EMERALD®
A Safety-Kleen® Company

April 14, 2022

Supervisor, Hazardous Waste and Toxics Reduction
Washington State Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775

RE: 2021 Annual Groundwater Monitoring Report, Emerald Services, Inc., Tacoma, Washington

Dear Supervisor:

Enclosed please find the 2021 Annual Groundwater Monitoring Report for Emerald Services, Inc. (Emerald) located at 1825 Alexander Avenue in Tacoma, Washington. The Emerald site operates as a full-service recycling and waste management facility. In 2016, Emerald was acquired by Safety-Kleen Systems, Inc. (S-K), a wholly owned subsidiary of Clean Harbors. As part of that acquisition, groundwater monitoring activities at the Emerald facility became the responsibility of the S-K Remediation Group.

This report is being submitted in accordance with the April 2010 Permit for Storage of Dangerous Waste (Permit) (Permit No. WAD 981 769 110) and the April 27, 2018 Groundwater Sampling and Analysis Work Plan. The report summarizes monitoring well inspection and groundwater monitoring activities completed from January 2021 through December 2021.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

S-K requested assistance from the Washington State Department of Ecology (Ecology) to discontinue groundwater monitoring and reporting in the 2019 Annual Report dated April 14, 2020. S-K continues to seek assistance in this matter. Monitoring of the Emerald site has been required by the Permit due to ongoing area-wide contamination issues. Groundwater results for the Emerald site have been consistent since site acquisition (2016) by S-K and Clean Harbors, and for several years prior to that. The exceedances of Model Toxics Control Act (MTCA) Cleanup Levels at the Emerald site are primarily limited to total petroleum hydrocarbons (TPH) in the northwestern wells downgradient of an adjacent

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property, as well as arsenic that is attributable to the Asarco smelter site. The results indicate that Emerald has not contributed to the area-wide groundwater contamination. Therefore, Emerald has initiated discussions with Ecology proposing that Permit-required groundwater monitoring and reporting be discontinued. Additionally, Emerald submitted a draft covenant package to Ecology on November 11, 2021 to address remaining groundwater impacts at the site. Emerald will continue discussions with Ecology during the ongoing permit renewal process.

S-K appreciates Ecology's assistance with completion of this project. Should you have any questions or require additional information, please do not hesitate to contact me at (307) 742-6150.

Sincerely,

Brian Culnan, P.G.
Director – Facility Closures & Corrective Action

46Y-001-006

Attachments

cc: Katie Mitchell, Trihydro
Sheila Smith, Emerald (Electronic Copy)
Paul Davis, Emerald (1 Hard Copy)
Kaia Peterson, Ecology (2 Hard copies)
Greg Fink, PSC (1 Hard copy)
Bill Sullivan, Puyallup Indian Tribe (1 Hard copy)

2021 ANNUAL GROUNDWATER MONITORING REPORT

EMERALD SERVICES INC.

TACOMA, WASHINGTON

April 14, 2022

Project #: 46Y-001-006

SUBMITTED BY: Trihydro Corporation

1252 Commerce Drive, Laramie, WY 82070

PREPARED FOR: Safety-Kleen Systems, Inc.

1050 North 3rd Street, Suite M, Laramie, WY 82079

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1.0 INTRODUCTION

Emerald Services, Inc. (Emerald) operates as a full-service recycling and waste management facility at 1825 Alexander Avenue, Tacoma, Washington (Figures 1-1 and 1-2). This report has been prepared in accordance with the requirements under Section 2.2.1 of the Permit for Storage of Dangerous Waste (Permit) (Permit No. WAD 981 769 110). The Washington State Department of Ecology (Ecology) issued a Dangerous Waste Storage Permit Modification on December 13, 2013. This annual groundwater report summarizes four monitoring well inspection and maintenance events (March 2021, June 2021, September 2021, and December 2021) and two fluid level gauging and groundwater sampling events (June 2021 and December 2021). Section 2 of the report presents a summary of quarterly well maintenance activities, and semiannual groundwater sampling procedures and results are included in Section 3. Future activities are briefly discussed in Section 4. A reference section is included as Section 5.

2.0 2021 QUARTERLY MONITORING AND WELL INSPECTIONS

In accordance with the updated April 27, 2018 Groundwater Monitoring Sampling and Analysis Plan (SAP), well inspection and maintenance activities were conducted on a quarterly basis during the months of March 2021, June 2021, September 2021, and December 2021 (Trihydro 2018). The 2021 quarterly well inspection forms are included as Appendix A-1. Inspection and maintenance activities included the following for each well:

1. Evaluated access to monitoring wells.
2. Inspected well protective casing, cover, and bolts.
3. Determined whether wells were clearly labeled.
4. Evaluated padlock operation and condition.
5. Inspected J-plug cap operation and condition.
6. Inspected PVC well casing for cracks or signs of surface leakage such as staining inside of the well casing.
7. Inspected elevation measuring point marking.

Monitoring wells were in generally good condition during 2021. During the March 2021 inspection the gasket was replaced on MW-4.

3.0 2021 GROUNDWATER MONITORING

Fluid level gauging and groundwater sampling activities were conducted in June 2021 and December 2021. Collection of groundwater samples from the onsite monitoring well network (MW-1, MW-2R, MW-3R, and MW-4) took place during the June 2021 monitoring event. Groundwater samples were collected from monitoring wells MW-3R and MW-4 in December 2021.

3.1 GROUNDWATER MONITORING PROCEDURES

The 2021 semiannual groundwater monitoring activities included fluid level gauging and collection of groundwater samples. Field activities were completed in accordance with the April 2018 SAP. Specific procedures are discussed below.

3.1.1 FLUID LEVEL GAUGING PROCEDURES

Fluid levels were gauged in onsite monitoring wells MW-1, MW-2R, MW-3R, and MW-4 on June 2, 2021 and December 21, 2021, using an oil/water interface probe. Fluid levels were collected within one hour of each other and prior to groundwater purging and sampling activities, with the exception of MW-2R during the June 2021 event. During the June 2021 event, monitoring well MW-2R was not immediately accessible (parked vehicle) and was gauged within two hours of all other wells, just outside of the one hour period. Light non-aqueous phase liquid (LNAPL) was not detected during either gauging event. Fluid levels and total depths were measured to an accuracy of 0.01 foot. Portions of the fluid level probe and cable that may have potentially come into contact with the water and/or well casing were decontaminated using a detergent/water solution and rinsed with distilled water prior to use at each well. A summary of well construction details is shown on Table 4-1. Fluid level measurements for each well were recorded on the field forms included as Appendix A-1 and are summarized on Table 4-2.

3.1.2 GROUNDWATER SAMPLING PROCEDURES

Groundwater sampling was conducted on the entire monitoring network during the June 2021 event. In accordance with the SAP, monitoring wells MW-3R and MW-4 were sampled during the December 2021 event due to June 2021 exceedances of total petroleum hydrocarbons (TPH). A peristaltic pump was used to purge and collect samples from the wells. New, dedicated tubing was lowered into each well with the intake located at the approximate center of the screened interval. The tubing was discarded after use at each well. Gloves were changed frequently, including between wells, following purging, before sample collection, and whenever the potential for cross-contamination was suspected. The flow rate of the pump was adjusted using a pump controller to minimize drawdown to the extent practical. Fluid levels were measured before purging and during sampling.

Field parameters consisting of pH, specific conductance, temperature, dissolved oxygen (DO), turbidity, and oxidation/reduction potential (ORP) were measured with a field meter and recorded on field forms, included as Appendix A and summarized on Table 4-3. Measurements were recorded on a routine basis (approximately every 3 to 5 minutes) to document stabilization of field parameters. After field parameters stabilized to within 10 percent between three successive readings, samples were collected directly from the dedicated tubing, without disturbance to flow rate, and placed into prepared/pre-preserved sample containers provided by the analytical laboratory. Purged groundwater was containerized and was emptied into the onsite water treatment system.

3.1.3 SAMPLE HANDLING PROCEDURES

Samples were labeled and placed on ice in coolers. A complete chain-of-custody/sample analysis request (COC/SAR) form was placed in a zip-lock type bag and placed in the coolers prior to delivery during both 2021 monitoring events. Completed COC/SAR forms are included in Appendix B. The samples were hand delivered to TestAmerica in Tacoma, Washington.

During the 2021 events, groundwater samples were submitted for analysis of volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method SW8260D, arsenic and lead (totals) by USEPA Method 6020B, and total petroleum hydrocarbons diesel range organics (TPH-DRO) plus total petroleum hydrocarbons oil range organics (TPH-ORO) by Washington Ecology Method NW-TPHDx.

3.1.4 QUALITY ASSURANCE/QUALITY CONTROL

Quality control samples were submitted per the SAP. During both events, one duplicate (ERI-MW-50, ie. MW-4 Dup) was collected from monitoring well MW-4. The duplicate sample was analyzed for the same parameters as the parent sample. Additional quality assurance/quality control sampling included a trip blank.

3.2 EVALUATION OF GROUNDWATER MONITORING RESULTS

Potentiometric data and groundwater quality results of the 2021 semiannual monitoring events are summarized below.

3.2.1 POTENTIOMETRIC DATA

A summary of the 2021 fluid level measurements is included as Table 4-2. The June 2021 and December 2021 groundwater elevations were used to prepare potentiometric surface maps included as Figures 4-1 and 4-2, respectively. LNAPL was not present in any of the site monitoring wells. As indicated on Figures 4-1 and 4-2, the groundwater flow direction is predominately to the southwest. The approximate hydraulic gradient across the site was

0.002 feet/feet (ft/ft) during both the June 2021 and December 2021 monitoring events. Groundwater elevations during the December 2021 event were generally higher but generally consistent compared to the June 2021 elevations, apart from MW-2R. Groundwater ranged from 2.65 feet below measuring point (ft-bmp, MW-2R) to 5.31 ft-bmp (MW-3R) in June 2021. During the December 2021 event, groundwater ranged from 1.39 ft-bmp (MW-2R) to 3.07 ft-bmp (MW-3R).

In accordance with the Permit, hydrographs of each monitoring well and a chart of daily precipitation are included in Figure 4-3. The daily precipitation data was collected from the Western Narrows Airport taken from the Midwestern Regional Climate Center website (MRCC 2021).

3.2.2 GROUNDWATER QUALITY RESULTS

Groundwater samples were submitted for analysis of VOCs, TPH-DRO, TPH-ORO, and total arsenic and total lead. Analytical data from the June 2021 and December 2021 monitoring events are presented on Tables 4-4 through 4-6. Detected constituent concentrations have been evaluated relative to Model Toxics Control Act (MTCA) Cleanup Levels.

Two constituents (TPH-DRO and TPH-ORO) were detected at concentrations exceeding MTCA Cleanup Levels in the groundwater samples collected in June 2021 (Tables 4-4 through 4-6). The June 2021 results are summarized below:

1. TPH-DRO was detected in samples MW-3R (0.8 milligram per liter [mg/L]), MW-4 (1.6 mg/L), and MW-4 Dup (1.7 mg/L) at a concentration exceeding the MTCA Method A Cleanup Level (0.5 mg/L).
2. TPH-ORO was detected in samples MW-3R (0.95 mg/L), MW-4 (0.57 mg/L), and MW-4 Dup (0.6 mg/L) at a concentration exceeding the MTCA Method A Cleanup Level (0.5 mg/L).
3. Remaining constituents in the June 2021 groundwater samples were either below the laboratory detection limit or respective MTCA Cleanup Levels.

Three constituents (TPH-DRO, TPH-ORO, and arsenic) were detected at concentrations exceeding MTCA Cleanup Levels in the groundwater samples collected in December 2021 (Tables 4-4 through 4-6). The December 2021 results are summarized below:

1. TPH-DRO was detected in samples MW-3R (0.77 mg/L), MW-4 (1.2 mg/L), and MW-4 Dup (1.1 mg/L) at a concentration exceeding the MTCA Method A Cleanup Level (0.5 mg/L).
2. TPH-ORO was detected in samples MW-3R (1.2 mg/L), MW-4 (0.59 mg/L), and MW-4 Dup (0.56 mg/L) at a concentration exceeding the MTCA Method A Cleanup Level (0.5 mg/L).
3. Arsenic was detected in the sample collected from monitoring well MW-3R (9.2 micrograms per liter [µg/L]) at a concentration exceeding the MTCA Method A Cleanup Level (5 µg/L).
4. All other constituents in the December 2021 groundwater samples were either below the laboratory detection limit or respective MTCA Cleanup Levels.

The exceedances detected during the 2021 sampling events are generally consistent with historical results. TPH and arsenic exceedances are limited to samples collected from two wells on the north/northwestern part of the facility. Further, arsenic concentrations have previously been attributed to the area wide arsenic contamination resulting from the Asarco Smelter Plume. Additionally, arsenic concentrations may be influenced by impacts from the former Kaiser Facility.

3.2.3 DATA USABILITY

A Tier II Data Validation was performed on the analytical data for the June and December 2021 monitoring events. Tier II Data Validation Reports are presented in Appendix C, providing a detailed assessment of the precision, accuracy, method compliance, and completeness of the data packages submitted by the analytical laboratory.

Select data for samples collected in June 2021 and December 2021 events were qualified as estimated for the difference between the initial relative response factor (RRF) and the opening continuing calibration verification (CCV) relative response factor (RRF) being outside the acceptable limits. Remaining data that were not qualified met all site data quality objectives. The complete data package for these samples consisted of 320 and 192 data points for the June 2021 and December 2021 events, respectively, excluding blank samples. The completeness measure for the June and December 2021 data packages were calculated to be 100.00%. Complete details of data validation for this package can be found in the Tier II Data Validation Report Summary presented in Appendix C.

4.0 FUTURE ACTIVITIES

In accordance with the site Permit and SAP, Emerald is required to conduct quarterly well inspections and maintenance. The first quarter 2022 well inspection and maintenance event was performed on March 7, 2022. Groundwater sampling and fluid level monitoring are scheduled to be conducted semiannually during the second and fourth quarter of 2022, with well inspection and maintenance scheduled for the third quarter of 2022.

Monitoring of the Emerald site has been required by permit due to ongoing area-wide contamination issues. Groundwater results for the Emerald site have been consistent since site acquisition (2016) by Safety-Kleen (S-K), and for several years prior to that. The exceedances of MTCA Cleanup Levels at the Emerald site are primarily limited to TPH in the northwestern wells downgradient of an adjacent property, as well as arsenic that is attributable to the Asarco smelter site. The results indicate that Emerald has not contributed to the area-wide groundwater contamination. Therefore, Emerald has initiated discussions with Ecology proposing that Permit-required groundwater monitoring and reporting be discontinued. Additionally, Emerald submitted a draft covenant package to Ecology on November 11, 2021 to address remaining groundwater impacts at the Site. Emerald will continue discussions with Ecology during the ongoing permit renewal process.

Emerald also understands that Ecology has developed an area-wide order to address ongoing corrective action of regional impacts. Based on recent discussions with Ecology, Emerald understands that future monitoring may ultimately be the responsibility of the area wide group/order. Emerald maintains there are inherent risks and undue costs associated with having groundwater monitoring wells at an industrial site like Emerald's that may not outweigh the benefit of accumulating additional groundwater monitoring data at this point in time. Therefore, Emerald has proposed that the wells be plugged and abandoned.

5.0 REFERENCES

Department of Ecology. 2010. Permit for the Storage and Treatment of Dangerous Waste (WAD 981 769 110). April 2010.

Midwestern Regional Climate Center (MRCC). 2021. MRCC Application Tools Environment. Available from: http://mrcc.isws.illinois.edu/CLIMATE/.

Safety-Kleen. 2018. Revised Work Plan for Monitoring Well Decommissioning and Replacement, Emerald Services, Inc., Tacoma, Washington. March 27, 2018.

Trihydro. 2018. Groundwater Monitoring and Sampling Analysis Work Plan, Emerald Services, Inc., Tacoma, Washington. April 27, 2018.

TABLES

TABLE 4-1. MONITORING WELL CONSTRUCTION DETAIL SUMMARY
EMERALD SERVICES, INC., 1825 ALEXANDER AVENUE, TACOMA, WASHINGTON

Well	Measuring Point Elevation (ft-msl)	Depth to Well Screen (ft-bgs)	Screen Length (ft)	Well Diameter (inches)	Well Casing Material	Total Depth (ft-bgs)
MW-1	14.07	5	2.75	2	PVC	7.75
MW-2R	13.79	5.45	2.75	2	PVC	8.20
MW-3R	14.28	6	2	2	PVC	8
MW-4	14.11	4	5	2	PVC	9

Notes:
ft-msl - feet above mean sea level (NAVD 88)
ft-bgs - feet below ground surface
ft - feet
Total depths taken from as-built diagrams provided by Ecology (MW1 and MW-3R), a Trihydro boring log (MW-2R), and an Environmental Partners boring log (MW-4)

TABLE 4-2. FLUID LEVEL ELEVATION DATA SUMMARY
EMERALD SERVICES, INC., 1825 ALEXANDER AVENUE, TACOMA, WASHINGTON

Location	Date/Time Measured	Measuring Point Elevation	Ground Surface Elevation	Depth to Water	Water Elevation	Depth Gauged
		(ft-msl)	(ft-msl)	(ft-bmp)	(ft-msl)	(ft-bmp)
Second Quarter						
MW-1	6/2/21 11:00	14.07	14.46	3.03	11.04	7.1
MW-2R	6/2/21 12:59	13.79	14.23	2.65	11.14	7.93
MW-3R	6/2/21 11:18	14.28	14.61	5.31	8.97	7.6
MW-4	6/2/21 11:10	14.11	14.4	3.23	10.88	9.25
Fourth Quarter						
MW-1	12/21/21 9:36	14.07	14.46	1.39	12.68	7.1
MW-2R	12/21/21 9:25	13.79	14.23	1.45	12.34	7.85
MW-3R	12/21/21 10:10	14.28	14.61	3.07	11.21	7.6
MW-4	12/21/21 9:44	14.11	14.4	1.42	12.69	9.18

Notes:
ft-msl - feet above mean sea level
ft-bmp - feet below measuring point
ft-bgs - feet below ground surface

TABLE 4-3. FIELD PARAMETER DATA SUMMARY
EMERALD SERVICES, INC., 1825 ALEXANDER AVENUE, TACOMA, WASHINGTON

Location	Date	Temp. (°C)	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Comments
Second Quarter								
MW-1	6/2/21	15.55	0.491	0.16	6.87	17	4.0	clear
MW-2R	6/2/21	15.54	0.259	0.00	6.31	-1	0.4	clear
MW-3R	6/2/21	17.90	1.23	6.31	7.05	-115	--	slightly yellow
MW-4	6/2/21	18.60	0.691	1.09	6.87	-86	0.0	clear
Fourth Quarter								
MW-3R	12/21/21	13.38	1.37	0.00	6.49	-35	0.0	clear
MW-4	12/21/21	10.78	0.751	0.00	6.61	-39	0.0	clear

Notes:
°C - Degrees Celsius
mS/cm - millisiemens per centimeter
mg/L - milligrams per liter
S.U. - Standard Units
mV - millivolts
NTU - Nephelometric Turbidity Unit
-- - Not available

TABLE 4-4. GROUNDWATER QUALITY SUMMARY – VOLATILE ORGANIC COMPOUNDS
EMERALD SERVICES, INC., 1825 ALEXANDER AVENUE, TACOMA, WASHINGTON

Location ID	Date Sampled	Benzene (ug/L)	Bromobenzene (ug/L)	Bromochloro-methane (ug/L)	Bromodichloro-methane (ug/L)	Bromoform (ug/L)	Bromomethane (ug/L)	n-Butylbenzene (ug/L)	sec-Butylbenzene (ug/L)	tert-Butylbenzene (ug/L)	Carbon tetrachloride (ug/L)	Chlorobenzene (ug/L)
MW-1	06/02/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1) UJ	ND(1)	ND(1)	ND(2)	ND(1)	ND(1)
MW-2R	06/02/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1) UJ	ND(1)	ND(1)	ND(2)	ND(1)	ND(1)
MW-3R	06/02/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1) UJ	ND(1)	ND(1)	ND(2)	ND(1)	ND(1)
MW-3R	12/21/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	ND(1)	ND(1)
MW-4	06/02/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1) UJ	ND(1)	ND(2)	ND(1) UJ	ND(1)
MW-4 Dup	06/02/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1) UJ	ND(1)	ND(2)	ND(1) UJ	ND(1)
MW-4	12/21/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	ND(1)	ND(1)
MW-4 Dup	12/21/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	ND(1)	ND(1)
MTCA Method A		5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MTCA Method B		0.8	NA	NA	0.71	5.5	11	400	800	800	0.63	160
MTCA Method C		8	NA	NA	7.1	55	25	880	1,800	1,800	6.3	350

