		0.0010	mg/L	6020
<b>280-113804-5</b>	<b>HVL-082918-25</b>	<b>Field Blank</b>				
Ammonia		0.10		0.10	mg/L	350.1

## METHOD SUMMARY

Client: SCS Engineers

Job Number: 280-113804-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Volatile Organic Compounds (GC/MS)	TAL DEN	SW846 8260B	
Purge and Trap	TAL DEN		SW846 5030B
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Anions, Ion Chromatography	TAL DEN	MCAWW 300.0	
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
Alkalinity	TAL DEN	SM SM 2320B	
Solids, Total Dissolved (TDS)	TAL DEN	SM SM 2540C	
Solids, Total Suspended (TSS)	TAL DEN	SM SM 2540D	
Organic Carbon, Total (TOC)	TAL DEN	SM SM 5310B	
Metals (ICP/MS)	TAL SEA	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL SEA		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Anions, Ion Chromatography	TAL SL	MCAWW 300.0	

### Lab References:

TAL DEN = TestAmerica Denver

TAL SEA = TestAmerica Seattle

TAL SL = TestAmerica St. Louis

### Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

## METHOD / ANALYST SUMMARY

Client: SCS Engineers

Job Number: 280-113804-1

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
SW846 8260B	Dobransky, Michael E	MD
SW846 6010B	Scott, Samantha J	SJS
SW846 6020	Rhoades, Chris R	CRR
SW846 6020	Woo, Fred C	FCW
MCAWW 300.0	Phan, Thu L	TLP
MCAWW 350.1	Pedrick, Joshua A	JAP
SM SM 2320B	Barker, Scott G	SGB
SM SM 2540C	Barker, Scott G	SGB
SM SM 2540D	Patadia, Bansari J	BJP
SM SM 5310B	Duplin, Alysha 1	A1D
MCAWW 300.0	Boyd, Jacob C	JCB

# SAMPLE SUMMARY

Client: SCS Engineers

Job Number: 280-113804-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
280-113804-1	HVL-082918-19	Water	08/29/2018 1005	08/30/2018 0925
280-113804-2	HVL-082918-20	Water	08/29/2018 1058	08/30/2018 0925
280-113804-3	HVL-082918-21	Water	08/29/2018 1255	08/30/2018 0925
280-113804-4	HVL-082918-22	Water	08/29/2018 1315	08/30/2018 0925
280-113804-5	HVL-082918-25	Water	08/29/2018 1400	08/30/2018 0925
280-113804-6	Trip Blank	Water	08/29/2018 0000	08/30/2018 0925

# **SAMPLE RESULTS**

## Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-19**

Lab Sample ID: 280-113804-1

Date Sampled: 08/29/2018 1005

Client Matrix: Water

Date Received: 08/30/2018 0925

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_4613.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1231		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1231		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0



# Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-19**

Lab Sample ID: 280-113804-1

Date Sampled: 08/29/2018 1005

Client Matrix: Water

Date Received: 08/30/2018 0925

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_4613.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1231		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1231		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	112		70 - 127
4-Bromofluorobenzene (Surr)	99		78 - 120
Dibromofluoromethane (Surr)	110		77 - 120
Toluene-d8 (Surr)	95		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-20**

Lab Sample ID: 280-113804-2

Date Sampled: 08/29/2018 1058

Client Matrix: Water

Date Received: 08/30/2018 0925

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_4614.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1252		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1252		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	12		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-20**

Lab Sample ID: 280-113804-2

Date Sampled: 08/29/2018 1058

Client Matrix: Water

Date Received: 08/30/2018 0925

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_4614.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1252		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1252		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	113		70 - 127
4-Bromofluorobenzene (Surr)	94		78 - 120
Dibromofluoromethane (Surr)	112		77 - 120
Toluene-d8 (Surr)	96		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-21**

Lab Sample ID: 280-113804-3

Date Sampled: 08/29/2018 1255

Client Matrix: Water

Date Received: 08/30/2018 0925

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_4615.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1314		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1314		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-21**

Lab Sample ID: 280-113804-3

Date Sampled: 08/29/2018 1255

Client Matrix: Water

Date Received: 08/30/2018 0925

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_4615.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1314		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1314		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	116		70 - 127
4-Bromofluorobenzene (Surr)	98		78 - 120
Dibromofluoromethane (Surr)	111		77 - 120
Toluene-d8 (Surr)	96		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-22**

Lab Sample ID: 280-113804-4

Date Sampled: 08/29/2018 1315

Client Matrix: Water

Date Received: 08/30/2018 0925

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B                      Analysis Batch: 280-428825                      Instrument ID: VMS\_MS9  
Prep Method: 5030B                      Prep Batch: N/A                      Lab File ID: MS9\_4616.D  
Dilution: 1.0                      Initial Weight/Volume: 20 mL  
Analysis Date: 09/07/2018 1336                      Final Weight/Volume: 20 mL  
Prep Date: 09/07/2018 1336

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-22**

Lab Sample ID: 280-113804-4

Date Sampled: 08/29/2018 1315

Client Matrix: Water

Date Received: 08/30/2018 0925

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_4616.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1336		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1336		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	119		70 - 127
4-Bromofluorobenzene (Surr)	99		78 - 120
Dibromofluoromethane (Surr)	115		77 - 120
Toluene-d8 (Surr)	97		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-25**

Lab Sample ID: 280-113804-5

Date Sampled: 08/29/2018 1400

Client Matrix: Water

Date Received: 08/30/2018 0925

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_4617.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1357		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1357		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0



# Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-25**

Lab Sample ID: 280-113804-5

Date Sampled: 08/29/2018 1400

Client Matrix: Water

Date Received: 08/30/2018 0925

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_4617.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1357		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1357		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	120		70 - 127
4-Bromofluorobenzene (Surr)	100		78 - 120
Dibromofluoromethane (Surr)	116		77 - 120
Toluene-d8 (Surr)	100		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

Client Sample ID: Trip Blank

Lab Sample ID: 280-113804-6

Date Sampled: 08/29/2018 0000

Client Matrix: Water

Date Received: 08/30/2018 0925

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-428825	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_4618.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	09/07/2018 1419			Final Weight/Volume:	20 mL
Prep Date:	09/07/2018 1419				

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

Client Sample ID: Trip Blank

Lab Sample ID: 280-113804-6

Date Sampled: 08/29/2018 0000

Client Matrix: Water

Date Received: 08/30/2018 0925

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_4618.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1419		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1419		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	120		70 - 127
4-Bromofluorobenzene (Surr)	97		78 - 120
Dibromofluoromethane (Surr)	111		77 - 120
Toluene-d8 (Surr)	95		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-19**

Lab Sample ID: 280-113804-1

Date Sampled: 08/29/2018 1005

Client Matrix: Water

Date Received: 08/30/2018 0925

---

### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 29.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/05/2018 2136

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	7.8		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-19**

Lab Sample ID: 280-113804-1

Date Sampled: 08/29/2018 1005

Client Matrix: Water

Date Received: 08/30/2018 0925

---

### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 67.d
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1708	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	7.4		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-20**

Lab Sample ID: 280-113804-2

Date Sampled: 08/29/2018 1058

Client Matrix: Water

Date Received: 08/30/2018 0925

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 30.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/05/2018 2151

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	4.0		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-20**

Lab Sample ID: 280-113804-2

Date Sampled: 08/29/2018 1058

Client Matrix: Water

Date Received: 08/30/2018 0925

---

### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 68.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1723	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	14		0.30

## Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-21**

Lab Sample ID: 280-113804-3

Date Sampled: 08/29/2018 1255

Client Matrix: Water

Date Received: 08/30/2018 0925

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 33.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/05/2018 2238

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	16		0.20



## Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-21**

Lab Sample ID: 280-113804-3

Date Sampled: 08/29/2018 1255

Client Matrix: Water

Date Received: 08/30/2018 0925

---

### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 69.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1738	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	15		0.30

## Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-22**

Lab Sample ID: 280-113804-4

Date Sampled: 08/29/2018 1315

Client Matrix: Water

Date Received: 08/30/2018 0925

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 34.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/05/2018 2253

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	16		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-22**

Lab Sample ID: 280-113804-4

Date Sampled: 08/29/2018 1315

Client Matrix: Water

Date Received: 08/30/2018 0925

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 70.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1754	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	15		0.30

## Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-25**

Lab Sample ID: 280-113804-5

Date Sampled: 08/29/2018 1400

Client Matrix: Water

Date Received: 08/30/2018 0925

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 35.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/05/2018 2309

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	ND		0.20
Sulfate	ND		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-19**

Lab Sample ID: 280-113804-1

Date Sampled: 08/29/2018 1005

Client Matrix: Water

Date Received: 08/30/2018 0925

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428701      Instrument ID: MT\_025  
Prep Method: 3005A      Prep Batch: 280-428185      Lab File ID: 25a090518cc.asc  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/05/2018 2015      Final Weight/Volume: 50 mL  
Prep Date: 08/31/2018 1605

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	23		0.20
Magnesium, Dissolved	9.9		0.10
Potassium, Dissolved	3.3		2.0
Sodium, Dissolved	13		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428391      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-428186      Lab File ID: 178SMPL\_083118a.D  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/01/2018 0208      Final Weight/Volume: 50 mL  
Prep Date: 08/31/2018 1605

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND	F1	0.0010

Analysis Method: 6020      Analysis Batch: 580-284304      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-284035      Lab File ID: 122SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/19/2018 0123      Final Weight/Volume: 50 mL  
Prep Date: 09/14/2018 1803

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-20**

Lab Sample ID: 280-113804-2

Date Sampled: 08/29/2018 1058

Client Matrix: Water

Date Received: 08/30/2018 0925

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428701      Instrument ID: MT\_025  
Prep Method: 3005A      Prep Batch: 280-428185      Lab File ID: 25a090518cc.asc  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/05/2018 2018      Final Weight/Volume: 50 mL  
Prep Date: 08/31/2018 1605

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	25		0.20
Magnesium, Dissolved	7.9		0.10
Potassium, Dissolved	9.4		2.0
Sodium, Dissolved	24		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428391      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-428186      Lab File ID: 185SMPL\_083118a.D  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/01/2018 0232      Final Weight/Volume: 50 mL  
Prep Date: 08/31/2018 1605

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020      Analysis Batch: 580-284304      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-284035      Lab File ID: 131SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/19/2018 0201      Final Weight/Volume: 50 mL  
Prep Date: 09/14/2018 1803

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-21**

Lab Sample ID: 280-113804-3

Date Sampled: 08/29/2018 1255

Client Matrix: Water

Date Received: 08/30/2018 0925

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428701      Instrument ID: MT\_025  
Prep Method: 3005A      Prep Batch: 280-428185      Lab File ID: 25a090518cc.asc  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/05/2018 2021      Final Weight/Volume: 50 mL  
Prep Date: 08/31/2018 1605

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	29		0.20
Magnesium, Dissolved	8.5		0.10
Potassium, Dissolved	4.2		2.0
Sodium, Dissolved	29		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428391      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-428186      Lab File ID: 186SMPL\_083118a.D  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/01/2018 0235      Final Weight/Volume: 50 mL  
Prep Date: 08/31/2018 1605

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	1.2		0.0010

Analysis Method: 6020      Analysis Batch: 580-284304      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-284035      Lab File ID: 132SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/19/2018 0205      Final Weight/Volume: 50 mL  
Prep Date: 09/14/2018 1803

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	0.50		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-22**

Lab Sample ID: 280-113804-4

Date Sampled: 08/29/2018 1315

Client Matrix: Water

Date Received: 08/30/2018 0925

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428701      Instrument ID: MT\_025  
Prep Method: 3005A      Prep Batch: 280-428185      Lab File ID: 25a090518cc.asc  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/05/2018 2023      Final Weight/Volume: 50 mL  
Prep Date: 08/31/2018 1605

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	29		0.20
Magnesium, Dissolved	8.8		0.10
Potassium, Dissolved	4.3		2.0
Sodium, Dissolved	30		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428391      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-428186      Lab File ID: 187SMPL\_083118a.D  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/01/2018 0239      Final Weight/Volume: 50 mL  
Prep Date: 08/31/2018 1605

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	1.2		0.0010

Analysis Method: 6020      Analysis Batch: 580-284304      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-284035      Lab File ID: 133SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/19/2018 0210      Final Weight/Volume: 50 mL  
Prep Date: 09/14/2018 1803

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	0.49		0.18



## Analytical Data

Client: SCS Engineers

Job Number: 280-113804-1

**Client Sample ID: HVL-082918-25**

Lab Sample ID: 280-113804-5

Date Sampled: 08/29/2018 1400

Client Matrix: Water

Date Received: 08/30/2018 0925

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428701      Instrument ID: MT\_025  
Prep Method: 3005A      Prep Batch: 280-428185      Lab File ID: 25a090518cc.asc  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/05/2018 2026      Final Weight/Volume: 50 mL  
Prep Date: 08/31/2018 1605

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	ND		0.20
Magnesium, Dissolved	ND		0.10
Potassium, Dissolved	ND		2.0
Sodium, Dissolved	ND		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428391      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-428186      Lab File ID: 188SMPL\_083118a.D  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/01/2018 0242      Final Weight/Volume: 50 mL  
Prep Date: 08/31/2018 1605

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020      Analysis Batch: 580-284304      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-284035      Lab File ID: 134SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/19/2018 0214      Final Weight/Volume: 50 mL  
Prep Date: 09/14/2018 1803

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

Client: SCS Engineers

Job Number: 280-113804-1

**General Chemistry**

**Client Sample ID: HVL-082918-19**

Lab Sample ID: 280-113804-1

Date Sampled: 08/29/2018 1005

Client Matrix: Water

Date Received: 08/30/2018 0925

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	1.6		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-428101		Analysis Date: 08/30/2018 1642			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429246		Analysis Date: 09/11/2018 1011			
Alkalinity	100		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-429385		Analysis Date: 09/11/2018 1432			
Total Dissolved Solids	190		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428633		Analysis Date: 09/05/2018 1521			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-428200		Analysis Date: 08/30/2018 1936			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428427		Analysis Date: 08/31/2018 2154			

Client: SCS Engineers

Job Number: 280-113804-1

**General Chemistry**

**Client Sample ID: HVL-082918-20**

Lab Sample ID: 280-113804-2

Date Sampled: 08/29/2018 1058

Client Matrix: Water

Date Received: 08/30/2018 0925

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	0.28		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-428101		Analysis Date: 08/30/2018 1810			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429246		Analysis Date: 09/11/2018 1013			
Alkalinity	130		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-429385		Analysis Date: 09/11/2018 1425			
Total Dissolved Solids	210		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428633		Analysis Date: 09/05/2018 1521			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-428200		Analysis Date: 08/30/2018 1936			
Total Organic Carbon - Quad	1.5		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428427		Analysis Date: 08/31/2018 2213			

Client: SCS Engineers

Job Number: 280-113804-1

General Chemistry

Client Sample ID: HVL-082918-21

Lab Sample ID: 280-113804-3

Client Matrix: Water

Date Sampled: 08/29/2018 1255

Date Received: 08/30/2018 0925

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	ND		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-428101		Analysis Date: 08/30/2018 1832			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429246		Analysis Date: 09/11/2018 1015			
Alkalinity	140		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-429385		Analysis Date: 09/11/2018 1440			
Total Dissolved Solids	250		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428633		Analysis Date: 09/05/2018 1521			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-428200		Analysis Date: 08/30/2018 1936			
Total Organic Carbon - Quad	1.5		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428427		Analysis Date: 08/31/2018 2232			

Client: SCS Engineers

Job Number: 280-113804-1

**General Chemistry**

**Client Sample ID: HVL-082918-22**

Lab Sample ID: 280-113804-4

Date Sampled: 08/29/2018 1315

Client Matrix: Water

Date Received: 08/30/2018 0925

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	ND		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-428101		Analysis Date: 08/30/2018 1855			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429246		Analysis Date: 09/11/2018 1017			
Alkalinity	140		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-429385		Analysis Date: 09/11/2018 1418			
Total Dissolved Solids	250		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428633		Analysis Date: 09/05/2018 1521			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-428200		Analysis Date: 08/30/2018 1936			
Total Organic Carbon - Quad	1.7		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428427		Analysis Date: 08/31/2018 2329			

Client: SCS Engineers

Job Number: 280-113804-1

General Chemistry

Client Sample ID: HVL-082918-25

Lab Sample ID: 280-113804-5

Client Matrix: Water

Date Sampled: 08/29/2018 1400

Date Received: 08/30/2018 0925

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	ND		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-428101		Analysis Date: 08/30/2018 1917			
Ammonia	0.10		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429246		Analysis Date: 09/11/2018 1019			
Alkalinity	ND		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-429385		Analysis Date: 09/11/2018 1410			
Total Dissolved Solids	ND		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428633		Analysis Date: 09/05/2018 1521			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-428200		Analysis Date: 08/30/2018 1936			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428427		Analysis Date: 08/31/2018 2348			

## DATA REPORTING QUALIFIERS

Client: SCS Engineers

Job Number: 280-113804-1

<b>Lab Section</b>	<b>Qualifier</b>	<b>Description</b>
GC/MS VOA	F2	MS/MSD RPD exceeds control limits
Metals	F1	MS and/or MSD Recovery is outside acceptance limits.

# QUALITY CONTROL RESULTS



## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS VOA</b>					
<b>Analysis Batch:280-428825</b>					
LCS 280-428825/4	Lab Control Sample	T	Water	8260B	
MB 280-428825/6	Method Blank	T	Water	8260B	
280-113804-1	HVL-082918-19	T	Water	8260B	
280-113804-2	HVL-082918-20	T	Water	8260B	
280-113804-3	HVL-082918-21	T	Water	8260B	
280-113804-4	HVL-082918-22	T	Water	8260B	
280-113804-5	HVL-082918-25	T	Water	8260B	
280-113804-6	Trip Blank	T	Water	8260B	
280-113806-G-1 MS	Matrix Spike	T	Water	8260B	
280-113806-G-1 MSD	Matrix Spike Duplicate	T	Water	8260B	

#### Report Basis

T = Total

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

## QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 580-284035</b>					
LCS 580-284035/23-A	Lab Control Sample	R	Water	3005A	
LCSD 580-284035/24-A	Lab Control Sample Duplicate	R	Water	3005A	
MB 580-284035/22-A	Method Blank	R	Water	3005A	
280-113804-1	HVL-082918-19	D	Water	3005A	
280-113804-1DU	Duplicate	D	Water	3005A	
280-113804-1MS	Matrix Spike	D	Water	3005A	
280-113804-1MSD	Matrix Spike Duplicate	D	Water	3005A	
280-113804-2	HVL-082918-20	D	Water	3005A	
280-113804-3	HVL-082918-21	D	Water	3005A	
280-113804-4	HVL-082918-22	D	Water	3005A	
280-113804-5	HVL-082918-25	D	Water	3005A	
<b>Analysis Batch:580-284304</b>					
LCS 580-284035/23-A	Lab Control Sample	R	Water	6020	580-284035
LCSD 580-284035/24-A	Lab Control Sample Duplicate	R	Water	6020	580-284035
MB 580-284035/22-A	Method Blank	R	Water	6020	580-284035
280-113804-1	HVL-082918-19	D	Water	6020	580-284035
280-113804-1DU	Duplicate	D	Water	6020	580-284035
280-113804-1MS	Matrix Spike	D	Water	6020	580-284035
280-113804-1MSD	Matrix Spike Duplicate	D	Water	6020	580-284035
280-113804-2	HVL-082918-20	D	Water	6020	580-284035
280-113804-3	HVL-082918-21	D	Water	6020	580-284035
280-113804-4	HVL-082918-22	D	Water	6020	580-284035
280-113804-5	HVL-082918-25	D	Water	6020	580-284035
<b>Prep Batch: 280-428185</b>					
LCS 280-428185/2-A	Lab Control Sample	R	Water	3005A	
MB 280-428185/1-A	Method Blank	R	Water	3005A	
280-113793-D-2-C MS	Matrix Spike	D	Water	3005A	
280-113793-D-2-D MSD	Matrix Spike Duplicate	D	Water	3005A	
280-113804-1	HVL-082918-19	D	Water	3005A	
280-113804-2	HVL-082918-20	D	Water	3005A	
280-113804-3	HVL-082918-21	D	Water	3005A	
280-113804-4	HVL-082918-22	D	Water	3005A	
280-113804-5	HVL-082918-25	D	Water	3005A	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

## QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 280-428186</b>					
LCS 280-428186/2-A	Lab Control Sample	R	Water	3005A	
MB 280-428186/1-A	Method Blank	R	Water	3005A	
280-113804-1	HVL-082918-19	D	Water	3005A	
280-113804-1MS	Matrix Spike	D	Water	3005A	
280-113804-1MSD	Matrix Spike Duplicate	D	Water	3005A	
280-113804-2	HVL-082918-20	D	Water	3005A	
280-113804-3	HVL-082918-21	D	Water	3005A	
280-113804-4	HVL-082918-22	D	Water	3005A	
280-113804-5	HVL-082918-25	D	Water	3005A	
<b>Analysis Batch:280-428391</b>					
LCS 280-428186/2-A	Lab Control Sample	R	Water	6020	280-428186
MB 280-428186/1-A	Method Blank	R	Water	6020	280-428186
280-113804-1	HVL-082918-19	D	Water	6020	280-428186
280-113804-1MS	Matrix Spike	D	Water	6020	280-428186
280-113804-1MSD	Matrix Spike Duplicate	D	Water	6020	280-428186
280-113804-2	HVL-082918-20	D	Water	6020	280-428186
280-113804-3	HVL-082918-21	D	Water	6020	280-428186
280-113804-4	HVL-082918-22	D	Water	6020	280-428186
280-113804-5	HVL-082918-25	D	Water	6020	280-428186
<b>Analysis Batch:280-428701</b>					
LCS 280-428185/2-A	Lab Control Sample	R	Water	6010B	280-428185
MB 280-428185/1-A	Method Blank	R	Water	6010B	280-428185
280-113793-D-2-C MS	Matrix Spike	D	Water	6010B	280-428185
280-113793-D-2-D MSD	Matrix Spike Duplicate	D	Water	6010B	280-428185
280-113804-1	HVL-082918-19	D	Water	6010B	280-428185
280-113804-2	HVL-082918-20	D	Water	6010B	280-428185
280-113804-3	HVL-082918-21	D	Water	6010B	280-428185
280-113804-4	HVL-082918-22	D	Water	6010B	280-428185
280-113804-5	HVL-082918-25	D	Water	6010B	280-428185

**Report Basis**

D = Dissolved

R = Total Recoverable

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-428101</b>					
LCS 280-428101/4	Lab Control Sample	T	Water	300.0	
LCSD 280-428101/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-428101/6	Method Blank	T	Water	300.0	
280-113804-1	HVL-082918-19	T	Water	300.0	
280-113804-1DU	Duplicate	T	Water	300.0	
280-113804-1MS	Matrix Spike	T	Water	300.0	
280-113804-1MSD	Matrix Spike Duplicate	T	Water	300.0	
280-113804-2	HVL-082918-20	T	Water	300.0	
280-113804-3	HVL-082918-21	T	Water	300.0	
280-113804-4	HVL-082918-22	T	Water	300.0	
280-113804-5	HVL-082918-25	T	Water	300.0	
<b>Analysis Batch:280-428200</b>					
LCS 280-428200/2	Lab Control Sample	T	Water	SM 2540D	
LCSD 280-428200/3	Lab Control Sample Duplicate	T	Water	SM 2540D	
MB 280-428200/1	Method Blank	T	Water	SM 2540D	
280-113782-A-1 DU	Duplicate	T	Water	SM 2540D	
280-113804-1	HVL-082918-19	T	Water	SM 2540D	
280-113804-2	HVL-082918-20	T	Water	SM 2540D	
280-113804-3	HVL-082918-21	T	Water	SM 2540D	
280-113804-4	HVL-082918-22	T	Water	SM 2540D	
280-113804-5	HVL-082918-25	T	Water	SM 2540D	
<b>Analysis Batch:280-428427</b>					
LCS 280-428427/3	Lab Control Sample	T	Water	SM 5310B	
MB 280-428427/4	Method Blank	T	Water	SM 5310B	
280-113804-1	HVL-082918-19	T	Water	SM 5310B	
280-113804-2	HVL-082918-20	T	Water	SM 5310B	
280-113804-3	HVL-082918-21	T	Water	SM 5310B	
280-113804-3MS	Matrix Spike	T	Water	SM 5310B	
280-113804-3MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
280-113804-4	HVL-082918-22	T	Water	SM 5310B	
280-113804-5	HVL-082918-25	T	Water	SM 5310B	
<b>Analysis Batch:280-428633</b>					
LCS 280-428633/2	Lab Control Sample	T	Water	SM 2540C	
MB 280-428633/1	Method Blank	T	Water	SM 2540C	
280-113511-A-5 DU	Duplicate	T	Water	SM 2540C	
280-113804-1	HVL-082918-19	T	Water	SM 2540C	
280-113804-2	HVL-082918-20	T	Water	SM 2540C	
280-113804-3	HVL-082918-21	T	Water	SM 2540C	
280-113804-4	HVL-082918-22	T	Water	SM 2540C	
280-113804-5	HVL-082918-25	T	Water	SM 2540C	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-429246</b>					
LCS 280-429246/18	Lab Control Sample	T	Water	350.1	
MB 280-429246/19	Method Blank	T	Water	350.1	
280-113793-C-1 MS	Matrix Spike	T	Water	350.1	
280-113793-C-1 MSD	Matrix Spike Duplicate	T	Water	350.1	
280-113804-1	HVL-082918-19	T	Water	350.1	
280-113804-2	HVL-082918-20	T	Water	350.1	
280-113804-3	HVL-082918-21	T	Water	350.1	
280-113804-4	HVL-082918-22	T	Water	350.1	
280-113804-5	HVL-082918-25	T	Water	350.1	
<b>Analysis Batch:280-429385</b>					
LCS 280-429385/31	Lab Control Sample	T	Water	SM 2320B	
LCS 280-429385/4	Lab Control Sample	T	Water	SM 2320B	
LCSD 280-429385/32	Lab Control Sample Duplicate	T	Water	SM 2320B	
LCSD 280-429385/5	Lab Control Sample Duplicate	T	Water	SM 2320B	
MB 280-429385/33	Method Blank	T	Water	SM 2320B	
MB 280-429385/6	Method Blank	T	Water	SM 2320B	
280-113804-1	HVL-082918-19	T	Water	SM 2320B	
280-113804-2	HVL-082918-20	T	Water	SM 2320B	
280-113804-3	HVL-082918-21	T	Water	SM 2320B	
280-113804-4	HVL-082918-22	T	Water	SM 2320B	
280-113804-5	HVL-082918-25	T	Water	SM 2320B	
280-114072-A-4 DU	Duplicate	T	Water	SM 2320B	