Notes:

MTCA - Model Toxics Control Act
µg/L - micrograms per liter
ND - Not detected above laboratory reporting limits
MTCA Standards are from the Cleanup Levels and Risk Calculation (CLARC) Mater Spreadsheet, updated July 2021
Dup - Field Duplicate

UJ - Estimated reporting limit

TABLE 4-4. GROUNDWATER QUALITY SUMMARY – VOLATILE ORGANIC COMPOUNDS
EMERALD SERVICES, INC., 1825 ALEXANDER AVENUE, TACOMA, WASHINGTON

Location ID	Date Sampled	Chloroethane (ug/L)	Chloroform (ug/L)	Chloromethane (ug/L)	2-Chlorotoluene (ug/L)	4-Chlorotoluene (ug/L)	1,2-Dibromo 3-chloropropane (ug/L)	Dibromo-chloromethane (ug/L)	1,2-Dibromoethane (ug/L)	Dibromomethane (ug/L)	1,2-Dichloro-benzene (ug/L)	1,3-Dichloro-benzene (ug/L)
MW-1	06/02/21	ND(1)	ND(1)	ND(1) UJ	ND(1)	ND(1)	ND(3)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-2R	06/02/21	ND(1)	ND(1)	ND(1) UJ	ND(1)	ND(1)	ND(3)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-3R	06/02/21	ND(1)	ND(1)	ND(1) UJ	ND(1)	ND(1)	ND(3)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-3R	12/21/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(3)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-4	06/02/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(3)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-4 Dup	06/02/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(3)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-4	12/21/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(3)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-4 Dup	12/21/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(3)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MTCA Method A		NA	NA	NA	NA	NA	NA	NA	0.01	NA	NA	NA
MTCA Method B		NA	1.4	NA	160	NA	0.055	0.52	0.022	80	720	NA
MTCA Method C		NA	14	NA	350	NA	0.55	5.2	0.22	180	1,600	NA

Notes:

MTCA - Model Toxics Control Act
µg/L - micrograms per liter
ND - Not detected above laboratory reporting limits
MTCA Standards are from the Cleanup Levels and Risk Calculation (CLARC) Mater Spreadsheet, updated July 2021
Dup - Field Duplicate

UJ - Estimated reporting limit

TABLE 4-4. GROUNDWATER QUALITY SUMMARY – VOLATILE ORGANIC COMPOUNDS
EMERALD SERVICES, INC., 1825 ALEXANDER AVENUE, TACOMA, WASHINGTON

Location ID	Date Sampled	1,4-Dichloro-benzene (ug/L)	Dichlorodifluoro-methane (ug/L)	1,1-Dichloroethane (ug/L)	1,2-Dichloroethane (ug/L)	1,1-Dichloroethene (ug/L)	cis-1,2-Dichloro-ethene (ug/L)	trans-1,2-Dichloro-ethene (ug/L)	1,2-Dichloro-propane (ug/L)	1,3-Dichloro-propane (ug/L)	2,2-Dichloro-propane (ug/L)	1,1-Dichloro-propene (ug/L)
MW-1	06/02/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-2R	06/02/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-3R	06/02/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-3R	12/21/21	ND(1)	ND(1) UJ	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-4	06/02/21	ND(1)	ND(1) UJ	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-4 Dup	06/02/21	ND(1)	ND(1) UJ	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-4	12/21/21	ND(1)	ND(1) UJ	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-4 Dup	12/21/21	ND(1)	ND(1) UJ	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MTCA Method A		NA	NA	NA	5	NA	NA	NA	NA	NA	NA	NA
MTCA Method B		8.1	1,600	7.7	0.48	400	16	160	1.2	NA	NA	NA
MTCA Method C		81	3,500	77	4.8	880	35	350	12	NA	NA	NA

Notes:

MTCA - Model Toxics Control Act
µg/L - micrograms per liter
ND - Not detected above laboratory reporting limits
MTCA Standards are from the Cleanup Levels and Risk Calculation (CLARC) Mater Spreadsheet, updated July 2021
Dup - Field Duplicate

UJ - Estimated reporting limit

TABLE 4-4. GROUNDWATER QUALITY SUMMARY – VOLATILE ORGANIC COMPOUNDS
EMERALD SERVICES, INC., 1825 ALEXANDER AVENUE, TACOMA, WASHINGTON

Location ID	Date Sampled	Cis-1,3- dichloro-propene (ug/L)	trans-1,3- Dichloro-propene (ug/L)	Ethylbenzene (ug/L)	Hexachloro-butadiene (ug/L)	Isopropyl-benzene (ug/L)	p-Isopropyl-toluene (ug/L)	Methylene Chloride (ug/L)	MTBE (ug/L)	Naphthalene (ug/L)	n-Propyl- benzene (ug/L)	Styrene (ug/L)
MW-1	06/02/21	ND(1) UJ	ND(1)	ND(1)	ND(3)	ND(1)	ND(1)	ND(3)	ND(1)	ND(3)	ND(1)	ND(1)
MW-2R	06/02/21	ND(1) UJ	ND(1)	ND(1)	ND(3)	ND(1)	ND(1)	ND(3)	7.5	ND(3)	ND(1)	ND(1)
MW-3R	06/02/21	ND(1) UJ	ND(1)	ND(1)	ND(3)	ND(1)	ND(1)	ND(3)	ND(1)	ND(3)	ND(1)	ND(1)
MW-3R	12/21/21	ND(1)	ND(1)	ND(1)	ND(3)	ND(1)	ND(1)	ND(3)	ND(1)	ND(3)	ND(1)	ND(1)
MW-4	06/02/21	ND(1)	ND(1)	ND(1)	ND(3)	ND(1)	ND(1)	ND(3)	ND(1)	ND(3)	ND(1)	ND(1)
MW-4 Dup	06/02/21	ND(1)	ND(1)	ND(1)	ND(3)	ND(1)	ND(1)	ND(3)	ND(1)	ND(3)	ND(1)	ND(1)
MW-4	12/21/21	ND(1)	ND(1)	ND(1)	ND(3)	ND(1)	ND(1)	ND(3)	ND(1)	ND(3)	ND(1)	ND(1)
MW-4 Dup	12/21/21	ND(1)	ND(1)	ND(1)	ND(3)	ND(1)	ND(1)	ND(3)	ND(1)	ND(3)	ND(1)	ND(1)
MTCA Method A		NA	NA	700	NA	NA	NA	5	20	160	NA	NA
MTCA Method B		NA	NA	800	0.56	800	NA	5.8	24	160	800	1,600
MTCA Method C		NA	NA	1,800	5.6	1,800	NA	220	240	350	1,800	3,500

Notes:

MTCA - Model Toxics Control Act
µg/L - micrograms per liter
ND - Not detected above laboratory reporting limits
MTCA Standards are from the Cleanup Levels and Risk Calculation (CLARC) Mater Spreadsheet, updated July 2021
Dup - Field Duplicate

UJ - Estimated reporting limit

TABLE 4-4. GROUNDWATER QUALITY SUMMARY – VOLATILE ORGANIC COMPOUNDS
EMERALD SERVICES, INC., 1825 ALEXANDER AVENUE, TACOMA, WASHINGTON

Location ID	Date Sampled	1,1,1,2-Tetrachloro-ethane (ug/L)	1,1,2,2-Tetrachloro-ethane (ug/L)	Tetrachloroethene (ug/L)	Toluene (ug/L)	1,2,3-Trichloro-benzene (ug/L)	1,2,4-Trichloro-benzene (ug/L)	1,1,1- Trichloro-ethane (ug/L)	1,1,2- Trichloro-ethane (ug/L)	Trichloroethene (ug/L)	Trichloro-fluoromethane (ug/L)	1,2,3-Trichloro-propane (ug/L)
MW-1	06/02/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-2R	06/02/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-3R	06/02/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-3R	12/21/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-4	06/02/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-4 Dup	06/02/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-4	12/21/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-4 Dup	12/21/21	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MTCA Method A		NA	NA	5	1,000	NA	NA	200	NA	5	NA	NA
MTCA Method B		1.7	0.22	21	640	NA	1.5	16,000	0.77	0.54	2,400	0.00038
MTCA Method C		17	2.2	110	1,400	NA	15	35,000	7.7	9.5	5,300	0.015

Notes:

MTCA - Model Toxics Control Act
µg/L - micrograms per liter
ND - Not detected above laboratory reporting limits
MTCA Standards are from the Cleanup Levels and Risk Calculation (CLARC) Mater Spreadsheet, updated July 2021
Dup - Field Duplicate

UJ - Estimated reporting limit

TABLE 4-4. GROUNDWATER QUALITY SUMMARY – VOLATILE ORGANIC COMPOUNDS
EMERALD SERVICES, INC., 1825 ALEXANDER AVENUE, TACOMA, WASHINGTON

Location ID	Date Sampled	1,2,4-Trimethyl-benzene (ug/L)	1,3,5-Trimethyl-benzene (ug/L)	Vinyl Chloride (ug/L)	m,p-Xylene (ug/L)	o-Xylene (ug/L)
MW-1	06/02/21	ND(3)	ND(1)	ND(1)	ND(2)	ND(1)
MW-2R	06/02/21	ND(3)	ND(1)	ND(1)	ND(2)	ND(1)
MW-3R	06/02/21	ND(3)	ND(1)	ND(1)	ND(2)	ND(1)
MW-3R	12/21/21	ND(3)	ND(1)	ND(1)	ND(2)	ND(1)
MW-4	06/02/21	ND(3)	ND(1)	ND(1)	ND(2)	ND(1)
MW-4 Dup	06/02/21	ND(3)	ND(1)	ND(1)	ND(2)	ND(1)
MW-4	12/21/21	ND(3)	ND(1)	ND(1)	ND(2)	ND(1)
MW-4 Dup	12/21/21	ND(3)	ND(1)	ND(1)	ND(2)	ND(1)
MTCA Method A		NA	NA	0.2	NA	NA
MTCA Method B		NA	80	0.029	1,600	1,600
MTCA Method C		NA	180	0.29	3,500	3,500

Notes:

MTCA - Model Toxics Control Act
µg/L - micrograms per liter
ND - Not detected above laboratory reporting limits
MTCA Standards are from the Cleanup Levels and Risk Calculation (CLARC) Mater Spreadsheet, updated July 2021
Dup - Field Duplicate

UJ - Estimated reporting limit

TABLE 4-5. GROUNDWATER QUALITY SUMMARY – TOTAL PETROLEUM HYDROCARBONS
EMERALD SERVICES, INC., 1825 ALEXANDER AVENUE, TACOMA, WASHINGTON

Location ID	Date Sampled	Motor Oil (mg/L)	Diesel Range Organics (mg/L)
MW-1	06/02/21	ND(0.37)	0.13
MW-2R	06/02/21	ND(0.37)	0.14
MW-3R	06/02/21	**0.95**	**0.8**
MW-3R	12/21/21	**1.2**	**0.77**
MW-4	06/02/21	**0.57**	**1.6**
MW-4 Dup	06/02/21	**0.6**	**1.7**
MW-4	12/21/21	**0.59**	**1.2**
MW-4 Dup	12/21/21	**0.56**	**1.1**
MTCA Method A		0.5	0.5
MTCA Method B		NA	NA
MTCA Method C		0.5	NA

Notes:

MTCA - Model Toxics Control Act
MTCA Standards are from the Cleanup Levels and Risk Calculation (CLARC) Mater Spreadsheet, updated July 2021
Bold - Value exceeds MTCA Standard
mg/L - milligrams per liter
ND - Not detected above laboratory reporting limits
Dup - Field Duplicate

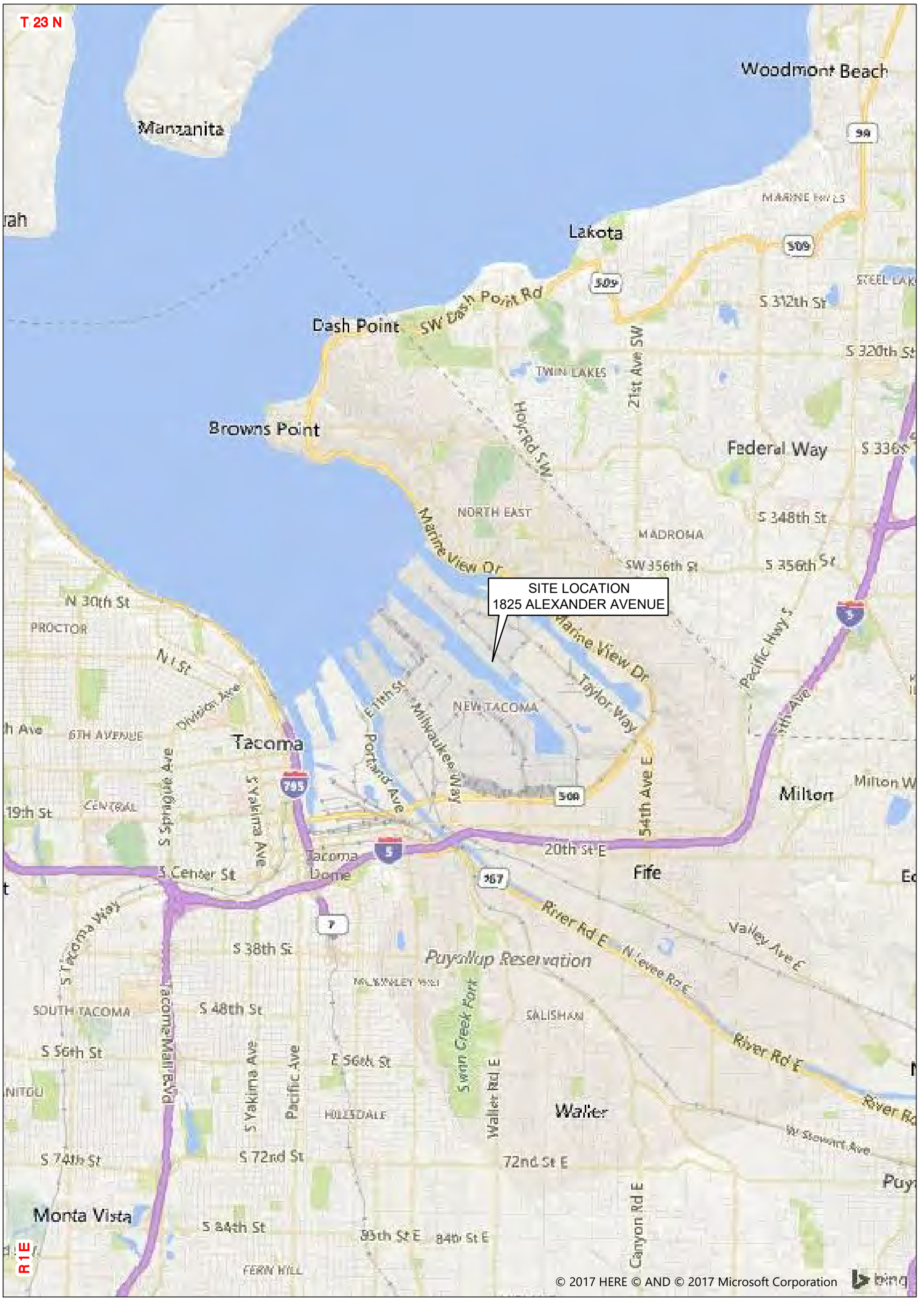
TABLE 4-6. GROUNDWATER QUALITY SUMMARY – TOTAL ARSENIC AND TOTAL LEAD
EMERALD SERVICES, INC., 1825 ALEXANDER AVENUE, TACOMA, WASHINGTON

Location ID	Date Sampled	Arsenic, Total (ug/L)	Lead, Total (ug/L)
MW-1	06/02/21	ND(1)	ND(0.4)
MW-2R	06/02/21	ND(1)	ND(0.4)
MW-3R	06/02/21	3.3	ND(0.4)
MW-3R	12/21/21	**9.2**	ND(2)
MW-4	06/02/21	ND(1)	ND(0.4)
MW-4 Dup	06/02/21	ND(1)	ND(0.4)
MW-4	12/21/21	ND(5)	ND(2)
MW-4 Dup	12/21/21	ND(5)	ND(2)
MTCA Method A		5	15
MTCA Method B		NA	NA
MTCA Method C		NA	NA

Notes:

MTCA - Model Toxics Control Act
MTCA Standards are from the Cleanup Levels and Risk Calculation (CLARC) Mater Spreadsheet, updated July 2021
Bold - Value exceeds MTCA Standard(s)
µg/L - micrograms per liter
ND - Not detected above laboratory reporting limits
Dup - Field Duplicate

FIGURES



WASHINGTON

QUADRANGLE LOCATION

NOTE:
SITE LEGAL DESCRIPTION -
TOWNSHIP 23 NORTH,
RANGE 1 EAST, SECTION 27

N

0 1 MILE

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Laramie, Wyoming 82070
www.trihydro.com
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FIGURE 1-1

SITE LOCATION MAP

EMERALD SERVICES, INC.
1825 ALEXANDER AVENUE, TACOMA, WASHINGTON

Drawn By: JLP	Checked By: MVA	Scale: 1" = 1 MILE	Date: 2/21/2022	File: 46Y_GWR-SITELOC-202202

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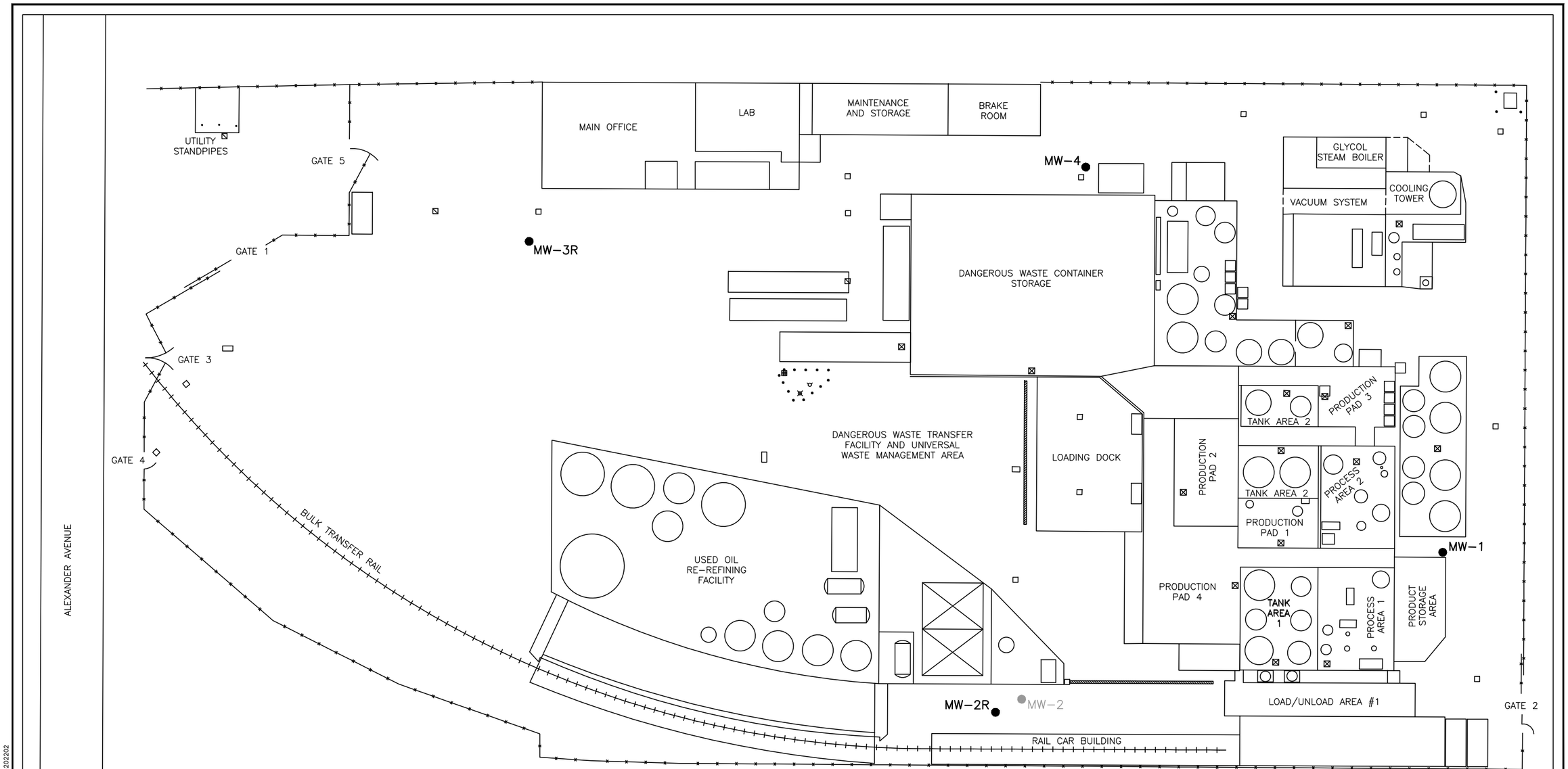

EXPLANATION

- MW-3R ● MONITORING WELL AND DESIGNATION
- ● ABANDONED MONITORING WELL
- ▧ CATCH BASIN
- ⊠ BLIND SUMP
- MANHOLE
- ▦ SUMP VENT
- ▦ SUMP VENT
- FIRE MAIN INDICATOR
- FIRE HYDRANT
- BOLLARD
- TRENCH DRAIN
- FENCELINE
- RAILROAD

N

0 100'

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FIGURE 1-2

SITE MAP AND MONITORING WELL NETWORK

EMERALD SERVICES, INC.
1825 ALEXANDER AVENUE, TACOMA, WASHINGTON

Drawn By: JLP	Checked By: MVA	Scale: 1" = 100'	Date: 2/21/2022	File: 46Y_GWR-SITEMAP-202202

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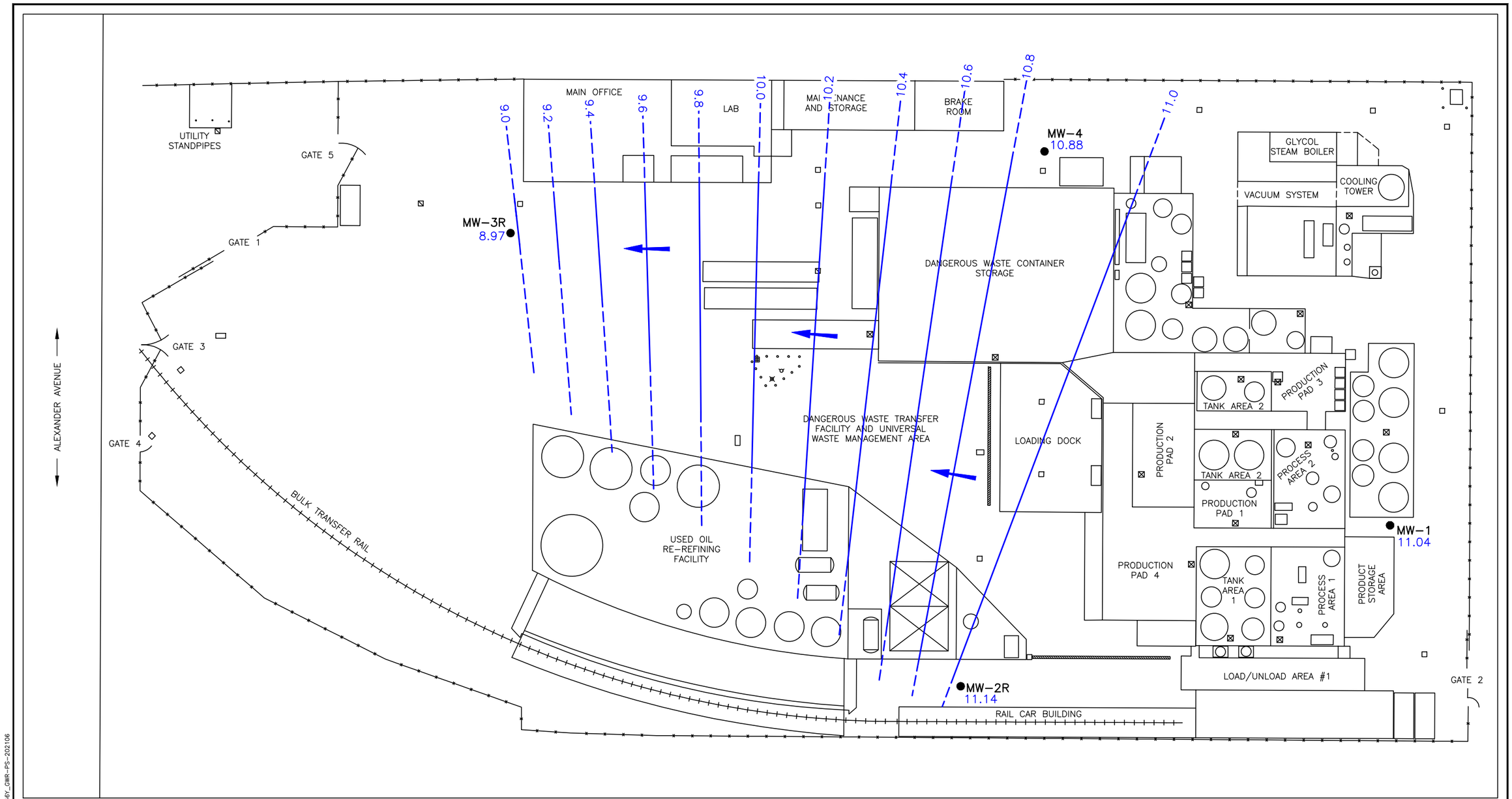

EXPLANATION

- MW-3R 8.97 — GROUNDWATER MONITORING WELL AND DESIGNATION SHOWING GROUNDWATER ELEVATION (FT MSL)
- ABANDONED MONITORING WELL
- 9.0 — LINE OF EQUAL POTENTIOMETRIC SURFACE ELEVATION, FT MSL, 0.10 FT CONTOUR INTERVAL (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION
- TRENCH DRAIN
- FENCELINE
- RAILROAD
- CATCH BASIN
- BLIND SUMP
- MANHOLE
- SUMP VENT
- FIRE MAIN INDICATOR
- FIRE HYDRANT
- FT MSL — FEET RELATIVE TO MEAN SEA LEVEL

0 100'

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FIGURE 4-1

POTENTIOMETERIC SURFACE MAP
JUNE 2, 2021

EMERALD SERVICES, INC.
1825 ALEXANDER AVENUE, TACOMA, WASHINGTON

Drawn By: JLP	Checked By: MVA	Scale: 1" = 100'	Date: 2/21/2022	File: 46Y_GWR-PS-202106

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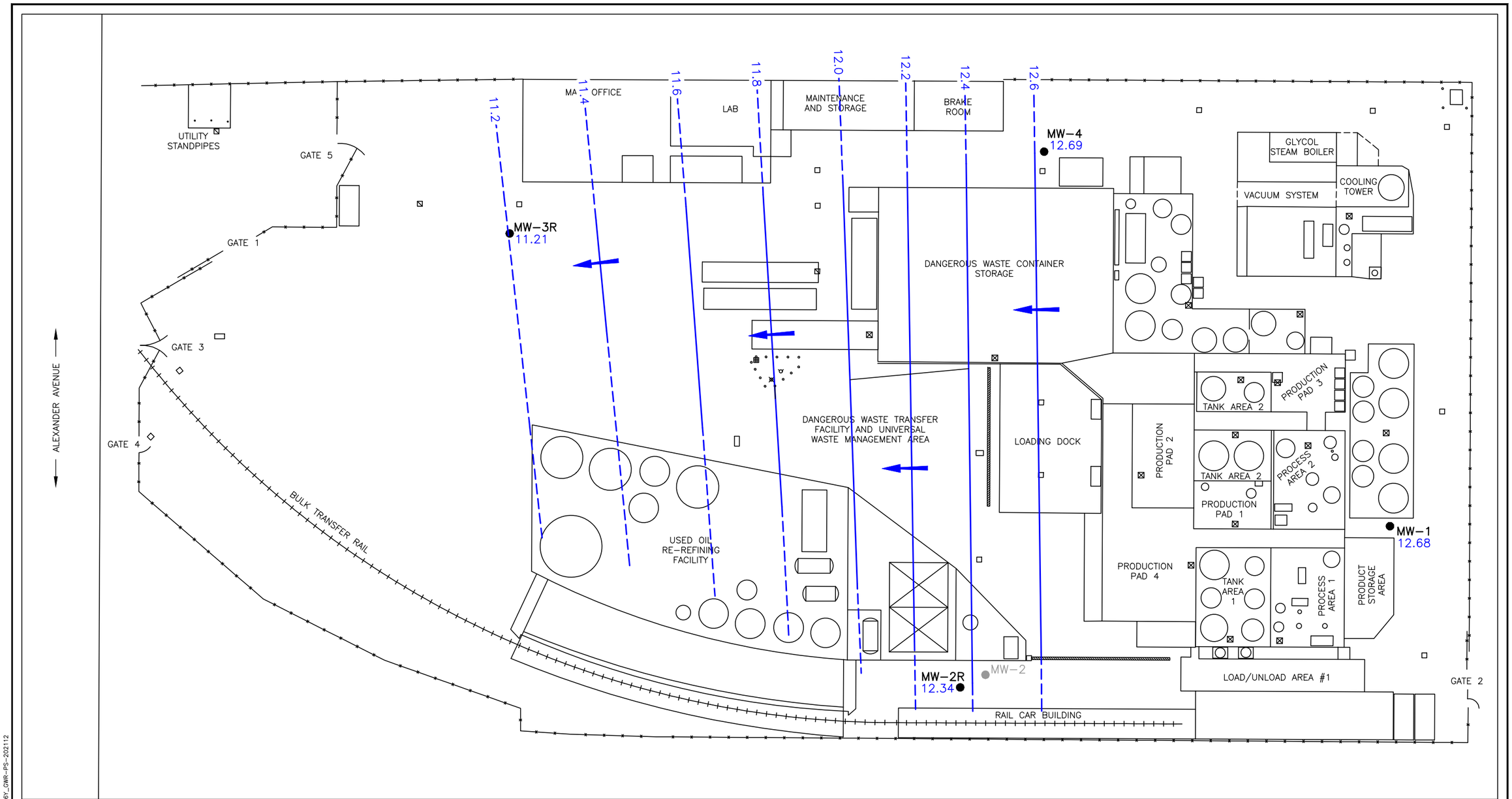

EXPLANATION

- MW-3R 11.21 — GROUNDWATER MONITORING WELL AND DESIGNATION SHOWING GROUNDWATER ELEVATION (FT MSL)
- ABANDONED MONITORING WELL
- 11.2 — LINE OF EQUAL POTENTIOMETRIC SURFACE ELEVATION, FT MSL, 0.10 FT CONTOUR INTERVAL (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION
- TRENCH DRAIN
- FENCELINE
- RAILROAD
- CATCH BASIN
- BLIND SUMP
- MANHOLE
- SUMP VENT
- FIRE MAIN INDICATOR
- FIRE HYDRANT
- FT MSL — FEET RELATIVE TO MEAN SEA LEVEL

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FIGURE 4-2

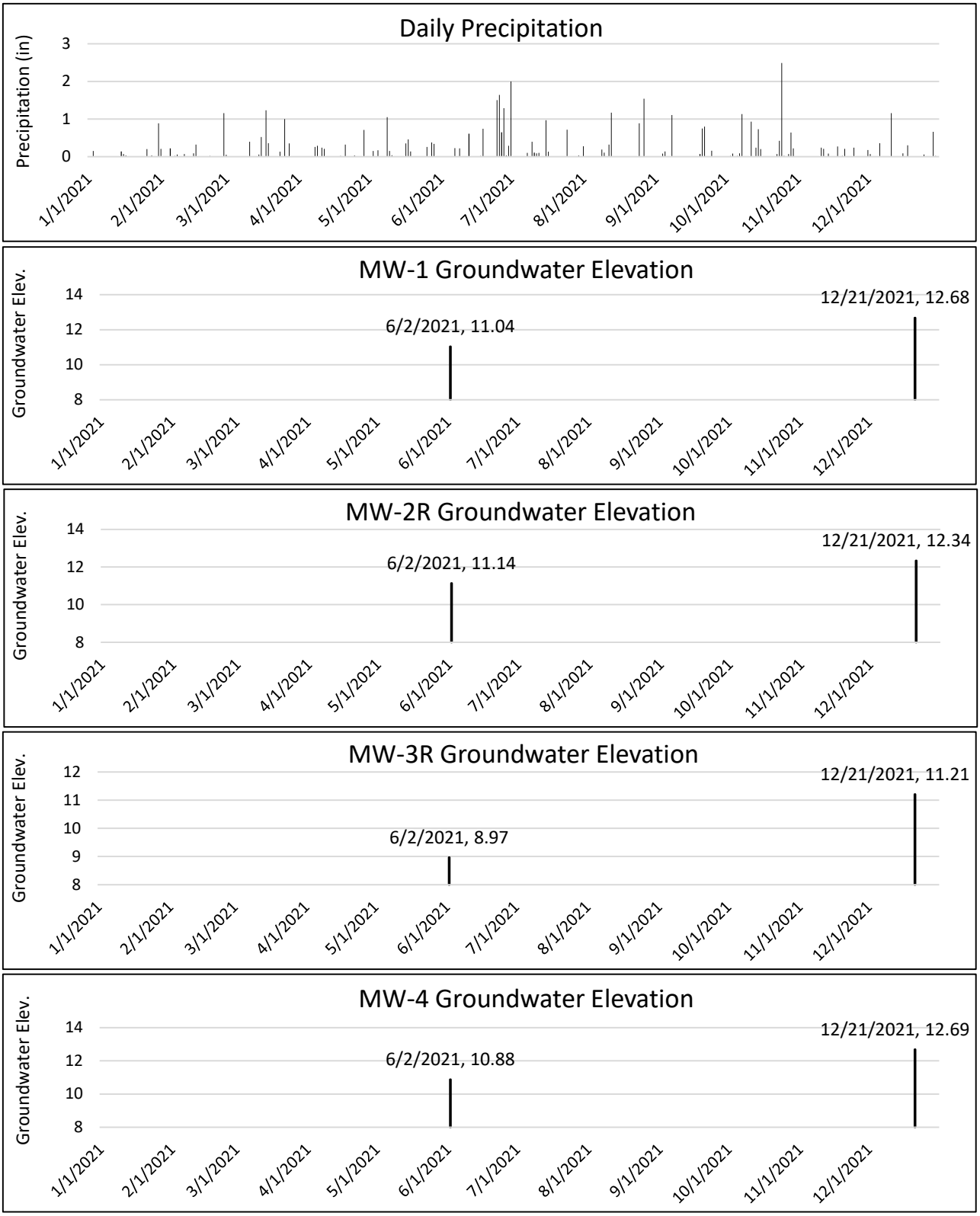
POTENTIOMETERIC SURFACE MAP
DECEMBER 21, 2021

EMERALD SERVICES, INC.
1825 ALEXANDER AVENUE, TACOMA, WASHINGTON

Drawn By: JLP	Checked By: MVA	Scale: 1" = 100'	Date: 2/21/2022	File: 46Y_GWR-PS-202112

M:\SLK\TACOMA\CADD\GROUNDWATERREPORT\2022\02\46Y_GWR-PS-202112

FIGURE 4-3. 2021 DAILY PRECIPITATION AND HYDROGRAPHS
EMERALD ENVIRONMENTAL SERVICES, INC., TACOMA, WASHINGTON



Notes:

Elev. - Elevation reported in feet above mean sea level

Precipitation data is from the Western Narrows Airport taken from the Midwestern Regional Climate Center

APPENDIX A

FIELD FORMS

A-1. QUARTERLY MONITORING WELL INSPECTION FORMS

A-2. SEMIANNUAL GROUNDWATER SAMPLING FORMS.

APPENDIX A-1

QUARTERLY MONITORING WELL INSPECTION FORMS

Trihydro CORPORATION

Monitoring Well Inspection and Maintenance Form

General Information

Project Name:	Emerald Services, Inc.	Date:	3-31-21
Station:	MW-1	Time:	1459
Sample ID:	--	Field Team:	MD
Weather Conditions:	Clear Warm	Temperature:	~60°F

Well Information

Well Diameter (in):	2	Bottom Condition:	--
As-Built Well Depth (ft):	7.75	Pump in Well:	no
Measured Well Depth (ft):	--	Well Type	Flush completion
Length of Tip (ft):	0.07		
Well Depth (ft):	-0.07		
Initial DTW (ft):	--		

Well Condition:

Bolts:	Good
Gasket:	
J-Plug:	
Lock:	
Label:	
Monument:	
Other:	NA

Repairs Needed NA

Repairs Performed

Other Comments:

Trihydro CORPORATION

Monitoring Well Inspection and Maintenance Form

General Information

Project Name:	Emerald Services, Inc.	Date:	3.31.21
Station:	MW-2R	Time:	1440
Sample ID:	--	Field Team:	MJ
Weather Conditions:	Clear / Warm	Temperature:	~60°F

Well Information

Well Diameter (in):	2	Bottom Condition:	--
As-Built Well Depth (ft):	8.2	Pump in Well:	No
Measured Well Depth (ft):		Well Type	Flush completion
Length of Tip (ft):	0.07		
Well Depth (ft):	-0.07		
Initial DTW (ft):			

Well Condition:

Bolts: Good
Gasket: Good
J-Plug: Good
Lock: Good
Label: Good
Monument: Good
Other: Rain water inside mont; mostly removed

Repairs Needed

NA

Repairs Performed

Other Comments:

Trihydro CORPORATION

Monitoring Well Inspection and Maintenance Form

General Information

Project Name:	Emerald Services, Inc.	Date:	3-31-21
Station:	MW-3R	Time:	1519
Sample ID:	—	Field Team:	MJ
Weather Conditions:	clear Warm	Temperature:	~60°F

Well Information

Well Diameter (in):	2	Bottom Condition:	-
As-Built Well Depth (ft):	8	Pump in Well:	no
Measured Well Depth (ft):	—	Well Type	Flush completion
Length of Tip (ft):	0.07		
Well Depth (ft):	-0.07		
Initial DTW (ft):	—		

Well Condition:

Bolts:	Good
Gasket:	
J-Plug:	
Lock:	
Label:	
Monument:	
Other:	NA

Repairs Needed NA

Repairs Performed

Other Comments:

Trihydro CORPORATION

Monitoring Well Inspection and Maintenance Form

General Information

Project Name:	Emeral Services, Inc.	Date:	2-3-21
Station:	MW-4	Time:	1513
Sample ID:	--	Field Team:	MS
Weather Conditions:	Clear Warm	Temperature:	260°F

Well Information

Well Diameter (in):	2	Bottom Condition:	--
As-Built Well Depth (ft):	9	Pump in Well:	no
Measured Well Depth (ft):	--	Well Type	Flush completion
Length of Tip (ft):	0.07		
Well Depth (ft):	-0.07		
Initial DTW (ft):	--		

Well Condition:

Bolts:	Good
Gasket:	Worn / Replaced
J-Plug:	Good
Lock:	
Label:	
Monument:	
Other:	Water inside flush mount; mostly removed

Repairs Needed

None

Repairs Performed

Replaced Gasket

Other Comments:

NA

Trihydro CORPORATION

Monitoring Well Inspection and Maintenance Form

General Information

Project Name:	Emerald Services, Inc.	Date:	6/2/2021
Station:	MW-1	Time:	11:00
Sample ID:	ERI-MW-1	Field Team:	MJ; KS
Weather Conditions:	Sunny	Temperature:	72°F

Well Information

Well Diameter (in):	2	Bottom Condition:	Good
As-Built Well Depth (ft):	7.75	Pump in Well:	no
Measured Well Depth (ft):	7.10	Well Type	Flush completion
Length of Tip (ft):	0.07		
Well Depth (ft):	-0.07		
Initial DTW (ft):	3.03		

Well Condition:

Bolts:	Good
Gasket:	
J-Plug:	
Lock:	
Label:	
Monument:	
Other:	

Repairs Needed

None

Repairs Performed

Other Comments:

PID = 1.7 ppm

Trihydro CORPORATION

Monitoring Well Inspection and Maintenance Form

General Information

Project Name:	Emerald Services, Inc.	Date:	6/2/2021
Station:	MW-2R	Time:	1259
Sample ID:	ERI-MW-2R	Field Team:	MJ; KS
Weather Conditions:	Sunny	Temperature:	74°F

Well Information

Well Diameter (in):	2	Bottom Condition:	Good
As-Built Well Depth (ft):	8.2	Pump in Well:	No
Measured Well Depth (ft):	7.93	Well Type	Flush completion
Length of Tip (ft):	0.07		
Well Depth (ft):	-0.07		
Initial DTW (ft):	2.65		

Well Condition:

Bolts:	Good
Gasket:	
J-Plug:	
Lock:	
Label:	
Monument:	
Other:	~5-6" of water inside well casing; water had sheen

Repairs Needed

Repairs Performed

Other Comments:

WL not gauged within one hour of other wells due to inaccessibility; work crew parked on well

PID = 3.8 ppm

Trihydro CORPORATION

Monitoring Well Inspection and Maintenance Form

General Information

Project Name:	Emerald Services, Inc.	Date:	6/2/2021
Station:	MW-3R	Time:	1118
Sample ID:	ERI-MN-3R	Field Team:	MJ; KS
Weather Conditions:	Sunny	Temperature:	72°F

Well Information

Well Diameter (in):	2	Bottom Condition:	Good
As-Built Well Depth (ft):	8	Pump in Well:	no
Measured Well Depth (ft):	7.60	Well Type	Flush completion
Length of Tip (ft):	0.07		
Well Depth (ft):	-0.07		
Initial DTW (ft):	5.31		

Well Condition:

Bolts:	Good
Gasket:	
J-Plug:	
Lock:	
Label:	
Monument:	
Other:	

Repairs Needed

None.