**Report Basis**

T = Total

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>HPLC/IC</b>					
<b>Analysis Batch:160-387239</b>					
LCS 160-387239/10	Lab Control Sample	T	Water	300.0	
MB 160-387239/9	Method Blank	T	Water	300.0	
280-113694-E-1 DU	Duplicate	T	Water	300.0	
280-113694-E-1 DUDL	Duplicate	T	Water	300.0	
280-113694-E-1 MSDL	Matrix Spike	T	Water	300.0	
280-113804-1	HVL-082918-19	T	Water	300.0	
280-113804-1DL	HVL-082918-19	T	Water	300.0	
280-113804-2	HVL-082918-20	T	Water	300.0	
280-113804-2DL	HVL-082918-20	T	Water	300.0	
280-113804-3	HVL-082918-21	T	Water	300.0	
280-113804-3DL	HVL-082918-21	T	Water	300.0	
280-113804-4	HVL-082918-22	T	Water	300.0	
280-113804-4DL	HVL-082918-22	T	Water	300.0	
280-113804-5	HVL-082918-25	T	Water	300.0	
280-113804-5MS	Matrix Spike	T	Water	300.0	

#### Report Basis

T = Total

Client: SCS Engineers

Job Number: 280-113804-1

**Surrogate Recovery Report**

**8260B Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	DBFM %Rec	TOL %Rec
280-113804-1	HVL-082918-19	112	99	110	95
280-113804-2	HVL-082918-20	113	94	112	96
280-113804-3	HVL-082918-21	116	98	111	96
280-113804-4	HVL-082918-22	119	99	115	97
280-113804-5	HVL-082918-25	120	100	116	100
280-113804-6	Trip Blank	120	97	111	95
MB 280-428825/6		107	96	114	100
LCS 280-428825/4		110	94	110	98
280-113806-G-1 MS		115	92	111	97
280-113806-G-1 MSD		114	91	109	94

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	70-127
BFB = 4-Bromofluorobenzene (Surr)	78-120
DBFM = Dibromofluoromethane (Surr)	77-120
TOL = Toluene-d8 (Surr)	80-125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Method Blank - Batch: 280-428825**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: MB 280-428825/6  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/07/2018 0917  
 Prep Date: 09/07/2018 0917  
 Leach Date: N/A

Analysis Batch: 280-428825  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: VMS\_MS9  
 Lab File ID: MS9\_4604.D  
 Initial Weight/Volume: 20 mL  
 Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50



# Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

## Method Blank - Batch: 280-428825

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: MB 280-428825/6  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/07/2018 0917  
Prep Date: 09/07/2018 0917  
Leach Date: N/A

Analysis Batch: 280-428825  
Prep Batch: N/A  
Leach Batch: N/A  
Units: ug/L

Instrument ID: VMS\_MS9  
Lab File ID: MS9\_4604.D  
Initial Weight/Volume: 20 mL  
Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
trans-1,4-Dichloro-2-butene	ND		3.0
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	107	70 - 127
4-Bromofluorobenzene (Surr)	96	78 - 120
Dibromofluoromethane (Surr)	114	77 - 120
Toluene-d8 (Surr)	100	80 - 125

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Lab Control Sample - Batch: 280-428825**

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: LCS 280-428825/4	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS9_4603.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 0856	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 0856		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1,2-Tetrachloroethane	5.00	5.85	117	65 - 135	
1,1,1-Trichloroethane	5.00	5.44	109	65 - 135	
1,1,2,2-Tetrachloroethane	5.00	5.08	102	58 - 135	
1,1,2-Trichloroethane	5.00	5.76	115	64 - 135	
1,1-Dichloroethane	5.00	5.58	112	65 - 135	
1,1-Dichloroethene	5.00	6.13	123	65 - 136	
1,2,3-Trichloropropane	5.00	5.08	102	65 - 135	
1,2-Dibromo-3-Chloropropane	5.00	5.78	116	57 - 135	
1,2-Dibromoethane	5.00	5.29	106	65 - 135	
1,2-Dichlorobenzene	5.00	5.34	107	65 - 135	
1,2-Dichloroethane	5.00	5.26	105	65 - 135	
1,2-Dichloropropane	5.00	5.58	112	64 - 135	
1,4-Dichlorobenzene	5.00	5.30	106	65 - 135	
2-Butanone (MEK)	20.0	28.9	145	44 - 177	
2-Hexanone	20.0	19.8	99	57 - 139	
4-Methyl-2-pentanone (MIBK)	20.0	20.8	104	60 - 150	
Acetone	20.0	23.2	116	39 - 156	
Acrylonitrile	50.0	54.9	110	56 - 135	
Benzene	5.00	5.68	114	65 - 135	
Bromochloromethane	5.00	6.21	124	65 - 135	
Bromodichloromethane	5.00	5.57	111	65 - 135	
Bromoform	5.00	6.05	121	62 - 135	
Bromomethane	5.00	5.36	107	45 - 135	
Carbon disulfide	5.00	5.93	119	55 - 143	
Carbon tetrachloride	5.00	5.81	116	65 - 135	
Chlorobenzene	5.00	5.49	110	65 - 135	
Chloroethane	5.00	5.16	103	46 - 136	
Chloroform	5.00	5.36	107	65 - 135	
Chloromethane	5.00	4.58	92	34 - 145	
cis-1,2-Dichloroethene	5.00	5.74	115	65 - 135	
cis-1,3-Dichloropropene	5.00	5.36	107	65 - 135	
Dibromochloromethane	5.00	5.88	118	65 - 135	
Dibromomethane	5.00	5.43	109	65 - 135	
Dichlorodifluoromethane	5.00	3.33	67	43 - 142	
Ethylbenzene	5.00	5.29	106	65 - 135	
Iodomethane	5.00	6.23	125	65 - 142	
Methylene Chloride	5.00	6.29	126	54 - 141	
m-Xylene & p-Xylene	5.00	5.11	102	65 - 135	
o-Xylene	5.00	5.36	107	65 - 135	
Styrene	5.00	5.28	106	65 - 135	
Tetrachloroethene	5.00	5.53	111	65 - 135	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Lab Control Sample - Batch: 280-428825**

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: LCS 280-428825/4	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS9_4603.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 0856	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 0856		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Toluene	5.00	5.36	107	65 - 135	
trans-1,2-Dichloroethene	5.00	6.20	124	65 - 135	
trans-1,3-Dichloropropene	5.00	5.52	110	65 - 135	
trans-1,4-Dichloro-2-butene	5.00	4.66	93	53 - 135	
Trichloroethene	5.00	5.85	117	65 - 135	
Trichlorofluoromethane	5.00	4.80	96	53 - 137	
Vinyl acetate	10.0	8.06	81	11 - 187	
Vinyl chloride	5.00	4.51	90	40 - 137	
Surrogate		% Rec		Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		110		70 - 127	
4-Bromofluorobenzene (Surr)		94		78 - 120	
Dibromofluoromethane (Surr)		110		77 - 120	
Toluene-d8 (Surr)		98		80 - 125	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428825**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-113806-G-1 MS	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS9_4611.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1148		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1148		
Leach Date: N/A		

MSD Lab Sample ID: 280-113806-G-1 MSD	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS9_4612.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1209		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1209		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1,1,2-Tetrachloroethane	101	105	65 - 135	4	20		
1,1,1-Trichloroethane	102	103	65 - 135	1	20		
1,1,2,2-Tetrachloroethane	83	83	58 - 135	0	20		
1,1,2-Trichloroethane	101	100	64 - 135	1	27		
1,1-Dichloroethane	99	103	65 - 135	4	21		
1,1-Dichloroethene	98	104	65 - 136	5	20		
1,2,3-Trichloropropane	88	96	65 - 135	9	23		
1,2-Dibromo-3-Chloropropane	90	60	57 - 135	41	22		F2
1,2-Dibromoethane	91	95	65 - 135	4	27		
1,2-Dichlorobenzene	91	95	65 - 135	5	20		
1,2-Dichloroethane	101	102	65 - 135	1	20		
1,2-Dichloropropane	95	97	64 - 135	2	20		
1,4-Dichlorobenzene	92	94	65 - 135	3	23		
2-Butanone (MEK)	113	121	44 - 177	7	32		
2-Hexanone	79	87	57 - 139	9	25		
4-Methyl-2-pentanone (MIBK)	87	94	60 - 150	8	22		
Acetone	106	109	39 - 156	2	23		
Acrylonitrile	90	94	56 - 135	4	30		
Benzene	97	101	65 - 135	3	20		
Bromochloromethane	103	106	65 - 135	3	29		
Bromodichloromethane	102	104	65 - 135	2	20		
Bromoform	102	101	62 - 135	1	27		
Bromomethane	91	98	45 - 135	8	33		
Carbon disulfide	97	102	55 - 143	4	20		
Carbon tetrachloride	106	108	65 - 135	2	21		
Chlorobenzene	99	99	65 - 135	0	20		
Chloroethane	82	92	46 - 136	12	25		
Chloroform	100	104	65 - 135	4	20		
Chloromethane	83	93	34 - 145	11	24		
cis-1,2-Dichloroethene	97	102	65 - 135	5	20		
cis-1,3-Dichloropropene	90	93	65 - 135	3	26		
Dibromochloromethane	99	102	65 - 135	3	20		

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428825**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-113806-G-1 MS	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS9_4611.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1148		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1148		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-113806-G-1 MSD	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS9_4612.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1209		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1209		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Dibromomethane	91	97	65 - 135	6	26		
Dichlorodifluoromethane	68	74	43 - 142	10	30		
Ethylbenzene	95	96	65 - 135	1	20		
Iodomethane	105	110	65 - 142	5	25		
Methylene Chloride	101	108	54 - 141	7	26		
m-Xylene & p-Xylene	93	94	65 - 135	2	20		
o-Xylene	93	96	65 - 135	3	20		
Styrene	90	94	65 - 135	4	26		
Tetrachloroethene	94	95	65 - 135	1	20		
Toluene	93	96	65 - 135	3	20		
trans-1,2-Dichloroethene	103	108	65 - 135	5	24		
trans-1,3-Dichloropropene	95	97	65 - 135	2	26		
trans-1,4-Dichloro-2-butene	82	84	53 - 135	2	25		
Trichloroethene	100	103	65 - 135	3	20		
Trichlorofluoromethane	86	93	53 - 137	8	27		
Vinyl acetate	71	77	11 - 187	8	24		
Vinyl chloride	82	89	40 - 137	8	24		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	115	114	70 - 127
4-Bromofluorobenzene (Surr)	92	91	78 - 120
Dibromofluoromethane (Surr)	111	109	77 - 120
Toluene-d8 (Surr)	97	94	80 - 125

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Method Blank - Batch: 160-387239**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 160-387239/9	Analysis Batch: 160-387239	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090518- 9.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/05/2018 1628	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Result	Qual	RL
Chloride	ND		0.20
Sulfate	ND		0.20

**Lab Control Sample - Batch: 160-387239**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: LCS 160-387239/10	Analysis Batch: 160-387239	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090518- 10.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/05/2018 1643	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.00	1.94	97	90 - 110	
Sulfate	8.00	7.70	96	90 - 110	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Matrix Spike - Batch: 160-387239**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-113804-5	Analysis Batch: 160-387239	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090518- 36.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/05/2018 2324	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	ND	2.00	2.00	100	90 - 110	
Sulfate	ND	4.00	3.74	94	90 - 110	

**Matrix Spike - Batch: 160-387239**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-113694-E-1 MSDL	Analysis Batch: 160-387239	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090518- 54.d
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/06/2018 1347	Units: mg/L	Final Weight/Volume:
Prep Date: N/A	Run Type: DL	Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	14	10.0	24.1	101	90 - 110	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

## Duplicate - Batch: 160-387239

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID:	280-113694-E-1 DU	Analysis Batch:	160-387239	Instrument ID:	CIC2500
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	090518- 12.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	09/05/2018 1714	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Sulfate	11	11.4	4	20	

## Duplicate - Batch: 160-387239

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID:	280-113694-E-1 DUDL	Analysis Batch:	160-387239	Instrument ID:	CIC2500
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	090518- 53.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1332	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A	Run Type:	DL	Injection Volume:	50 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	14	14.0	0.7	20	



## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Method Blank - Batch: 280-428185**

Lab Sample ID: MB 280-428185/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/05/2018 1942  
 Prep Date: 08/31/2018 1605  
 Leach Date: N/A

Analysis Batch: 280-428701  
 Prep Batch: 280-428185  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_025  
 Lab File ID: 25a090518cc.asc  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Calcium, Dissolved	ND		0.20
Magnesium, Dissolved	ND		0.10
Potassium, Dissolved	ND		2.0
Sodium, Dissolved	ND		1.0

**Lab Control Sample - Batch: 280-428185**

Lab Sample ID: LCS 280-428185/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/05/2018 1945  
 Prep Date: 08/31/2018 1605  
 Leach Date: N/A

Analysis Batch: 280-428701  
 Prep Batch: 280-428185  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_025  
 Lab File ID: 25a090518cc.asc  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Calcium, Dissolved	50.0	48.9	98	90 - 111	
Magnesium, Dissolved	50.0	50.8	102	90 - 113	
Potassium, Dissolved	50.0	50.3	101	89 - 114	
Sodium, Dissolved	50.0	51.2	102	90 - 115	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428185**

**Method: 6010B  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-113793-D-2-C MS	Analysis Batch: 280-428701	Instrument ID: MT_025
Client Matrix: Water	Prep Batch: 280-428185	Lab File ID: 25a090518cc.asc
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/05/2018 1952		Final Weight/Volume: 50 mL
Prep Date: 08/31/2018 1605		
Leach Date: N/A		

MSD Lab Sample ID: 280-113793-D-2-D MSD	Analysis Batch: 280-428701	Instrument ID: MT_025
Client Matrix: Water	Prep Batch: 280-428185	Lab File ID: 25a090518cc.asc
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/05/2018 1955		Final Weight/Volume: 50 mL
Prep Date: 08/31/2018 1605		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Calcium, Dissolved	99	99	48 - 153	1	20		
Magnesium, Dissolved	101	101	62 - 146	0	20		
Potassium, Dissolved	101	100	76 - 132	1	20		
Sodium, Dissolved	102	103	70 - 203	0	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Method Blank - Batch: 580-284035**

Lab Sample ID: MB 580-284035/22-A  
 Client Matrix: Water  
 Dilution: 5.0  
 Analysis Date: 09/19/2018 0110  
 Prep Date: 09/14/2018 1803  
 Leach Date: N/A

Analysis Batch: 580-284304  
 Prep Batch: 580-284035  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA044  
 Lab File ID: 119SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Iron, Dissolved	ND		0.18

**Lab Control Sample/  
 Lab Control Sample Duplicate Recovery Report - Batch: 580-284035**

LCS Lab Sample ID: LCS 580-284035/23-A  
 Client Matrix: Water  
 Dilution: 50  
 Analysis Date: 09/19/2018 0115  
 Prep Date: 09/14/2018 1803  
 Leach Date: N/A

Analysis Batch: 580-284304  
 Prep Batch: 580-284035  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA044  
 Lab File ID: 120SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Iron, Dissolved	103	102	80 - 120	1	20		

Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Iron, Dissolved	103	102	80 - 120	1	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-284035**

**Method: 6020  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-113804-1  
Client Matrix: Water  
Dilution: 50  
Analysis Date: 09/19/2018 0136  
Prep Date: 09/14/2018 1803  
Leach Date: N/A

Analysis Batch: 580-284304  
Prep Batch: 580-284035  
Leach Batch: N/A

Instrument ID: SEA044  
Lab File ID: 125SMPL.D  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-113804-1  
Client Matrix: Water  
Dilution: 50  
Analysis Date: 09/19/2018 0140  
Prep Date: 09/14/2018 1803  
Leach Date: N/A

Analysis Batch: 580-284304  
Prep Batch: 580-284035  
Leach Batch: N/A

Instrument ID: SEA044  
Lab File ID: 126SMPL.D  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Iron, Dissolved	105	102	80 - 120	3	20		

**Duplicate - Batch: 580-284035**

**Method: 6020  
Preparation: 3005A  
Dissolved**

Lab Sample ID: 280-113804-1  
Client Matrix: Water  
Dilution: 5.0  
Analysis Date: 09/19/2018 0127  
Prep Date: 09/14/2018 1803  
Leach Date: N/A

Analysis Batch: 580-284304  
Prep Batch: 580-284035  
Leach Batch: N/A  
Units: mg/L

Instrument ID: SEA044  
Lab File ID: 123SMPL.D  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Iron, Dissolved	ND	ND	NC	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Method Blank - Batch: 280-428186**

Lab Sample ID: MB 280-428186/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/01/2018 0201  
 Prep Date: 08/31/2018 1605  
 Leach Date: N/A

Analysis Batch: 280-428391  
 Prep Batch: 280-428186  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_078  
 Lab File ID: 176\_BLK\_083118a.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Manganese, Dissolved	ND		0.0010

**Lab Control Sample - Batch: 280-428186**

Lab Sample ID: LCS 280-428186/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/01/2018 0205  
 Prep Date: 08/31/2018 1605  
 Leach Date: N/A

Analysis Batch: 280-428391  
 Prep Batch: 280-428186  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_078  
 Lab File ID: 177\_LCS\_083118a.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Manganese, Dissolved	0.0400	0.0413	103	85 - 117	

**Matrix Spike/  
 Matrix Spike Duplicate Recovery Report - Batch: 280-428186**

MS Lab Sample ID: 280-113804-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/01/2018 0215  
 Prep Date: 08/31/2018 1605  
 Leach Date: N/A

Analysis Batch: 280-428391  
 Prep Batch: 280-428186  
 Leach Batch: N/A

**Method: 6020  
 Preparation: 3005A  
 Dissolved**

Instrument ID: MT\_078  
 Lab File ID: 180SMPL\_083118a.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-113804-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/01/2018 0218  
 Prep Date: 08/31/2018 1605  
 Leach Date: N/A

Analysis Batch: 280-428391  
 Prep Batch: 280-428186  
 Leach Batch: N/A

Instrument ID: MT\_078  
 Lab File ID: 181SMPL\_083118a.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Manganese, Dissolved	103	100	85 - 117	3	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Method Blank - Batch: 280-428101**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-428101/6	Analysis Batch: 280-428101	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 06.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/30/2018 1305	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Nitrate as N	ND		0.20

**Method Reporting Limit Check - Batch: 280-428101**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-428101/3	Analysis Batch: 280-428101	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 03.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/30/2018 1158	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	0.200	ND	115	50 - 150	

**Lab Control Sample/**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-428101**

**Method: 300.0**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-428101/4	Analysis Batch: 280-428101	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 04.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/30/2018 1220	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-428101/5	Analysis Batch: 280-428101	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 05.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/30/2018 1243	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Nitrate as N	105	104	90 - 110	1	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428101**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-113804-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/30/2018 1726  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-428101  
 Prep Batch: N/A  
 Leach Batch: N/A

Instrument ID: WC\_IonChrom8  
 Lab File ID: 09.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

MSD Lab Sample ID: 280-113804-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/30/2018 1748  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-428101  
 Prep Batch: N/A  
 Leach Batch: N/A

Instrument ID: WC\_IonChrom8  
 Lab File ID: 10.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate as N	102	105	80 - 120	2	20		

**Duplicate - Batch: 280-428101**

**Method: 300.0  
Preparation: N/A**

Lab Sample ID: 280-113804-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/30/2018 1704  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-428101  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: WC\_IonChrom8  
 Lab File ID: 08.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate as N	1.6	1.62	0.2	15	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Method Blank - Batch: 280-429246**

**Method: 350.1  
Preparation: N/A**

Lab Sample ID: MB 280-429246/19	Analysis Batch: 280-429246	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091118.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/11/2018 0933	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Ammonia	ND		0.10

**Lab Control Sample - Batch: 280-429246**

**Method: 350.1  
Preparation: N/A**

Lab Sample ID: LCS 280-429246/18	Analysis Batch: 280-429246	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091118.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/11/2018 0931	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	2.50	2.41	96	90 - 110	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-429246**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-113793-C-1 MS	Analysis Batch: 280-429246	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091118.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 09/11/2018 0937		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-113793-C-1 MSD	Analysis Batch: 280-429246	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091118.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 09/11/2018 0939		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia	99	95	90 - 110	4	10		



# Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

## Method Blank - Batch: 280-429385

Method: SM 2320B

Preparation: N/A

Lab Sample ID: MB 280-429385/6  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/11/2018 1341  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-429385  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: WC\_AT2  
Lab File ID: alk 091118.txt  
Initial Weight/Volume:  
Final Weight/Volume:

Analyte	Result	Qual	RL
Alkalinity	ND		5.0

## Method Blank - Batch: 280-429385

Method: SM 2320B

Preparation: N/A

Lab Sample ID: MB 280-429385/33  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/11/2018 1743  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-429385  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: WC\_AT2  
Lab File ID: alk 091118.txt  
Initial Weight/Volume:  
Final Weight/Volume:

Analyte	Result	Qual	RL
Alkalinity	ND		5.0

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Lab Control Sample/**  
**Lab Control Sample Duplicate Recovery Report - Batch: 280-429385**      **Method: SM 2320B**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-429385/4	Analysis Batch: 280-429385	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 091118.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/11/2018 1325	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-429385/5	Analysis Batch: 280-429385	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 091118.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/11/2018 1334	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Alkalinity	97	97	90 - 110	0	10		

**Lab Control Sample/**  
**Lab Control Sample Duplicate Recovery Report - Batch: 280-429385**      **Method: SM 2320B**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-429385/31	Analysis Batch: 280-429385	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 091118.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/11/2018 1726	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-429385/32	Analysis Batch: 280-429385	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 091118.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/11/2018 1736	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Alkalinity	98	98	90 - 110	0	10		

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

## Duplicate - Batch: 280-429385

Method: SM 2320B

Preparation: N/A

Lab Sample ID: 280-114072-A-4 DU  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/11/2018 1811  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-429385  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: WC\_AT2  
Lab File ID: alk 091118.txt  
Initial Weight/Volume:  
Final Weight/Volume:

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity	670	671	0	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Method Blank - Batch: 280-428633**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: MB 280-428633/1	Analysis Batch: 280-428633	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/05/2018 1521	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Dissolved Solids	ND		10

**Lab Control Sample - Batch: 280-428633**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: LCS 280-428633/2	Analysis Batch: 280-428633	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/05/2018 1521	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Dissolved Solids	501	483	96	86 - 110	

**Duplicate - Batch: 280-428633**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: 280-113511-A-5 DU	Analysis Batch: 280-428633	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/05/2018 1521	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Dissolved Solids	330	340	4	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Method Blank - Batch: 280-428200**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: MB 280-428200/1	Analysis Batch: 280-428200	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 08/30/2018 1936	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Suspended Solids	ND		4.0

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-428200**

**Method: SM 2540D  
Preparation: N/A**

LCS Lab Sample ID: LCS 280-428200/2	Analysis Batch: 280-428200	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 08/30/2018 1936	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-428200/3	Analysis Batch: 280-428200	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 08/30/2018 1936	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Total Suspended Solids	94	107	86 - 114	13	20		

**Duplicate - Batch: 280-428200**

**Method: SM 2540D  
Preparation: N/A**

Lab Sample ID: 280-113782-A-1 DU	Analysis Batch: 280-428200	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 08/30/2018 1936	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Suspended Solids	4.8	5.20	8	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113804-1

**Method Blank - Batch: 280-428427**

**Method: SM 5310B**  
**Preparation: N/A**

Lab Sample ID: MB 280-428427/4	Analysis Batch: 280-428427	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090418.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/31/2018 1725	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Organic Carbon - Quad	ND		1.0

**Lab Control Sample - Batch: 280-428427**

**Method: SM 5310B**  
**Preparation: N/A**

Lab Sample ID: LCS 280-428427/3	Analysis Batch: 280-428427	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090418.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/31/2018 1707	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Quad	25.0	24.3	97	88 - 112	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428427**


**Method: SM 5310B**  
**Preparation: N/A**

MS Lab Sample ID: 280-113804-3	Analysis Batch: 280-428427	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090418.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/31/2018 2250		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-113804-3	Analysis Batch: 280-428427	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090418.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/31/2018 2310		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Total Organic Carbon - Quad	92	93	88 - 112	1	15		