Repairs Performed

Other Comments:

PID = 7.2ppm

Trihydro CORPORATION

Monitoring Well Inspection and Maintenance Form

General Information

Project Name:	Emeral Services, Inc.	Date:	6/2/2021
Station:	MW-4	Time:	11:10
Sample ID:	ERI-MW-4 & ERI-MW-SD	Field Team:	MJ; KS
Weather Conditions:	Sunny	Temperature:	72°F

Well Information

Well Diameter (in):	2	Bottom Condition:	Good
As-Built Well Depth (ft):	9	Pump in Well:	no
Measured Well Depth (ft):	9.25	Well Type	Flush completion
Length of Tip (ft):	0.07		
Well Depth (ft):	-0.07		
Initial DTW (ft):	3.23		

Well Condition:

Bolts:	Good
Gasket:	
J-Plug:	
Lock:	
Label:	
Monument:	
Other:	

Repairs Needed

None

Repairs Performed

Other Comments:

Water below J-plug ~4" deep; removed

PID = 4.2 ppm

Trihydro CORPORATION

Monitoring Well Inspection and Maintenance Form

General Information

Project Name:	Emerald Services, Inc.	Date:	9-16-21
Station:	MW-1	Time:	0939
Sample ID:	--	Field Team:	MJ
Weather Conditions:	Clear Cool	Temperature:	65°F

Well Information

Well Diameter (in):	2	Bottom Condition:	
As-Built Well Depth (ft):	7.75	Pump in Well:	no
Measured Well Depth (ft):		Well Type	Flush completion
Length of Tip (ft):	0.07		
Well Depth (ft):	-0.07		
Initial DTW (ft):			

Well Condition:

Bolts:	Good
Gasket:	
J-Plug:	
Lock:	
Label:	
Monument:	
Other:	N/A

Repairs Needed

None

Repairs Performed

None

Other Comments:

Trihydro CORPORATION

Monitoring Well Inspection and Maintenance Form

General Information

Project Name:	Emerald Services, Inc.	Date:	9-16-2021
Station:	MW-2R	Time:	0930
Sample ID:	--	Field Team:	MJ
Weather Conditions:	Sunny Cool	Temperature:	~55°F

Well Information

Well Diameter (in):	2	Bottom Condition:	
As-Built Well Depth (ft):	8.2	Pump in Well:	No
Measured Well Depth (ft):		Well Type	Flush completion
Length of Tip (ft):	0.07		
Well Depth (ft):	-0.07		
Initial DTW (ft):			

Well Condition:

Bolts:	Good
Gasket:	
J-Plug:	
Lock:	
Label:	
Monument:	
Other:	NA

Repairs Needed

None

Repairs Performed

None

Other Comments:

Removed relatively low volume of standing water below J-plug

Trihydro CORPORATION

Monitoring Well Inspection and Maintenance Form

General Information

Project Name:	Emerald Services, Inc.	Date:	9-16-2021
Station:	MW-3R	Time:	0951
Sample ID:	--	Field Team:	MS
Weather Conditions:	clear cool	Temperature:	55°F

Well Information

Well Diameter (in):	2	Bottom Condition:	
As-Built Well Depth (ft):	8	Pump in Well:	no
Measured Well Depth (ft):		Well Type	Flush completion
Length of Tip (ft):	0.07		
Well Depth (ft):	-0.07		
Initial DTW (ft):			

Well Condition:

Bolts:	Good
Gasket:	
J-Plug:	
Lock:	
Label:	
Monument:	V
Other:	NA

Repairs Needed

None

Repairs Performed

None

Other Comments:

Trihydro CORPORATION

Monitoring Well Inspection and Maintenance Form

General Information

Project Name:	Emeral Services, Inc.	Date:	9-16-21
Station:	MW-4	Time:	0945
Sample ID:	--	Field Team:	MS
Weather Conditions:	Clear Cool	Temperature:	65°F

Well Information

Well Diameter (in):	2	Bottom Condition:	
As-Built Well Depth (ft):	9	Pump in Well:	no
Measured Well Depth (ft):		Well Type	Flush completion
Length of Tip (ft):	0.07		
Well Depth (ft):	-0.07		
Initial DTW (ft):			

Well Condition:

Bolts:	Good
Gasket:	
J-Plug:	
Lock:	
Label:	
Monument:	V
Other:	NA

Repairs Needed

None

Repairs Performed

None

Other Comments:

Removed relatively small volum of standing water below J-plug

Trihydro CORPORATION

Monitoring Well Inspection and Maintenance Form

General Information

Project Name:	Emerald Services, Inc.	Date:	10/21/21
Station:	MW-1	Time:	09:36
Sample ID:	NA	Field Team:	KM
Weather Conditions:	cool, foggy ~51°	Temperature:	~510

Well Information

Well Diameter (in):	2	Bottom Condition:	Hard
As-Built Well Depth (ft):	7.75	Pump in Well:	no
Measured Well Depth (ft):	7.10	Well Type	Flush completion
Length of Tip (ft):	0.07		
Well Depth (ft):	-0.07		
Initial DTW (ft):	1.39		

Well Condition:

Bolts:	Good
Gasket:	Good
J-Plug:	Good
Lock:	Good
Label:	Good
Monument:	Good
Other:	PID = 0.0 PPM

Repairs Needed

Repairs Performed

Other Comments: Hard bottom

Trihydro CORPORATION

Monitoring Well Inspection and Maintenance Form

General Information

Project Name:	Emerald Services, Inc.	Date:	12/21/21
Station:	MW-2R	Time:	09:25
Sample ID:	NA	Field Team:	KH
Weather Conditions:	Cool, cloudy	Temperature:	23.4°

Well Information

Well Diameter (in):	2	Bottom Condition:	Hard
As-Built Well Depth (ft):	8.2	Pump in Well:	No
Measured Well Depth (ft):	7.85	Well Type	Flush completion
Length of Tip (ft):	0.07		
Well Depth (ft):	-0.07		
Initial DTW (ft):	1.45		

Well Condition:

Bolts:	Good
Gasket:	Good
J-Plug:	Bad
Lock:	Good
Label:	Good
Monument:	
Other:	PID = 0.5 PPM

Repairs Needed

Standing water above J-Plug

Repairs Performed

Other Comments:

Trihydro CORPORATION

Monitoring Well Inspection and Maintenance Form

General Information

Project Name:	Emerald Services, Inc.	Date:	12/21/21
Station:	MW-3R	Time:	10:10
Sample ID:	ERI-MW-3R	Field Team:	KH
Weather Conditions:	Cool ~ 35°	Temperature:	35°

Well Information

Well Diameter (in):	2	Bottom Condition:	Heaved
As-Built Well Depth (ft):	8	Pump in Well:	no
Measured Well Depth (ft):	7.80 60	Well Type	Flush completion
Length of Tip (ft):	0.07		
Well Depth (ft):	-0.07		
Initial DTW (ft):	3.07		

Well Condition:

Bolts:	Good
Gasket:	Good
J-Plug:	Good
Lock:	Good
Label:	Good
Monument:	Good
Other:	PID = 0.10 PPM

Repairs Needed

Repairs Performed

Other Comments:

Trihydro CORPORATION

Monitoring Well Inspection and Maintenance Form

General Information

Project Name:	Emeral Services, Inc.	Date:	12/21/21
Station:	MW-4	Time:	0944
Sample ID:	ERI-MW-4	Field Team:	KM
Weather Conditions:	Cool ≈ 34°	Temperature:	≈ 34°

Well Information

Well Diameter (in):	2	Bottom Condition:	Hard
As-Built Well Depth (ft):	9	Pump in Well:	no
Measured Well Depth (ft):	9.18	Well Type	Flush completion
Length of Tip (ft):	0.07		
Well Depth (ft):	-0.07		
Initial DTW (ft):	1.42		

Well Condition:

Bolts:	Good
Gasket:	Good
J-Plug:	Good
Lock:	Good
Label:	
Monument:	Crumbly
Other:	PID = 0.2 PPM

Repairs Needed

Standing water above J-Plug.

Repairs Performed

Other Comments:

APPENDIX A-2

SEMIANNUAL GROUNDWATER SAMPLING FORMS

GROUNDWAT[illegible] SAMPLING LOG

Client:	Safety-Kleen	**Static Water Level:**	3.03'
Project Number:	46Y-001-001	**Depth to Hydrocarbon:**	NA
Project Name:	Emerald Services	**Total Well Depth:**	7.75 ft-bgs
Project Location:	Tacoma WA	**Screened Interval:**	5 – 2.75 ft-bgs
Sample Date:	6/2/2021	**Pump Inlet Depth:**	~5'
Weather:	Sunny; 74°F	**Laboratory Analysis:**	Arsenic/Lead 7060A/7421, TPH DRO/ORO Dx Extended, VOCs 8260B
Field Personnel:	Katie Mitchell	**Containers/Preservatives:**	6 VOAs w/ HCL, (1) Liter poly w/HN03
SAMPLE TIME:	12:30	**QAQC Samples Collected:** (yes) (no)	**Water Quality Meter:** Horiba
SAMPLE ID:	ERI-MW-1	**If Yes, Sample ID:**	**Total Purge Volume:** 2.5gal

MONITORING WELL ID: MW-1

Time	Pumping Rate (gpm)	Depth to Water (ft-bmp) +/- 0.33 ft	Temp (deg C) +/- 10%	Sp. Con. (mS/cm) +/- 10%	DO (mg/L) +/- 10%	pH (S.U.) +/- 10%	ORP (mV) +/- 10%	Turbidity (NTU) +/- 10%	Comments Groundwater appearance, odor, NAPL, purge interruptions, etc.
1202	950L/5min	3.06	16.73	0.497	2.68	6.64	180	4.7	Clear
1207	800L/5min	3.02	16.70	0.489	1.00	6.76	132	1.5	"
1212	700L/5min	3.09	16.10	0.498	0.41	6.87	71	3.9	"
1217	800L/5min	3.08	15.84	0.498	0.78	6.88	52	4.6	"
1222	775L/5min	3.07	15.63	0.495	0.20	6.86	30	3.7	"
1227	775L/5min	3.07	15.56	0.491	0.17	6.85	18	3.8	"
1232	775L/5min	3.09	15.55	0.491	0.16	6.87	17	4.0	"

FIELD WELL INSPECTION:

Protective Casing:		**Well I.D. Visible:**	
Lock Condition:		**Condition of Manway:**	
Lid Condition:	KS 6/2/2021	**Bolt Condition:**	KS 6/2/2021
Casing Diameter:		**Bumper Posts:**	
Cap Condition:		**Flush Mount Seal:**	
Comments:	(Repairs needed?)		

GROUNDWATER SAMPLING LOG

Client:	Safety-Kleen	**Static Water Level:**	2.65
Project Number:	46Y-001-001	**Depth to Hydrocarbon:**	NA
Project Name:	Emerald Services	**Total Well Depth:**	8.2 ft-bgs
Project Location:	Tacoma WA	**Screened Interval:**	4.45 – 8.2 ft-bgs
Sample Date:	6/2/2021	**Pump Inlet Depth:**	~5.0'
Weather:	Sunny; 74°F	**Laboratory Analysis:**	Arsenic/Lead 7060A/7421, TPH DRO/ORO Dx Extended, VOCs 8260B
Field Personnel:	Katie Mitchell	**Containers/Preservatives:**	6 VOAs w/ HCL, (1) Liter poly w/HN03
SAMPLE TIME:	1330	**QAQC Samples Collected:** (yes) (no)	**Water Quality Meter:** Horiba
SAMPLE ID:	ERI-MW-2R	**If Yes, Sample ID:**	**Total Purge Volume:** 3.0 gal

MONITORING WELL ID: MW-2R

Time	Pumping Rate (gpm)	Depth to Water (ft-bmp) +/- 0.33 ft	Temp (deg C) +/- 10%	Sp. Con. (mS/cm) +/- 10%	DO (mg/L) +/- 10%	pH (S.U.) +/- 10%	ORP (mV) +/- 10%	Turbidity (NTU) +/- 10%	Comments Groundwater appearance, odor, NAPL, purge interruptions, etc.
1310	900L/5min	3.05	15.66	0.270	0.07	6.41	3	2.0	clear
1315	750L/5min	3.03	15.65	0.267	0.03	6.35	3	1.8	"
1320	800L/5min	3.04	15.60	0.264	0.00	6.31	3	1.6	"
1325	800L/5min	2.97	15.54	0.259	0.00	6.31	-1	0.4	"

FIELD WELL INSPECTION:

Protective Casing:	KS 6/2/2021	**Well I.D. Visible:**	KS 6/2/2021
Lock Condition:		**Condition of Manway:**	
Lid Condition:		**Bolt Condition:**	
Casing Diameter:		**Bumper Posts:**	
Cap Condition:		**Flush Mount Seal:**	
Comments:	(Repairs needed?)		

GROUNDWAT SAMPLING LOG

Client:	Safety-Kleen	**Static Water Level:**	5.31
Project Number:	46Y-001-001	**Depth to Hydrocarbon:**	NA
Project Name:	Emerald Services	**Total Well Depth:**	8 ft-bgs
Project Location:	Tacoma WA	**Screened Interval:**	6 – 8 ft-bgs
Sample Date:	6/2/2021	**Pump Inlet Depth:**	7'
Weather:	Sunny; 82°F	**Laboratory Analysis:**	Arsenic/Lead 7060A/7421, TPH DRO/ORO Dx Extended, VOCs 8260B
Field Personnel:	Katie Mitchell KLM	**Containers/Preservatives:**	6 VOAs w/ HCL, (1) Liter poly w/HN03
SAMPLE TIME:	1425	**QAQC Samples Collected:** (yes) (no)	**Water Quality Meter:** Horiba
SAMPLE ID:	ERI-MW-3R	**If Yes, Sample ID:**	**Total Purge Volume:** 2 gal

MONITORING WELL ID: MW-3R

Time	Pumping Rate (gpm)	Depth to Water (ft-bmp) +/- 0.33 ft	Temp (deg C) +/- 10%	Sp. Con. (mS/cm) +/- 10%	DO (mg/L) +/- 10%	pH (S.U.) +/- 10%	ORP (mV) +/- 10%	Turbidity (NTU) +/- 10%	Comments Groundwater appearance, odor, NAPL, purge interruptions, etc.
1500	775L/5min	6.03	18.54	1.20	0.08	6.52	-61		Slightly yellow
1505	600L/5min	6.01	18.65	1.21	0.00	6.55	-73		" "
1510	800L/5min	6.16	18.05	1.22	2.30*	6.75	-97		" "
1515	775L/5min	6.35	17.80	1.22	4.18	6.81	-101		less yellow
1520	900L/5min	6.35	17.93	1.22	4.08	6.92	-109		more clear
1525	700L/5min	6.64	17.90	1.23	6.31	7.05	-115		

* DO increased due to air introduced into tubing from quick drawdown; pump was set to lowest setting

*water was close to bottom of well prior to sampling; allowed to recharge for ~15 min before sampling

FIELD WELL INSPECTION:

Protective Casing:	KS 6/2/2021	**Well I.D. Visible:**	KS 6/2/2021
Lock Condition:		**Condition of Manway:**	
Lid Condition:		**Bolt Condition:**	
Casing Diameter:		**Bumper Posts:**	
Cap Condition:		**Flush Mount Seal:**	
Comments:	(Repairs needed)		

GROUNDWATER SAMPLING LOG

Client:	Safety-Kleen	**Static Water Level:**	3.23
Project Number:	46Y-001-001	**Depth to Hydrocarbon:**	NA
Project Name:	Emerald Services	**Total Well Depth:**	9 ft-bgs
Project Location:	Tacoma WA	**Screened Interval:**	4 – 9 ft-bgs
Sample Date:	6/2/2021	**Pump Inlet Depth:**	3.5'
Weather:	Sunny; 75°F	**Laboratory Analysis:**	Arsenic/Lead 7060A/7421, TPH DRO/ORO Dx Extended, VOCs 8260B
Field Personnel:	Katie Mitchell KS	**Containers/Preservatives:**	6 VOAs w/ HCL, (1) Liter poly w/HN03
SAMPLE TIME:	1430	**QAQC Samples Collected:** (yes) (no)	**Water Quality Meter:** Horiba
SAMPLE ID:	ERI-MW-4	**If Yes, Sample ID:** ERI-MW-50	**Total Purge Volume:** 2 gal

MONITORING WELL ID: MW-4

Time	Pumping Rate (gpm)	Depth to Water (ft-bmp) +/- 0.33 ft	Temp (deg C) +/- 10%	Sp. Con. (mS/cm) +/- 10%	DO (mg/L) +/- 10%	pH (S.U.) +/- 10%	ORP (mV) +/- 10%	Turbidity (NTU) +/- 10%	Comments Groundwater appearance, odor, NAPL, purge interruptions, etc.
1405	800L/5min	3.25	18.62	0.535	0.03	6.88	-51	0.0	clear
1410	800L/5min	3.26	19.18	0.577	0.10	6.72	-59	0.0	"
1415	800L/5min	3.26	18.71	0.596	1.11 *	6.76	-70	0.0	" *Bubbles in tube caused ↑ in DO
1420	800L/5min	3.27	18.70	0.656	1.12 *	6.79	-78	0.0	"
1425	800L/5min	3.26	18.63	0.658	1.08 *	6.83	-82	0.0	"
1430	800L/5min	3.26	18.60	0.691	1.09 *	6.87	-86	0.0	"

FIELD WELL INSPECTION:

Protective Casing:	KS 6/2/2021	**Well I.D. Visible:**	KS 6/2/2021
Lock Condition:		**Condition of Manway:**	
Lid Condition:		**Bolt Condition:**	
Casing Diameter:		**Bumper Posts:**	
Cap Condition:		**Flush Mount Seal:**	
Comments:	(Repairs needed?)		

GROUNDWATER SAMPLING LOG

Client: Safety-Kleen
Project Number: 46Y-001-001
Project Name: Emerald Services
Project Location: Tacoma WA
Sample Date: 12/21/21
Weather: Cool, foggy
Field Personnel: Katie Mitchell
SAMPLE TIME: ~~1100~~ 1056
SAMPLE ID: ERI-MW-3R

Static Water Level: 2.92
Depth to Hydrocarbon: na
Total Well Depth: 8 ft-bgs
Screened Interval: 6 – 8 ft-bgs
Pump Inlet Depth: 7 ft bgs
Laboratory Analysis: Arsenic/Lead 7060A/7421, TPH DRO/ORO Dx Extended, VOCs 8260B
Containers/Preservatives: 6 VOAs w/ HCL, (1) Liter poly w/HNO3
QAQC Samples Collected: (yes) (no)
If Yes, Sample ID:
Water Quality Meter: Horiba U52
Total Purge Volume:

MONITORING WELL ID: MW-3R

Time	Pumping Rate ~~(gpm)~~ mL/min	Depth to Water (ft-bmp) +/- 0.33 ft	Temp (deg C) +/- 10%	Sp. Con. (mS/cm) +/- 10%	DO (mg/L) +/- 10%	pH (S.U.) +/- 10%	ORP (mV) +/- 10%	Turbidity (NTU) +/- 10%	Comments Groundwater appearance, odor, NAPL, purge interruptions, etc.
10:39	450ml	3.76	13.33	1.39	0.53	6.69	-27	0.0	Clear
10:41	450	4.16	13.25	1.39	0.00	6.57	-31	0.0	
10:46	400	4.34	13.27	1.38	0.00	6.52	-35	0.0	
10:51	350	4.60	13.33	1.38	0.00	6.50	-38	0.0	
10:56	350	4.73	13.38	1.37	0.00	6.49	-35	0.0	
~~1100~~	~~SAMPLE~~								

GROUNDWATER SAMPLING LOG

Client: Safety-Kleen
Project Number: 46Y-001-001
Project Name: Emerald Services
Project Location: Tacoma WA
Sample Date: 12/21/21
Weather: Cool, cloudy ~34°
Field Personnel: Katie Mitchell
SAMPLE TIME: 1145
SAMPLE ID: ERI-MW-4

Static Water Level: 1.41
Depth to Hydrocarbon: na
Total Well Depth: 9 ft-bgs
Screened Interval: 4 – 9 ft-bgs
Pump Inlet Depth: ~8
Laboratory Analysis: Arsenic/Lead 7060A/7421, TPH DRO/ORO Dx Extended, VOCs 8260B
Containers/Preservatives: 6 VOAs w/ HCL, (1) Liter poly w/HN03
QAQC Samples Collected: (yes) (no)
If Yes, Sample ID: ERI-MW-50
Water Quality Meter: Horiba U52
Total Purge Volume: 2.5 gals

MONITORING WELL ID: MW-4

Time	Pumping Rate ~~(gpm)~~ ml/m	Depth to Water (ft-bmp) +/- 0.33 ft	Temp (deg C) +/- 10%	Sp. Con. (mS/cm) +/- 10%	DO (mg/L) +/- 10%	pH (S.U.) +/- 10%	ORP (mV) +/- 10%	Turbidity (NTU) +/- 10%	Comments Groundwater appearance, odor, NAPL, purge interruptions, etc.
1125	350	1.46	10.61	0.971	1.00	6.69	-36	17.0	Clear
1130	350	1.45	10.56	0.890	0.00	6.66	-37	7.6	
1135	350	1.44	10.65	0.794	0.00	6.63	-38	1.0	
1140	350	1.44	10.75	0.763	0.00	6.62	-39	0.6	
1145	350	1.44	10.78	0.751	0.00	6.61	-39	0.0	

APPENDIX B

LABORATORY REPORTS

B-1. LABORATORY REPORT (JUNE 2021)

B-2. LABORATORY REPORT (DECEMBER 2021)

APPENDIX B-1

LABORATORY REPORT (JUNE 2021)

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins FGS, Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

Laboratory Job ID: 580-103512-1
Client Project/Site: Emerald Services Tacoma

For:
Trihydro Corporation
1252 Commerce Drive
Laramie, Wyoming 82070

Attn: Katie Mitchell

Authorized for release by:
6/21/2021 2:46:55 PM

Nathan Lewis, Project Manager I
(253)922-2310
Nathan.Lewis@Eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Job ID: 580-103512-1

Laboratory: Eurofins FGS, Seattle

Narrative

Job Narrative
580-103512-1

Comments
No additional comments.

Receipt
The samples were received on 6/2/2021 4:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 9.0º C.

GC/MS VOA
Method 8260D: The laboratory control sample (LCS) for analytical batch 580-358637 recovered outside control limits for the following analytes: Dichlorodifluoromethane, Tetrachloroethene and Ethylene Dibromide. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-358637 recovered above the upper control limit for Dichlorodifluoromethane, 1,1,2-Trichloro-1,2,2-trifluoroethane and Carbon tetrachloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: ERI-MW-4 (580-103512-4), ERI-MW-50 (580-103512-5), TRIP BLANK (580-103512-6) and (CCVIS 580-358637/3).

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-358637 recovered outside acceptance criteria, low biased, for n-Butylbenzene. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported.

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-358759 recovered outside acceptance criteria, low biased, for Chloromethane, Bromomethane and cis-1,3-Dichloropropene. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported.

Method 8260D: The method blank for preparation batch 358759 contained Methylene Chloride above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

Method 8260D: The laboratory control sample duplicate (LCSD) for analytical batch 580-358759 recovered outside control limits for the following analytes: Methylene Chloride. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: ERI-MW-1 (580-103512-1), ERI-MW-2R (580-103512-2), ERI-MW-3R (580-103512-3), ERI-MW-4 (580-103512-4) and ERI-MW-50 (580-103512-5).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 580-358299, so a LCS and LCSD were used instead.

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 580-358158, so a LCS and LCSD were used instead.

Job ID: 580-103512-1 (Continued)

Laboratory: Eurofins FGS, Seattle (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: Trihydro Corporation
Project/Site: Emerald Services Tacoma

Job ID: 580-103512-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client: Trihydro Corporation
Project/Site: Emerald Services Tacoma

Job ID: 580-103512-1

Client Sample ID: ERI-MW-1
Date Collected: 06/02/21 12:30
Date Received: 06/02/21 16:20

Lab Sample ID: 580-103512-1
Matrix: Water

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0		ug/L			06/10/21 01:34	1
Chloromethane	ND		1.0		ug/L			06/10/21 01:34	1
Vinyl chloride	ND		1.0		ug/L			06/10/21 01:34	1
Bromomethane	ND		1.0		ug/L			06/10/21 01:34	1
Chloroethane	ND		1.0		ug/L			06/10/21 01:34	1
Trichlorofluoromethane	ND		1.0		ug/L			06/10/21 01:34	1
1,1-Dichloroethene	ND		1.0		ug/L			06/10/21 01:34	1
Methylene Chloride	ND	*+	3.0		ug/L			06/10/21 01:34	1
Methyl tert-butyl ether	ND		1.0		ug/L			06/10/21 01:34	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			06/10/21 01:34	1
1,1-Dichloroethane	ND		1.0		ug/L			06/10/21 01:34	1
2,2-Dichloropropane	ND		1.0		ug/L			06/10/21 01:34	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			06/10/21 01:34	1
Bromochloromethane	ND		1.0		ug/L			06/10/21 01:34	1
Chloroform	ND		1.0		ug/L			06/10/21 01:34	1
1,1,1-Trichloroethane	ND		1.0		ug/L			06/10/21 01:34	1
Carbon tetrachloride	ND		1.0		ug/L			06/10/21 01:34	1
1,1-Dichloropropene	ND		1.0		ug/L			06/10/21 01:34	1
Benzene	ND		1.0		ug/L			06/10/21 01:34	1
1,2-Dichloroethane	ND		1.0		ug/L			06/10/21 01:34	1
Trichloroethene	ND		1.0		ug/L			06/10/21 01:34	1
1,2-Dichloropropane	ND		1.0		ug/L			06/10/21 01:34	1
Dibromomethane	ND		1.0		ug/L			06/10/21 01:34	1
Bromodichloromethane	ND		1.0		ug/L			06/10/21 01:34	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			06/10/21 01:34	1
Toluene	ND		1.0		ug/L			06/10/21 01:34	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			06/10/21 01:34	1
1,1,2-Trichloroethane	ND		1.0		ug/L			06/10/21 01:34	1
Tetrachloroethene	ND		1.0		ug/L			06/10/21 01:34	1
1,3-Dichloropropane	ND		1.0		ug/L			06/10/21 01:34	1
Dibromochloromethane	ND		1.0		ug/L			06/10/21 01:34	1
1,2-Dibromoethane	ND		1.0		ug/L			06/10/21 01:34	1
Chlorobenzene	ND		1.0		ug/L			06/10/21 01:34	1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			06/10/21 01:34	1
Ethylbenzene	ND		1.0		ug/L			06/10/21 01:34	1
m-Xylene & p-Xylene	ND		2.0		ug/L			06/10/21 01:34	1
o-Xylene	ND		1.0		ug/L			06/10/21 01:34	1
Styrene	ND		1.0		ug/L			06/10/21 01:34	1
Bromoform	ND		1.0		ug/L			06/10/21 01:34	1
Isopropylbenzene	ND		1.0		ug/L			06/10/21 01:34	1
Bromobenzene	ND		1.0		ug/L			06/10/21 01:34	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			06/10/21 01:34	1
1,2,3-Trichloropropane	ND		1.0		ug/L			06/10/21 01:34	1
N-Propylbenzene	ND		1.0		ug/L			06/10/21 01:34	1
2-Chlorotoluene	ND		1.0		ug/L			06/10/21 01:34	1
4-Chlorotoluene	ND		1.0		ug/L			06/10/21 01:34	1
t-Butylbenzene	ND		2.0		ug/L			06/10/21 01:34	1
1,2,4-Trimethylbenzene	ND		3.0		ug/L			06/10/21 01:34	1
sec-Butylbenzene	ND		1.0		ug/L			06/10/21 01:34	1

Client Sample ID: ERI-MW-1

Date Collected: 06/02/21 12:30
Date Received: 06/02/21 16:20

Lab Sample ID: 580-103512-1

Matrix: Water

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Isopropyltoluene	ND		1.0		ug/L			06/10/21 01:34	1
1,3-Dichlorobenzene	ND		1.0		ug/L			06/10/21 01:34	1
1,4-Dichlorobenzene	ND		1.0		ug/L			06/10/21 01:34	1
n-Butylbenzene	ND		1.0		ug/L			06/10/21 01:34	1
1,2-Dichlorobenzene	ND		1.0		ug/L			06/10/21 01:34	1
1,2-Dibromo-3-Chloropropane	ND		3.0		ug/L			06/10/21 01:34	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			06/10/21 01:34	1
Hexachlorobutadiene	ND		3.0		ug/L			06/10/21 01:34	1
Naphthalene	ND		3.0		ug/L			06/10/21 01:34	1
1,2,3-Trichlorobenzene	ND		2.0		ug/L			06/10/21 01:34	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			06/10/21 01:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*06/10/21 01:34*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*80 - 126*		*06/10/21 01:34*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*06/10/21 01:34*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 120*		*06/10/21 01:34*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**0.13**		0.12		mg/L		06/04/21 09:25	06/09/21 14:06	1
Motor Oil (>C24-C36)	ND		0.37		mg/L		06/04/21 09:25	06/09/21 14:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*60*		*50 - 150*	*06/04/21 09:25*	*06/09/21 14:06*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		06/11/21 12:53	06/19/21 02:27	1
Lead	ND		0.00040		mg/L		06/11/21 12:53	06/19/21 02:27	1

Client: Trihydro Corporation
Project/Site: Emerald Services Tacoma

Job ID: 580-103512-1

Client Sample ID: ERI-MW-2R
Date Collected: 06/02/21 13:30
Date Received: 06/02/21 16:20

Lab Sample ID: 580-103512-2
Matrix: Water

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0		ug/L			06/10/21 02:01	1
Chloromethane	ND		1.0		ug/L			06/10/21 02:01	1
Vinyl chloride	ND		1.0		ug/L			06/10/21 02:01	1
Bromomethane	ND		1.0		ug/L			06/10/21 02:01	1
Chloroethane	ND		1.0		ug/L			06/10/21 02:01	1
Trichlorofluoromethane	ND		1.0		ug/L			06/10/21 02:01	1
1,1-Dichloroethene	ND		1.0		ug/L			06/10/21 02:01	1
Methylene Chloride	ND	*+	3.0		ug/L			06/10/21 02:01	1
Methyl tert-butyl ether	**7.5**		1.0		ug/L			06/10/21 02:01	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			06/10/21 02:01	1
1,1-Dichloroethane	ND		1.0		ug/L			06/10/21 02:01	1
2,2-Dichloropropane	ND		1.0		ug/L			06/10/21 02:01	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			06/10/21 02:01	1
Bromochloromethane	ND		1.0		ug/L			06/10/21 02:01	1
Chloroform	ND		1.0		ug/L			06/10/21 02:01	1
1,1,1-Trichloroethane	ND		1.0		ug/L			06/10/21 02:01	1
Carbon tetrachloride	ND		1.0		ug/L			06/10/21 02:01	1
1,1-Dichloropropene	ND		1.0		ug/L			06/10/21 02:01	1
Benzene	ND		1.0		ug/L			06/10/21 02:01	1
1,2-Dichloroethane	ND		1.0		ug/L			06/10/21 02:01	1
Trichloroethene	ND		1.0		ug/L			06/10/21 02:01	1
1,2-Dichloropropane	ND		1.0		ug/L			06/10/21 02:01	1
Dibromomethane	ND		1.0		ug/L			06/10/21 02:01	1
Bromodichloromethane	ND		1.0		ug/L			06/10/21 02:01	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			06/10/21 02:01	1
Toluene	ND		1.0		ug/L			06/10/21 02:01	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			06/10/21 02:01	1
1,1,2-Trichloroethane	ND		1.0		ug/L			06/10/21 02:01	1
Tetrachloroethene	ND		1.0		ug/L			06/10/21 02:01	1
1,3-Dichloropropane	ND		1.0		ug/L			06/10/21 02:01	1
Dibromochloromethane	ND		1.0		ug/L			06/10/21 02:01	1
1,2-Dibromoethane	ND		1.0		ug/L			06/10/21 02:01	1
Chlorobenzene	ND		1.0		ug/L			06/10/21 02:01	1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			06/10/21 02:01	1
Ethylbenzene	ND		1.0		ug/L			06/10/21 02:01	1
m-Xylene & p-Xylene	ND		2.0		ug/L			06/10/21 02:01	1
o-Xylene	ND		1.0		ug/L			06/10/21 02:01	1
Styrene	ND		1.0		ug/L			06/10/21 02:01	1
Bromoform	ND		1.0		ug/L			06/10/21 02:01	1
Isopropylbenzene	ND		1.0		ug/L			06/10/21 02:01	1
Bromobenzene	ND		1.0		ug/L			06/10/21 02:01	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			06/10/21 02:01	1
1,2,3-Trichloropropane	ND		1.0		ug/L			06/10/21 02:01	1
N-Propylbenzene	ND		1.0		ug/L			06/10/21 02:01	1
2-Chlorotoluene	ND		1.0		ug/L			06/10/21 02:01	1
4-Chlorotoluene	ND		1.0		ug/L			06/10/21 02:01	1
t-Butylbenzene	ND		2.0		ug/L			06/10/21 02:01	1
1,2,4-Trimethylbenzene	ND		3.0		ug/L			06/10/21 02:01	1
sec-Butylbenzene	ND		1.0		ug/L			06/10/21 02:01	1

Client: Trihydro Corporation
Project/Site: Emerald Services Tacoma

Job ID: 580-103512-1

Client Sample ID: ERI-MW-2R

Date Collected: 06/02/21 13:30
Date Received: 06/02/21 16:20

Lab Sample ID: 580-103512-2

Matrix: Water

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Isopropyltoluene	ND		1.0		ug/L			06/10/21 02:01	1
1,3-Dichlorobenzene	ND		1.0		ug/L			06/10/21 02:01	1
1,4-Dichlorobenzene	ND		1.0		ug/L			06/10/21 02:01	1
n-Butylbenzene	ND		1.0		ug/L			06/10/21 02:01	1
1,2-Dichlorobenzene	ND		1.0		ug/L			06/10/21 02:01	1
1,2-Dibromo-3-Chloropropane	ND		3.0		ug/L			06/10/21 02:01	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			06/10/21 02:01	1
Hexachlorobutadiene	ND		3.0		ug/L			06/10/21 02:01	1
Naphthalene	ND		3.0		ug/L			06/10/21 02:01	1
1,2,3-Trichlorobenzene	ND		2.0		ug/L			06/10/21 02:01	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			06/10/21 02:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*06/10/21 02:01*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*80 - 126*		*06/10/21 02:01*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*06/10/21 02:01*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 120*		*06/10/21 02:01*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**0.14**		0.12		mg/L		06/04/21 09:25	06/09/21 14:26	1
Motor Oil (>C24-C36)	ND		0.37		mg/L		06/04/21 09:25	06/09/21 14:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*61*		*50 - 150*	*06/04/21 09:25*	*06/09/21 14:26*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		06/11/21 12:53	06/19/21 02:31	1
Lead	ND		0.00040		mg/L		06/11/21 12:53	06/19/21 02:31	1

Client: Trihydro Corporation
Project/Site: Emerald Services Tacoma

Job ID: 580-103512-1

Client Sample ID: ERI-MW-3R
Date Collected: 06/02/21 15:30
Date Received: 06/02/21 16:20

Lab Sample ID: 580-103512-3
Matrix: Water

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0		ug/L			06/10/21 02:26	1
Chloromethane	ND		1.0		ug/L			06/10/21 02:26	1
Vinyl chloride	ND		1.0		ug/L			06/10/21 02:26	1
Bromomethane	ND		1.0		ug/L			06/10/21 02:26	1
Chloroethane	ND		1.0		ug/L			06/10/21 02:26	1
Trichlorofluoromethane	ND		1.0		ug/L			06/10/21 02:26	1
1,1-Dichloroethene	ND		1.0		ug/L			06/10/21 02:26	1
Methylene Chloride	ND	*+	3.0		ug/L			06/10/21 02:26	1
Methyl tert-butyl ether	ND		1.0		ug/L			06/10/21 02:26	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			06/10/21 02:26	1
1,1-Dichloroethane	ND		1.0		ug/L			06/10/21 02:26	1
2,2-Dichloropropane	ND		1.0		ug/L			06/10/21 02:26	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			06/10/21 02:26	1
Bromochloromethane	ND		1.0		ug/L			06/10/21 02:26	1
Chloroform	ND		1.0		ug/L			06/10/21 02:26	1
1,1,1-Trichloroethane	ND		1.0		ug/L			06/10/21 02:26	1
Carbon tetrachloride	ND		1.0		ug/L			06/10/21 02:26	1
1,1-Dichloropropene	ND		1.0		ug/L			06/10/21 02:26	1
Benzene	ND		1.0		ug/L			06/10/21 02:26	1
1,2-Dichloroethane	ND		1.0		ug/L			06/10/21 02:26	1
Trichloroethene	ND		1.0		ug/L			06/10/21 02:26	1
1,2-Dichloropropane	ND		1.0		ug/L			06/10/21 02:26	1
Dibromomethane	ND		1.0		ug/L			06/10/21 02:26	1
Bromodichloromethane	ND		1.0		ug/L			06/10/21 02:26	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			06/10/21 02:26	1
Toluene	ND		1.0		ug/L			06/10/21 02:26	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			06/10/21 02:26	1
1,1,2-Trichloroethane	ND		1.0		ug/L			06/10/21 02:26	1
Tetrachloroethene	ND		1.0		ug/L			06/10/21 02:26	1
1,3-Dichloropropane	ND		1.0		ug/L			06/10/21 02:26	1
Dibromochloromethane	ND		1.0		ug/L			06/10/21 02:26	1
1,2-Dibromoethane	ND		1.0		ug/L			06/10/21 02:26	1
Chlorobenzene	ND		1.0		ug/L			06/10/21 02:26	1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			06/10/21 02:26	1
Ethylbenzene	ND		1.0		ug/L			06/10/21 02:26	1
m-Xylene & p-Xylene	ND		2.0		ug/L			06/10/21 02:26	1
o-Xylene	ND		1.0		ug/L			06/10/21 02:26	1
Styrene	ND		1.0		ug/L			06/10/21 02:26	1
Bromoform	ND		1.0		ug/L			06/10/21 02:26	1
Isopropylbenzene	ND		1.0		ug/L			06/10/21 02:26	1
Bromobenzene	ND		1.0		ug/L			06/10/21 02:26	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			06/10/21 02:26	1
1,2,3-Trichloropropane	ND		1.0		ug/L			06/10/21 02:26	1
N-Propylbenzene	ND		1.0		ug/L			06/10/21 02:26	1
2-Chlorotoluene	ND		1.0		ug/L			06/10/21 02:26	1
4-Chlorotoluene	ND		1.0		ug/L			06/10/21 02:26	1
t-Butylbenzene	ND		2.0		ug/L			06/10/21 02:26	1
1,2,4-Trimethylbenzene	ND		3.0		ug/L			06/10/21 02:26	1
sec-Butylbenzene	ND		1.0		ug/L			06/10/21 02:26	1