**Chain of Custody Record**

<b>Client Information</b> Client Contact: Sam Graber Company: SCS Engineers Address: 2405 140th Avenue NE Suite 107 City: Bellevue State, Zip: WA, 98005-1877 Phone: 425-766-5362 Email: SGrab@scsengineers.com Project Name: Hidden Valley Landfill Site:		Sampler: Sam G. Lab PM: Sara, Betsy A Phone: 425-766-3362 E-Mail: betsy.sara@testamericainc.com		Carrier Tracking No(s): 4445 6530 1164 4445 6530 1175 Job #: 04219002.03 Preservation Codes: M - Hexane N - None O - AdNH02 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecylhydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify) Other:		COC No: 280-21691-6019.1 Page: 1 of 1	
Due Date Requested: Standard TAT Requested (days): PO #: Purchase Order not required WO #:		Analysis Requested  280-113804 Chain of Custody		Total Number of Containers:		Special Instructions/Note: Short Hold: NO3(IC)	
Project #: 28003580-Quarterly Groundwater Wells SSOW#:		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No)		Dissolved Metals (6010B/6020) Dissolved Iron (TA Seattle) TDS/Alk/NO3(IC) CUSO4 (TA St. Louis) Ammonia/TOC TSS		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:	
Sample Identification HVL-082918-19 HVL-082918-20 HVL-082918-21 HVL-082918-22 HVL-082918-25 Trip Blank		Sample Date 8/29/18 1058 1255 1315 1400 - -		Sample Time 1005 1058 1255 1315 1400 - -		Sample Type (C=Comp, G=grab) Preservation Code: B W ↓ ↓ ↓ ↓ - -	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Empty Kit Relinquished by:		Date:		Method of Shipment:	
Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by:		Date/Time: 8/29/18 1900 Date/Time: Date/Time:		Received by: [Signature] Received by: Received by:		Date/Time: 8/31/18 0935 Date/Time: Date/Time:	
Custody Seal No.: 552604, 552605 Custody Seals Intact: Δ Yes Δ No		Company: SCS Company: Company:		Company: DABank Company: Company:		Cooler Temperature(s) °C and Other Remarks: 04, 16, 18, 28 cf-6.4	

**TestAmerica Denver**  
 4955 Yarrow Street  
 Arvada, CO 80002  
 Phone (303) 736-0100 Fax (303) 431-7171

**Chain of Custody Record**



**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING

**Client Information (Sub Contract Lab)**

Client Contact: Shipping/Receiving  
 Company: TestAmerica Laboratories, Inc.  
 Address: 13715 Rider Trail North,  
 City: Earth City  
 State, Zip: MO, 63045  
 Phone: 314-298-8566(Tel) 314-298-8757(Fax)  
 Email:   
 Project Name: Hidden Valley LF  
 State:   
 SSO#W#

Sampler: Sara, Betsy A  
 Lab PM: Sara, Betsy A  
 E-Mail: betsy\_sara@testamericainc.com  
 Accreditations Required (see note): State Program - Washington

Due Date Requested: 9/19/2018  
 TAT Requested (days):   
 Corner Tracking (Yes/No):   
 State of Origin: Washington

COC No: 280-113804-1  
 Page: Page 1 of 1  
 Job #: 280-113804-1

Analysis Requested  
 Field Filtered Sample (Yes or No)   
 Perform MS/MSD (Yes or No)   
 300\_ORGFM\_38D (MOD) Sulfate/Chloride (TA St. Louis)

Preservation Codes:  
 A - HCl  
 B - NaOH  
 C - Zn Acetate  
 D - Nitric Acid  
 E - NaHSO4  
 F - MeOH  
 G - Amchlor  
 H - Ascorbic Acid  
 I - Ice  
 J - DI Water  
 K - EDTA  
 L - EDTA  
 M - Hexane  
 N - None  
 O - Acetic  
 P - Na2SO3  
 Q - Na2SO4  
 R - Na2S2O3  
 S - H2SO4  
 T - TSP Dodecylhydrate  
 U - Acetone  
 V - MeOH  
 W - pH 4.5  
 Z - other (specify)

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water, S=Solid, O=Organic, B=Tracer, A=Air)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers	Special Instructions/Note:
HML-082918-19 (280-113804-1)	8/29/18	10:05	Pacific	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1	
HML-082918-20 (280-113804-2)	8/29/18	10:58	Pacific	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1	
HML-082918-21 (280-113804-3)	8/29/18	12:55	Pacific	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1	
HML-082918-22 (280-113804-4)	8/29/18	13:15	Pacific	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1	
HML-082918-25 (280-113804-5)	8/29/18	14:00	Pacific	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis, the sample must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_  
 Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Relinquished by: *Sara Castro* Date/Time: 8-31-18 1355 Company: THID  
 Relinquished by: *Michael Hill* Date/Time: 9-1-18 0830 Company: TH.SD

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Custody Seats Intact:  Yes  No  
 Custody Seal No.: \_\_\_\_\_  
 Cooler Temperature(s) °C and Other Remarks: \_\_\_\_\_



Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>	Sampler: Sara, Betsy A	Lab PM: Sara, Betsy A	Carrier Tracking No(s):	COC No: 280-453016.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: betsy.sara@testamericainc.com	State of Origin: Washington	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Washington		Job #: 280-113804-1

Address: 5755 8th Street East, City: Tacoma State, Zip: WA, 98424	Due Date Requested: 9/18/2018 TAT Requested (days):	<b>Analysis Requested</b>						Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)				
Phone: 253-922-2310(Tel) 253-922-5047(Fax) Email:	PO #: WO #:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8020FIELD_FLTRD (MOD) Iron							Total Number of containers	Other:
Project Name: Hidden Valley LF Site:	Project #: 28003580 SSOW#:											

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wast/leach, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8020FIELD_FLTRD (MOD) Iron	Total Number of containers	Special Instructions/Note:
HVL-082918-19 (280-113804-1)	8/29/18	10:05 Pacific		Water	X			1	
HVL-082918-20 (280-113804-2)	8/29/18	10:58 Pacific		Water	X			1	
HVL-082918-21 (280-113804-3)	8/29/18	12:55 Pacific		Water	X			1	
HVL-082918-22 (280-113804-4)	8/29/18	13:15 Pacific		Water	X			1	
HVL-082918-25 (280-113804-5)	8/29/18	14:00 Pacific		Water	X			1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

<b>Possible Hazard Identification</b> Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2	<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b> <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months
Special Instructions/QC Requirements:		

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: Diana Castro	Date/Time: 8-31-18 1505	Company: TALDea	Received by: B. Hall Date/Time: 9-1-18 1010 Company: SEW TA
Relinquished by:	Date/Time:	Company:	Received by: Date/Time: Company:
Relinquished by:	Date/Time:	Company:	Received by: Date/Time: Company:

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-113804-1

**Login Number: 113804**  
**List Number: 1**  
**Creator: Rhoades, Joseph P**

**List Source: TestAmerica Denver**

<b>Question</b>	<b>Answer</b>	<b>Comment</b>
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-113804-1

**Login Number: 113804**  
**List Number: 2**  
**Creator: Hobbs, Kenneth F**

**List Source: TestAmerica Seattle**  
**List Creation: 09/01/18 11:53 AM**

<b>Question</b>	<b>Answer</b>	<b>Comment</b>
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-113804-1

**Login Number: 113804**  
**List Number: 3**  
**Creator: Hellm, Michael**

**List Source: TestAmerica St. Louis**  
**List Creation: 09/01/18 02:01 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Job Number: 280-113806-1  
Job Description: Hidden Valley LF

**Paul Bunyan  
Corliss  
Trip Blank**

For:  
SCS Engineers  
2405 140th Avenue NE  
Suite 107  
Bellevue, WA 98005-1877  
Attention: Mr. Kevin Lakey



Approved for release.  
Betsy A Sara  
Project Manager II  
9/20/2018 9:16 AM

---

Betsy A Sara, Project Manager II  
4955 Yarrow Street, Arvada, CO, 80002  
(303)736-0189  
betsy.sara@testamericainc.com  
09/20/2018

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

These data and reporting limits are being used specifically to meet the needs of this project. All RLs are supported by TestAmerica's Method Detection Limits (MDLs). Reporting limits in this report are at or above the MDL.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002  
Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)

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## CASE NARRATIVE

Client: SCS Engineers

Project: Hidden Valley LF

Report Number: 280-113806-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### Sample Receiving

The samples were received on 08/30/2018; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.7 C.

### Holding Times

All holding times were within established control limits.

### Method Blanks

All Method Blanks were within established control limits.

### Laboratory Control Samples (LCS)

All Laboratory Control Samples were within established control limits.

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

The Method 8260B MS/MSD performed on the sample HVL-082918-23 exhibited a RPD result outside the RPD limit for 1,2-Dibromo-3-Chloropropane. Because the corresponding Matrix Spike and Matrix Spike Duplicate recoveries, Laboratory Control Sample, and Method Blank sample were within control limits, this anomaly is considered to be due to matrix interference and no corrective action was taken.

Sample HVL-082918-24 was selected to fulfill the laboratory batch quality control requirements for Method 6020. Analysis of the laboratory generated MS/MSD for this sample exhibited recoveries of Total Zinc below the lower control limit. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, this anomaly may be due to matrix interference and no corrective action was taken.

The Matrix Spike and Matrix Spike Duplicate performed on a sample from another client exhibited recoveries outside control limits for Ammonia Method 350.1. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, this anomaly may be due to matrix interference and no corrective action was taken.

All other MS and MSD samples were within established control limits.

### General Chemistry

The samples HVL-082918-23 and HVL-082918-24 in Anion batch 160-387239 were bracketed by an ending continuing calibration blank (CCB) that had a detection for Chloride slightly above the reporting limit (RL). Because these samples have Chloride results greater than ten times the concentration found in the bracketing CCB corrective action was deemed unnecessary.

### General Comments

The analysis for Chloride and Sulfate Method 300.0 was performed at the TestAmerica's St. Louis Laboratory.  
13715 Rider Trail North  
Earth City, MO 63045  
Phone: 314-298-8566

The analysis for Iron Method 6020 was performed at the TestAmerica's Seattle Laboratory.  
5755 8th Street East  
Tacoma, WA 98424  
Phone: 253-922-2310



## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-113806-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-113806-1</b>	<b>HVL-082918-23</b>	<b>Paul Bunyan</b>				
Nitrate as N		2.3		0.20	mg/L	300.0
Color		5.0		5.0	PCU	SM 2120B
Chloride		6.4	^	0.20	mg/L	300.0
Sulfate		11		0.20	mg/L	300.0
<b>280-113806-2</b>	<b>HVL-082918-24</b>	<b>Corliss</b>				
Nitrate as N		1.4		0.20	mg/L	300.0
Color		5.0		5.0	PCU	SM 2120B
Chloride		5.6	^	0.20	mg/L	300.0
Sulfate		11		0.20	mg/L	300.0

## METHOD SUMMARY

Client: SCS Engineers

Job Number: 280-113806-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Volatile Organic Compounds (GC/MS)	TAL DEN	SW846 8260B	
Purge and Trap	TAL DEN		SW846 5030B
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Metals	TAL DEN		SW846 3020A
Anions, Ion Chromatography	TAL DEN	MCAWW 300.0	
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
COD	TAL DEN	MCAWW 410.4	
Color, Colorimetric	TAL DEN	SM SM 2120B	
Organic Carbon, Total (TOC)	TAL DEN	SM SM 5310B	
Metals (ICP/MS)	TAL SEA	SW846 6020	
Preparation, Total Metals	TAL SEA		SW846 3010A
Anions, Ion Chromatography	TAL SL	MCAWW 300.0	

### Lab References:

TAL DEN = TestAmerica Denver

TAL SEA = TestAmerica Seattle

TAL SL = TestAmerica St. Louis

### Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

## METHOD / ANALYST SUMMARY

Client: SCS Engineers

Job Number: 280-113806-1

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
SW846 8260B	Dobransky, Michael E	MD
SW846 6020	Rhoades, Chris R	CRR
SW846 6020	Woo, Fred C	FCW
MCAWW 300.0	Phan, Thu L	TLP
MCAWW 350.1	Pedrick, Joshua A	JAP
MCAWW 410.4	Kurniadi, Richard	RK
SM SM 2120B	Bryant, Chase K	CKB
SM SM 5310B	Duplin, Alysha 1	A1D
MCAWW 300.0	Boyd, Jacob C	JCB

# SAMPLE SUMMARY

Client: SCS Engineers

Job Number: 280-113806-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
280-113806-1	HVL-082918-23	Water	08/29/2018 1515	08/30/2018 0925
280-113806-2	HVL-082918-24	Water	08/29/2018 1540	08/30/2018 0925
280-113806-3	TRIP BLANK	Water	08/29/2018 0000	08/30/2018 0925

# SAMPLE RESULTS

# Analytical Data

Client: SCS Engineers

Job Number: 280-113806-1

**Client Sample ID: HVL-082918-23**

Lab Sample ID: 280-113806-1

Date Sampled: 08/29/2018 1515

Client Matrix: Water

Date Received: 08/30/2018 0925

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_4607.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1022		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1022		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND	F2	2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113806-1

**Client Sample ID: HVL-082918-23**

Lab Sample ID: 280-113806-1

Date Sampled: 08/29/2018 1515

Client Matrix: Water

Date Received: 08/30/2018 0925

---

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_4607.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1022		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1022		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106		70 - 127
4-Bromofluorobenzene (Surr)	95		78 - 120
Dibromofluoromethane (Surr)	108		77 - 120
Toluene-d8 (Surr)	94		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-113806-1

**Client Sample ID: HVL-082918-24**

Lab Sample ID: 280-113806-2

Date Sampled: 08/29/2018 1540

Client Matrix: Water

Date Received: 08/30/2018 0925

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_4609.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1105		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1105		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0



# Analytical Data

Client: SCS Engineers

Job Number: 280-113806-1

**Client Sample ID: HVL-082918-24**

Lab Sample ID: 280-113806-2

Date Sampled: 08/29/2018 1540

Client Matrix: Water

Date Received: 08/30/2018 0925

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_4609.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1105		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1105		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	113		70 - 127
4-Bromofluorobenzene (Surr)	100		78 - 120
Dibromofluoromethane (Surr)	112		77 - 120
Toluene-d8 (Surr)	97		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-113806-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-113806-3

Date Sampled: 08/29/2018 0000

Client Matrix: Water

Date Received: 08/30/2018 0925

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_4610.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1126		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1126		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113806-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-113806-3

Date Sampled: 08/29/2018 0000

Client Matrix: Water

Date Received: 08/30/2018 0925

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_4610.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1126		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1126		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	118		70 - 127
4-Bromofluorobenzene (Surr)	98		78 - 120
Dibromofluoromethane (Surr)	115		77 - 120
Toluene-d8 (Surr)	97		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-113806-1

**Client Sample ID: HVL-082918-23**

Lab Sample ID: 280-113806-1

Date Sampled: 08/29/2018 1515

Client Matrix: Water

Date Received: 08/30/2018 0925

---

### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 41.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/06/2018 0041

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	11		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113806-1

**Client Sample ID: HVL-082918-23**

Lab Sample ID: 280-113806-1

Date Sampled: 08/29/2018 1515

Client Matrix: Water

Date Received: 08/30/2018 0925

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 73.d
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1840	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	6.4	^	0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113806-1

**Client Sample ID: HVL-082918-24**

Lab Sample ID: 280-113806-2

Date Sampled: 08/29/2018 1540

Client Matrix: Water

Date Received: 08/30/2018 0925

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 44.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/06/2018 0127

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	11		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113806-1

**Client Sample ID: HVL-082918-24**

Lab Sample ID: 280-113806-2

Date Sampled: 08/29/2018 1540

Client Matrix: Water

Date Received: 08/30/2018 0925

---

### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 76.d
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1926	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	5.6	^	0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113806-1

**Client Sample ID: HVL-082918-23**

Lab Sample ID: 280-113806-1

Date Sampled: 08/29/2018 1515

Client Matrix: Water

Date Received: 08/30/2018 0925

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### 6020 Metals (ICP/MS)

Analysis Method: 6020	Analysis Batch: 280-428391	Instrument ID: MT_078
Prep Method: 3020A	Prep Batch: 280-428192	Lab File ID: 168SMPL_083118a.D
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 09/01/2018 0134		Final Weight/Volume: 50 mL
Prep Date: 08/31/2018 1605		

Analyte	Result (mg/L)	Qualifier	RL
Zinc, Total	ND		0.010

Analyte	Result (ug/L)	Qualifier	RL
Manganese, Total	ND		1.0

Analysis Method: 6020	Analysis Batch: 280-428561	Instrument ID: MT_078
Prep Method: 3020A	Prep Batch: 280-428192	Lab File ID: 093SMPL_090418.D
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 09/04/2018 1548		Final Weight/Volume: 50 mL
Prep Date: 08/31/2018 1605		

Analyte	Result (mg/L)	Qualifier	RL
Arsenic, Total	ND		0.0050

Analysis Method: 6020	Analysis Batch: 580-284303	Instrument ID: SEA044
Prep Method: 3010A	Prep Batch: 580-283970	Lab File ID: 064SMPL.D
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 09/18/2018 2117		Final Weight/Volume: 50 mL
Prep Date: 09/14/2018 0908		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Total	ND		0.18



## Analytical Data

Client: SCS Engineers

Job Number: 280-113806-1

**Client Sample ID: HVL-082918-24**

Lab Sample ID: 280-113806-2

Date Sampled: 08/29/2018 1540

Client Matrix: Water

Date Received: 08/30/2018 0925

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### 6020 Metals (ICP/MS)

Analysis Method: 6020	Analysis Batch: 280-428391	Instrument ID: MT_078
Prep Method: 3020A	Prep Batch: 280-428192	Lab File ID: 169SMPL_083118a.D
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 09/01/2018 0137		Final Weight/Volume: 50 mL
Prep Date: 08/31/2018 1605		

Analyte	Result (mg/L)	Qualifier	RL
Zinc, Total	ND	F1	0.010

Analyte	Result (ug/L)	Qualifier	RL
Manganese, Total	ND		1.0

Analysis Method: 6020	Analysis Batch: 280-428561	Instrument ID: MT_078
Prep Method: 3020A	Prep Batch: 280-428192	Lab File ID: 094SMPL_090418.D
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 09/04/2018 1551		Final Weight/Volume: 50 mL
Prep Date: 08/31/2018 1605		

Analyte	Result (mg/L)	Qualifier	RL
Arsenic, Total	ND		0.0050

Analysis Method: 6020	Analysis Batch: 580-284303	Instrument ID: SEA044
Prep Method: 3010A	Prep Batch: 580-283970	Lab File ID: 063SMPL.D
Dilution: 5.0		Initial Weight/Volume: 50 mL
Analysis Date: 09/18/2018 2113		Final Weight/Volume: 50 mL
Prep Date: 09/14/2018 0908		

Analyte	Result (mg/L)	Qualifier	RL
Iron, Total	ND		0.18

Client: SCS Engineers

Job Number: 280-113806-1

**General Chemistry**

**Client Sample ID: HVL-082918-23**

Lab Sample ID: 280-113806-1

Date Sampled: 08/29/2018 1515

Client Matrix: Water

Date Received: 08/30/2018 0925

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	2.3		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-428101		Analysis Date: 08/30/2018 2237			
Nitrite as N	ND		mg/L	0.50	1.0	300.0
	Analysis Batch: 280-428101		Analysis Date: 08/30/2018 2237			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429246		Analysis Date: 09/11/2018 1139			
Chemical Oxygen Demand	ND		mg/L	5.0	1.0	410.4
	Analysis Batch: 280-429547		Analysis Date: 09/13/2018 1023			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428427		Analysis Date: 09/01/2018 0122			
Analyte	Result	Qual	Units	RL	Dil	Method
Color	5.0		PCU	5.0	1.0	SM 2120B
	Analysis Batch: 280-428201		Analysis Date: 08/30/2018 1946			

Client: SCS Engineers

Job Number: 280-113806-1

**General Chemistry**

**Client Sample ID: HVL-082918-24**

Lab Sample ID: 280-113806-2

Date Sampled: 08/29/2018 1540

Client Matrix: Water

Date Received: 08/30/2018 0925

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	1.4		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-428101		Analysis Date: 08/31/2018 0006			
Nitrite as N	ND		mg/L	0.50	1.0	300.0
	Analysis Batch: 280-428101		Analysis Date: 08/31/2018 0006			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-429246		Analysis Date: 09/11/2018 1141			
Chemical Oxygen Demand	ND		mg/L	5.0	1.0	410.4
	Analysis Batch: 280-429547		Analysis Date: 09/13/2018 1023			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428427		Analysis Date: 09/01/2018 0025			
Analyte	Result	Qual	Units	RL	Dil	Method
Color	5.0		PCU	5.0	1.0	SM 2120B
	Analysis Batch: 280-428201		Analysis Date: 08/30/2018 1946			

## DATA REPORTING QUALIFIERS

Client: SCS Engineers

Job Number: 280-113806-1

Lab Section	Qualifier	Description
GC/MS VOA	F2	MS/MSD RPD exceeds control limits
HPLC/IC	^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
	E	Result exceeded calibration range.
Metals	F1	MS and/or MSD Recovery is outside acceptance limits.
General Chemistry	F1	MS and/or MSD Recovery is outside acceptance limits.

# QUALITY CONTROL RESULTS

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

## QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS VOA</b>					
<b>Analysis Batch:280-428825</b>					
LCS 280-428825/4	Lab Control Sample	T	Water	8260B	
MB 280-428825/6	Method Blank	T	Water	8260B	
280-113806-1	HVL-082918-23	T	Water	8260B	
280-113806-1MS	Matrix Spike	T	Water	8260B	
280-113806-1MSD	Matrix Spike Duplicate	T	Water	8260B	
280-113806-2	HVL-082918-24	T	Water	8260B	
280-113806-3	TRIP BLANK	T	Water	8260B	
<b>Report Basis</b>					
T = Total					
<b>Metals</b>					
<b>Prep Batch: 580-283970</b>					
LCS 580-283970/9-A	Lab Control Sample	T	Water	3010A	
LCSD 580-283970/10-A	Lab Control Sample Duplicate	T	Water	3010A	
MB 580-283970/8-A	Method Blank	T	Water	3010A	
280-113806-1	HVL-082918-23	T	Water	3010A	
280-113806-1DU	Duplicate	T	Water	3010A	
280-113806-1MS	Matrix Spike	T	Water	3010A	
280-113806-1MSD	Matrix Spike Duplicate	T	Water	3010A	
280-113806-2	HVL-082918-24	T	Water	3010A	
<b>Analysis Batch:580-284303</b>					
LCS 580-283970/9-A	Lab Control Sample	T	Water	6020	580-283970
LCSD 580-283970/10-A	Lab Control Sample Duplicate	T	Water	6020	580-283970
MB 580-283970/8-A	Method Blank	T	Water	6020	580-283970
280-113806-1	HVL-082918-23	T	Water	6020	580-283970
280-113806-1DU	Duplicate	T	Water	6020	580-283970
280-113806-1MS	Matrix Spike	T	Water	6020	580-283970
280-113806-1MSD	Matrix Spike Duplicate	T	Water	6020	580-283970
280-113806-2	HVL-082918-24	T	Water	6020	580-283970
<b>Prep Batch: 280-428192</b>					
LCS 280-428192/2-A	Lab Control Sample	T	Water	3020A	
MB 280-428192/1-A	Method Blank	T	Water	3020A	
280-113806-1	HVL-082918-23	T	Water	3020A	
280-113806-2	HVL-082918-24	T	Water	3020A	
280-113806-2MS	Matrix Spike	T	Water	3020A	
280-113806-2MSD	Matrix Spike Duplicate	T	Water	3020A	
<b>Analysis Batch:280-428391</b>					
LCS 280-428192/2-A	Lab Control Sample	T	Water	6020	280-428192
MB 280-428192/1-A	Method Blank	T	Water	6020	280-428192
280-113806-1	HVL-082918-23	T	Water	6020	280-428192
280-113806-2	HVL-082918-24	T	Water	6020	280-428192

TestAmerica Denver

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Analysis Batch:280-428391</b>					
280-113806-2MS	Matrix Spike	T	Water	6020	280-428192
280-113806-2MSD	Matrix Spike Duplicate	T	Water	6020	280-428192
<b>Analysis Batch:280-428561</b>					
LCS 280-428192/2-A	Lab Control Sample	T	Water	6020	280-428192
MB 280-428192/1-A	Method Blank	T	Water	6020	280-428192
280-113806-1	HVL-082918-23	T	Water	6020	280-428192
280-113806-2	HVL-082918-24	T	Water	6020	280-428192
280-113806-2MS	Matrix Spike	T	Water	6020	280-428192
280-113806-2MSD	Matrix Spike Duplicate	T	Water	6020	280-428192

#### Report Basis

T = Total

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-428101</b>					
LCS 280-428101/4	Lab Control Sample	T	Water	300.0	
LCSD 280-428101/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-428101/6	Method Blank	T	Water	300.0	
280-113806-1	HVL-082918-23	T	Water	300.0	
280-113806-1DU	Duplicate	T	Water	300.0	
280-113806-1MS	Matrix Spike	T	Water	300.0	
280-113806-1MSD	Matrix Spike Duplicate	T	Water	300.0	
280-113806-2	HVL-082918-24	T	Water	300.0	
<b>Analysis Batch:280-428201</b>					
MB 280-428201/1	Method Blank	T	Water		SM 2120B
280-113806-1	HVL-082918-23	T	Water		SM 2120B
280-113806-1DU	Duplicate	T	Water		SM 2120B
280-113806-2	HVL-082918-24	T	Water		SM 2120B
<b>Analysis Batch:280-428427</b>					
LCS 280-428427/3	Lab Control Sample	T	Water		SM 5310B
MB 280-428427/4	Method Blank	T	Water		SM 5310B
280-113804-C-3 MS	Matrix Spike	T	Water		SM 5310B
280-113804-C-3 MSD	Matrix Spike Duplicate	T	Water		SM 5310B
280-113806-1	HVL-082918-23	T	Water		SM 5310B
280-113806-2	HVL-082918-24	T	Water		SM 5310B
<b>Analysis Batch:280-429246</b>					
LCS 280-429246/62	Lab Control Sample	T	Water	350.1	
MB 280-429246/63	Method Blank	T	Water	350.1	
280-113806-1	HVL-082918-23	T	Water	350.1	
280-113806-2	HVL-082918-24	T	Water	350.1	
280-113847-C-1 MS	Matrix Spike	T	Water	350.1	
280-113847-C-1 MSD	Matrix Spike Duplicate	T	Water	350.1	
<b>Analysis Batch:280-429547</b>					
LCS 280-429547/3	Lab Control Sample	T	Water	410.4	
LCSD 280-429547/4	Lab Control Sample Duplicate	T	Water	410.4	
MB 280-429547/5	Method Blank	T	Water	410.4	
280-113758-B-1 MS	Matrix Spike	T	Water	410.4	
280-113758-B-1 MSD	Matrix Spike Duplicate	T	Water	410.4	
280-113806-1	HVL-082918-23	T	Water	410.4	
280-113806-2	HVL-082918-24	T	Water	410.4	