Client: Trihydro Corporation
Project/Site: Emerald Services Tacoma

Job ID: 580-103512-1

Client Sample ID: ERI-MW-3R
Date Collected: 06/02/21 15:30
Date Received: 06/02/21 16:20

Lab Sample ID: 580-103512-3
Matrix: Water

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Isopropyltoluene	ND		1.0		ug/L			06/10/21 02:26	1
1,3-Dichlorobenzene	ND		1.0		ug/L			06/10/21 02:26	1
1,4-Dichlorobenzene	ND		1.0		ug/L			06/10/21 02:26	1
n-Butylbenzene	ND		1.0		ug/L			06/10/21 02:26	1
1,2-Dichlorobenzene	ND		1.0		ug/L			06/10/21 02:26	1
1,2-Dibromo-3-Chloropropane	ND		3.0		ug/L			06/10/21 02:26	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			06/10/21 02:26	1
Hexachlorobutadiene	ND		3.0		ug/L			06/10/21 02:26	1
Naphthalene	ND		3.0		ug/L			06/10/21 02:26	1
1,2,3-Trichlorobenzene	ND		2.0		ug/L			06/10/21 02:26	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			06/10/21 02:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*06/10/21 02:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*80 - 126*		*06/10/21 02:26*	*1*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*06/10/21 02:26*	*1*
Dibromofluoromethane (Surr)	*109*		*80 - 120*		*06/10/21 02:26*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**0.80**		0.12		mg/L		06/04/21 09:25	06/09/21 14:46	1
Motor Oil (>C24-C36)	**0.95**		0.39		mg/L		06/04/21 09:25	06/09/21 14:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*71*		*50 - 150*	*06/04/21 09:25*	*06/09/21 14:46*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0033**		0.0010		mg/L		06/11/21 12:53	06/19/21 02:35	1
Lead	ND		0.00040		mg/L		06/11/21 12:53	06/19/21 02:35	1

Client: Trihydro Corporation
Project/Site: Emerald Services Tacoma

Job ID: 580-103512-1

Client Sample ID: ERI-MW-4
Date Collected: 06/02/21 14:30
Date Received: 06/02/21 16:20

Lab Sample ID: 580-103512-4
Matrix: Water

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	*+	1.0		ug/L			06/09/21 02:14	1
Chloromethane	ND		1.0		ug/L			06/09/21 02:14	1
Vinyl chloride	ND		1.0		ug/L			06/09/21 02:14	1
Bromomethane	ND		1.0		ug/L			06/09/21 02:14	1
Chloroethane	ND		1.0		ug/L			06/09/21 02:14	1
Trichlorofluoromethane	ND		1.0		ug/L			06/09/21 02:14	1
1,1-Dichloroethene	ND		1.0		ug/L			06/09/21 02:14	1
Methylene Chloride	ND		3.0		ug/L			06/09/21 02:14	1
Methyl tert-butyl ether	ND		1.0		ug/L			06/09/21 02:14	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			06/09/21 02:14	1
1,1-Dichloroethane	ND		1.0		ug/L			06/09/21 02:14	1
2,2-Dichloropropane	ND		1.0		ug/L			06/09/21 02:14	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			06/09/21 02:14	1
Bromochloromethane	ND		1.0		ug/L			06/09/21 02:14	1
Chloroform	ND		1.0		ug/L			06/09/21 02:14	1
1,1,1-Trichloroethane	ND		1.0		ug/L			06/09/21 02:14	1
Carbon tetrachloride	ND		1.0		ug/L			06/09/21 02:14	1
1,1-Dichloropropene	ND		1.0		ug/L			06/09/21 02:14	1
Benzene	ND		1.0		ug/L			06/09/21 02:14	1
1,2-Dichloroethane	ND		1.0		ug/L			06/09/21 02:14	1
Trichloroethene	ND		1.0		ug/L			06/09/21 02:14	1
1,2-Dichloropropane	ND		1.0		ug/L			06/09/21 02:14	1
Dibromomethane	ND		1.0		ug/L			06/09/21 02:14	1
Bromodichloromethane	ND		1.0		ug/L			06/09/21 02:14	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			06/09/21 02:14	1
Toluene	ND		1.0		ug/L			06/09/21 02:14	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			06/09/21 02:14	1
1,1,2-Trichloroethane	ND		1.0		ug/L			06/09/21 02:14	1
Tetrachloroethene	ND	*+	1.0		ug/L			06/09/21 02:14	1
1,3-Dichloropropane	ND		1.0		ug/L			06/09/21 02:14	1
Dibromochloromethane	ND		1.0		ug/L			06/09/21 02:14	1
1,2-Dibromoethane	ND	*+	1.0		ug/L			06/09/21 02:14	1
Chlorobenzene	ND		1.0		ug/L			06/09/21 02:14	1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			06/09/21 02:14	1
Ethylbenzene	ND		1.0		ug/L			06/09/21 02:14	1
m-Xylene & p-Xylene	ND		2.0		ug/L			06/09/21 02:14	1
o-Xylene	ND		1.0		ug/L			06/09/21 02:14	1
Styrene	ND		1.0		ug/L			06/09/21 02:14	1
Bromoform	ND		1.0		ug/L			06/09/21 02:14	1
Isopropylbenzene	ND		1.0		ug/L			06/09/21 02:14	1
Bromobenzene	ND		1.0		ug/L			06/09/21 02:14	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			06/09/21 02:14	1
1,2,3-Trichloropropane	ND		1.0		ug/L			06/09/21 02:14	1
N-Propylbenzene	ND		1.0		ug/L			06/09/21 02:14	1
2-Chlorotoluene	ND		1.0		ug/L			06/09/21 02:14	1
4-Chlorotoluene	ND		1.0		ug/L			06/09/21 02:14	1
t-Butylbenzene	ND		2.0		ug/L			06/09/21 02:14	1
1,2,4-Trimethylbenzene	ND		3.0		ug/L			06/09/21 02:14	1
sec-Butylbenzene	ND		1.0		ug/L			06/09/21 02:14	1

Client: Trihydro Corporation
Project/Site: Emerald Services Tacoma

Job ID: 580-103512-1

Client Sample ID: ERI-MW-4

Date Collected: 06/02/21 14:30
Date Received: 06/02/21 16:20

Lab Sample ID: 580-103512-4

Matrix: Water

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Isopropyltoluene	ND		1.0		ug/L			06/09/21 02:14	1
1,3-Dichlorobenzene	ND		1.0		ug/L			06/09/21 02:14	1
1,4-Dichlorobenzene	ND		1.0		ug/L			06/09/21 02:14	1
n-Butylbenzene	ND		1.0		ug/L			06/09/21 02:14	1
1,2-Dichlorobenzene	ND		1.0		ug/L			06/09/21 02:14	1
1,2-Dibromo-3-Chloropropane	ND		3.0		ug/L			06/09/21 02:14	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			06/09/21 02:14	1
Hexachlorobutadiene	ND		3.0		ug/L			06/09/21 02:14	1
Naphthalene	ND		3.0		ug/L			06/09/21 02:14	1
1,2,3-Trichlorobenzene	ND		2.0		ug/L			06/09/21 02:14	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			06/09/21 02:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*06/09/21 02:14*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 126*		*06/09/21 02:14*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*06/09/21 02:14*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*06/09/21 02:14*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**1.6**		0.11		mg/L		06/04/21 09:25	06/09/21 15:07	1
Motor Oil (>C24-C36)	**0.57**		0.37		mg/L		06/04/21 09:25	06/09/21 15:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*80*		*50 - 150*	*06/04/21 09:25*	*06/09/21 15:07*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		06/11/21 12:53	06/19/21 02:39	1
Lead	ND		0.00040		mg/L		06/11/21 12:53	06/19/21 02:39	1

Client: Trihydro Corporation
Project/Site: Emerald Services Tacoma

Job ID: 580-103512-1

Client Sample ID: ERI-MW-50
Date Collected: 06/02/21 00:01
Date Received: 06/02/21 16:20

Lab Sample ID: 580-103512-5
Matrix: Water

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	*+	1.0		ug/L			06/09/21 02:39	1
Chloromethane	ND		1.0		ug/L			06/09/21 02:39	1
Vinyl chloride	ND		1.0		ug/L			06/09/21 02:39	1
Bromomethane	ND		1.0		ug/L			06/09/21 02:39	1
Chloroethane	ND		1.0		ug/L			06/09/21 02:39	1
Trichlorofluoromethane	ND		1.0		ug/L			06/09/21 02:39	1
1,1-Dichloroethene	ND		1.0		ug/L			06/09/21 02:39	1
Methylene Chloride	ND		3.0		ug/L			06/09/21 02:39	1
Methyl tert-butyl ether	ND		1.0		ug/L			06/09/21 02:39	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			06/09/21 02:39	1
1,1-Dichloroethane	ND		1.0		ug/L			06/09/21 02:39	1
2,2-Dichloropropane	ND		1.0		ug/L			06/09/21 02:39	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			06/09/21 02:39	1
Bromochloromethane	ND		1.0		ug/L			06/09/21 02:39	1
Chloroform	ND		1.0		ug/L			06/09/21 02:39	1
1,1,1-Trichloroethane	ND		1.0		ug/L			06/09/21 02:39	1
Carbon tetrachloride	ND		1.0		ug/L			06/09/21 02:39	1
1,1-Dichloropropene	ND		1.0		ug/L			06/09/21 02:39	1
Benzene	ND		1.0		ug/L			06/09/21 02:39	1
1,2-Dichloroethane	ND		1.0		ug/L			06/09/21 02:39	1
Trichloroethene	ND		1.0		ug/L			06/09/21 02:39	1
1,2-Dichloropropane	ND		1.0		ug/L			06/09/21 02:39	1
Dibromomethane	ND		1.0		ug/L			06/09/21 02:39	1
Bromodichloromethane	ND		1.0		ug/L			06/09/21 02:39	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			06/09/21 02:39	1
Toluene	ND		1.0		ug/L			06/09/21 02:39	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			06/09/21 02:39	1
1,1,2-Trichloroethane	ND		1.0		ug/L			06/09/21 02:39	1
Tetrachloroethene	ND	*+	1.0		ug/L			06/09/21 02:39	1
1,3-Dichloropropane	ND		1.0		ug/L			06/09/21 02:39	1
Dibromochloromethane	ND		1.0		ug/L			06/09/21 02:39	1
1,2-Dibromoethane	ND	*+	1.0		ug/L			06/09/21 02:39	1
Chlorobenzene	ND		1.0		ug/L			06/09/21 02:39	1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			06/09/21 02:39	1
Ethylbenzene	ND		1.0		ug/L			06/09/21 02:39	1
m-Xylene & p-Xylene	ND		2.0		ug/L			06/09/21 02:39	1
o-Xylene	ND		1.0		ug/L			06/09/21 02:39	1
Styrene	ND		1.0		ug/L			06/09/21 02:39	1
Bromoform	ND		1.0		ug/L			06/09/21 02:39	1
Isopropylbenzene	ND		1.0		ug/L			06/09/21 02:39	1
Bromobenzene	ND		1.0		ug/L			06/09/21 02:39	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			06/09/21 02:39	1
1,2,3-Trichloropropane	ND		1.0		ug/L			06/09/21 02:39	1
N-Propylbenzene	ND		1.0		ug/L			06/09/21 02:39	1
2-Chlorotoluene	ND		1.0		ug/L			06/09/21 02:39	1
4-Chlorotoluene	ND		1.0		ug/L			06/09/21 02:39	1
t-Butylbenzene	ND		2.0		ug/L			06/09/21 02:39	1
1,2,4-Trimethylbenzene	ND		3.0		ug/L			06/09/21 02:39	1
sec-Butylbenzene	ND		1.0		ug/L			06/09/21 02:39	1

Client: Trihydro Corporation
Project/Site: Emerald Services Tacoma

Job ID: 580-103512-1

Client Sample ID: ERI-MW-50

Date Collected: 06/02/21 00:01
Date Received: 06/02/21 16:20

Lab Sample ID: 580-103512-5

Matrix: Water

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Isopropyltoluene	ND		1.0		ug/L			06/09/21 02:39	1
1,3-Dichlorobenzene	ND		1.0		ug/L			06/09/21 02:39	1
1,4-Dichlorobenzene	ND		1.0		ug/L			06/09/21 02:39	1
n-Butylbenzene	ND		1.0		ug/L			06/09/21 02:39	1
1,2-Dichlorobenzene	ND		1.0		ug/L			06/09/21 02:39	1
1,2-Dibromo-3-Chloropropane	ND		3.0		ug/L			06/09/21 02:39	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			06/09/21 02:39	1
Hexachlorobutadiene	ND		3.0		ug/L			06/09/21 02:39	1
Naphthalene	ND		3.0		ug/L			06/09/21 02:39	1
1,2,3-Trichlorobenzene	ND		2.0		ug/L			06/09/21 02:39	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			06/09/21 02:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*06/09/21 02:39*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*80 - 126*		*06/09/21 02:39*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*06/09/21 02:39*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 120*		*06/09/21 02:39*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**1.7**		0.11		mg/L		06/04/21 09:25	06/09/21 15:27	1
Motor Oil (>C24-C36)	**0.60**		0.36		mg/L		06/04/21 09:25	06/09/21 15:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*91*		*50 - 150*	*06/04/21 09:25*	*06/09/21 15:27*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		06/11/21 12:53	06/19/21 02:42	1
Lead	ND		0.00040		mg/L		06/11/21 12:53	06/19/21 02:42	1

Client: Trihydro Corporation
Project/Site: Emerald Services Tacoma

Job ID: 580-103512-1

Client Sample ID: TRIP BLANK
Date Collected: 06/02/21 00:01
Date Received: 06/02/21 16:20

Lab Sample ID: 580-103512-6
Matrix: Water

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	*+	1.0		ug/L			06/09/21 03:04	1
Chloromethane	ND		1.0		ug/L			06/09/21 03:04	1
Vinyl chloride	ND		1.0		ug/L			06/09/21 03:04	1
Bromomethane	ND		1.0		ug/L			06/09/21 03:04	1
Chloroethane	ND		1.0		ug/L			06/09/21 03:04	1
Trichlorofluoromethane	ND		1.0		ug/L			06/09/21 03:04	1
1,1-Dichloroethene	ND		1.0		ug/L			06/09/21 03:04	1
Methylene Chloride	ND		3.0		ug/L			06/09/21 03:04	1
Methyl tert-butyl ether	ND		1.0		ug/L			06/09/21 03:04	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			06/09/21 03:04	1
1,1-Dichloroethane	ND		1.0		ug/L			06/09/21 03:04	1
2,2-Dichloropropane	ND		1.0		ug/L			06/09/21 03:04	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			06/09/21 03:04	1
Bromochloromethane	ND		1.0		ug/L			06/09/21 03:04	1
Chloroform	ND		1.0		ug/L			06/09/21 03:04	1
1,1,1-Trichloroethane	ND		1.0		ug/L			06/09/21 03:04	1
Carbon tetrachloride	ND		1.0		ug/L			06/09/21 03:04	1
1,1-Dichloropropene	ND		1.0		ug/L			06/09/21 03:04	1
Benzene	ND		1.0		ug/L			06/09/21 03:04	1
1,2-Dichloroethane	ND		1.0		ug/L			06/09/21 03:04	1
Trichloroethene	ND		1.0		ug/L			06/09/21 03:04	1
1,2-Dichloropropane	ND		1.0		ug/L			06/09/21 03:04	1
Dibromomethane	ND		1.0		ug/L			06/09/21 03:04	1
Bromodichloromethane	ND		1.0		ug/L			06/09/21 03:04	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			06/09/21 03:04	1
Toluene	ND		1.0		ug/L			06/09/21 03:04	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			06/09/21 03:04	1
1,1,2-Trichloroethane	ND		1.0		ug/L			06/09/21 03:04	1
Tetrachloroethene	ND	*+	1.0		ug/L			06/09/21 03:04	1
1,3-Dichloropropane	ND		1.0		ug/L			06/09/21 03:04	1
Dibromochloromethane	ND		1.0		ug/L			06/09/21 03:04	1
1,2-Dibromoethane	ND	*+	1.0		ug/L			06/09/21 03:04	1
Chlorobenzene	ND		1.0		ug/L			06/09/21 03:04	1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			06/09/21 03:04	1
Ethylbenzene	ND		1.0		ug/L			06/09/21 03:04	1
m-Xylene & p-Xylene	ND		2.0		ug/L			06/09/21 03:04	1
o-Xylene	ND		1.0		ug/L			06/09/21 03:04	1
Styrene	ND		1.0		ug/L			06/09/21 03:04	1
Bromoform	ND		1.0		ug/L			06/09/21 03:04	1
Isopropylbenzene	ND		1.0		ug/L			06/09/21 03:04	1
Bromobenzene	ND		1.0		ug/L			06/09/21 03:04	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			06/09/21 03:04	1
1,2,3-Trichloropropane	ND		1.0		ug/L			06/09/21 03:04	1
N-Propylbenzene	ND		1.0		ug/L			06/09/21 03:04	1
2-Chlorotoluene	ND		1.0		ug/L			06/09/21 03:04	1
4-Chlorotoluene	ND		1.0		ug/L			06/09/21 03:04	1
t-Butylbenzene	ND		2.0		ug/L			06/09/21 03:04	1
1,2,4-Trimethylbenzene	ND		3.0		ug/L			06/09/21 03:04	1
sec-Butylbenzene	ND		1.0		ug/L			06/09/21 03:04	1

Client: Trihydro Corporation
Project/Site: Emerald Services Tacoma

Job ID: 580-103512-1

Client Sample ID: TRIP BLANK
Date Collected: 06/02/21 00:01
Date Received: 06/02/21 16:20

Lab Sample ID: 580-103512-6
Matrix: Water

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Isopropyltoluene	ND		1.0		ug/L			06/09/21 03:04	1
1,3-Dichlorobenzene	ND		1.0		ug/L			06/09/21 03:04	1
1,4-Dichlorobenzene	ND		1.0		ug/L			06/09/21 03:04	1
n-Butylbenzene	ND		1.0		ug/L			06/09/21 03:04	1
1,2-Dichlorobenzene	ND		1.0		ug/L			06/09/21 03:04	1
1,2-Dibromo-3-Chloropropane	ND		3.0		ug/L			06/09/21 03:04	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			06/09/21 03:04	1
Hexachlorobutadiene	ND		3.0		ug/L			06/09/21 03:04	1
Naphthalene	ND		3.0		ug/L			06/09/21 03:04	1
1,2,3-Trichlorobenzene	ND		2.0		ug/L			06/09/21 03:04	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			06/09/21 03:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*06/09/21 03:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*80 - 126*		*06/09/21 03:04*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*06/09/21 03:04*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*06/09/21 03:04*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-358637/7
Matrix: Water
Analysis Batch: 358637