**Report Basis**

T = Total



## Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>HPLC/IC</b>					
<b>Analysis Batch:160-387239</b>					
LCS 160-387239/40	Lab Control Sample	T	Water	300.0	
MB 160-387239/39	Method Blank	T	Water	300.0	
280-113806-1	HVL-082918-23	T	Water	300.0	
280-113806-1DL	HVL-082918-23	T	Water	300.0	
280-113806-1DU	Duplicate	T	Water	300.0	
280-113806-1DUDL	Duplicate	T	Water	300.0	
280-113806-1MS	Matrix Spike	T	Water	300.0	
280-113806-1MSDL	Matrix Spike	T	Water	300.0	
280-113806-2	HVL-082918-24	T	Water	300.0	
280-113806-2DL	HVL-082918-24	T	Water	300.0	

#### Report Basis

T = Total

Client: SCS Engineers

Job Number: 280-113806-1

**Surrogate Recovery Report**

**8260B Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	DBFM %Rec	TOL %Rec
280-113806-1	HVL-082918-23	106	95	108	94
280-113806-2	HVL-082918-24	113	100	112	97
280-113806-3	TRIP BLANK	118	98	115	97
MB 280-428825/6		107	96	114	100
LCS 280-428825/4		110	94	110	98
280-113806-1 MS	HVL-082918-23 MS	115	92	111	97
280-113806-1 MSD	HVL-082918-23 MSD	114	91	109	94

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	70-127
BFB = 4-Bromofluorobenzene (Surr)	78-120
DBFM = Dibromofluoromethane (Surr)	77-120
TOL = Toluene-d8 (Surr)	80-125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Method Blank - Batch: 280-428825**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: MB 280-428825/6  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/07/2018 0917  
 Prep Date: 09/07/2018 0917  
 Leach Date: N/A

Analysis Batch: 280-428825  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: VMS\_MS9  
 Lab File ID: MS9\_4604.D  
 Initial Weight/Volume: 20 mL  
 Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Method Blank - Batch: 280-428825**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: MB 280-428825/6  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/07/2018 0917  
 Prep Date: 09/07/2018 0917  
 Leach Date: N/A

Analysis Batch: 280-428825  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: VMS\_MS9  
 Lab File ID: MS9\_4604.D  
 Initial Weight/Volume: 20 mL  
 Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
trans-1,4-Dichloro-2-butene	ND		3.0
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50
Surrogate	% Rec	Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)	107	70 - 127	
4-Bromofluorobenzene (Surr)	96	78 - 120	
Dibromofluoromethane (Surr)	114	77 - 120	
Toluene-d8 (Surr)	100	80 - 125	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Lab Control Sample - Batch: 280-428825**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID:	LCS 280-428825/4	Analysis Batch:	280-428825	Instrument ID:	VMS_MS9
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	MS9_4603.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	09/07/2018 0856	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	09/07/2018 0856				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1,2-Tetrachloroethane	5.00	5.85	117	65 - 135	
1,1,1-Trichloroethane	5.00	5.44	109	65 - 135	
1,1,2,2-Tetrachloroethane	5.00	5.08	102	58 - 135	
1,1,2-Trichloroethane	5.00	5.76	115	64 - 135	
1,1-Dichloroethane	5.00	5.58	112	65 - 135	
1,1-Dichloroethene	5.00	6.13	123	65 - 136	
1,2,3-Trichloropropane	5.00	5.08	102	65 - 135	
1,2-Dibromo-3-Chloropropane	5.00	5.78	116	57 - 135	
1,2-Dibromoethane	5.00	5.29	106	65 - 135	
1,2-Dichlorobenzene	5.00	5.34	107	65 - 135	
1,2-Dichloroethane	5.00	5.26	105	65 - 135	
1,2-Dichloropropane	5.00	5.58	112	64 - 135	
1,4-Dichlorobenzene	5.00	5.30	106	65 - 135	
2-Butanone (MEK)	20.0	28.9	145	44 - 177	
2-Hexanone	20.0	19.8	99	57 - 139	
4-Methyl-2-pentanone (MIBK)	20.0	20.8	104	60 - 150	
Acetone	20.0	23.2	116	39 - 156	
Acrylonitrile	50.0	54.9	110	56 - 135	
Benzene	5.00	5.68	114	65 - 135	
Bromochloromethane	5.00	6.21	124	65 - 135	
Bromodichloromethane	5.00	5.57	111	65 - 135	
Bromoform	5.00	6.05	121	62 - 135	
Bromomethane	5.00	5.36	107	45 - 135	
Carbon disulfide	5.00	5.93	119	55 - 143	
Carbon tetrachloride	5.00	5.81	116	65 - 135	
Chlorobenzene	5.00	5.49	110	65 - 135	
Chloroethane	5.00	5.16	103	46 - 136	
Chloroform	5.00	5.36	107	65 - 135	
Chloromethane	5.00	4.58	92	34 - 145	
cis-1,2-Dichloroethene	5.00	5.74	115	65 - 135	
cis-1,3-Dichloropropene	5.00	5.36	107	65 - 135	
Dibromochloromethane	5.00	5.88	118	65 - 135	
Dibromomethane	5.00	5.43	109	65 - 135	
Dichlorodifluoromethane	5.00	3.33	67	43 - 142	
Ethylbenzene	5.00	5.29	106	65 - 135	
Iodomethane	5.00	6.23	125	65 - 142	
Methylene Chloride	5.00	6.29	126	54 - 141	
m-Xylene & p-Xylene	5.00	5.11	102	65 - 135	
o-Xylene	5.00	5.36	107	65 - 135	
Styrene	5.00	5.28	106	65 - 135	
Tetrachloroethene	5.00	5.53	111	65 - 135	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Lab Control Sample - Batch: 280-428825**

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: LCS 280-428825/4	Analysis Batch: 280-428825	Instrument ID: VMS_MS9
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS9_4603.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 0856	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 0856		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Toluene	5.00	5.36	107	65 - 135	
trans-1,2-Dichloroethene	5.00	6.20	124	65 - 135	
trans-1,3-Dichloropropene	5.00	5.52	110	65 - 135	
trans-1,4-Dichloro-2-butene	5.00	4.66	93	53 - 135	
Trichloroethene	5.00	5.85	117	65 - 135	
Trichlorofluoromethane	5.00	4.80	96	53 - 137	
Vinyl acetate	10.0	8.06	81	11 - 187	
Vinyl chloride	5.00	4.51	90	40 - 137	
Surrogate		% Rec		Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		110		70 - 127	
4-Bromofluorobenzene (Surr)		94		78 - 120	
Dibromofluoromethane (Surr)		110		77 - 120	
Toluene-d8 (Surr)		98		80 - 125	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428825**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-113806-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/07/2018 1148  
Prep Date: 09/07/2018 1148  
Leach Date: N/A

Analysis Batch: 280-428825  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: VMS\_MS9  
Lab File ID: MS9\_4611.D  
Initial Weight/Volume: 20 mL  
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 280-113806-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/07/2018 1209  
Prep Date: 09/07/2018 1209  
Leach Date: N/A

Analysis Batch: 280-428825  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: VMS\_MS9  
Lab File ID: MS9\_4612.D  
Initial Weight/Volume: 20 mL  
Final Weight/Volume: 20 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1,1,2-Tetrachloroethane	101	105	65 - 135	4	20		
1,1,1-Trichloroethane	102	103	65 - 135	1	20		
1,1,2,2-Tetrachloroethane	83	83	58 - 135	0	20		
1,1,2-Trichloroethane	101	100	64 - 135	1	27		
1,1-Dichloroethane	99	103	65 - 135	4	21		
1,1-Dichloroethene	98	104	65 - 136	5	20		
1,2,3-Trichloropropane	88	96	65 - 135	9	23		
1,2-Dibromo-3-Chloropropane	90	60	57 - 135	41	22		F2
1,2-Dibromoethane	91	95	65 - 135	4	27		
1,2-Dichlorobenzene	91	95	65 - 135	5	20		
1,2-Dichloroethane	101	102	65 - 135	1	20		
1,2-Dichloropropane	95	97	64 - 135	2	20		
1,4-Dichlorobenzene	92	94	65 - 135	3	23		
2-Butanone (MEK)	113	121	44 - 177	7	32		
2-Hexanone	79	87	57 - 139	9	25		
4-Methyl-2-pentanone (MIBK)	87	94	60 - 150	8	22		
Acetone	106	109	39 - 156	2	23		
Acrylonitrile	90	94	56 - 135	4	30		
Benzene	97	101	65 - 135	3	20		
Bromochloromethane	103	106	65 - 135	3	29		
Bromodichloromethane	102	104	65 - 135	2	20		
Bromoform	102	101	62 - 135	1	27		
Bromomethane	91	98	45 - 135	8	33		
Carbon disulfide	97	102	55 - 143	4	20		
Carbon tetrachloride	106	108	65 - 135	2	21		
Chlorobenzene	99	99	65 - 135	0	20		
Chloroethane	82	92	46 - 136	12	25		
Chloroform	100	104	65 - 135	4	20		
Chloromethane	83	93	34 - 145	11	24		
cis-1,2-Dichloroethene	97	102	65 - 135	5	20		
cis-1,3-Dichloropropene	90	93	65 - 135	3	26		
Dibromochloromethane	99	102	65 - 135	3	20		

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428825**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-113806-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/07/2018 1148  
Prep Date: 09/07/2018 1148  
Leach Date: N/A

Analysis Batch: 280-428825  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: VMS\_MS9  
Lab File ID: MS9\_4611.D  
Initial Weight/Volume: 20 mL  
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 280-113806-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/07/2018 1209  
Prep Date: 09/07/2018 1209  
Leach Date: N/A

Analysis Batch: 280-428825  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: VMS\_MS9  
Lab File ID: MS9\_4612.D  
Initial Weight/Volume: 20 mL  
Final Weight/Volume: 20 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Dibromomethane	91	97	65 - 135	6	26		
Dichlorodifluoromethane	68	74	43 - 142	10	30		
Ethylbenzene	95	96	65 - 135	1	20		
Iodomethane	105	110	65 - 142	5	25		
Methylene Chloride	101	108	54 - 141	7	26		
m-Xylene & p-Xylene	93	94	65 - 135	2	20		
o-Xylene	93	96	65 - 135	3	20		
Styrene	90	94	65 - 135	4	26		
Tetrachloroethene	94	95	65 - 135	1	20		
Toluene	93	96	65 - 135	3	20		
trans-1,2-Dichloroethene	103	108	65 - 135	5	24		
trans-1,3-Dichloropropene	95	97	65 - 135	2	26		
trans-1,4-Dichloro-2-butene	82	84	53 - 135	2	25		
Trichloroethene	100	103	65 - 135	3	20		
Trichlorofluoromethane	86	93	53 - 137	8	27		
Vinyl acetate	71	77	11 - 187	8	24		
Vinyl chloride	82	89	40 - 137	8	24		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	115	114	70 - 127
4-Bromofluorobenzene (Surr)	92	91	78 - 120
Dibromofluoromethane (Surr)	111	109	77 - 120
Toluene-d8 (Surr)	97	94	80 - 125



## Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Method Blank - Batch: 160-387239**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 160-387239/39	Analysis Batch: 160-387239	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090518- 39.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/06/2018 0010	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Result	Qual	RL
Chloride	ND		0.20
Sulfate	ND		0.20

**Lab Control Sample - Batch: 160-387239**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: LCS 160-387239/40	Analysis Batch: 160-387239	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090518- 40.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/06/2018 0026	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.00	2.00	100	90 - 110	
Sulfate	8.00	7.92	99	90 - 110	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

## Matrix Spike - Batch: 160-387239

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID:	280-113806-1	Analysis Batch:	160-387239	Instrument ID:	CIC2500
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	090518- 43.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 0112	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	11	4.00	15.3	105	90 - 110	

## Matrix Spike - Batch: 160-387239

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID:	280-113806-1DL	Analysis Batch:	160-387239	Instrument ID:	CIC2500
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	090518- 75.d
Dilution:	2.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1911	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A	Run Type:	DL	Injection Volume:	50 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	6.4	4.00	10.2	95	90 - 110	E

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

## Duplicate - Batch: 160-387239

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-113806-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/06/2018 0056  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 160-387239  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: CIC2500  
Lab File ID: 090518- 42.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume:  
Injection Volume: 50 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Sulfate	11	11.1	0.1	20	

## Duplicate - Batch: 160-387239

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-113806-1DL  
Client Matrix: Water  
Dilution: 2.0  
Analysis Date: 09/06/2018 1855  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 160-387239  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L  
Run Type: DL

Instrument ID: CIC2500  
Lab File ID: 090518- 74.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume:  
Injection Volume: 50 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	6.4	6.43	0.9	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Method Blank - Batch: 580-283970**

**Method: 6020  
Preparation: 3010A**

Lab Sample ID: MB 580-283970/8-A	Analysis Batch: 580-284303	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-283970	Lab File ID: 060SMPL.D
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/18/2018 2100	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 09/14/2018 0908		
Leach Date: N/A		

Analyte	Result	Qual	RL
Iron, Total	ND		0.18

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 580-283970**

**Method: 6020  
Preparation: 3010A**

LCS Lab Sample ID: LCS 580-283970/9-A	Analysis Batch: 580-284303	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-283970	Lab File ID: 061SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/18/2018 2104	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 09/14/2018 0908		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 580-283970/10-A	Analysis Batch: 580-284303	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-283970	Lab File ID: 062SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/18/2018 2109	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 09/14/2018 0908		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Iron, Total	97	99	80 - 120	2	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-283970**

**Method: 6020  
Preparation: 3010A**

MS Lab Sample ID: 280-113806-1  
Client Matrix: Water  
Dilution: 50  
Analysis Date: 09/18/2018 2130  
Prep Date: 09/14/2018 0908  
Leach Date: N/A

Analysis Batch: 580-284303  
Prep Batch: 580-283970  
Leach Batch: N/A

Instrument ID: SEA044  
Lab File ID: 067SMPL.D  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-113806-1  
Client Matrix: Water  
Dilution: 50  
Analysis Date: 09/18/2018 2134  
Prep Date: 09/14/2018 0908  
Leach Date: N/A

Analysis Batch: 580-284303  
Prep Batch: 580-283970  
Leach Batch: N/A

Instrument ID: SEA044  
Lab File ID: 068SMPL.D  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Iron, Total	100	103	80 - 120	3	20		

**Duplicate - Batch: 580-283970**

**Method: 6020  
Preparation: 3010A**

Lab Sample ID: 280-113806-1  
Client Matrix: Water  
Dilution: 5.0  
Analysis Date: 09/18/2018 2121  
Prep Date: 09/14/2018 0908  
Leach Date: N/A

Analysis Batch: 580-284303  
Prep Batch: 580-283970  
Leach Batch: N/A  
Units: mg/L

Instrument ID: SEA044  
Lab File ID: 065SMPL.D  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Iron, Total	ND	ND	NC	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Method Blank - Batch: 280-428192**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: MB 280-428192/1-A	Analysis Batch: 280-428391	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-428192	Lab File ID: 166_BLK_083118a.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/01/2018 0127	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 08/31/2018 1605		
Leach Date: N/A		

Analyte	Result	Qual	RL
Zinc, Total	ND		0.010

**Method Blank - Batch: 280-428192**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: MB 280-428192/1-A	Analysis Batch: 280-428391	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-428192	Lab File ID: 166_BLK_083118a.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/01/2018 0127	Units: ug/L	Final Weight/Volume: 50 mL
Prep Date: 08/31/2018 1605		
Leach Date: N/A		

Analyte	Result	Qual	RL
Manganese, Total	ND		1.0

**Method Blank - Batch: 280-428192**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: MB 280-428192/1-A	Analysis Batch: 280-428561	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-428192	Lab File ID: 091_BLK_090418.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/04/2018 1541	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 08/31/2018 1605		
Leach Date: N/A		

Analyte	Result	Qual	RL
Arsenic, Total	ND		0.0050

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Lab Control Sample - Batch: 280-428192**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: LCS 280-428192/2-A	Analysis Batch: 280-428391	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-428192	Lab File ID: 167_LCS_083118a.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/01/2018 0130	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 08/31/2018 1605		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Zinc, Total	0.0400	0.0355	89	83 - 122	

**Lab Control Sample - Batch: 280-428192**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: LCS 280-428192/2-A	Analysis Batch: 280-428391	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-428192	Lab File ID: 167_LCS_083118a.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/01/2018 0130	Units: ug/L	Final Weight/Volume: 50 mL
Prep Date: 08/31/2018 1605		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Manganese, Total	40.0	39.2	98	85 - 117	

**Lab Control Sample - Batch: 280-428192**

**Method: 6020**  
**Preparation: 3020A**

Lab Sample ID: LCS 280-428192/2-A	Analysis Batch: 280-428561	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-428192	Lab File ID: 092_LCS_090418.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/04/2018 1544	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 08/31/2018 1605		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic, Total	0.0400	0.0353	88	85 - 117	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428192**

**Method: 6020  
Preparation: 3020A**

MS Lab Sample ID: 280-113806-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/01/2018 0144  
Prep Date: 08/31/2018 1605  
Leach Date: N/A

Analysis Batch: 280-428391  
Prep Batch: 280-428192  
Leach Batch: N/A

Instrument ID: MT\_078  
Lab File ID: 171SMPL\_083118a.D  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-113806-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/01/2018 0147  
Prep Date: 08/31/2018 1605  
Leach Date: N/A

Analysis Batch: 280-428391  
Prep Batch: 280-428192  
Leach Batch: N/A

Instrument ID: MT\_078  
Lab File ID: 172SMPL\_083118a.D  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Zinc, Total	85	78	83 - 122	7	20		F1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428192**

**Method: 6020  
Preparation: 3020A**

MS Lab Sample ID: 280-113806-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/01/2018 0144  
Prep Date: 08/31/2018 1605  
Leach Date: N/A

Analysis Batch: 280-428391  
Prep Batch: 280-428192  
Leach Batch: N/A

Instrument ID: MT\_078  
Lab File ID: 171SMPL\_083118a.D  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-113806-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/01/2018 0147  
Prep Date: 08/31/2018 1605  
Leach Date: N/A

Analysis Batch: 280-428391  
Prep Batch: 280-428192  
Leach Batch: N/A

Instrument ID: MT\_078  
Lab File ID: 172SMPL\_083118a.D  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Manganese, Total	98	96	85 - 117	2	20		



## Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428192**

**Method: 6020  
Preparation: 3020A**

MS Lab Sample ID: 280-113806-2  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/04/2018 1558  
 Prep Date: 08/31/2018 1605  
 Leach Date: N/A

Analysis Batch: 280-428561  
 Prep Batch: 280-428192  
 Leach Batch: N/A

Instrument ID: MT\_078  
 Lab File ID: 096SMPL\_090418.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-113806-2  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/04/2018 1601  
 Prep Date: 08/31/2018 1605  
 Leach Date: N/A

Analysis Batch: 280-428561  
 Prep Batch: 280-428192  
 Leach Batch: N/A

Instrument ID: MT\_078  
 Lab File ID: 097SMPL\_090418.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Arsenic, Total	89	89	85 - 117	1	20		

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Method Blank - Batch: 280-428101**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-428101/6	Analysis Batch: 280-428101	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 06.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/30/2018 1305	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Nitrate as N	ND		0.20
Nitrite as N	ND		0.50

**Method Reporting Limit Check - Batch: 280-428101**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-428101/3	Analysis Batch: 280-428101	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 03.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/30/2018 1158	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	0.200	ND	115	50 - 150	
Nitrite as N	0.200	ND	90	50 - 150	

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-428101**

**Method: 300.0**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-428101/4	Analysis Batch: 280-428101	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 04.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/30/2018 1220	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-428101/5	Analysis Batch: 280-428101	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 05.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/30/2018 1243	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Nitrate as N	105	104	90 - 110	1	10		
Nitrite as N	102	102	90 - 110	0	10		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428101**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-113806-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 08/30/2018 2321  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-428101  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom8  
Lab File ID: 25.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

MSD Lab Sample ID: 280-113806-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 08/30/2018 2344  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-428101  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_IonChrom8  
Lab File ID: 26.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate as N	102	103	80 - 120	1	20		
Nitrite as N	102	104	80 - 120	2	20		

**Duplicate - Batch: 280-428101**

**Method: 300.0  
Preparation: N/A**

Lab Sample ID: 280-113806-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 08/30/2018 2259  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-428101  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: WC\_IonChrom8  
Lab File ID: 24.0000.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
25 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate as N	2.3	2.27	0.3	15	
Nitrite as N	ND	ND	NC	15	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Method Blank - Batch: 280-429246**

**Method: 350.1  
Preparation: N/A**

Lab Sample ID: MB 280-429246/63	Analysis Batch: 280-429246	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091118.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/11/2018 1101	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Ammonia	ND		0.10

**Lab Control Sample - Batch: 280-429246**

**Method: 350.1  
Preparation: N/A**

Lab Sample ID: LCS 280-429246/62	Analysis Batch: 280-429246	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091118.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/11/2018 1059	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	2.50	2.55	102	90 - 110	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-429246**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-113847-C-1 MS	Analysis Batch: 280-429246	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091118.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 09/11/2018 1105		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-113847-C-1 MSD	Analysis Batch: 280-429246	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\091118.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 09/11/2018 1107		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia	89	97	90 - 110	9	10	F1	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Method Blank - Batch: 280-429547**

**Method: 410.4  
Preparation: N/A**

Lab Sample ID: MB 280-429547/5	Analysis Batch: 280-429547	Instrument ID: WC_Genesys20
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 2 mL
Analysis Date: 09/13/2018 1023	Units: mg/L	Final Weight/Volume: 2 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Chemical Oxygen Demand	ND		5.0

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-429547**

**Method: 410.4  
Preparation: N/A**

LCS Lab Sample ID: LCS 280-429547/3	Analysis Batch: 280-429547	Instrument ID: WC_Genesys20
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/13/2018 1023	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-429547/4	Analysis Batch: 280-429547	Instrument ID: WC_Genesys20
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/13/2018 1023	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Chemical Oxygen Demand	97	101	90 - 110	4	11		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-429547**

**Method: 410.4  
Preparation: N/A**

MS Lab Sample ID: 280-113758-B-1 MS  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/13/2018 1023  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-429547  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_Genesys20  
Lab File ID: N/A  
Initial Weight/Volume: 100 mL  
Final Weight/Volume: 100 mL

MSD Lab Sample ID: 280-113758-B-1 MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/13/2018 1023  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-429547  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_Genesys20  
Lab File ID: N/A  
Initial Weight/Volume: 100 mL  
Final Weight/Volume: 100 mL

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chemical Oxygen Demand	104	103	90 - 110	0	11		

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

## Method Blank - Batch: 280-428201

Method: SM 2120B

Preparation: N/A

Lab Sample ID:	MB 280-428201/1	Analysis Batch:	280-428201	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	08/30/2018 1945	Units:	PCU	Final Weight/Volume:	50 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	RL
Color	ND		5.0

## Duplicate - Batch: 280-428201

Method: SM 2120B

Preparation: N/A

Lab Sample ID:	280-113806-1	Analysis Batch:	280-428201	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	08/30/2018 1946	Units:	PCU	Final Weight/Volume:	50 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Color	5.0	5.00	0	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113806-1

**Method Blank - Batch: 280-428427**

**Method: SM 5310B  
Preparation: N/A**

Lab Sample ID: MB 280-428427/4	Analysis Batch: 280-428427	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090418.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/31/2018 1725	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Organic Carbon - Quad	ND		1.0

**Lab Control Sample - Batch: 280-428427**

**Method: SM 5310B  
Preparation: N/A**

Lab Sample ID: LCS 280-428427/3	Analysis Batch: 280-428427	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090418.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/31/2018 1707	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Quad	25.0	24.3	97	88 - 112	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428427**

**Method: SM 5310B  
Preparation: N/A**

MS Lab Sample ID: 280-113804-C-3 MS	Analysis Batch: 280-428427	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090418.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/31/2018 2250		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-113804-C-3 MSD	Analysis Batch: 280-428427	Instrument ID: WC_SHI2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090418.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/31/2018 2310		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Total Organic Carbon - Quad	92	93	88 - 112	1	15		