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0		ug/L			06/09/21 01:49	1
Chloromethane	ND		1.0		ug/L			06/09/21 01:49	1
Vinyl chloride	ND		1.0		ug/L			06/09/21 01:49	1
Bromomethane	ND		1.0		ug/L			06/09/21 01:49	1
Chloroethane	ND		1.0		ug/L			06/09/21 01:49	1
Trichlorofluoromethane	ND		1.0		ug/L			06/09/21 01:49	1
1,1-Dichloroethene	ND		1.0		ug/L			06/09/21 01:49	1
Methylene Chloride	ND		3.0		ug/L			06/09/21 01:49	1
Methyl tert-butyl ether	ND		1.0		ug/L			06/09/21 01:49	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			06/09/21 01:49	1
1,1-Dichloroethane	ND		1.0		ug/L			06/09/21 01:49	1
2,2-Dichloropropane	ND		1.0		ug/L			06/09/21 01:49	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			06/09/21 01:49	1
Bromochloromethane	ND		1.0		ug/L			06/09/21 01:49	1
Chloroform	ND		1.0		ug/L			06/09/21 01:49	1
1,1,1-Trichloroethane	ND		1.0		ug/L			06/09/21 01:49	1
Carbon tetrachloride	ND		1.0		ug/L			06/09/21 01:49	1
1,1-Dichloropropene	ND		1.0		ug/L			06/09/21 01:49	1
Benzene	ND		1.0		ug/L			06/09/21 01:49	1
1,2-Dichloroethane	ND		1.0		ug/L			06/09/21 01:49	1
Trichloroethene	ND		1.0		ug/L			06/09/21 01:49	1
1,2-Dichloropropane	ND		1.0		ug/L			06/09/21 01:49	1
Dibromomethane	ND		1.0		ug/L			06/09/21 01:49	1
Bromodichloromethane	ND		1.0		ug/L			06/09/21 01:49	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			06/09/21 01:49	1
Toluene	ND		1.0		ug/L			06/09/21 01:49	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			06/09/21 01:49	1
1,1,2-Trichloroethane	ND		1.0		ug/L			06/09/21 01:49	1
Tetrachloroethene	ND		1.0		ug/L			06/09/21 01:49	1
1,3-Dichloropropane	ND		1.0		ug/L			06/09/21 01:49	1
Dibromochloromethane	ND		1.0		ug/L			06/09/21 01:49	1
1,2-Dibromoethane	ND		1.0		ug/L			06/09/21 01:49	1
Chlorobenzene	ND		1.0		ug/L			06/09/21 01:49	1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			06/09/21 01:49	1
Ethylbenzene	ND		1.0		ug/L			06/09/21 01:49	1
m-Xylene & p-Xylene	ND		2.0		ug/L			06/09/21 01:49	1
o-Xylene	ND		1.0		ug/L			06/09/21 01:49	1
Styrene	ND		1.0		ug/L			06/09/21 01:49	1
Bromoform	ND		1.0		ug/L			06/09/21 01:49	1
Isopropylbenzene	ND		1.0		ug/L			06/09/21 01:49	1
Bromobenzene	ND		1.0		ug/L			06/09/21 01:49	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			06/09/21 01:49	1
1,2,3-Trichloropropane	ND		1.0		ug/L			06/09/21 01:49	1
N-Propylbenzene	ND		1.0		ug/L			06/09/21 01:49	1
2-Chlorotoluene	ND		1.0		ug/L			06/09/21 01:49	1
4-Chlorotoluene	ND		1.0		ug/L			06/09/21 01:49	1
t-Butylbenzene	ND		2.0		ug/L			06/09/21 01:49	1
1,2,4-Trimethylbenzene	ND		3.0		ug/L			06/09/21 01:49	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-358637/7
Matrix: Water
Analysis Batch: 358637

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	ND		1.0		ug/L			06/09/21 01:49	1
4-Isopropyltoluene	ND		1.0		ug/L			06/09/21 01:49	1
1,3-Dichlorobenzene	ND		1.0		ug/L			06/09/21 01:49	1
1,4-Dichlorobenzene	ND		1.0		ug/L			06/09/21 01:49	1
1,2-Dichlorobenzene	ND		1.0		ug/L			06/09/21 01:49	1
1,2-Dibromo-3-Chloropropane	ND		3.0		ug/L			06/09/21 01:49	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			06/09/21 01:49	1
Hexachlorobutadiene	ND		3.0		ug/L			06/09/21 01:49	1
Naphthalene	ND		3.0		ug/L			06/09/21 01:49	1
1,2,3-Trichlorobenzene	ND		2.0		ug/L			06/09/21 01:49	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			06/09/21 01:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*06/09/21 01:49*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*80 - 126*		*06/09/21 01:49*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*06/09/21 01:49*	*1*
Dibromofluoromethane (Surr)	*112*		*80 - 120*		*06/09/21 01:49*	*1*

Lab Sample ID: LCS 580-358637/4
Matrix: Water
Analysis Batch: 358637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	10.0	13.8	*+	ug/L		138	47 - 133
Chloromethane	10.0	7.57		ug/L		76	52 - 135
Vinyl chloride	10.0	8.51		ug/L		85	65 - 130
Bromomethane	10.0	8.56		ug/L		86	66 - 125
Chloroethane	10.0	8.86		ug/L		89	65 - 132
Trichlorofluoromethane	10.0	9.88		ug/L		99	64 - 130
1,1-Dichloroethene	10.0	12.0		ug/L		120	70 - 129
Methylene Chloride	10.0	11.3		ug/L		113	77 - 120
Methyl tert-butyl ether	10.0	10.3		ug/L		103	72 - 130
trans-1,2-Dichloroethene	10.0	10.9		ug/L		109	70 - 130
1,1-Dichloroethane	10.0	10.6		ug/L		106	81 - 129
2,2-Dichloropropane	10.0	10.1		ug/L		101	53 - 150
cis-1,2-Dichloroethene	10.0	10.8		ug/L		108	76 - 129
Bromochloromethane	10.0	11.2		ug/L		112	78 - 120
Chloroform	10.0	11.7		ug/L		117	73 - 127
1,1,1-Trichloroethane	10.0	12.0		ug/L		120	74 - 130
Carbon tetrachloride	10.0	12.3		ug/L		123	72 - 129
1,1-Dichloropropene	10.0	11.2		ug/L		112	74 - 131
Benzene	10.0	10.8		ug/L		108	82 - 122
1,2-Dichloroethane	10.0	10.5		ug/L		105	76 - 126
Trichloroethene	10.0	11.3		ug/L		113	81 - 125
1,2-Dichloropropane	10.0	10.2		ug/L		102	80 - 126
Dibromomethane	10.0	11.3		ug/L		113	80 - 120
Bromodichloromethane	10.0	11.0		ug/L		110	75 - 124
cis-1,3-Dichloropropene	10.0	8.63		ug/L		86	77 - 120

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-358637/4
Matrix: Water
Analysis Batch: 358637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	10.0	10.9		ug/L		109	80 - 120
trans-1,3-Dichloropropene	10.0	10.2		ug/L		102	70 - 122
1,1,2-Trichloroethane	10.0	11.6		ug/L		116	80 - 121
Tetrachloroethene	10.0	12.1	*+	ug/L		121	76 - 120
1,3-Dichloropropane	10.0	11.0		ug/L		110	79 - 120
Dibromochloromethane	10.0	11.7		ug/L		117	60 - 125
1,2-Dibromoethane	10.0	12.2	*+	ug/L		122	79 - 120
Chlorobenzene	10.0	11.2		ug/L		112	80 - 120
1,1,1,2-Tetrachloroethane	10.0	11.3		ug/L		113	79 - 120
Ethylbenzene	10.0	11.2		ug/L		112	80 - 120
m-Xylene & p-Xylene	10.0	11.3		ug/L		113	80 - 120
o-Xylene	10.0	11.0		ug/L		110	80 - 125
Styrene	10.0	11.2		ug/L		112	76 - 127
Bromoform	10.0	11.3		ug/L		113	28 - 139
Isopropylbenzene	10.0	11.5		ug/L		115	75 - 129
Bromobenzene	10.0	10.2		ug/L		102	80 - 120
1,1,2,2-Tetrachloroethane	10.0	9.44		ug/L		94	74 - 124
1,2,3-Trichloropropane	10.0	10.5		ug/L		105	76 - 124
N-Propylbenzene	10.0	10.2		ug/L		102	80 - 128
2-Chlorotoluene	10.0	10.3		ug/L		103	80 - 120
4-Chlorotoluene	10.0	9.99		ug/L		100	80 - 120
t-Butylbenzene	10.0	9.67		ug/L		97	80 - 129
1,2,4-Trimethylbenzene	10.0	9.81		ug/L		98	80 - 131
sec-Butylbenzene	10.0	9.85		ug/L		98	78 - 131
4-Isopropyltoluene	10.0	9.74		ug/L		97	77 - 131
1,3-Dichlorobenzene	10.0	11.9		ug/L		119	69 - 127
1,4-Dichlorobenzene	10.0	10.2		ug/L		102	80 - 120
1,2-Dichlorobenzene	10.0	10.8		ug/L		108	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	10.4		ug/L		104	65 - 125
1,2,4-Trichlorobenzene	10.0	12.3		ug/L		123	73 - 128
Hexachlorobutadiene	10.0	10.4		ug/L		104	74 - 125
Naphthalene	10.0	11.0		ug/L		110	75 - 134
1,2,3-Trichlorobenzene	10.0	11.1		ug/L		111	74 - 139
1,3,5-Trimethylbenzene	10.0	10.0		ug/L		100	80 - 131

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*103*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 126*
4-Bromofluorobenzene (Surr)	*111*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*

Lab Sample ID: LCSD 580-358637/5
Matrix: Water
Analysis Batch: 358637

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dichlorodifluoromethane	10.0	12.5		ug/L		125	47 - 133	10	15
Chloromethane	10.0	7.68		ug/L		77	52 - 135	1	14

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-358637/5
Matrix: Water
Analysis Batch: 358637

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Vinyl chloride	10.0	8.07		ug/L		81	65 - 130	5	14
Bromomethane	10.0	7.96		ug/L		80	66 - 125	7	14
Chloroethane	10.0	8.35		ug/L		84	65 - 132	6	18
Trichlorofluoromethane	10.0	9.32		ug/L		93	64 - 130	6	14
1,1-Dichloroethene	10.0	11.4		ug/L		114	70 - 129	6	17
Methylene Chloride	10.0	10.7		ug/L		107	77 - 120	5	18
Methyl tert-butyl ether	10.0	9.77		ug/L		98	72 - 130	6	18
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	70 - 130	6	21
1,1-Dichloroethane	10.0	9.98		ug/L		100	81 - 129	6	15
2,2-Dichloropropane	10.0	9.59		ug/L		96	53 - 150	5	15
cis-1,2-Dichloroethene	10.0	10.3		ug/L		103	76 - 129	4	15
Bromochloromethane	10.0	11.0		ug/L		110	78 - 120	2	13
Chloroform	10.0	11.1		ug/L		111	73 - 127	5	14
1,1,1-Trichloroethane	10.0	11.5		ug/L		115	74 - 130	5	11
Carbon tetrachloride	10.0	11.7		ug/L		117	72 - 129	5	11
1,1-Dichloropropene	10.0	10.5		ug/L		105	74 - 131	7	14
Benzene	10.0	10.2		ug/L		102	82 - 122	6	14
1,2-Dichloroethane	10.0	10.6		ug/L		106	76 - 126	1	11
Trichloroethene	10.0	10.6		ug/L		106	81 - 125	6	13
1,2-Dichloropropane	10.0	10.2		ug/L		102	80 - 126	0	14
Dibromomethane	10.0	11.0		ug/L		110	80 - 120	3	11
Bromodichloromethane	10.0	10.9		ug/L		109	75 - 124	1	13
cis-1,3-Dichloropropene	10.0	8.75		ug/L		88	77 - 120	1	20
Toluene	10.0	10.7		ug/L		107	80 - 120	2	13
trans-1,3-Dichloropropene	10.0	9.87		ug/L		99	70 - 122	3	14
1,1,2-Trichloroethane	10.0	11.4		ug/L		114	80 - 121	2	14
Tetrachloroethene	10.0	11.6		ug/L		116	76 - 120	4	13
1,3-Dichloropropane	10.0	10.7		ug/L		107	79 - 120	3	13
Dibromochloromethane	10.0	11.4		ug/L		114	60 - 125	3	13
1,2-Dibromoethane	10.0	11.8		ug/L		118	79 - 120	3	12
Chlorobenzene	10.0	10.9		ug/L		109	80 - 120	2	10
1,1,1,2-Tetrachloroethane	10.0	11.0		ug/L		110	79 - 120	3	10
Ethylbenzene	10.0	10.9		ug/L		109	80 - 120	3	14
m-Xylene & p-Xylene	10.0	10.9		ug/L		109	80 - 120	4	14
o-Xylene	10.0	10.6		ug/L		106	80 - 125	4	16
Styrene	10.0	10.8		ug/L		108	76 - 127	3	16
Bromoform	10.0	11.0		ug/L		110	28 - 139	3	15
Isopropylbenzene	10.0	11.0		ug/L		110	75 - 129	5	12
Bromobenzene	10.0	10.4		ug/L		104	80 - 120	2	13
1,1,2,2-Tetrachloroethane	10.0	9.45		ug/L		95	74 - 124	0	18
1,2,3-Trichloropropane	10.0	10.9		ug/L		109	76 - 124	4	16
N-Propylbenzene	10.0	10.1		ug/L		101	80 - 128	0	13
2-Chlorotoluene	10.0	10.3		ug/L		103	80 - 120	1	15
4-Chlorotoluene	10.0	10.0		ug/L		100	80 - 120	1	14
t-Butylbenzene	10.0	9.73		ug/L		97	80 - 129	1	14
1,2,4-Trimethylbenzene	10.0	9.91		ug/L		99	80 - 131	1	16
sec-Butylbenzene	10.0	9.79		ug/L		98	78 - 131	1	15
4-Isopropyltoluene	10.0	9.68		ug/L		97	77 - 131	1	20
1,3-Dichlorobenzene	10.0	11.3		ug/L		113	69 - 127	5	14

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-358637/5
Matrix: Water
Analysis Batch: 358637

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dichlorobenzene			10.0	10.4		ug/L		104	80 - 120	1	17
1,2-Dichlorobenzene			10.0	10.9		ug/L		109	80 - 120	1	15
1,2-Dibromo-3-Chloropropane			10.0	10.0		ug/L		100	65 - 125	4	17
1,2,4-Trichlorobenzene			10.0	11.0		ug/L		110	73 - 128	12	20
Hexachlorobutadiene			10.0	9.98		ug/L		100	74 - 125	4	22
Naphthalene			10.0	10.2		ug/L		102	75 - 134	7	23
1,2,3-Trichlorobenzene			10.0	10.5		ug/L		105	74 - 139	6	26
1,3,5-Trimethylbenzene			10.0	10.0		ug/L		100	80 - 131	0	14

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*103*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 126*
4-Bromofluorobenzene (Surr)	*110*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*

Lab Sample ID: MB 580-358759/7
Matrix: Water
Analysis Batch: 358759

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0		ug/L			06/10/21 00:44	1
Chloromethane	ND		1.0		ug/L			06/10/21 00:44	1
Vinyl chloride	ND		1.0		ug/L			06/10/21 00:44	1
Bromomethane	ND		1.0		ug/L			06/10/21 00:44	1
Chloroethane	ND		1.0		ug/L			06/10/21 00:44	1
Trichlorofluoromethane	ND		1.0		ug/L			06/10/21 00:44	1
1,1-Dichloroethene	ND		1.0		ug/L			06/10/21 00:44	1
Methylene Chloride	3.57		3.0		ug/L			06/10/21 00:44	1
Methyl tert-butyl ether	ND		1.0		ug/L			06/10/21 00:44	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			06/10/21 00:44	1
1,1-Dichloroethane	ND		1.0		ug/L			06/10/21 00:44	1
2,2-Dichloropropane	ND		1.0		ug/L			06/10/21 00:44	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			06/10/21 00:44	1
Bromochloromethane	ND		1.0		ug/L			06/10/21 00:44	1
Chloroform	ND		1.0		ug/L			06/10/21 00:44	1
1,1,1-Trichloroethane	ND		1.0		ug/L			06/10/21 00:44	1
Carbon tetrachloride	ND		1.0		ug/L			06/10/21 00:44	1
1,1-Dichloropropene	ND		1.0		ug/L			06/10/21 00:44	1
Benzene	ND		1.0		ug/L			06/10/21 00:44	1
1,2-Dichloroethane	ND		1.0		ug/L			06/10/21 00:44	1
Trichloroethene	ND		1.0		ug/L			06/10/21 00:44	1
1,2-Dichloropropane	ND		1.0		ug/L			06/10/21 00:44	1
Dibromomethane	ND		1.0		ug/L			06/10/21 00:44	1
Bromodichloromethane	ND		1.0		ug/L			06/10/21 00:44	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			06/10/21 00:44	1
Toluene	ND		1.0		ug/L			06/10/21 00:44	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			06/10/21 00:44	1
1,1,2-Trichloroethane	ND		1.0		ug/L			06/10/21 00:44	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-358759/7
Matrix: Water
Analysis Batch: 358759

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	ND		1.0		ug/L			06/10/21 00:44	1
1,3-Dichloropropane	ND		1.0		ug/L			06/10/21 00:44	1
Dibromochloromethane	ND		1.0		ug/L			06/10/21 00:44	1
1,2-Dibromoethane	ND		1.0		ug/L			06/10/21 00:44	1
Chlorobenzene	ND		1.0		ug/L			06/10/21 00:44	1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			06/10/21 00:44	1
Ethylbenzene	ND		1.0		ug/L			06/10/21 00:44	1
m-Xylene & p-Xylene	ND		2.0		ug/L			06/10/21 00:44	1
o-Xylene	ND		1.0		ug/L			06/10/21 00:44	1
Styrene	ND		1.0		ug/L			06/10/21 00:44	1
Bromoform	ND		1.0		ug/L			06/10/21 00:44	1
Isopropylbenzene	ND		1.0		ug/L			06/10/21 00:44	1
Bromobenzene	ND		1.0		ug/L			06/10/21 00:44	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			06/10/21 00:44	1
1,2,3-Trichloropropane	ND		1.0		ug/L			06/10/21 00:44	1
N-Propylbenzene	ND		1.0		ug/L			06/10/21 00:44	1
2-Chlorotoluene	ND		1.0		ug/L			06/10/21 00:44	1
4-Chlorotoluene	ND		1.0		ug/L			06/10/21 00:44	1
t-Butylbenzene	ND		2.0		ug/L			06/10/21 00:44	1
1,2,4-Trimethylbenzene	ND		3.0		ug/L			06/10/21 00:44	1
sec-Butylbenzene	ND		1.0		ug/L			06/10/21 00:44	1
4-Isopropyltoluene	ND		1.0		ug/L			06/10/21 00:44	1
1,3-Dichlorobenzene	ND		1.0		ug/L			06/10/21 00:44	1
1,4-Dichlorobenzene	ND		1.0		ug/L			06/10/21 00:44	1
n-Butylbenzene	ND		1.0		ug/L			06/10/21 00:44	1
1,2-Dichlorobenzene	ND		1.0		ug/L			06/10/21 00:44	1
1,2-Dibromo-3-Chloropropane	ND		3.0		ug/L			06/10/21 00:44	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			06/10/21 00:44	1
Hexachlorobutadiene	ND		3.0		ug/L			06/10/21 00:44	1
Naphthalene	ND		3.0		ug/L			06/10/21 00:44	1
1,2,3-Trichlorobenzene	ND		2.0		ug/L			06/10/21 00:44	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			06/10/21 00:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*06/10/21 00:44*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 126*		*06/10/21 00:44*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*06/10/21 00:44*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*06/10/21 00:44*	*1*

Lab Sample ID: LCS 580-358759/4
Matrix: Water
Analysis Batch: 358759

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	10.0	12.1		ug/L		121	47 - 133
Chloromethane	10.0	8.76		ug/L		88	52 - 135
Vinyl chloride	10.0	8.67		ug/L		87	65 - 130
Bromomethane	10.0	8.41		ug/L		84	66 - 125

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-358759/4
Matrix: Water
Analysis Batch: 358759