**Chain of Custody Record**

**TestAmerica Denver**  
4955 Yarrow Street  
Arvada, CO 80002  
Phone: (303) 736-0100 Fax: (303) 431-7171

<b>Client Information</b>		Lab PM: Sara, Betsy A		Carrier Tracking No(s): 445 6530 1136		COC No: 280-21692-4512.1	
Client Contact: Sam Graber		E-Mail: betsy.sara@testamericainc.com		Phone: 425-706-3362		Page: Page 1 of 1	
Company: SCS Engineers		Due Date Requested: Standard		Job #: 01218002.03		Preservation Codes:	
Address: 2405 140th Avenue NE Suite 107		TAT Requested (days):		PO #: Purchase Order not requir		M - Hexane	
City: Bellevue		WO #:		Project #: 28003580-Water Supply Wells		N - None	
State, Zip: WA, 98005-1877		Project Name: Hidden Valley Landfill		SSOW#:		O - AsNaO2	
Phone:		Sample Date		Sample Time		P - Na2O4S	
Email: SGrabr@scsengineers.com		Sample Date		Sample Time		Q - Na2SO3	
Project Name: Hidden Valley Landfill		Sample Date		Sample Time		R - Na2S2O3	
Site:		Sample Date		Sample Time		S - H2SO4	
Sample Identification		Sample Date		Sample Time		T - TSP Dodecahydrate	
HL-032918-23		9/29/13		1515		U - Acetone	
HL-032918-24		↓		1540		V - MCAA	
Trip blank						W - ph 4-5	
Sample Type (C=Comp, G=grab)		Sample Time		Sample Time		X - DI Water	
G		1515		1540		K - EDTA	
G						L - EDA	
-						Other:	
Matrix (Water, Swab, Onsite, BT+Trace, Adu)		Sample Time		Sample Time		Total Number of containers	
W		1515		1540		8	
W						8	
W						2	
Preservation Code:		Sample Date		Sample Time		Special Instructions/Note:	
W		9/29/13		1515		Short Holds: NO3(NO2)(C), Color	
W		↓		1540			
W							
Field Filtered Sample (Yes or No)		Sample Date		Sample Time		Total Iron (TA Seabro)	
N		9/29/13		1515		X	
N		↓		1540		X	
N						X	
Perform MS/MSD (Yes or No)		Sample Date		Sample Time		NO3(NO2)(C)Color	
N		9/29/13		1515		X	
N		↓		1540		X	
N						X	
TOC/COD/Ammonia		Sample Date		Sample Time		CISO4 (TA St. Louis)	
X		9/29/13		1515		X	
X		↓		1540		X	
X						X	
Barcode		Sample Date		Sample Time		826B	
280-113806 Chain of Custody		9/29/13		1515		X	
		↓		1540		X	
						X	
Possible Hazard Identification		Sample Date		Sample Time		Total Metals	
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological		9/29/13		1515		X	
Deliverable Requested: I, II, III, IV, Other (specify)		Sample Date		Sample Time		X	
I, II, III, IV, Other (specify)		9/29/13		1515		X	
Empty Kit Relinquished by:		Sample Date		Sample Time		X	
Relinquished by:		Sample Date		Sample Time		X	
Relinquished by:		Sample Date		Sample Time		X	
Relinquished by:		Sample Date		Sample Time		X	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Sample Date		Sample Time		X	
Custody Seal No.: 552606		Sample Date		Sample Time		X	
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		Sample Date		Sample Time		X	
<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		9/29/13		1515		X	
Special Instructions/OC Requirements:		Sample Date		Sample Time		X	
Method of Shipment:		Sample Date		Sample Time		X	
Received by: [Signature]		Sample Date		Sample Time		X	
Received by: [Signature]		Sample Date		Sample Time		X	
Received by: [Signature]		Sample Date		Sample Time		X	
Company: SCS		Sample Date		Sample Time		X	
Company: TADEN		Sample Date		Sample Time		X	
Company: TADEN		Sample Date		Sample Time		X	
Company: TADEN		Sample Date		Sample Time		X	
Cooler Temperature(s) °C and Other Remarks:		Sample Date		Sample Time		X	
1.3 TO 4 IRS XFERRED BY KO 08-30-13		9/29/13		1515		X	

Chain of Custody Record



Client Information (Sub Contract Lab)

Client Contact: Sara, Betsy A  
 Shipping/Receiving: Betsy.sara@testamericainc.com  
 Address: 13715 Rider Trail North, State of Origin: Washington  
 City: Earth City, MO, 63045  
 State, Zip: MO, 63045  
 Phone: 314-298-8566(Tel) 314-298-8757(Fax)  
 Email: WQ #  
 Project Name: Hidden Valley LF  
 Project #: 28003580  
 State: SCONW

Due Date Requested: 9/19/2018  
 TAT Requested (days):  
 Analysis Requested:  
 State of Origin: Washington  
 State Program - Washington  
 COC No: 280-453089-1  
 Page: Page 1 of 1  
 Job #: 280-113809-1

Sample ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=other)	Preservation Code (S=Seal, A=Aspirator)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers	Special Instructions/Note:
HVL-082918-23 (280-113806-1)	8/29/18	15:15		Water				1	
HVL-082918-24 (280-113806-2)	8/29/18	15:40		Water				1	

Preservation Codes:  
 A - HCL  
 B - NaOH  
 C - Zn Acetate  
 D - Nitric Acid  
 E - NaHSO4  
 F - MeOH  
 G - Amnchlor  
 H - Ascorbic Acid  
 I - Ice  
 J - DI Water  
 K - EDTA  
 L - EDA  
 M - Hexane  
 N - None  
 O - AsH2O2  
 P - Na2O4S  
 Q - Na2SO3  
 R - Na2S2O3  
 S - H2SO4  
 T - TSP Dodecalhydrate  
 U - Acetone  
 V - MCAA  
 W - pH 4.5  
 Z - other (specify)

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analysis & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/methods being analyzed, the samples must be shipped back to the TestAmerica laboratory or other institutions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (Specify)  
 Primary Deliverable Rank: 2  
 Empty Kit Relinquished by:  
 Relinquished by: *Sara* Date: *8-31-18*  
 Relinquished by: *Cofer* Date: *1355* Company: *THA Denver*  
 Received by: *Michael Bell* Date: *9-11-18 0530* Company: *THA SR*  
 Custody Seals Intact:  Yes  No  
 Custody Seal No.:  
 Cooler Temperature(s) °C and Other Remarks:

Special Instructions/QC Requirements:  
 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months  
 Method of Shipment:  
 Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

### Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Sampler:		Lab PM: Sara, Betsy A		Carrier Tracking No(s):		COC No: 280-453079.1																	
Client Contact: Shipping/Receiving		Phone:		E-Mail: betsy.sara@testamericainc.com		State of Origin: Washington		Page: Page 1 of 1																	
Company: TestAmerica Laboratories, Inc.				Accreditations Required (See note): State Program - Washington				Job #: 280-113806-1																	
Address: 5755 8th Street East,		Due Date Requested: 9/18/2018		<b>Analysis Requested</b>						<b>Preservation Codes:</b> A - HCL                      M - Hexane B - NaOH                    N - None C - Zn Acetate            O - AsNaO2 D - Nitric Acid            P - Na2O4S E - NaHSO4                Q - Na2SO3 F - MeOH                    R - Na2S2O3 G - Amchlor                S - H2SO4 H - Ascorbic Acid        T - TSP Dodecahydrate I - Ice                        U - Acetone J - DI Water                V - MCAA K - EDTA                    W - pH 4-5 L - EDA                      Z - other (specify)															
City: Tacoma		TAT Requested (days):																							
State, Zip: WA, 98424		PO #:		Field/Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		6020/3010A Total Iron (TA Seattle)		Total Number of Containers															
Phone: 253-922-2310(Tel) 253-922-5047(Fax)		WO #:																							
Email:		Project #: 28003580		Special Instructions/Note:		Other:																			
Project Name: Hidden Valley LF		SSOW#:																							
Site:				Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=tissue, A=Air)		Preservation Code		Field/Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		6020/3010A Total Iron (TA Seattle)		Total Number of Containers		Special Instructions/Note:	
HVL-082918-23 (280-113806-1)		8/29/18		15:15 Pacific		Water																			
HVL-082918-24 (280-113806-2)		8/29/18		15:40 Pacific		Water																			

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

<b>Possible Hazard Identification</b>		<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>	
Unconfirmed		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Primary Deliverable Rank: 2	
Special Instructions/QC Requirements:			

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by: <i>Olivia Castro</i>		Date/Time: <i>8-31-18 1505</i>		Company: <i>TALPA</i>		Received by: <i>B. J. Lee</i>	
Relinquished by:		Date/Time:		Company:		Received by:	
Relinquished by:		Date/Time:		Company:		Received by:	

Custody Seals Intact: △ Yes    △ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: <i>IR5 = 2.4/2.4 w/c.s. 09/20/2018</i>	
----------------------------------------	--	-------------------	--	---------------------------------------------------------------------------------------	--

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-113806-1

**Login Number: 113806**  
**List Number: 1**  
**Creator: Dunlap, Krista M**

**List Source: TestAmerica Denver**

<b>Question</b>	<b>Answer</b>	<b>Comment</b>
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-113806-1

**Login Number: 113806**  
**List Number: 2**  
**Creator: Hobbs, Kenneth F**

**List Source: TestAmerica Seattle**  
**List Creation: 09/01/18 11:53 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-113806-1

**Login Number: 113806**  
**List Number: 3**  
**Creator: Hellm, Michael**

**List Source: TestAmerica St. Louis**  
**List Creation: 09/01/18 02:01 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Job Number: 280-113694-1  
Job Description: Hidden Valley LF

For:  
SCS Engineers  
2405 140th Avenue NE  
Suite 107  
Bellevue, WA 98005-1877  
Attention: Mr. Kevin Lakey

**MW-11S**  
**MW-11D(2)**  
**MW-14R**  
**MW-15S**  
**MW-15D**  
**MW-17S**



Approved for release.  
Betsy A Sara  
Project Manager II  
9/26/2018 8:13 AM

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09/26/2018

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

These data and reporting limits are being used specifically to meet the needs of this project. All RLs are supported by TestAmerica's Method Detection Limits (MDLs). Reporting limits in this report are at or above the MDL.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

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## CASE NARRATIVE

Client: SCS Engineers

Project: Hidden Valley LF

Report Number: 280-113694-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### Sample Receiving

The samples were received on 08/28/2018; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 3.6° C and 4.9° C.

### Holding Times

All holding times were within established control limits.

### Method Blanks

All Method Blanks were within established control limits.

### Laboratory Control Samples (LCS)

All Laboratory Control Samples were within established control limits.

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

The Matrix Spike and Matrix Spike Duplicate performed on a sample from another client exhibited recoveries outside control limits for Carbon disulfide and 4-Bromofluorobenzene (Surrogate) Method 8260B. In addition, the RPD results 1,1,2-Trichloroethane, 1,2-Dibromo-3-Chloropropane, 1,2-Dichloropropane, Carbon disulfide, Methylene Chloride, Toluene and trans-1,3-Dichloropropene Method 8260B. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, this anomaly may be due to matrix interference and no corrective action was taken.

The Method 8260B MS/MSD performed on a sample from another client exhibited a RPD result outside the RPD limit for Vinyl acetate. Because the corresponding Matrix Spike and Matrix Spike Duplicate recoveries, Laboratory Control Sample, and Method Blank sample were within control limits, this anomaly is considered to be due to matrix interference and no corrective action was taken.

The percent recoveries and/or relative percent difference of the MS/MSD performed on a sample from another client were outside control limits for Dissolved Manganese Method 6020 because the sample concentration was greater than four times the spike amount. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, no corrective action was taken.

All other MS and MSD samples were within established control limits.

### General Comments

The analysis for Chloride and Sulfate Method 300.0 was performed at the TestAmerica's St. Louis Laboratory.  
13715 Rider Trail North  
Earth City, MO 63045  
Phone: 314-298-8566

The analysis for Iron Method 6020 was performed at the TestAmerica's Seattle Laboratory.  
5755 8th Street East  
Tacoma, WA 98424  
Phone: 253-922-2310

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-113694-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>MW-11S</b>						
<b>280-113694-1</b>	<b>HVL-082718-01</b>					
Nitrate as N		0.67		0.20	mg/L	300.0
Alkalinity		85		5.0	mg/L	SM 2320B
Total Dissolved Solids		170		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.3		1.0	mg/L	SM 5310B
Chloride		14		0.30	mg/L	300.0
Sulfate		11		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		20		0.20	mg/L	6010B
Magnesium, Dissolved		5.8		0.10	mg/L	6010B
Potassium, Dissolved		6.7		2.0	mg/L	6010B
Sodium, Dissolved		17		1.0	mg/L	6010B
Manganese, Dissolved		0.0058		0.0010	mg/L	6020
<b>MW-11D</b>						
<b>280-113694-2</b>	<b>HVL-082718-02</b>					
				0.50	ug/L	8260B
Nitrate as N		1.7		0.20	mg/L	300.0
Alkalinity		80		5.0	mg/L	SM 2320B
Total Dissolved Solids		130		10	mg/L	SM 2540C
Chloride		5.8		0.20	mg/L	300.0
Sulfate		9.6		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		20		0.20	mg/L	6010B
Magnesium, Dissolved		8.4		0.10	mg/L	6010B
Potassium, Dissolved		2.4		2.0	mg/L	6010B
Sodium, Dissolved		7.4		1.0	mg/L	6010B
<b>MW-17S</b>						
<b>280-113694-3</b>	<b>HVL-082718-03</b>					
Ammonia		3.8		0.10	mg/L	350.1
Alkalinity		160		5.0	mg/L	SM 2320B
Total Dissolved Solids		220		10	mg/L	SM 2540C
Total Organic Carbon - Quad		1.9	F1	1.0	mg/L	SM 5310B
Chloride		13		1.2	mg/L	300.0
Sulfate		2.0		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		27		0.20	mg/L	6010B
Magnesium, Dissolved		8.6		0.10	mg/L	6010B
Potassium, Dissolved		15		2.0	mg/L	6010B
Sodium, Dissolved		23		1.0	mg/L	6010B
Manganese, Dissolved		0.82		0.0010	mg/L	6020

## EXECUTIVE SUMMARY - Detections

Client: SCS Engineers

Job Number: 280-113694-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-113694-4</b>	<b>HVL-082718-04</b>	<b>MW-15S</b>				
Ammonia		3.2		0.10	mg/L	350.1
Alkalinity		98		5.0	mg/L	SM 2320B
Total Dissolved Solids		170		10	mg/L	SM 2540C
Total Organic Carbon - Quad		2.0		1.0	mg/L	SM 5310B
Chloride		16		0.30	mg/L	300.0
Sulfate		10		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		20		0.20	mg/L	6010B
Magnesium, Dissolved		5.7		0.10	mg/L	6010B
Potassium, Dissolved		8.6		2.0	mg/L	6010B
Sodium, Dissolved		15		1.0	mg/L	6010B
Manganese, Dissolved		0.83		0.0010	mg/L	6020
<b>280-113694-5</b>	<b>HVL-082718-05</b>	<b>MW-15D</b>				
Nitrate as N		0.82		0.20	mg/L	300.0
Alkalinity		110		5.0	mg/L	SM 2320B
Total Dissolved Solids		170		10	mg/L	SM 2540C
Chloride		8.5		0.20	mg/L	300.0
Sulfate		10		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		22		0.20	mg/L	6010B
Magnesium, Dissolved		8.8		0.10	mg/L	6010B
Potassium, Dissolved		2.7		2.0	mg/L	6010B
Sodium, Dissolved		16		1.0	mg/L	6010B
Manganese, Dissolved		0.023		0.0010	mg/L	6020
<b>280-113694-6</b>	<b>HVL-082718-06</b>	<b>MW-14R</b>				
				10	ug/L	8260B
Alkalinity		45		5.0	mg/L	SM 2320B
Total Dissolved Solids		110		10	mg/L	SM 2540C
Chloride		1.6		0.20	mg/L	300.0
Sulfate		3.6		0.20	mg/L	300.0
<i>Dissolved</i>						
Calcium, Dissolved		8.1		0.20	mg/L	6010B
Magnesium, Dissolved		4.5		0.10	mg/L	6010B
Potassium, Dissolved		2.1		2.0	mg/L	6010B
Sodium, Dissolved		5.0		1.0	mg/L	6010B
Manganese, Dissolved		0.19		0.0010	mg/L	6020

## METHOD SUMMARY

Client: SCS Engineers

Job Number: 280-113694-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Volatile Organic Compounds (GC/MS)	TAL DEN	SW846 8260B	
Purge and Trap	TAL DEN		SW846 5030B
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Anions, Ion Chromatography	TAL DEN	MCAWW 300.0	
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
Alkalinity	TAL DEN	SM SM 2320B	
Solids, Total Dissolved (TDS)	TAL DEN	SM SM 2540C	
Solids, Total Suspended (TSS)	TAL DEN	SM SM 2540D	
Organic Carbon, Total (TOC)	TAL DEN	SM SM 5310B	
Metals (ICP/MS)	TAL SEA	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL SEA		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Anions, Ion Chromatography	TAL SL	MCAWW 300.0	

### Lab References:

TAL DEN = TestAmerica Denver

TAL SEA = TestAmerica Seattle

TAL SL = TestAmerica St. Louis

### Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

## METHOD / ANALYST SUMMARY

Client: SCS Engineers

Job Number: 280-113694-1

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
SW846 8260B	Seifert, Judy L	JLS
SW846 6010B	Lackey, Cara M	CML
SW846 6020	Trudell, Lynn-Anne M	LMT
SW846 6020	Woo, Fred C	FCW
MCAWW 300.0	Moser, Angela R	ARM
MCAWW 350.1	Pedrick, Joshua A	JAP
SM SM 2320B	Barker, Scott G	SGB
SM SM 2540C	Barker, Scott G	SGB
SM SM 2540D	Patadia, Bansari J	BJP
SM SM 5310B	Loux, Lauren P	LPL
MCAWW 300.0	Boyd, Jacob C	JCB

# SAMPLE SUMMARY

Client: SCS Engineers

Job Number: 280-113694-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
280-113694-1	HVL-082718-01	Water	08/27/2018 1010	08/28/2018 0854
280-113694-2	HVL-082718-02	Water	08/27/2018 1113	08/28/2018 0854
280-113694-3	HVL-082718-03	Water	08/27/2018 1218	08/28/2018 0854
280-113694-4	HVL-082718-04	Water	08/27/2018 1320	08/28/2018 0854
280-113694-5	HVL-082718-05	Water	08/27/2018 1408	08/28/2018 0854
280-113694-6	HVL-082718-06	Water	08/27/2018 1502	08/28/2018 0854

# **SAMPLE RESULTS**

# Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-01**

Lab Sample ID: 280-113694-1

Date Sampled: 08/27/2018 1010

Client Matrix: Water

Date Received: 08/28/2018 0854

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428693	Instrument ID: VMS_G
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G8912.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/06/2018 1144		Final Weight/Volume: 20 mL
Prep Date: 09/06/2018 1144		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0



# Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-01**

Lab Sample ID: 280-113694-1

Date Sampled: 08/27/2018 1010

Client Matrix: Water

Date Received: 08/28/2018 0854

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428693	Instrument ID: VMS_G
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G8912.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/06/2018 1144		Final Weight/Volume: 20 mL
Prep Date: 09/06/2018 1144		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	80		70 - 127
4-Bromofluorobenzene (Surr)	84		78 - 120
Dibromofluoromethane (Surr)	100		77 - 120
Toluene-d8 (Surr)	99		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-02**

Lab Sample ID: 280-113694-2

Date Sampled: 08/27/2018 1113

Client Matrix: Water

Date Received: 08/28/2018 0854

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428693	Instrument ID: VMS_G
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G8920.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/06/2018 1428		Final Weight/Volume: 20 mL
Prep Date: 09/06/2018 1428		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	0.86		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-02**

Lab Sample ID: 280-113694-2

Date Sampled: 08/27/2018 1113

Client Matrix: Water

Date Received: 08/28/2018 0854

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428693	Instrument ID: VMS_G
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G8920.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/06/2018 1428		Final Weight/Volume: 20 mL
Prep Date: 09/06/2018 1428		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	82		70 - 127
4-Bromofluorobenzene (Surr)	86		78 - 120
Dibromofluoromethane (Surr)	99		77 - 120
Toluene-d8 (Surr)	96		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-03**

Lab Sample ID: 280-113694-3

Date Sampled: 08/27/2018 1218

Client Matrix: Water

Date Received: 08/28/2018 0854

### 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428839	Instrument ID: VMS_P
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: P9811.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1759		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1759		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-03**

Lab Sample ID: 280-113694-3

Date Sampled: 08/27/2018 1218

Client Matrix: Water

Date Received: 08/28/2018 0854

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428839	Instrument ID: VMS_P
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: P9811.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1759		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1759		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	92		70 - 127
4-Bromofluorobenzene (Surr)	93		78 - 120
Dibromofluoromethane (Surr)	97		77 - 120
Toluene-d8 (Surr)	100		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-04**

Lab Sample ID: 280-113694-4

Date Sampled: 08/27/2018 1320

Client Matrix: Water

Date Received: 08/28/2018 0854

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428693	Instrument ID: VMS_G
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G8922.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/06/2018 1508		Final Weight/Volume: 20 mL
Prep Date: 09/06/2018 1508		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-04**

Lab Sample ID: 280-113694-4

Date Sampled: 08/27/2018 1320

Client Matrix: Water

Date Received: 08/28/2018 0854

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428693	Instrument ID: VMS_G
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: G8922.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/06/2018 1508		Final Weight/Volume: 20 mL
Prep Date: 09/06/2018 1508		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	80		70 - 127
4-Bromofluorobenzene (Surr)	85		78 - 120
Dibromofluoromethane (Surr)	101		77 - 120
Toluene-d8 (Surr)	94		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-05**

Lab Sample ID: 280-113694-5

Date Sampled: 08/27/2018 1408

Client Matrix: Water

Date Received: 08/28/2018 0854

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428839	Instrument ID: VMS_P
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: P9808.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1703		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1703		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0



# Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-05**

Lab Sample ID: 280-113694-5

Date Sampled: 08/27/2018 1408

Client Matrix: Water

Date Received: 08/28/2018 0854

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428839	Instrument ID: VMS_P
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: P9808.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1703		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1703		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	93		70 - 127
4-Bromofluorobenzene (Surr)	91		78 - 120
Dibromofluoromethane (Surr)	97		77 - 120
Toluene-d8 (Surr)	97		80 - 125

# Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-06**

Lab Sample ID: 280-113694-6

Date Sampled: 08/27/2018 1502

Client Matrix: Water

Date Received: 08/28/2018 0854

## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428839	Instrument ID: VMS_P
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: P9812.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1817		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1817		

Analyte	Result (ug/L)	Qualifier	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	18		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
trans-1,4-Dichloro-2-butene	ND		3.0

# Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-06**

Lab Sample ID: 280-113694-6

Date Sampled: 08/27/2018 1502

Client Matrix: Water

Date Received: 08/28/2018 0854

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## 8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-428839	Instrument ID: VMS_P
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: P9812.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1817		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1817		

Analyte	Result (ug/L)	Qualifier	RL
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	90		70 - 127
4-Bromofluorobenzene (Surr)	89		78 - 120
Dibromofluoromethane (Surr)	96		77 - 120
Toluene-d8 (Surr)	94		80 - 125

## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-01**

Lab Sample ID: 280-113694-1

Date Sampled: 08/27/2018 1010

Client Matrix: Water

Date Received: 08/28/2018 0854

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 11.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/05/2018 1658

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	11		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-01**

Lab Sample ID: 280-113694-1

Date Sampled: 08/27/2018 1010

Client Matrix: Water

Date Received: 08/28/2018 0854

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 52.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1316	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	14		0.30

## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-02**

Lab Sample ID: 280-113694-2

Date Sampled: 08/27/2018 1113

Client Matrix: Water

Date Received: 08/28/2018 0854

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 14.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/05/2018 1745

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

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Analyte	Result (mg/L)	Qualifier	RL
Sulfate	9.6		0.20

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## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-02**

Lab Sample ID: 280-113694-2

Date Sampled: 08/27/2018 1113

Client Matrix: Water

Date Received: 08/28/2018 0854

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 55.d
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1402	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	5.8		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-03**

Lab Sample ID: 280-113694-3

Date Sampled: 08/27/2018 1218

Client Matrix: Water

Date Received: 08/28/2018 0854

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-391014

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 092418- 33.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/24/2018 2204

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	2.0		0.20



## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-03**

Lab Sample ID: 280-113694-3

Date Sampled: 08/27/2018 1218

Client Matrix: Water

Date Received: 08/28/2018 0854

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-391014	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	092418- 34.d
Dilution:	20			Initial Weight/Volume:	5 mL
Analysis Date:	09/24/2018 2218	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	13		1.2

## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-04**

Lab Sample ID: 280-113694-4

Date Sampled: 08/27/2018 1320

Client Matrix: Water

Date Received: 08/28/2018 0854

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 15.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/05/2018 1800

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

Analyte	Result (mg/L)	Qualifier	RL
Sulfate	10		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-04**

Lab Sample ID: 280-113694-4

Date Sampled: 08/27/2018 1320

Client Matrix: Water

Date Received: 08/28/2018 0854

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 56.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1418	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	16		0.30

## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-05**

Lab Sample ID: 280-113694-5

Date Sampled: 08/27/2018 1408

Client Matrix: Water

Date Received: 08/28/2018 0854

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### 300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 160-387239

Instrument ID: CIC2500

N/A

Prep Batch: N/A

Lab File ID: 090518- 16.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/05/2018 1816

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 50 uL

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Analyte	Result (mg/L)	Qualifier	RL
Sulfate	10		0.20

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## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-05**

Lab Sample ID: 280-113694-5

Date Sampled: 08/27/2018 1408

Client Matrix: Water

Date Received: 08/28/2018 0854

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 57.d
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/06/2018 1433	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	8.5		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-06**

Lab Sample ID: 280-113694-6

Date Sampled: 08/27/2018 1502

Client Matrix: Water

Date Received: 08/28/2018 0854

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### 300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	160-387239	Instrument ID:	CIC2500
	N/A	Prep Batch:	N/A	Lab File ID:	090518- 17.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/05/2018 1831			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	50 uL

Analyte	Result (mg/L)	Qualifier	RL
Chloride	1.6		0.20
Sulfate	3.6		0.20

## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-01**

Lab Sample ID: 280-113694-1

Date Sampled: 08/27/2018 1010

Client Matrix: Water

Date Received: 08/28/2018 0854

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428217      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-427823      Lab File ID: 51a083018A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 1736      Final Weight/Volume: 50 mL  
Prep Date: 08/29/2018 1630

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	20		0.20
Magnesium, Dissolved	5.8		0.10
Potassium, Dissolved	6.7		2.0
Sodium, Dissolved	17		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428070      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-427824      Lab File ID: 193SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 0124      Final Weight/Volume: 50 mL  
Prep Date: 08/29/2018 1630

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.0058		0.0010

Analysis Method: 6020      Analysis Batch: 580-283922      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-283841      Lab File ID: 051SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/13/2018 1154      Final Weight/Volume: 50 mL  
Prep Date: 09/12/2018 1809

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-02**

Lab Sample ID: 280-113694-2

Date Sampled: 08/27/2018 1113

Client Matrix: Water

Date Received: 08/28/2018 0854

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428217      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-427823      Lab File ID: 51a083018A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 1740      Final Weight/Volume: 50 mL  
Prep Date: 08/29/2018 1630

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	20		0.20
Magnesium, Dissolved	8.4		0.10
Potassium, Dissolved	2.4		2.0
Sodium, Dissolved	7.4		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428070      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-427824      Lab File ID: 194SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 0127      Final Weight/Volume: 50 mL  
Prep Date: 08/29/2018 1630

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	ND		0.0010

Analysis Method: 6020      Analysis Batch: 580-283586      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-283400      Lab File ID: 081SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/07/2018 1259      Final Weight/Volume: 50 mL  
Prep Date: 09/06/2018 1534

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18



## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-03**

Lab Sample ID: 280-113694-3

Date Sampled: 08/27/2018 1218

Client Matrix: Water

Date Received: 08/28/2018 0854

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428217      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-427823      Lab File ID: 51a083018A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 1743      Final Weight/Volume: 50 mL  
Prep Date: 08/29/2018 1630

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	27		0.20
Magnesium, Dissolved	8.6		0.10
Potassium, Dissolved	15		2.0
Sodium, Dissolved	23		1.0

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### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428070      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-427824      Lab File ID: 195SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 0131      Final Weight/Volume: 50 mL  
Prep Date: 08/29/2018 1630

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.82		0.0010

Analysis Method: 6020      Analysis Batch: 580-283752      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-283658      Lab File ID: 091SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/11/2018 1421      Final Weight/Volume: 50 mL  
Prep Date: 09/10/2018 1827

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-04**

Lab Sample ID: 280-113694-4

Date Sampled: 08/27/2018 1320

Client Matrix: Water

Date Received: 08/28/2018 0854

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428217      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-427823      Lab File ID: 51a083018A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 1800      Final Weight/Volume: 50 mL  
Prep Date: 08/29/2018 1630

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	20		0.20
Magnesium, Dissolved	5.7		0.10
Potassium, Dissolved	8.6		2.0
Sodium, Dissolved	15		1.0

---

### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428070      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-427824      Lab File ID: 196SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 0134      Final Weight/Volume: 50 mL  
Prep Date: 08/29/2018 1630

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.83		0.0010

Analysis Method: 6020      Analysis Batch: 580-283586      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-283400      Lab File ID: 082SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/07/2018 1303      Final Weight/Volume: 50 mL  
Prep Date: 09/06/2018 1534

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-05**

Lab Sample ID: 280-113694-5

Date Sampled: 08/27/2018 1408

Client Matrix: Water

Date Received: 08/28/2018 0854

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428217      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-427823      Lab File ID: 51a083018A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 1803      Final Weight/Volume: 50 mL  
Prep Date: 08/29/2018 1630

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	22		0.20
Magnesium, Dissolved	8.8		0.10
Potassium, Dissolved	2.7		2.0
Sodium, Dissolved	16		1.0

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### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428070      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-427824      Lab File ID: 197SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 0137      Final Weight/Volume: 50 mL  
Prep Date: 08/29/2018 1630

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.023		0.0010

Analysis Method: 6020      Analysis Batch: 580-283586      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-283400      Lab File ID: 083SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/07/2018 1308      Final Weight/Volume: 50 mL  
Prep Date: 09/06/2018 1534

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

## Analytical Data

Client: SCS Engineers

Job Number: 280-113694-1

**Client Sample ID: HVL-082718-06**

Lab Sample ID: 280-113694-6

Date Sampled: 08/27/2018 1502

Client Matrix: Water

Date Received: 08/28/2018 0854

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### 6010B Metals (ICP)-Dissolved

Analysis Method: 6010B      Analysis Batch: 280-428217      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-427823      Lab File ID: 51a083018A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 1807      Final Weight/Volume: 50 mL  
Prep Date: 08/29/2018 1630

Analyte	Result (mg/L)	Qualifier	RL
Calcium, Dissolved	8.1		0.20
Magnesium, Dissolved	4.5		0.10
Potassium, Dissolved	2.1		2.0
Sodium, Dissolved	5.0		1.0

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### 6020 Metals (ICP/MS)-Dissolved

Analysis Method: 6020      Analysis Batch: 280-428070      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-427824      Lab File ID: 198SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 08/30/2018 0141      Final Weight/Volume: 50 mL  
Prep Date: 08/29/2018 1630

Analyte	Result (mg/L)	Qualifier	RL
Manganese, Dissolved	0.19		0.0010

Analysis Method: 6020      Analysis Batch: 580-283586      Instrument ID: SEA044  
Prep Method: 3005A      Prep Batch: 580-283400      Lab File ID: 084SMPL.D  
Dilution: 5.0      Initial Weight/Volume: 50 mL  
Analysis Date: 09/07/2018 1312      Final Weight/Volume: 50 mL  
Prep Date: 09/06/2018 1534

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	ND		0.18

Client: SCS Engineers

Job Number: 280-113694-1

**General Chemistry**

**Client Sample ID: HVL-082718-01**

Lab Sample ID: 280-113694-1

Date Sampled: 08/27/2018 1010

Client Matrix: Water

Date Received: 08/28/2018 0854

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	0.67		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-427779		Analysis Date: 08/28/2018 1623			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-428756		Analysis Date: 09/06/2018 1130			
Alkalinity	85		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-428436		Analysis Date: 08/31/2018 1945			
Total Dissolved Solids	170		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428302		Analysis Date: 08/31/2018 1637			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-427868		Analysis Date: 08/28/2018 1723			
Total Organic Carbon - Quad	1.3		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428113		Analysis Date: 08/29/2018 1554			

Client: SCS Engineers

Job Number: 280-113694-1

**General Chemistry**

**Client Sample ID: HVL-082718-02**

Lab Sample ID: 280-113694-2

Date Sampled: 08/27/2018 1113

Client Matrix: Water

Date Received: 08/28/2018 0854

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	1.7		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-427779		Analysis Date: 08/28/2018 1800			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-428756		Analysis Date: 09/06/2018 1132			
Alkalinity	80		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-428436		Analysis Date: 08/31/2018 1952			
Total Dissolved Solids	130		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428302		Analysis Date: 08/31/2018 1637			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-427868		Analysis Date: 08/28/2018 1723			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428113		Analysis Date: 08/29/2018 1615			

Client: SCS Engineers

Job Number: 280-113694-1

**General Chemistry**

**Client Sample ID: HVL-082718-03**

Lab Sample ID: 280-113694-3

Date Sampled: 08/27/2018 1218

Client Matrix: Water

Date Received: 08/28/2018 0854

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	ND		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-427779		Analysis Date: 08/28/2018 1823			
Ammonia	3.8		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-428756		Analysis Date: 09/06/2018 1134			
Alkalinity	160		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-428436		Analysis Date: 08/31/2018 1959			
Total Dissolved Solids	220		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428302		Analysis Date: 08/31/2018 1637			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-427868		Analysis Date: 08/28/2018 1723			
Total Organic Carbon - Quad	1.9	F1	mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428113		Analysis Date: 08/29/2018 1704			

Client: SCS Engineers

Job Number: 280-113694-1

General Chemistry

Client Sample ID: HVL-082718-04

Lab Sample ID: 280-113694-4

Client Matrix: Water

Date Sampled: 08/27/2018 1320

Date Received: 08/28/2018 0854

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	ND		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-427779		Analysis Date: 08/28/2018 1845			
Ammonia	3.2		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-428756		Analysis Date: 09/06/2018 1136			
Alkalinity	98		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-428436		Analysis Date: 08/31/2018 2040			
Total Dissolved Solids	170		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428302		Analysis Date: 08/31/2018 1637			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-427868		Analysis Date: 08/28/2018 1723			
Total Organic Carbon - Quad	2.0		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428113		Analysis Date: 08/29/2018 1752			



Client: SCS Engineers

Job Number: 280-113694-1

**General Chemistry**

**Client Sample ID: HVL-082718-05**

Lab Sample ID: 280-113694-5

Date Sampled: 08/27/2018 1408

Client Matrix: Water

Date Received: 08/28/2018 0854

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	0.82		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-427779		Analysis Date: 08/28/2018 1907			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-428756		Analysis Date: 09/06/2018 1138			
Alkalinity	110		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-428436		Analysis Date: 08/31/2018 2055			
Total Dissolved Solids	170		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428302		Analysis Date: 08/31/2018 1637			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-427868		Analysis Date: 08/28/2018 1723			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428113		Analysis Date: 08/29/2018 1806			

Client: SCS Engineers

Job Number: 280-113694-1

**General Chemistry**

**Client Sample ID: HVL-082718-06**

Lab Sample ID: 280-113694-6

Date Sampled: 08/27/2018 1502

Client Matrix: Water

Date Received: 08/28/2018 0854

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrate as N	ND		mg/L	0.20	1.0	300.0
	Analysis Batch: 280-427779		Analysis Date: 08/28/2018 1929			
Ammonia	ND		mg/L	0.10	1.0	350.1
	Analysis Batch: 280-428756		Analysis Date: 09/06/2018 1140			
Alkalinity	45		mg/L	5.0	1.0	SM 2320B
	Analysis Batch: 280-428436		Analysis Date: 08/31/2018 2102			
Total Dissolved Solids	110		mg/L	10	1.0	SM 2540C
	Analysis Batch: 280-428302		Analysis Date: 08/31/2018 1637			
Total Suspended Solids	ND		mg/L	4.0	1.0	SM 2540D
	Analysis Batch: 280-427868		Analysis Date: 08/28/2018 1723			
Total Organic Carbon - Quad	ND		mg/L	1.0	1.0	SM 5310B
	Analysis Batch: 280-428113		Analysis Date: 08/29/2018 1821			

## DATA REPORTING QUALIFIERS

Client: SCS Engineers

Job Number: 280-113694-1

Lab Section	Qualifier	Description
GC/MS VOA	F1	MS and/or MSD Recovery is outside acceptance limits.
	F2	MS/MSD RPD exceeds control limits
	X	Surrogate is outside control limits
Metals	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
General Chemistry	F1	MS and/or MSD Recovery is outside acceptance limits.

# QUALITY CONTROL RESULTS

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS VOA</b>					
<b>Analysis Batch:280-428693</b>					
LCS 280-428693/5	Lab Control Sample	T	Water	8260B	
MB 280-428693/7	Method Blank	T	Water	8260B	
280-113694-1	HVL-082718-01	T	Water	8260B	
280-113694-2	HVL-082718-02	T	Water	8260B	
280-113694-4	HVL-082718-04	T	Water	8260B	
280-113783-D-4 MS	Matrix Spike	T	Water	8260B	
280-113783-D-4 MSD	Matrix Spike Duplicate	T	Water	8260B	
<b>Analysis Batch:280-428839</b>					
LCS 280-428839/6	Lab Control Sample	T	Water	8260B	
LCSD 280-428839/7	Lab Control Sample Duplicate	T	Water	8260B	
MB 280-428839/10	Method Blank	T	Water	8260B	
280-113694-3	HVL-082718-03	T	Water	8260B	
280-113694-5	HVL-082718-05	T	Water	8260B	
280-113694-6	HVL-082718-06	T	Water	8260B	
280-113766-A-1 MS	Matrix Spike	T	Water	8260B	
280-113766-A-1 MSD	Matrix Spike Duplicate	T	Water	8260B	

#### Report Basis

T = Total

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 580-283400</b>					
LCS 580-283400/23-A	Lab Control Sample	R	Water	3005A	
LCSD 580-283400/24-A	Lab Control Sample Duplicate	R	Water	3005A	
MB 580-283400/22-A	Method Blank	R	Water	3005A	
580-80079-K-1-B DU	Duplicate		Water	3005A	
580-80079-K-1-C MS	Matrix Spike		Water	3005A	
580-80079-K-1-D MSD	Matrix Spike Duplicate		Water	3005A	
280-113694-2	HVL-082718-02	D	Water	3005A	
280-113694-4	HVL-082718-04	D	Water	3005A	
280-113694-5	HVL-082718-05	D	Water	3005A	
280-113694-6	HVL-082718-06	D	Water	3005A	
<b>Analysis Batch:580-283586</b>					
LCS 580-283400/23-A	Lab Control Sample	R	Water	6020	580-283400
LCSD 580-283400/24-A	Lab Control Sample Duplicate	R	Water	6020	580-283400
MB 580-283400/22-A	Method Blank	R	Water	6020	580-283400
580-80079-K-1-B DU	Duplicate		Water	6020	580-283400
580-80079-K-1-C MS	Matrix Spike		Water	6020	580-283400
580-80079-K-1-D MSD	Matrix Spike Duplicate		Water	6020	580-283400
280-113694-2	HVL-082718-02	D	Water	6020	580-283400
280-113694-4	HVL-082718-04	D	Water	6020	580-283400
280-113694-5	HVL-082718-05	D	Water	6020	580-283400
280-113694-6	HVL-082718-06	D	Water	6020	580-283400
<b>Prep Batch: 580-283658</b>					
LCS 580-283658/23-A	Lab Control Sample	R	Water	3005A	
LCSD 580-283658/24-A	Lab Control Sample Duplicate	R	Water	3005A	
MB 580-283658/22-A	Method Blank	R	Water	3005A	
580-80109-J-1-C DU	Duplicate		Water	3005A	
580-80109-H-1-A MS	Matrix Spike		Water	3005A	
580-80109-H-1-B MSD	Matrix Spike Duplicate		Water	3005A	
280-113694-3	HVL-082718-03	D	Water	3005A	
280-113694-6	HVL-082718-06	D	Water	3005A	
<b>Analysis Batch:580-283752</b>					
LCS 580-283658/23-A	Lab Control Sample	R	Water	6020	580-283658
LCSD 580-283658/24-A	Lab Control Sample Duplicate	R	Water	6020	580-283658
MB 580-283658/22-A	Method Blank	R	Water	6020	580-283658
580-80109-J-1-C DU	Duplicate		Water	6020	580-283658
580-80109-H-1-A MS	Matrix Spike		Water	6020	580-283658
580-80109-H-1-B MSD	Matrix Spike Duplicate		Water	6020	580-283658
280-113694-3	HVL-082718-03	D	Water	6020	580-283658
280-113694-6	HVL-082718-06	D	Water	6020	580-283658

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

## QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 580-283841</b>					
LCS 580-283841/23-A	Lab Control Sample	R	Water	3005A	
LCSD 580-283841/24-A	Lab Control Sample Duplicate	R	Water	3005A	
MB 580-283841/22-A	Method Blank	R	Water	3005A	
580-80276-B-2-C DU	Duplicate	R	Water	3005A	
580-80276-B-2-D MS	Matrix Spike	R	Water	3005A	
580-80276-B-2-E MSD	Matrix Spike Duplicate	R	Water	3005A	
280-113694-1	HVL-082718-01	D	Water	3005A	
<b>Analysis Batch:580-283922</b>					
LCS 580-283841/23-A	Lab Control Sample	R	Water	6020	580-283841
LCSD 580-283841/24-A	Lab Control Sample Duplicate	R	Water	6020	580-283841
MB 580-283841/22-A	Method Blank	R	Water	6020	580-283841
580-80276-B-2-C DU	Duplicate	R	Water	6020	580-283841
580-80276-B-2-D MS	Matrix Spike	R	Water	6020	580-283841
580-80276-B-2-E MSD	Matrix Spike Duplicate	R	Water	6020	580-283841
280-113694-1	HVL-082718-01	D	Water	6020	580-283841
<b>Prep Batch: 280-427823</b>					
LCS 280-427823/2-A	Lab Control Sample	R	Water	3005A	
MB 280-427823/1-A	Method Blank	R	Water	3005A	
280-113694-1	HVL-082718-01	D	Water	3005A	
280-113694-2	HVL-082718-02	D	Water	3005A	
280-113694-3	HVL-082718-03	D	Water	3005A	
280-113694-4	HVL-082718-04	D	Water	3005A	
280-113694-5	HVL-082718-05	D	Water	3005A	
280-113694-6	HVL-082718-06	D	Water	3005A	
280-113695-D-4-B MS	Matrix Spike	D	Water	3005A	
280-113695-D-4-C MSD	Matrix Spike Duplicate	D	Water	3005A	
<b>Prep Batch: 280-427824</b>					
LCS 280-427824/2-A	Lab Control Sample	R	Water	3005A	
MB 280-427824/1-A	Method Blank	R	Water	3005A	
280-113694-1	HVL-082718-01	D	Water	3005A	
280-113694-2	HVL-082718-02	D	Water	3005A	
280-113694-3	HVL-082718-03	D	Water	3005A	
280-113694-4	HVL-082718-04	D	Water	3005A	
280-113694-5	HVL-082718-05	D	Water	3005A	
280-113694-6	HVL-082718-06	D	Water	3005A	
280-113698-L-1-C MS	Matrix Spike	D	Water	3005A	
280-113698-L-1-D MSD	Matrix Spike Duplicate	D	Water	3005A	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

## QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Analysis Batch:280-428070</b>					
LCS 280-427824/2-A	Lab Control Sample	R	Water	6020	280-427824
MB 280-427824/1-A	Method Blank	R	Water	6020	280-427824
280-113694-1	HVL-082718-01	D	Water	6020	280-427824
280-113694-2	HVL-082718-02	D	Water	6020	280-427824
280-113694-3	HVL-082718-03	D	Water	6020	280-427824
280-113694-4	HVL-082718-04	D	Water	6020	280-427824
280-113694-5	HVL-082718-05	D	Water	6020	280-427824
280-113694-6	HVL-082718-06	D	Water	6020	280-427824
280-113698-L-1-C MS	Matrix Spike	D	Water	6020	280-427824
280-113698-L-1-D MSD	Matrix Spike Duplicate	D	Water	6020	280-427824
<b>Analysis Batch:280-428217</b>					
LCS 280-427823/2-A	Lab Control Sample	R	Water	6010B	280-427823
MB 280-427823/1-A	Method Blank	R	Water	6010B	280-427823
280-113694-1	HVL-082718-01	D	Water	6010B	280-427823
280-113694-2	HVL-082718-02	D	Water	6010B	280-427823
280-113694-3	HVL-082718-03	D	Water	6010B	280-427823
280-113694-4	HVL-082718-04	D	Water	6010B	280-427823
280-113694-5	HVL-082718-05	D	Water	6010B	280-427823
280-113694-6	HVL-082718-06	D	Water	6010B	280-427823
280-113695-D-4-B MS	Matrix Spike	D	Water	6010B	280-427823
280-113695-D-4-C MSD	Matrix Spike Duplicate	D	Water	6010B	280-427823

**Report Basis**

D = Dissolved

R = Total Recoverable



## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-427779</b>					
LCS 280-427779/4	Lab Control Sample	T	Water	300.0	
LCSD 280-427779/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-427779/6	Method Blank	T	Water	300.0	
280-113694-1	HVL-082718-01	T	Water	300.0	
280-113694-1DU	Duplicate	T	Water	300.0	
280-113694-1MS	Matrix Spike	T	Water	300.0	
280-113694-1MSD	Matrix Spike Duplicate	T	Water	300.0	
280-113694-2	HVL-082718-02	T	Water	300.0	
280-113694-3	HVL-082718-03	T	Water	300.0	
280-113694-4	HVL-082718-04	T	Water	300.0	
280-113694-5	HVL-082718-05	T	Water	300.0	
280-113694-6	HVL-082718-06	T	Water	300.0	
<b>Analysis Batch:280-427868</b>					
LCS 280-427868/2	Lab Control Sample	T	Water	SM 2540D	
LCSD 280-427868/3	Lab Control Sample Duplicate	T	Water	SM 2540D	
MB 280-427868/1	Method Blank	T	Water	SM 2540D	
280-113655-A-1 DU	Duplicate	T	Water	SM 2540D	
280-113694-1	HVL-082718-01	T	Water	SM 2540D	
280-113694-2	HVL-082718-02	T	Water	SM 2540D	
280-113694-3	HVL-082718-03	T	Water	SM 2540D	
280-113694-4	HVL-082718-04	T	Water	SM 2540D	
280-113694-5	HVL-082718-05	T	Water	SM 2540D	
280-113694-6	HVL-082718-06	T	Water	SM 2540D	
<b>Analysis Batch:280-428113</b>					
LCS 280-428113/3	Lab Control Sample	T	Water	SM 5310B	
MB 280-428113/4	Method Blank	T	Water	SM 5310B	
280-113694-1	HVL-082718-01	T	Water	SM 5310B	
280-113694-2	HVL-082718-02	T	Water	SM 5310B	
280-113694-3	HVL-082718-03	T	Water	SM 5310B	
280-113694-3MS	Matrix Spike	T	Water	SM 5310B	
280-113694-3MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
280-113694-4	HVL-082718-04	T	Water	SM 5310B	
280-113694-5	HVL-082718-05	T	Water	SM 5310B	
280-113694-6	HVL-082718-06	T	Water	SM 5310B	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-428302</b>					
LCS 280-428302/2	Lab Control Sample	T	Water	SM 2540C	
MB 280-428302/1	Method Blank	T	Water	SM 2540C	
280-113694-1	HVL-082718-01	T	Water	SM 2540C	
280-113694-1DU	Duplicate	T	Water	SM 2540C	
280-113694-2	HVL-082718-02	T	Water	SM 2540C	
280-113694-3	HVL-082718-03	T	Water	SM 2540C	
280-113694-4	HVL-082718-04	T	Water	SM 2540C	
280-113694-5	HVL-082718-05	T	Water	SM 2540C	
280-113694-6	HVL-082718-06	T	Water	SM 2540C	
<b>Analysis Batch:280-428436</b>					
LCS 280-428436/30	Lab Control Sample	T	Water	SM 2320B	
LCS 280-428436/4	Lab Control Sample	T	Water	SM 2320B	
MB 280-428436/31	Method Blank	T	Water	SM 2320B	
MB 280-428436/5	Method Blank	T	Water	SM 2320B	
280-113694-1	HVL-082718-01	T	Water	SM 2320B	
280-113694-2	HVL-082718-02	T	Water	SM 2320B	
280-113694-3	HVL-082718-03	T	Water	SM 2320B	
280-113694-4	HVL-082718-04	T	Water	SM 2320B	
280-113694-4DU	Duplicate	T	Water	SM 2320B	
280-113694-5	HVL-082718-05	T	Water	SM 2320B	
280-113694-6	HVL-082718-06	T	Water	SM 2320B	
<b>Analysis Batch:280-428756</b>					
LCS 280-428756/18	Lab Control Sample	T	Water	350.1	
MB 280-428756/19	Method Blank	T	Water	350.1	
280-113694-1	HVL-082718-01	T	Water	350.1	
280-113694-2	HVL-082718-02	T	Water	350.1	
280-113694-3	HVL-082718-03	T	Water	350.1	
280-113694-4	HVL-082718-04	T	Water	350.1	
280-113694-5	HVL-082718-05	T	Water	350.1	
280-113694-6	HVL-082718-06	T	Water	350.1	
280-113745-C-1 MS	Matrix Spike	T	Water	350.1	
280-113745-C-1 MSD	Matrix Spike Duplicate	T	Water	350.1	

**Report Basis**

T = Total

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>HPLC/IC</b>					
<b>Analysis Batch:160-387239</b>					
LCS 160-387239/10	Lab Control Sample	T	Water	300.0	
MB 160-387239/9	Method Blank	T	Water	300.0	
280-113694-1	HVL-082718-01	T	Water	300.0	
280-113694-1DL	HVL-082718-01	T	Water	300.0	
280-113694-1DU	Duplicate	T	Water	300.0	
280-113694-1DUDL	Duplicate	T	Water	300.0	
280-113694-1MS	Matrix Spike	T	Water	300.0	
280-113694-1MSDL	Matrix Spike	T	Water	300.0	
280-113694-2	HVL-082718-02	T	Water	300.0	
280-113694-2DL	HVL-082718-02	T	Water	300.0	
280-113694-4	HVL-082718-04	T	Water	300.0	
280-113694-4DL	HVL-082718-04	T	Water	300.0	
280-113694-5	HVL-082718-05	T	Water	300.0	
280-113694-5DL	HVL-082718-05	T	Water	300.0	
280-113694-6	HVL-082718-06	T	Water	300.0	
<b>Analysis Batch:160-391014</b>					
LCS 160-391014/10	Lab Control Sample	T	Water	300.0	
MB 160-391014/9	Method Blank	T	Water	300.0	
280-113694-3	HVL-082718-03	T	Water	300.0	
280-113694-3DL	HVL-082718-03	T	Water	300.0	
280-113694-3DU	Duplicate	T	Water	300.0	
280-113694-3DUDL	Duplicate	T	Water	300.0	
280-113694-3MS	Matrix Spike	T	Water	300.0	
280-113694-3MSDL	Matrix Spike	T	Water	300.0	

#### Report Basis

T = Total

Client: SCS Engineers

Job Number: 280-113694-1

**Surrogate Recovery Report**

**8260B Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	DBFM %Rec	TOL %Rec
280-113694-1	HVL-082718-01	80	84	100	99
280-113694-2	HVL-082718-02	82	86	99	96
280-113694-3	HVL-082718-03	92	93	97	100
280-113694-4	HVL-082718-04	80	85	101	94
280-113694-5	HVL-082718-05	93	91	97	97
280-113694-6	HVL-082718-06	90	89	96	94
MB 280-428693/7		78	83	102	96
MB 280-428839/10		96	104	101	107
LCS 280-428693/5		79	87	101	100
LCS 280-428839/6		101	104	106	110
LCSD 280-428839/7		99	101	102	110
280-113783-D-4 MS		76	75X	98	98
280-113766-A-1 MS		89	90	95	97
280-113783-D-4 MSD		84	83	93	94
280-113766-A-1 MSD		82	84	85	91

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	70-127
BFB = 4-Bromofluorobenzene (Surr)	78-120
DBFM = Dibromofluoromethane (Surr)	77-120
TOL = Toluene-d8 (Surr)	80-125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Method Blank - Batch: 280-428693**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: MB 280-428693/7  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/06/2018 1123  
 Prep Date: 09/06/2018 1123  
 Leach Date: N/A

Analysis Batch: 280-428693  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: VMS\_G  
 Lab File ID: G8911.D  
 Initial Weight/Volume: 20 mL  
 Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

## Method Blank - Batch: 280-428693

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: MB 280-428693/7  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/06/2018 1123  
Prep Date: 09/06/2018 1123  
Leach Date: N/A

Analysis Batch: 280-428693  
Prep Batch: N/A  
Leach Batch: N/A  
Units: ug/L

Instrument ID: VMS\_G  
Lab File ID: G8911.D  
Initial Weight/Volume: 20 mL  
Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
trans-1,4-Dichloro-2-butene	ND		3.0
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50
Surrogate	% Rec		Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	78		70 - 127
4-Bromofluorobenzene (Surr)	83		78 - 120
Dibromofluoromethane (Surr)	102		77 - 120
Toluene-d8 (Surr)	96		80 - 125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Lab Control Sample - Batch: 280-428693**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID:	LCS 280-428693/5	Analysis Batch:	280-428693	Instrument ID:	VMS_G
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	G8910.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	09/06/2018 1103	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	09/06/2018 1103				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1,2-Tetrachloroethane	5.00	5.09	102	65 - 135	
1,1,1-Trichloroethane	5.00	4.78	96	65 - 135	
1,1,2,2-Tetrachloroethane	5.00	5.78	116	58 - 135	
1,1,2-Trichloroethane	5.00	5.87	117	64 - 135	
1,1-Dichloroethane	5.00	5.25	105	65 - 135	
1,1-Dichloroethene	5.00	4.68	94	65 - 136	
1,2,3-Trichloropropane	5.00	5.32	106	65 - 135	
1,2-Dibromo-3-Chloropropane	5.00	4.89	98	57 - 135	
1,2-Dibromoethane	5.00	4.72	94	65 - 135	
1,2-Dichlorobenzene	5.00	5.27	105	65 - 135	
1,2-Dichloroethane	5.00	4.73	95	65 - 135	
1,2-Dichloropropane	5.00	5.90	118	64 - 135	
1,4-Dichlorobenzene	5.00	5.14	103	65 - 135	
2-Butanone (MEK)	20.0	16.6	83	44 - 177	
2-Hexanone	20.0	15.1	76	57 - 139	
4-Methyl-2-pentanone (MIBK)	20.0	18.9	95	60 - 150	
Acetone	20.0	14.9	74	39 - 156	
Acrylonitrile	50.0	62.6	125	56 - 135	
Benzene	5.00	5.07	101	65 - 135	
Bromochloromethane	5.00	5.49	110	65 - 135	
Bromodichloromethane	5.00	5.64	113	65 - 135	
Bromoform	5.00	5.24	105	62 - 135	
Bromomethane	5.00	3.74	75	45 - 135	
Carbon disulfide	5.00	2.83	57	55 - 143	
Carbon tetrachloride	5.00	4.47	89	65 - 135	
Chlorobenzene	5.00	4.81	96	65 - 135	
Chloroethane	5.00	3.77	75	46 - 136	
Chloroform	5.00	5.46	109	65 - 135	
Chloromethane	5.00	3.60	72	34 - 145	
cis-1,2-Dichloroethene	5.00	5.40	108	65 - 135	
cis-1,3-Dichloropropene	5.00	5.21	104	65 - 135	
Dibromochloromethane	5.00	5.47	109	65 - 135	
Dibromomethane	5.00	5.00	100	65 - 135	
Dichlorodifluoromethane	5.00	2.58	52	43 - 142	
Ethylbenzene	5.00	4.79	96	65 - 135	
Iodomethane	5.00	4.63	93	65 - 142	
Methylene Chloride	5.00	5.01	100	54 - 141	
m-Xylene & p-Xylene	5.00	4.59	92	65 - 135	
o-Xylene	5.00	4.83	97	65 - 135	
Styrene	5.00	4.80	96	65 - 135	
Tetrachloroethene	5.00	4.43	89	65 - 135	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Lab Control Sample - Batch: 280-428693**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID:	LCS 280-428693/5	Analysis Batch:	280-428693	Instrument ID:	VMS_G
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	G8910.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	09/06/2018 1103	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	09/06/2018 1103				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Toluene	5.00	5.06	101	65 - 135	
trans-1,2-Dichloroethene	5.00	4.55	91	65 - 135	
trans-1,3-Dichloropropene	5.00	5.41	108	65 - 135	
trans-1,4-Dichloro-2-butene	5.00	5.19	104	53 - 135	
Trichloroethene	5.00	4.87	97	65 - 135	
Trichlorofluoromethane	5.00	3.30	66	53 - 137	
Vinyl acetate	10.0	11.7	117	11 - 187	
Vinyl chloride	5.00	3.89	78	40 - 137	
Surrogate		% Rec		Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		79		70 - 127	
4-Bromofluorobenzene (Surr)		87		78 - 120	
Dibromofluoromethane (Surr)		101		77 - 120	
Toluene-d8 (Surr)		100		80 - 125	



# Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428693**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-113783-D-4 MS	Analysis Batch: 280-428693	Instrument ID: VMS_G
Client Matrix: Water	Prep Batch: N/A	Lab File ID: G8915.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/06/2018 1246		Final Weight/Volume: 20 mL
Prep Date: 09/06/2018 1246		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-113783-D-4 MSD	Analysis Batch: 280-428693	Instrument ID: VMS_G
Client Matrix: Water	Prep Batch: N/A	Lab File ID: G8916.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/06/2018 1306		Final Weight/Volume: 20 mL
Prep Date: 09/06/2018 1306		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1,1,2-Tetrachloroethane	90	95	65 - 135	5	20		
1,1,1-Trichloroethane	87	90	65 - 135	4	20		
1,1,2,2-Tetrachloroethane	88	108	58 - 135	20	20		
1,1,2-Trichloroethane	92	130	64 - 135	34	27		F2
1,1-Dichloroethane	101	100	65 - 135	1	21		
1,1-Dichloroethene	77	93	65 - 136	20	20		
1,2,3-Trichloropropane	77	88	65 - 135	14	23		
1,2-Dibromo-3-Chloropropane	78	103	57 - 135	28	22		F2
1,2-Dibromoethane	77	88	65 - 135	14	27		
1,2-Dichlorobenzene	94	98	65 - 135	4	20		
1,2-Dichloroethane	86	96	65 - 135	11	20		
1,2-Dichloropropane	103	129	64 - 135	22	20		F2
1,4-Dichlorobenzene	95	92	65 - 135	3	23		
2-Butanone (MEK)	75	84	44 - 177	11	32		
2-Hexanone	72	79	57 - 139	9	25		
4-Methyl-2-pentanone (MIBK)	97	114	60 - 150	16	22		
Acetone	62	70	39 - 156	9	23		
Acrylonitrile	91	114	56 - 135	22	30		
Benzene	92	94	65 - 135	2	20		
Bromochloromethane	98	104	65 - 135	6	29		
Bromodichloromethane	99	120	65 - 135	20	20		
Bromoform	93	99	62 - 135	6	27		
Bromomethane	84	95	45 - 135	13	33		
Carbon disulfide	44	56	55 - 143	25	20	F1	F2
Carbon tetrachloride	81	90	65 - 135	10	21		
Chlorobenzene	87	88	65 - 135	1	20		
Chloroethane	86	96	46 - 136	10	25		
Chloroform	99	107	65 - 135	7	20		
Chloromethane	78	89	34 - 145	13	24		
cis-1,2-Dichloroethene	97	106	65 - 135	9	20		
cis-1,3-Dichloropropene	95	95	65 - 135	0	26		
Dibromochloromethane	88	101	65 - 135	14	20		

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428693**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-113783-D-4 MS	Analysis Batch: 280-428693	Instrument ID: VMS_G
Client Matrix: Water	Prep Batch: N/A	Lab File ID: G8915.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/06/2018 1246		Final Weight/Volume: 20 mL
Prep Date: 09/06/2018 1246		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-113783-D-4 MSD	Analysis Batch: 280-428693	Instrument ID: VMS_G
Client Matrix: Water	Prep Batch: N/A	Lab File ID: G8916.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/06/2018 1306		Final Weight/Volume: 20 mL
Prep Date: 09/06/2018 1306		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Dibromomethane	89	109	65 - 135	20	26		
Dichlorodifluoromethane	52	59	43 - 142	13	30		
Ethylbenzene	78	85	65 - 135	10	20		
Iodomethane	76	96	65 - 142	23	25		
Methylene Chloride	73	105	54 - 141	36	26		F2
m-Xylene & p-Xylene	74	81	65 - 135	10	20		
o-Xylene	93	87	65 - 135	7	20		
Styrene	92	87	65 - 135	5	26		
Tetrachloroethene	70	73	65 - 135	5	20		
Toluene	87	110	65 - 135	23	20		F2
trans-1,2-Dichloroethene	70	82	65 - 135	15	24		
trans-1,3-Dichloropropene	89	119	65 - 135	29	26		F2
trans-1,4-Dichloro-2-butene	85	96	53 - 135	11	25		
Trichloroethene	85	104	65 - 135	20	20		
Trichlorofluoromethane	69	79	53 - 137	13	27		
Vinyl acetate	110	106	11 - 187	4	24		
Vinyl chloride	82	93	40 - 137	13	24		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	76	84	70 - 127
4-Bromofluorobenzene (Surr)	75	X 83	78 - 120
Dibromofluoromethane (Surr)	98	93	77 - 120
Toluene-d8 (Surr)	98	94	80 - 125

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Method Blank - Batch: 280-428839**

**Method: 8260B  
Preparation: 5030B**

Lab Sample ID: MB 280-428839/10  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/07/2018 1051  
 Prep Date: 09/07/2018 1051  
 Leach Date: N/A

Analysis Batch: 280-428839  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: VMS\_P  
 Lab File ID: P9788.D  
 Initial Weight/Volume: 20 mL  
 Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
1,1,1,2-Tetrachloroethane	ND		0.50
1,1,1-Trichloroethane	ND		0.50
1,1,2,2-Tetrachloroethane	ND		0.50
1,1,2-Trichloroethane	ND		0.50
1,1-Dichloroethane	ND		0.50
1,1-Dichloroethene	ND		0.50
1,2,3-Trichloropropane	ND		1.0
1,2-Dibromo-3-Chloropropane	ND		2.0
1,2-Dibromoethane	ND		1.0
1,2-Dichlorobenzene	ND		0.50
1,2-Dichloroethane	ND		0.50
1,2-Dichloropropane	ND		0.50
1,4-Dichlorobenzene	ND		0.50
2-Butanone (MEK)	ND		6.0
2-Hexanone	ND		5.0
4-Methyl-2-pentanone (MIBK)	ND		5.0
Acetone	ND		10
Acrylonitrile	ND		20
Benzene	ND		0.50
Bromochloromethane	ND		0.50
Bromodichloromethane	ND		0.50
Bromoform	ND		0.50
Bromomethane	ND		0.50
Carbon disulfide	ND		0.50
Carbon tetrachloride	ND		0.50
Chlorobenzene	ND		0.50
Chloroethane	ND		0.50
Chloroform	ND		0.50
Chloromethane	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
cis-1,4-Dichloro-2-butene	ND		3.0
Dibromochloromethane	ND		0.50
Dibromomethane	ND		0.50
Dichlorodifluoromethane	ND		2.0
Ethylbenzene	ND		1.0
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
m-Xylene & p-Xylene	ND		0.50
o-Xylene	ND		0.50
Styrene	ND		0.50
Tetrachloroethene	ND		0.50
Toluene	ND		0.50
trans-1,2-Dichloroethene	ND		0.50
trans-1,3-Dichloropropene	ND		0.50

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

## Method Blank - Batch: 280-428839

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: MB 280-428839/10  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/07/2018 1051  
Prep Date: 09/07/2018 1051  
Leach Date: N/A

Analysis Batch: 280-428839  
Prep Batch: N/A  
Leach Batch: N/A  
Units: ug/L

Instrument ID: VMS\_P  
Lab File ID: P9788.D  
Initial Weight/Volume: 20 mL  
Final Weight/Volume: 20 mL

Analyte	Result	Qual	RL
trans-1,4-Dichloro-2-butene	ND		3.0
Trichloroethene	ND		0.50
Trichlorofluoromethane	ND		0.50
Vinyl acetate	ND		3.0
Vinyl chloride	ND		0.50
Surrogate	% Rec		Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 127
4-Bromofluorobenzene (Surr)	104		78 - 120
Dibromofluoromethane (Surr)	101		77 - 120
Toluene-d8 (Surr)	107		80 - 125

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Lab Control Sample/**  
**Lab Control Sample Duplicate Recovery Report - Batch: 280-428839**      **Method: 8260B**  
**Preparation: 5030B**

LCS Lab Sample ID: LCS 280-428839/6	Analysis Batch: 280-428839	Instrument ID: VMS_P
Client Matrix: Water	Prep Batch: N/A	Lab File ID: P9787.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1032	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1032		20 mL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-428839/7	Analysis Batch: 280-428839	Instrument ID: VMS_P
Client Matrix: Water	Prep Batch: N/A	Lab File ID: P9789.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1109	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1109		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
1,1,1,2-Tetrachloroethane	104	106	65 - 135	1	20		
1,1,1-Trichloroethane	109	110	65 - 135	1	20		
1,1,2,2-Tetrachloroethane	96	97	58 - 135	2	20		
1,1,2-Trichloroethane	100	99	64 - 135	0	27		
1,1-Dichloroethane	104	104	65 - 135	0	21		
1,1-Dichloroethene	109	110	65 - 136	2	20		
1,2,3-Trichloropropane	101	103	65 - 135	2	23		
1,2-Dibromo-3-Chloropropane	83	84	57 - 135	2	22		
1,2-Dibromoethane	98	100	65 - 135	2	27		
1,2-Dichlorobenzene	109	110	65 - 135	0	20		
1,2-Dichloroethane	101	101	65 - 135	0	20		
1,2-Dichloropropane	104	107	64 - 135	2	20		
1,4-Dichlorobenzene	113	112	65 - 135	1	23		
2-Butanone (MEK)	102	95	44 - 177	7	32		
2-Hexanone	90	89	57 - 139	1	25		
4-Methyl-2-pentanone (MIBK)	91	90	60 - 150	1	22		
Acetone	97	95	39 - 156	1	23		
Acrylonitrile	94	102	56 - 135	8	30		
Benzene	106	106	65 - 135	0	20		
Bromochloromethane	107	104	65 - 135	2	29		
Bromodichloromethane	97	98	65 - 135	1	20		
Bromoform	80	80	62 - 135	1	27		
Bromomethane	107	109	45 - 135	2	33		
Carbon disulfide	107	109	55 - 143	1	20		
Carbon tetrachloride	103	104	65 - 135	1	21		
Chlorobenzene	107	108	65 - 135	1	20		
Chloroethane	104	108	46 - 136	3	25		
Chloroform	107	107	65 - 135	0	20		
Chloromethane	96	97	34 - 145	1	24		
cis-1,2-Dichloroethene	108	107	65 - 135	1	20		
cis-1,3-Dichloropropene	101	101	65 - 135	0	26		
Dibromochloromethane	93	94	65 - 135	1	20		
Dibromomethane	101	100	65 - 135	1	26		
Dichlorodifluoromethane	79	80	43 - 142	1	30		
Ethylbenzene	113	114	65 - 135	1	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Lab Control Sample/**  
**Lab Control Sample Duplicate Recovery Report - Batch: 280-428839**      **Method: 8260B**  
**Preparation: 5030B**

LCS Lab Sample ID: LCS 280-428839/6	Analysis Batch: 280-428839	Instrument ID: VMS_P
Client Matrix: Water	Prep Batch: N/A	Lab File ID: P9787.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1032	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1032		20 mL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-428839/7	Analysis Batch: 280-428839	Instrument ID: VMS_P
Client Matrix: Water	Prep Batch: N/A	Lab File ID: P9789.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1109	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1109		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Iodomethane	107	108	65 - 142	1	25		
Methylene Chloride	105	105	54 - 141	0	26		
m-Xylene & p-Xylene	117	116	65 - 135	1	20		
o-Xylene	116	117	65 - 135	1	20		
Styrene	109	110	65 - 135	1	26		
Tetrachloroethene	114	112	65 - 135	1	20		
Toluene	107	109	65 - 135	2	20		
trans-1,2-Dichloroethene	115	113	65 - 135	1	24		
trans-1,3-Dichloropropene	91	90	65 - 135	1	26		
trans-1,4-Dichloro-2-butene	96	93	53 - 135	3	25		
Trichloroethene	105	107	65 - 135	2	20		
Trichlorofluoromethane	104	105	53 - 137	1	27		
Vinyl acetate	80	78	11 - 187	3	24		
Vinyl chloride	103	106	40 - 137	3	24		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
1,2-Dichloroethane-d4 (Surr)	101		99		70 - 127		
4-Bromofluorobenzene (Surr)	104		101		78 - 120		
Dibromofluoromethane (Surr)	106		102		77 - 120		
Toluene-d8 (Surr)	110		110		80 - 125		

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428839**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-113766-A-1 MS	Analysis Batch: 280-428839	Instrument ID: VMS_P
Client Matrix: Water	Prep Batch: N/A	Lab File ID: P9792.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1208		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1208		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-113766-A-1 MSD	Analysis Batch: 280-428839	Instrument ID: VMS_P
Client Matrix: Water	Prep Batch: N/A	Lab File ID: P9793.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1226		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1226		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1,1,2-Tetrachloroethane	104	103	65 - 135	0	20		
1,1,1-Trichloroethane	110	111	65 - 135	1	20		
1,1,2,2-Tetrachloroethane	96	98	58 - 135	2	20		
1,1,2-Trichloroethane	99	101	64 - 135	2	27		
1,1-Dichloroethane	105	104	65 - 135	1	21		
1,1-Dichloroethene	113	112	65 - 136	1	20		
1,2,3-Trichloropropane	99	100	65 - 135	2	23		
1,2-Dibromo-3-Chloropropane	82	84	57 - 135	2	22		
1,2-Dibromoethane	99	100	65 - 135	0	27		
1,2-Dichlorobenzene	109	108	65 - 135	1	20		
1,2-Dichloroethane	101	102	65 - 135	1	20		
1,2-Dichloropropane	106	105	64 - 135	1	20		
1,4-Dichlorobenzene	113	112	65 - 135	1	23		
2-Butanone (MEK)	90	102	44 - 177	12	32		
2-Hexanone	91	92	57 - 139	1	25		
4-Methyl-2-pentanone (MIBK)	92	94	60 - 150	3	22		
Acetone	90	100	39 - 156	11	23		
Acrylonitrile	104	103	56 - 135	2	30		
Benzene	107	106	65 - 135	0	20		
Bromochloromethane	108	105	65 - 135	2	29		
Bromodichloromethane	97	97	65 - 135	0	20		
Bromoform	80	81	62 - 135	1	27		
Bromomethane	110	110	45 - 135	0	33		
Carbon disulfide	110	111	55 - 143	0	20		
Carbon tetrachloride	103	106	65 - 135	3	21		
Chlorobenzene	108	108	65 - 135	0	20		
Chloroethane	106	104	46 - 136	1	25		
Chloroform	108	106	65 - 135	1	20		
Chloromethane	98	97	34 - 145	0	24		
cis-1,2-Dichloroethene	111	107	65 - 135	3	20		
cis-1,3-Dichloropropene	100	99	65 - 135	1	26		
Dibromochloromethane	91	94	65 - 135	3	20		

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428839**

**Method: 8260B  
Preparation: 5030B**

MS Lab Sample ID: 280-113766-A-1 MS	Analysis Batch: 280-428839	Instrument ID: VMS_P
Client Matrix: Water	Prep Batch: N/A	Lab File ID: P9792.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1208		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1208		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-113766-A-1 MSD	Analysis Batch: 280-428839	Instrument ID: VMS_P
Client Matrix: Water	Prep Batch: N/A	Lab File ID: P9793.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 09/07/2018 1226		Final Weight/Volume: 20 mL
Prep Date: 09/07/2018 1226		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Dibromomethane	102	102	65 - 135	1	26		
Dichlorodifluoromethane	78	80	43 - 142	2	30		
Ethylbenzene	114	113	65 - 135	0	20		
Iodomethane	107	112	65 - 142	4	25		
Methylene Chloride	103	103	54 - 141	0	26		
m-Xylene & p-Xylene	114	115	65 - 135	1	20		
o-Xylene	116	114	65 - 135	2	20		
Styrene	111	110	65 - 135	1	26		
Tetrachloroethene	112	114	65 - 135	2	20		
Toluene	108	107	65 - 135	0	20		
trans-1,2-Dichloroethene	115	115	65 - 135	0	24		
trans-1,3-Dichloropropene	93	91	65 - 135	1	26		
trans-1,4-Dichloro-2-butene	89	93	53 - 135	5	25		
Trichloroethene	108	106	65 - 135	1	20		
Trichlorofluoromethane	104	105	53 - 137	1	27		
Vinyl acetate	172	85	11 - 187	68	24		F2
Vinyl chloride	105	105	40 - 137	1	24		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	89	82	70 - 127
4-Bromofluorobenzene (Surr)	90	84	78 - 120
Dibromofluoromethane (Surr)	95	85	77 - 120
Toluene-d8 (Surr)	97	91	80 - 125



## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Method Blank - Batch: 160-387239**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 160-387239/9	Analysis Batch: 160-387239	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090518- 9.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/05/2018 1628	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Result	Qual	RL
Chloride	ND		0.20
Sulfate	ND		0.20

**Lab Control Sample - Batch: 160-387239**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: LCS 160-387239/10	Analysis Batch: 160-387239	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 090518- 10.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/05/2018 1643	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.00	1.94	97	90 - 110	
Sulfate	8.00	7.70	96	90 - 110	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Matrix Spike - Batch: 160-387239**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-113694-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/05/2018 1729  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 160-387239  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: CIC2500  
Lab File ID: 090518- 13.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume:  
Injection Volume: 50 uL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	11	4.00	15.3	110	90 - 110	

**Matrix Spike - Batch: 160-387239**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-113694-1DL  
Client Matrix: Water  
Dilution: 5.0  
Analysis Date: 09/06/2018 1347  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 160-387239  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L  
Run Type: DL

Instrument ID: CIC2500  
Lab File ID: 090518- 54.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume:  
Injection Volume: 50 uL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	14	10.0	24.1	101	90 - 110	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

## Duplicate - Batch: 160-387239

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-113694-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/05/2018 1714  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 160-387239  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: CIC2500  
Lab File ID: 090518- 12.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume:  
Injection Volume: 50 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Sulfate	11	11.4	4	20	

## Duplicate - Batch: 160-387239

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-113694-1DL  
Client Matrix: Water  
Dilution: 5.0  
Analysis Date: 09/06/2018 1332  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 160-387239  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L  
Run Type: DL

Instrument ID: CIC2500  
Lab File ID: 090518- 53.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume:  
Injection Volume: 50 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	14	14.0	0.7	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Method Blank - Batch: 160-391014**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 160-391014/9	Analysis Batch: 160-391014	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 092418- 9.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/24/2018 1618	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Result	Qual	RL
Chloride	ND		0.20
Sulfate	ND		0.20

**Lab Control Sample - Batch: 160-391014**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: LCS 160-391014/10	Analysis Batch: 160-391014	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 092418- 10.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/24/2018 1632	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.00	1.90	95	90 - 110	
Sulfate	8.00	7.52	94	90 - 110	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Matrix Spike - Batch: 160-391014**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-113694-3	Analysis Batch: 160-391014	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 092418- 37.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/24/2018 2301	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	2.0	4.00	5.86	95	90 - 110	

**Matrix Spike - Batch: 160-391014**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-113694-3DL	Analysis Batch: 160-391014	Instrument ID: CIC2500
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 092418- 38.d
Dilution: 20	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/24/2018 2316	Units: mg/L	Final Weight/Volume:
Prep Date: N/A	Run Type: DL	Injection Volume: 50 uL
Leach Date: N/A		

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	13	40.0	50.9	94	90 - 110	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

## Duplicate - Batch: 160-391014

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-113694-3  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 09/24/2018 2233  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 160-391014  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: CIC2500  
Lab File ID: 092418- 35.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume:  
Injection Volume: 50 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Sulfate	2.0	2.04	0.3	20	

## Duplicate - Batch: 160-391014

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-113694-3DL  
Client Matrix: Water  
Dilution: 20  
Analysis Date: 09/24/2018 2247  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 160-391014  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L  
Run Type: DL

Instrument ID: CIC2500  
Lab File ID: 092418- 36.d  
Initial Weight/Volume: 5 mL  
Final Weight/Volume:  
Injection Volume: 50 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	13	13.0	0.4	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Method Blank - Batch: 280-427823**

Lab Sample ID: MB 280-427823/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/30/2018 1729  
 Prep Date: 08/29/2018 1630  
 Leach Date: N/A

Analysis Batch: 280-428217  
 Prep Batch: 280-427823  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_051  
 Lab File ID: 51a083018A.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Calcium, Dissolved	ND		0.20
Magnesium, Dissolved	ND		0.10
Potassium, Dissolved	ND		2.0
Sodium, Dissolved	ND		1.0

**Lab Control Sample - Batch: 280-427823**

Lab Sample ID: LCS 280-427823/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/30/2018 1733  
 Prep Date: 08/29/2018 1630  
 Leach Date: N/A

Analysis Batch: 280-428217  
 Prep Batch: 280-427823  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_051  
 Lab File ID: 51a083018A.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Calcium, Dissolved	50.0	51.1	102	90 - 111	
Magnesium, Dissolved	50.0	49.3	99	90 - 113	
Potassium, Dissolved	50.0	50.5	101	89 - 114	
Sodium, Dissolved	50.0	55.0	110	90 - 115	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-427823**

**Method: 6010B  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-113695-D-4-B MS	Analysis Batch: 280-428217	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-427823	Lab File ID: 51a083018A.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 08/30/2018 1827		Final Weight/Volume: 50 mL
Prep Date: 08/29/2018 1630		
Leach Date: N/A		

MSD Lab Sample ID: 280-113695-D-4-C MSD	Analysis Batch: 280-428217	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-427823	Lab File ID: 51a083018A.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 08/30/2018 1830		Final Weight/Volume: 50 mL
Prep Date: 08/29/2018 1630		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Calcium, Dissolved	101	102	48 - 153	1	20		
Magnesium, Dissolved	98	99	62 - 146	0	20		
Potassium, Dissolved	99	99	76 - 132	0	20		
Sodium, Dissolved	101	101	70 - 203	0	20		



# Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Method Blank - Batch: 580-283400**

Lab Sample ID: MB 580-283400/22-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/07/2018 1152  
 Prep Date: 09/06/2018 1534  
 Leach Date: N/A

Analysis Batch: 580-283586  
 Prep Batch: 580-283400  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA044  
 Lab File ID: 065SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Iron, Dissolved	ND		0.036

**Lab Control Sample/  
 Lab Control Sample Duplicate Recovery Report - Batch: 580-283400**

LCS Lab Sample ID: LCS 580-283400/23-A  
 Client Matrix: Water  
 Dilution: 50  
 Analysis Date: 09/07/2018 1156  
 Prep Date: 09/06/2018 1534  
 Leach Date: N/A

Analysis Batch: 580-283586  
 Prep Batch: 580-283400  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA044  
 Lab File ID: 066SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-283400/24-A  
 Client Matrix: Water  
 Dilution: 50  
 Analysis Date: 09/07/2018 1200  
 Prep Date: 09/06/2018 1534  
 Leach Date: N/A

Analysis Batch: 580-283586  
 Prep Batch: 580-283400  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: SEA044  
 Lab File ID: 067SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Iron, Dissolved	104	103	80 - 120	1	20		

**Quality Control Results**

Client: SCS Engineers

Job Number: 280-113694-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-283400**

**Method: 6020**

MS Lab Sample ID: 580-80079-K-1-C MS	Analysis Batch: 580-283586	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-283400	Lab File ID: 071SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/07/2018 1217		Final Weight/Volume: 50 mL
Prep Date: 09/06/2018 1534		
Leach Date: N/A		

MSD Lab Sample ID: 580-80079-K-1-D MSD	Analysis Batch: 580-283586	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-283400	Lab File ID: 072SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/07/2018 1221		Final Weight/Volume: 50 mL
Prep Date: 09/06/2018 1534		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Iron, Dissolved	110	109	80 - 120	2	20		

**Duplicate - Batch: 580-283400**

**Method: 6020**

Lab Sample ID: 580-80079-K-1-B DU	Analysis Batch: 580-283586	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-283400	Lab File ID: 069SMPL.D
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/07/2018 1209	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 09/06/2018 1534		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Iron, Dissolved	ND	ND	NC	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Method Blank - Batch: 580-283658**

Lab Sample ID: MB 580-283658/22-A  
 Client Matrix: Water  
 Dilution: 5.0  
 Analysis Date: 09/11/2018 1257  
 Prep Date: 09/10/2018 1827  
 Leach Date: N/A

Analysis Batch: 580-283752  
 Prep Batch: 580-283658  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA044  
 Lab File ID: 071SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Iron, Dissolved	ND		0.18

**Lab Control Sample/  
 Lab Control Sample Duplicate Recovery Report - Batch: 580-283658**

LCS Lab Sample ID: LCS 580-283658/23-A  
 Client Matrix: Water  
 Dilution: 50  
 Analysis Date: 09/11/2018 1301  
 Prep Date: 09/10/2018 1827  
 Leach Date: N/A

Analysis Batch: 580-283752  
 Prep Batch: 580-283658  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA044  
 Lab File ID: 072SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Iron, Dissolved	91	92	80 - 120	1	20		

Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Iron, Dissolved	91	92	80 - 120	1	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-283658**

**Method: 6020**

MS Lab Sample ID: 580-80109-H-1-A MS	Analysis Batch: 580-283752	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-283658	Lab File ID: 078SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/11/2018 1327		Final Weight/Volume: 50 mL
Prep Date: 09/10/2018 1827		
Leach Date: N/A		

MSD Lab Sample ID: 580-80109-H-1-B MSD	Analysis Batch: 580-283752	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-283658	Lab File ID: 079SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/11/2018 1331		Final Weight/Volume: 50 mL
Prep Date: 09/10/2018 1827		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Iron, Dissolved	92	91	80 - 120	1	20		

**Duplicate - Batch: 580-283658**

**Method: 6020**

Lab Sample ID: 580-80109-J-1-C DU	Analysis Batch: 580-283752	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-283658	Lab File ID: 076SMPL.D
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/11/2018 1318	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 09/10/2018 1827		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Iron, Dissolved	ND	ND	NC	20	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Method Blank - Batch: 580-283841**

Lab Sample ID: MB 580-283841/22-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 09/13/2018 1030  
 Prep Date: 09/12/2018 1809  
 Leach Date: N/A

Analysis Batch: 580-283922  
 Prep Batch: 580-283841  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA044  
 Lab File ID: 031SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Iron, Dissolved	ND		0.036

**Lab Control Sample/  
 Lab Control Sample Duplicate Recovery Report - Batch: 580-283841**

LCS Lab Sample ID: LCS 580-283841/23-A  
 Client Matrix: Water  
 Dilution: 50  
 Analysis Date: 09/13/2018 1034  
 Prep Date: 09/12/2018 1809  
 Leach Date: N/A

Analysis Batch: 580-283922  
 Prep Batch: 580-283841  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA044  
 Lab File ID: 032SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-283841/24-A  
 Client Matrix: Water  
 Dilution: 50  
 Analysis Date: 09/13/2018 1038  
 Prep Date: 09/12/2018 1809  
 Leach Date: N/A

Analysis Batch: 580-283922  
 Prep Batch: 580-283841  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: SEA044  
 Lab File ID: 033SMPL.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Iron, Dissolved	91	93	80 - 120	2	20		

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-283841**

**Method: 6020  
Preparation: 3005A  
Total Recoverable**

MS Lab Sample ID: 580-80276-B-2-D MS	Analysis Batch: 580-283922	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-283841	Lab File ID: 038SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/13/2018 1100		Final Weight/Volume: 50 mL
Prep Date: 09/12/2018 1809		
Leach Date: N/A		

MSD Lab Sample ID: 580-80276-B-2-E MSD	Analysis Batch: 580-283922	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-283841	Lab File ID: 039SMPL.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/13/2018 1104		Final Weight/Volume: 50 mL
Prep Date: 09/12/2018 1809		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Iron, Dissolved	98	101	80 - 120	2	20		

**Duplicate - Batch: 580-283841**

**Method: 6020  
Preparation: 3005A  
Total Recoverable**

Lab Sample ID: 580-80276-B-2-C DU	Analysis Batch: 580-283922	Instrument ID: SEA044
Client Matrix: Water	Prep Batch: 580-283841	Lab File ID: 036SMPL.D
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 09/13/2018 1051	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 09/12/2018 1809		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Iron, Dissolved	ND	ND	NC	20	

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Method Blank - Batch: 280-427824**

Lab Sample ID: MB 280-427824/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/30/2018 0117  
 Prep Date: 08/29/2018 1630  
 Leach Date: N/A

Analysis Batch: 280-428070  
 Prep Batch: 280-427824  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_078  
 Lab File ID: 191\_BLK.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Manganese, Dissolved	ND		0.0010

**Lab Control Sample - Batch: 280-427824**

Lab Sample ID: LCS 280-427824/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/30/2018 0120  
 Prep Date: 08/29/2018 1630  
 Leach Date: N/A

Analysis Batch: 280-428070  
 Prep Batch: 280-427824  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_078  
 Lab File ID: 192\_LCS.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Manganese, Dissolved	0.0400	0.0388	97	85 - 117	

**Matrix Spike/  
 Matrix Spike Duplicate Recovery Report - Batch: 280-427824**

MS Lab Sample ID: 280-113698-L-1-C MS  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/30/2018 0158  
 Prep Date: 08/29/2018 1630  
 Leach Date: N/A

Analysis Batch: 280-428070  
 Prep Batch: 280-427824  
 Leach Batch: N/A

**Method: 6020  
 Preparation: 3005A  
 Dissolved**

Instrument ID: MT\_078  
 Lab File ID: 203SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-113698-L-1-D MSD  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/30/2018 0201  
 Prep Date: 08/29/2018 1630  
 Leach Date: N/A

Analysis Batch: 280-428070  
 Prep Batch: 280-427824  
 Leach Batch: N/A

Instrument ID: MT\_078  
 Lab File ID: 204SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Manganese, Dissolved	465	66	85 - 117	3	20	4	4

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Method Blank - Batch: 280-427779**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-427779/6	Analysis Batch: 280-427779	Instrument ID: WC_IonChrom11
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 0006.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/28/2018 1503	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Nitrate as N	ND		0.20

**Method Reporting Limit Check - Batch: 280-427779**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-427779/3	Analysis Batch: 280-427779	Instrument ID: WC_IonChrom11
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 0003.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/28/2018 1345	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	0.200	ND	148	50 - 150	

**Lab Control Sample/**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-427779**

**Method: 300.0**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-427779/4	Analysis Batch: 280-427779	Instrument ID: WC_IonChrom11
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 0004.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/28/2018 1411	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		10 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-427779/5	Analysis Batch: 280-427779	Instrument ID: WC_IonChrom11
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 0005.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 08/28/2018 1437	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		10 uL
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Nitrate as N	97	98	90 - 110	0	10		



## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-427779**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-113694-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/28/2018 1713  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-427779  
 Prep Batch: N/A  
 Leach Batch: N/A

Instrument ID: WC\_IonChrom11  
 Lab File ID: 0009.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 10 uL

MSD Lab Sample ID: 280-113694-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/28/2018 1735  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-427779  
 Prep Batch: N/A  
 Leach Batch: N/A

Instrument ID: WC\_IonChrom11  
 Lab File ID: 0010.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 10 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate as N	93	96	80 - 120	2	20		

**Duplicate - Batch: 280-427779**

**Method: 300.0  
Preparation: N/A**

Lab Sample ID: 280-113694-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/28/2018 1645  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-427779  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: WC\_IonChrom11  
 Lab File ID: 0008.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 10 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate as N	0.67	0.677	0.7	15	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Method Blank - Batch: 280-428756**

**Method: 350.1  
Preparation: N/A**

Lab Sample ID: MB 280-428756/19	Analysis Batch: 280-428756	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\090618.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 09/06/2018 1052	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Ammonia	ND		0.10

**Lab Control Sample - Batch: 280-428756**

**Method: 350.1  
Preparation: N/A**

Lab Sample ID: LCS 280-428756/18	Analysis Batch: 280-428756	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\090618.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 09/06/2018 1050	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	2.50	2.52	101	90 - 110	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428756**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-113745-C-1 MS	Analysis Batch: 280-428756	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\090618.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 09/06/2018 1056		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-113745-C-1 MSD	Analysis Batch: 280-428756	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\090618.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 09/06/2018 1058		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia	97	94	90 - 110	3	10		

# Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

## Method Blank - Batch: 280-428436

Method: SM 2320B

Preparation: N/A

Lab Sample ID: MB 280-428436/5  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 08/31/2018 1719  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-428436  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: WC\_AT2  
Lab File ID: alk 083118.txt  
Initial Weight/Volume:  
Final Weight/Volume:

Analyte	Result	Qual	RL
Alkalinity	ND		5.0

## Method Blank - Batch: 280-428436

Method: SM 2320B

Preparation: N/A

Lab Sample ID: MB 280-428436/31  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 08/31/2018 2033  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-428436  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: WC\_AT2  
Lab File ID: alk 083118.txt  
Initial Weight/Volume:  
Final Weight/Volume:

Analyte	Result	Qual	RL
Alkalinity	ND		5.0

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Lab Control Sample - Batch: 280-428436**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: LCS 280-428436/4  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/31/2018 1712  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-428436  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: WC\_AT2  
 Lab File ID: alk 083118.txt  
 Initial Weight/Volume:  
 Final Weight/Volume:

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	200	191	95	90 - 110	

**Lab Control Sample - Batch: 280-428436**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: LCS 280-428436/30  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/31/2018 2025  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-428436  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: WC\_AT2  
 Lab File ID: alk 083118.txt  
 Initial Weight/Volume:  
 Final Weight/Volume:

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	200	191	95	90 - 110	

**Duplicate - Batch: 280-428436**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: 280-113694-4  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 08/31/2018 2047  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-428436  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: WC\_AT2  
 Lab File ID: alk 083118.txt  
 Initial Weight/Volume:  
 Final Weight/Volume:

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity	98	98.2	0.2	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Method Blank - Batch: 280-428302**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: MB 280-428302/1	Analysis Batch: 280-428302	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 08/31/2018 1637	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Dissolved Solids	ND		10

**Lab Control Sample - Batch: 280-428302**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: LCS 280-428302/2	Analysis Batch: 280-428302	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 08/31/2018 1637	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Dissolved Solids	500	490	98	86 - 110	

**Duplicate - Batch: 280-428302**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: 280-113694-1	Analysis Batch: 280-428302	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 08/31/2018 1637	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Dissolved Solids	170	156	6	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Method Blank - Batch: 280-427868**

**Method: SM 2540D**  
**Preparation: N/A**

Lab Sample ID: MB 280-427868/1	Analysis Batch: 280-427868	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 08/28/2018 1723	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Suspended Solids	ND		4.0

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-427868**

**Method: SM 2540D**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-427868/2	Analysis Batch: 280-427868	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 08/28/2018 1723	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-427868/3	Analysis Batch: 280-427868	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 08/28/2018 1723	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Total Suspended Solids	87	100	86 - 114	14	20		

**Duplicate - Batch: 280-427868**

**Method: SM 2540D**  
**Preparation: N/A**

Lab Sample ID: 280-113655-A-1 DU	Analysis Batch: 280-427868	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 08/28/2018 1723	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Suspended Solids	4.0	ND	NC	10	

## Quality Control Results

Client: SCS Engineers

Job Number: 280-113694-1

**Method Blank - Batch: 280-428113**

**Method: SM 5310B  
Preparation: N/A**

Lab Sample ID: MB 280-428113/4	Analysis Batch: 280-428113	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 083018.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/29/2018 1319	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL
Total Organic Carbon - Quad	ND		1.0

**Lab Control Sample - Batch: 280-428113**

**Method: SM 5310B  
Preparation: N/A**

Lab Sample ID: LCS 280-428113/3	Analysis Batch: 280-428113	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 083018.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/29/2018 1302	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Quad	25.0	25.2	101	88 - 112	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-428113**

**Method: SM 5310B  
Preparation: N/A**

MS Lab Sample ID: 280-113694-3	Analysis Batch: 280-428113	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 083018.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/29/2018 1718		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-113694-3	Analysis Batch: 280-428113	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 083018.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 08/29/2018 1733		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Total Organic Carbon - Quad	100	100	88 - 112	0	15		

Chain of Custody Record

<b>Client Information</b> Client Contact: Sam Graber Company: SCS Engineers Address: 2405 140th Avenue NE Suite 107 Bellevue State, Zip: WA, 98005-1877 Phone: 425-766-3362 Email: SGrabr@scsengineers.com Project Name: Hidden Valley Landfill Site:		Lab PM: Sara, Betsy A E-Mail: betsy.sara@testamericainc.com Camer Tracking No(s): 44456510 1109 44456530 1110 Job #: 0421802-03	
Due Date Requested: Standard TAT Requested (days): PO #: Purchase Order not required WO #: Project #: 28003580-Quarterly Groundwater Wells SSO#:		Analysis Requested Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) Dissolved Metals (6010B/6020) Dissolved Iron (TA Seattle) TDS/Alk/NO3(C) CrSO4 (TA St. Louis) Ammonia/TOC TSS	
Sample Identification HVL-082718-01 HVL-082718-02 HVL-082718-03 HVL-082718-04 HVL-082718-05 HVL-082718-06		Special Instructions/Note: Short Hold: NO3(C)	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/OC Requirements:	
Empty Kit Relinquished by:		Method of Shipment:	
Relinquished by:		Date/Time: 8/27/18 1600	
Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:	
Custody Seal Intact: Yes <input type="checkbox"/> No <input type="checkbox"/>		Custody Seal No: 552596, 552597	
Cooler Temperature(s) °C and Other Remarks: 4.4, 3.1, 1.4 & CF + 0.5 Trans for by Agl 8/28/18		Company: SCS Date/Time: 8/27/18 0854 Company: TADEN Date/Time: Company:	





# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Sampler: Sara, Betsy A	Lab PM: Sara, Betsy A	Carrier Tracking No(s):	COC No: 280-452598-1					
Shipping/Receiving		Phone:	E-Mail: betsy.sara@testamericainc.com	State of Origin: Washington	Page: Page 1 of 1					
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Washington		Job #: 280-113694-1	Preservation Codes:					
Address: 13715 Rider Trail North,		Due Date Requested: 9/17/2018	Analysis Requested							
City: Earth City		TAT Requested (days):	Total Number of Containers							
State, Zip: MO, 63045		PO #:	Perform MS/MSD (Yes or No)							
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		WO #:	Field Filtered Sample (Yes or No)							
Email:		Project #:	500 ORGFM_350/ (MOD) Sulfate/Chloride (TA ST)							
Project Name: Hidden Valley LF		SSOW#:	300 ORGFM_350/ (MOD) Sulfate/Chloride (TA ST)							
Site:			Louis							
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Soil, Other)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	500 ORGFM_350/ (MOD) Sulfate/Chloride (TA ST)	Total Number of Containers	Special Instructions/Note:
HVL-082718-01 (280-113694-1)	8/27/18	10:10 Pacific	Water	Water		X			1	
HVL-082718-02 (280-113694-2)	8/27/18	11:13 Pacific	Water	Water		X			1	
HVL-082718-03 (280-113694-3)	8/27/18	12:18 Pacific	Water	Water		X			1	
HVL-082718-04 (280-113694-4)	8/27/18	13:20 Pacific	Water	Water		X			1	
HVL-082718-05 (280-113694-5)	8/27/18	14:08 Pacific	Water	Water		X			1	
HVL-082718-06 (280-113694-6)	8/27/18	15:02 Pacific	Water	Water		X			1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_  
 Primary Deliverable Rank: 2  
 Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished by: *Diana Castro* Date: 8-28-18 15:15 Company: *HALD*  
 Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Custody Seals Intact: \_\_\_\_\_ Custody Seal No.: \_\_\_\_\_  
 Δ Yes Δ No

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months  
 Special Instructions/OC Requirements: \_\_\_\_\_  
 Method of Shipment: \_\_\_\_\_  
 Received by: *Jace Dupont* Date/Time: 08/30/18 09:30 Company: *TA STL*  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Cooler Temperature(s) °C and Other Remarks: \_\_\_\_\_

# Chain of Custody Record

Client Information (Sub Contract Lab)				Sampler:		Lab PM:		Carrier Tracking No(s):		COC No:	
Company: TestAmerica Laboratories, Inc.				Sara, Betsy A		Sara, Betsy A		280-452598, 1		280-452598, 1	
Address: 13715 Rider Trail North,				Phone:		E-Mail:		State of Origin:		Page:	
City: Earth City				314-298-8566(Tel) 314-298-8757(Fax)		betsy.sara@testamericainc.com		Washington		Page 1 of 1	
State, Zip: MO, 63045				WO #:		Accreditations Required (See note):		Job #:		280-113694-1	
Project Name: Hidden Valley LF				Project #: 28003580		State Program - Washington		Preservation Codes:		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Site:				SSOW#:				Analysis Requested		Other:	
Sample ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Solid, Or-anal, Other)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	306 ORGM_28D (MOD) Sulfate/Chloride (A St. Louis)	Total Number of Containers	Special Instructions/Note:		
HVL-082718-03 (280-113694-3)	8/27/18	12:18 Pacific	Water					1			
								1			
								1			
								1			
								1			
								1			

**Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)**  
 Return To Client     Disposal By Lab     Archive For \_\_\_\_\_ Months  
 Special Instructions/QC Requirements:

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify)    Primary Deliverable Rank: 2  
 Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Relinquished by: *Diana Castro* Date: *9-12-18* Company: *THL Co*  
 Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Company: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Company: \_\_\_\_\_  
 Custody Seal No.: \_\_\_\_\_ Custody Seal Intact:  Yes  No  
 Cooler Temperature(s) °C and Other Remarks:

Received by: *Michael Heun* Date/Time: *9.13.18 0915* Company: *THL Co*  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

**TestAmerica Denver**

4955 Yarrow Street  
 Arvada, CO 80002  
 Phone (303) 736-0100 Fax (303) 431-7171

**Chain of Custody Record**



**TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab PM: Sara, Betsy A	Carrier Tracking No(s):	COC No: 280-452597.1
Client Contact: Shipping/Receiving		Phone:	E-Mail: betsy.sara@testamericainc.com	State of Origin: Washington	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.			Accreditations Required (See note): State Program - Washington		Job #: 280-113694-1
Address: 5755 8th Street East, City: Tacoma		Due Date Requested: 9/14/2018	<b>Analysis Requested</b>		
State, Zip: WA, 98424		TAT Requested (days):			
Phone: 253-922-2310(Tel) 253-922-5047(Fax)		PO #:			
Email:		WO #:			
Project Name: Hidden Valley LF		Project #: 28003580	<b>Preservation Codes:</b>		
Site:		SSOW#:			
			<b>Other:</b>		
			<b>Field Filtered Sample (Yes or No)</b>		
			<b>Perform MS/MSD (Yes or No)</b>		
			<b>6020 FIELD_FLTRD (MOD) Iron</b>		
			<b>Total Number of Containers</b>		
			<b>Special Instructions/Note:</b>		
<b>Sample Identification - Client ID (Lab ID)</b>		<b>Sample Date</b>	<b>Sample Time</b>	<b>Sample Type (C=comp, G=grab)</b>	<b>Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air)</b>
					<b>Preservation Code</b>
HVL-082718-01 (280-113694-1)		8/27/18	10:10 Pacific	Water	
HVL-082718-02 (280-113694-2)		8/27/18	11:13 Pacific	Water	
HVL-082718-03 (280-113694-3)		8/27/18	12:18 Pacific	Water	
HVL-082718-04 (280-113694-4)		8/27/18	13:20 Pacific	Water	
HVL-082718-05 (280-113694-5)		8/27/18	14:08 Pacific	Water	
HVL-082718-06 (280-113694-6)		8/27/18	15:02 Pacific	Water	
<p>Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte &amp; accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.</p>					
<b>Possible Hazard Identification</b>			<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>		
Unconfirmed			<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		
Deliverable Requested: I, II, III, IV, Other (specify)		Primary Deliverable Rank: 2		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:	
Relinquished by: <i>Laura Castro</i>		Date/Time: <i>8-28-18 1550</i>	Company: <i>TALD</i>	Received by: <i>Kenny [Signature]</i>	Date/Time: <i>8-29-18 0950</i>
Relinquished by:		Date/Time:	Company:	Received by:	Date/Time:
Relinquished by:		Date/Time:	Company:	Received by:	Date/Time:
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: <i>A2=0.4/0.3</i>			09/26/2018

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-113694-1

**Login Number: 113694**  
**List Number: 1**  
**Creator: Lujan, Jacob P**

**List Source: TestAmerica Denver**

<b>Question</b>	<b>Answer</b>	<b>Comment</b>
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-113694-1

**Login Number: 113694**  
**List Number: 2**  
**Creator: Hobbs, Kenneth F**

**List Source: TestAmerica Seattle**  
**List Creation: 08/29/18 03:29 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	A2=0.4/0.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 280-113694-1

**Login Number: 113694**  
**List Number: 3**  
**Creator: Hellm, Michael**

**List Source: TestAmerica St. Louis**  
**List Creation: 08/30/18 12:37 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	