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloroethane	10.0	8.84		ug/L		88	65 - 132
Trichlorofluoromethane	10.0	9.63		ug/L		96	64 - 130
1,1-Dichloroethene	10.0	11.8		ug/L		118	70 - 129
Methylene Chloride	10.0	11.9		ug/L		119	77 - 120
Methyl tert-butyl ether	10.0	10.1		ug/L		101	72 - 130
trans-1,2-Dichloroethene	10.0	10.6		ug/L		106	70 - 130
1,1-Dichloroethane	10.0	10.4		ug/L		104	81 - 129
2,2-Dichloropropane	10.0	9.31		ug/L		93	53 - 150
cis-1,2-Dichloroethene	10.0	10.1		ug/L		101	76 - 129
Bromochloromethane	10.0	10.2		ug/L		102	78 - 120
Chloroform	10.0	11.0		ug/L		110	73 - 127
1,1,1-Trichloroethane	10.0	11.3		ug/L		113	74 - 130
Carbon tetrachloride	10.0	11.2		ug/L		112	72 - 129
1,1-Dichloropropene	10.0	10.6		ug/L		106	74 - 131
Benzene	10.0	10.4		ug/L		104	82 - 122
1,2-Dichloroethane	10.0	10.5		ug/L		105	76 - 126
Trichloroethene	10.0	10.6		ug/L		106	81 - 125
1,2-Dichloropropane	10.0	9.85		ug/L		99	80 - 126
Dibromomethane	10.0	10.3		ug/L		103	80 - 120
Bromodichloromethane	10.0	10.4		ug/L		104	75 - 124
cis-1,3-Dichloropropene	10.0	8.00		ug/L		80	77 - 120
Toluene	10.0	10.1		ug/L		101	80 - 120
trans-1,3-Dichloropropene	10.0	9.47		ug/L		95	70 - 122
1,1,2-Trichloroethane	10.0	10.4		ug/L		104	80 - 121
Tetrachloroethene	10.0	10.7		ug/L		107	76 - 120
1,3-Dichloropropane	10.0	10.3		ug/L		103	79 - 120
Dibromochloromethane	10.0	10.2		ug/L		102	60 - 125
1,2-Dibromoethane	10.0	10.6		ug/L		106	79 - 120
Chlorobenzene	10.0	9.84		ug/L		98	80 - 120
1,1,1,2-Tetrachloroethane	10.0	9.88		ug/L		99	79 - 120
Ethylbenzene	10.0	9.98		ug/L		100	80 - 120
m-Xylene & p-Xylene	10.0	10.2		ug/L		102	80 - 120
o-Xylene	10.0	9.77		ug/L		98	80 - 125
Styrene	10.0	10.0		ug/L		100	76 - 127
Bromoform	10.0	9.96		ug/L		100	28 - 139
Isopropylbenzene	10.0	10.2		ug/L		102	75 - 129
Bromobenzene	10.0	8.79		ug/L		88	80 - 120
1,1,2,2-Tetrachloroethane	10.0	8.64		ug/L		86	74 - 124
1,2,3-Trichloropropane	10.0	9.20		ug/L		92	76 - 124
N-Propylbenzene	10.0	8.69		ug/L		87	80 - 128
2-Chlorotoluene	10.0	8.89		ug/L		89	80 - 120
4-Chlorotoluene	10.0	9.15		ug/L		92	80 - 120
t-Butylbenzene	10.0	8.89		ug/L		89	80 - 129
1,2,4-Trimethylbenzene	10.0	9.09		ug/L		91	80 - 131
sec-Butylbenzene	10.0	9.54		ug/L		95	78 - 131
4-Isopropyltoluene	10.0	8.92		ug/L		89	77 - 131
1,3-Dichlorobenzene	10.0	11.3		ug/L		113	69 - 127
1,4-Dichlorobenzene	10.0	9.60		ug/L		96	80 - 120
n-Butylbenzene	10.0	8.41		ug/L		84	78 - 120

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-358759/4
Matrix: Water
Analysis Batch: 358759

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichlorobenzene	10.0	10.3		ug/L		103	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	10.9		ug/L		109	65 - 125
1,2,4-Trichlorobenzene	10.0	12.7		ug/L		127	73 - 128
Hexachlorobutadiene	10.0	10.8		ug/L		108	74 - 125
Naphthalene	10.0	11.5		ug/L		115	75 - 134
1,2,3-Trichlorobenzene	10.0	11.6		ug/L		116	74 - 139
1,3,5-Trimethylbenzene	10.0	8.91		ug/L		89	80 - 131

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 126*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 580-358759/5
Matrix: Water
Analysis Batch: 358759

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dichlorodifluoromethane	10.0	12.3		ug/L		123	47 - 133	2	15
Chloromethane	10.0	7.70		ug/L		77	52 - 135	13	14
Vinyl chloride	10.0	8.48		ug/L		85	65 - 130	2	14
Bromomethane	10.0	8.37		ug/L		84	66 - 125	0	14
Chloroethane	10.0	8.70		ug/L		87	65 - 132	2	18
Trichlorofluoromethane	10.0	9.74		ug/L		97	64 - 130	1	14
1,1-Dichloroethene	10.0	12.0		ug/L		120	70 - 129	2	17
Methylene Chloride	10.0	12.2	*+	ug/L		122	77 - 120	2	18
Methyl tert-butyl ether	10.0	10.6		ug/L		106	72 - 130	6	18
trans-1,2-Dichloroethene	10.0	10.9		ug/L		109	70 - 130	3	21
1,1-Dichloroethane	10.0	10.9		ug/L		109	81 - 129	5	15
2,2-Dichloropropane	10.0	9.70		ug/L		97	53 - 150	4	15
cis-1,2-Dichloroethene	10.0	10.4		ug/L		104	76 - 129	4	15
Bromochloromethane	10.0	10.9		ug/L		109	78 - 120	6	13
Chloroform	10.0	12.0		ug/L		120	73 - 127	9	14
1,1,1-Trichloroethane	10.0	11.5		ug/L		115	74 - 130	2	11
Carbon tetrachloride	10.0	11.5		ug/L		115	72 - 129	3	11
1,1-Dichloropropene	10.0	10.9		ug/L		109	74 - 131	3	14
Benzene	10.0	11.1		ug/L		111	82 - 122	7	14
1,2-Dichloroethane	10.0	11.2		ug/L		112	76 - 126	7	11
Trichloroethene	10.0	11.1		ug/L		111	81 - 125	5	13
1,2-Dichloropropane	10.0	10.6		ug/L		106	80 - 126	7	14
Dibromomethane	10.0	10.8		ug/L		108	80 - 120	5	11
Bromodichloromethane	10.0	11.2		ug/L		112	75 - 124	7	13
cis-1,3-Dichloropropene	10.0	8.14		ug/L		81	77 - 120	2	20
Toluene	10.0	10.5		ug/L		105	80 - 120	4	13
trans-1,3-Dichloropropene	10.0	10.2		ug/L		102	70 - 122	7	14
1,1,2-Trichloroethane	10.0	11.1		ug/L		111	80 - 121	6	14
Tetrachloroethene	10.0	10.9		ug/L		109	76 - 120	2	13

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-358759/5
Matrix: Water
Analysis Batch: 358759

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3-Dichloropropane			10.0	11.0		ug/L		110	79 - 120	7	13
Dibromochloromethane			10.0	11.0		ug/L		110	60 - 125	7	13
1,2-Dibromoethane			10.0	11.4		ug/L		114	79 - 120	7	12
Chlorobenzene			10.0	10.4		ug/L		104	80 - 120	6	10
1,1,1,2-Tetrachloroethane			10.0	10.6		ug/L		106	79 - 120	7	10
Ethylbenzene			10.0	10.6		ug/L		106	80 - 120	6	14
m-Xylene & p-Xylene			10.0	10.8		ug/L		108	80 - 120	6	14
o-Xylene			10.0	10.4		ug/L		104	80 - 125	6	16
Styrene			10.0	10.6		ug/L		106	76 - 127	6	16
Bromoform			10.0	10.6		ug/L		106	28 - 139	6	15
Isopropylbenzene			10.0	10.7		ug/L		107	75 - 129	5	12
Bromobenzene			10.0	8.83		ug/L		88	80 - 120	0	13
1,1,2,2-Tetrachloroethane			10.0	8.76		ug/L		88	74 - 124	1	18
1,2,3-Trichloropropane			10.0	9.33		ug/L		93	76 - 124	1	16
N-Propylbenzene			10.0	8.75		ug/L		87	80 - 128	1	13
2-Chlorotoluene			10.0	8.97		ug/L		90	80 - 120	1	15
4-Chlorotoluene			10.0	9.14		ug/L		91	80 - 120	0	14
t-Butylbenzene			10.0	8.87		ug/L		89	80 - 129	0	14
1,2,4-Trimethylbenzene			10.0	9.00		ug/L		90	80 - 131	1	16
sec-Butylbenzene			10.0	9.69		ug/L		97	78 - 131	1	15
4-Isopropyltoluene			10.0	9.00		ug/L		90	77 - 131	1	20
1,3-Dichlorobenzene			10.0	11.8		ug/L		118	69 - 127	4	14
1,4-Dichlorobenzene			10.0	9.83		ug/L		98	80 - 120	2	17
n-Butylbenzene			10.0	8.31		ug/L		83	78 - 120	1	14
1,2-Dichlorobenzene			10.0	10.8		ug/L		108	80 - 120	4	15
1,2-Dibromo-3-Chloropropane			10.0	10.4		ug/L		104	65 - 125	5	17
1,2,4-Trichlorobenzene			10.0	12.6		ug/L		126	73 - 128	1	20
Hexachlorobutadiene			10.0	10.3		ug/L		103	74 - 125	5	22
Naphthalene			10.0	10.7		ug/L		107	75 - 134	7	23
1,2,3-Trichlorobenzene			10.0	11.0		ug/L		110	74 - 139	5	26
1,3,5-Trimethylbenzene			10.0	9.03		ug/L		90	80 - 131	1	14

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*102*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 126*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-358299/1-A
Matrix: Water
Analysis Batch: 358787

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 358299

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.11		mg/L		06/04/21 09:25	06/09/21 13:06	1
Motor Oil (>C24-C36)	ND		0.35		mg/L		06/04/21 09:25	06/09/21 13:06	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-358299/1-A
Matrix: Water
Analysis Batch: 358787

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 358299

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*75*		*50 - 150*	*06/04/21 09:25*	*06/09/21 13:06*	*1*

Lab Sample ID: LCS 580-358299/2-A
Matrix: Water
Analysis Batch: 358787

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 358299

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	2.00	1.82		mg/L		91	50 - 120
Motor Oil (>C24-C36)	2.00	2.04		mg/L		102	64 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*91*		*50 - 150*

Lab Sample ID: LCSD 580-358299/3-A
Matrix: Water
Analysis Batch: 358787

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 358299

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	2.00	1.73		mg/L		87	50 - 120	5	26
Motor Oil (>C24-C36)	2.00	1.91		mg/L		96	64 - 120	6	24

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*87*		*50 - 150*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 580-358992/14-A
Matrix: Water
Analysis Batch: 359767

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 358992

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		06/11/21 12:53	06/19/21 01:33	1
Lead	ND		0.00040		mg/L		06/11/21 12:53	06/19/21 01:33	1

Lab Sample ID: LCS 580-358992/15-A
Matrix: Water
Analysis Batch: 359767

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 358992

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1.00	1.07		mg/L		107	80 - 120
Lead	1.00	1.04		mg/L		104	80 - 120

Lab Sample ID: LCSD 580-358992/16-A
Matrix: Water
Analysis Batch: 359767

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 358992

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	1.00	1.07		mg/L		107	80 - 120	0	20
Lead	1.00	1.03		mg/L		103	80 - 120	1	20

Lab Chronicle

Client: Trihydro Corporation
Project/Site: Emerald Services Tacoma

Job ID: 580-103512-1

Client Sample ID: ERI-MW-1
Date Collected: 06/02/21 12:30
Date Received: 06/02/21 16:20

Lab Sample ID: 580-103512-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	358759	06/10/21 01:34	RJF	FGS SEA
Total/NA	Prep	3510C			358299	06/04/21 09:25	N1B	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	358787	06/09/21 14:06	W1T	FGS SEA
Total Recoverable	Prep	3005A			358992	06/11/21 12:53	JLS	FGS SEA
Total Recoverable	Analysis	6020B		1	359767	06/19/21 02:27	FCW	FGS SEA

Client Sample ID: ERI-MW-2R
Date Collected: 06/02/21 13:30
Date Received: 06/02/21 16:20

Lab Sample ID: 580-103512-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	358759	06/10/21 02:01	RJF	FGS SEA
Total/NA	Prep	3510C			358299	06/04/21 09:25	N1B	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	358787	06/09/21 14:26	W1T	FGS SEA
Total Recoverable	Prep	3005A			358992	06/11/21 12:53	JLS	FGS SEA
Total Recoverable	Analysis	6020B		1	359767	06/19/21 02:31	FCW	FGS SEA

Client Sample ID: ERI-MW-3R
Date Collected: 06/02/21 15:30
Date Received: 06/02/21 16:20

Lab Sample ID: 580-103512-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	358759	06/10/21 02:26	RJF	FGS SEA
Total/NA	Prep	3510C			358299	06/04/21 09:25	N1B	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	358787	06/09/21 14:46	W1T	FGS SEA
Total Recoverable	Prep	3005A			358992	06/11/21 12:53	JLS	FGS SEA
Total Recoverable	Analysis	6020B		1	359767	06/19/21 02:35	FCW	FGS SEA

Client Sample ID: ERI-MW-4
Date Collected: 06/02/21 14:30
Date Received: 06/02/21 16:20

Lab Sample ID: 580-103512-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	358637	06/09/21 02:14	CJ	FGS SEA
Total/NA	Prep	3510C			358299	06/04/21 09:25	N1B	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	358787	06/09/21 15:07	W1T	FGS SEA
Total Recoverable	Prep	3005A			358992	06/11/21 12:53	JLS	FGS SEA
Total Recoverable	Analysis	6020B		1	359767	06/19/21 02:39	FCW	FGS SEA

Client Sample ID: ERI-MW-50
Date Collected: 06/02/21 00:01
Date Received: 06/02/21 16:20

Lab Sample ID: 580-103512-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	358637	06/09/21 02:39	CJ	FGS SEA

Lab Chronicle

Client: Trihydro Corporation
Job ID: 580-103512-1
Project/Site: Emerald Services Tacoma

Client Sample ID: ERI-MW-50
Lab Sample ID: 580-103512-5
Date Collected: 06/02/21 00:01
Matrix: Water
Date Received: 06/02/21 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			358299	06/04/21 09:25	N1B	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	358787	06/09/21 15:27	W1T	FGS SEA
Total Recoverable	Prep	3005A			358992	06/11/21 12:53	JLS	FGS SEA
Total Recoverable	Analysis	6020B		1	359767	06/19/21 02:42	FCW	FGS SEA

Client Sample ID: TRIP BLANK
Lab Sample ID: 580-103512-6
Date Collected: 06/02/21 00:01
Matrix: Water
Date Received: 06/02/21 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	358637	06/09/21 03:04	CJ	FGS SEA

Laboratory References:

FGS SEA = Eurofins FGS, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Trihydro Corporation
Job ID: 580-103512-1
Project/Site: Emerald Services Tacoma

Laboratory: Eurofins FGS, Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-21

Sample Summary

Client: Trihydro Corporation
Project/Site: Emerald Services Tacoma

Job ID: 580-103512-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
580-103512-1	ERI-MW-1	Water	06/02/21 12:30	06/02/21 16:20	
580-103512-2	ERI-MW-2R	Water	06/02/21 13:30	06/02/21 16:20	
580-103512-3	ERI-MW-3R	Water	06/02/21 15:30	06/02/21 16:20	
580-103512-4	ERI-MW-4	Water	06/02/21 14:30	06/02/21 16:20	
580-103512-5	ERI-MW-50	Water	06/02/21 00:01	06/02/21 16:20	
580-103512-6	TRIP BLANK	Water	06/02/21 00:01	06/02/21 16:20	

Eurofins FGS, Seattle
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310 Fax: 425-420-9210

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: Kelli Staky	Lab PM: Lewis, Nathan A	Carrier Tracking No(s):	COC No: 580-43385-13876.1
Client Contact: ~~Accounts Payable~~ Safety-Kleen	Phone: 525-455-5107	E-Mail: Nathan.Lewis@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: ~~Trihydro Corporation~~ Safety-Kleen	PWSID:	**Analysis Requested**		Job #:
Address: 1252 Commerce Drive	Due Date Requested:			
City: Laramie Bill Safety-Kleen	TAT Requested (days): Normal			
State, Zip: WY, 82070	Compliance Project: Δ Yes Δ No			
Phone: 307-745-7474(Tel)	PO #: 46Y-001-004			
Email: ap@trihydro.com	WO #:			
Project Name: Emerald Services Tacoma	Project #: 58011140			
Site:	SSOW#:			

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)
Other:

Sample Identification	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)	6020B - Total Metals (As,Pb)	NWTPH_Dx - Northwest - DRO/RRO	8260D - Volatiles, standard list	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	A	A		
ERI-MW-1	6-2-21	1230	G	Water	N	N	X	X	X	6	
ERI-MW-2R	↓	1330	↓	Water	↓	↓	↓	↓	↓	6	
ERI-MW-3R	↓	1530	↓	Water	↓	↓	↓	↓	↓	6	
ERI-MW-4	↓	1430	↓	Water	↓	↓	↓	↓	↓	6	
ERI-MW-50	↓	--	↓	Water	↓	↓	↓	↓	↓	4	
Trip Blank	--	--	--	Water	↓	↓			↓	2	
				Water							
				Water							

580-103512 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ________ Months

Deliverable Requested: I, II, III, IV, Other (specify) See SOW Trihydro Style EDD

Special Instructions/QC Requirements: See SOW

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Kelli Staka	6/2/2021 1620	Trihydro	K. Kres	6/2/21 1620	EFGS

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Therm. ID: IR9 Cor: 9.0° Unc: 8.8°
Cooler Dsc: Lg B
Packing: Bubble
Cust. Seal: Yes__ No Yes
Blue Ice, Wet, Dry, None
FedEx: ____
UPS: ____
Lab Cour: ____
Other: Client

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Trihydro Corporation

Job Number: 580-103512-1

Login Number: 103512
List Number: 1
Creator: Vallelunga, Diana L

List Source: Eurofins FGS, Seattle

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.	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	
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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX B-2

LABORATORY REPORT (DECEMBER 2021)

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

Laboratory Job ID: 580-108655-1
Client Project/Site: Emerald Services Tacoma FY 2017

For:
Trihydro Corporation
1252 Commerce Drive
Laramie, Wyoming 82070

Attn: Katie Mitchell

Authorized for release by:
1/5/2022 6:11:49 PM
Sheri Cruz, Project Manager I
(253)922-2310
Sheri.Cruz@Eurofinset.com

Designee for

Nathan Lewis, Project Manager I
(253)922-2310
Nathan.Lewis@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Client: Trihydro Corporation
Job ID: 580-108655-1
Project/Site: Emerald Services Tacoma FY 2017

Job ID: 580-108655-1

Laboratory: Eurofins Seattle

Narrative

Job Narrative
580-108655-1

Comments
No additional comments.

Receipt
The samples were received on 12/21/2021 12:30 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.7º C.

GC/MS VOA
Method 8260D: The CCV for analytical batch 580-377212 recovered outside control limits for the following analyte(s): Dichlorodifluoromethane. Dichlorodifluoromethane has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260D: Surrogate recovery for the following sample was outside the upper control limit: ERI-MW-3R (580-108655-1). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 3510C: The following samples formed emulsions during the extraction procedure: ERI-MW-3R (580-108655-1). The emulsions were broken up using additional sodium sulfate filtration and methylene chloride rinses.

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 580-377387, so a laboratory control sample and laboratory control sample duplicate were created and substituted for the MS/MSD/DUP.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: Trihydro Corporation
Job ID: 580-108655-1
Project/Site: Emerald Services Tacoma FY 2017

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client: Trihydro Corporation
Job ID: 580-108655-1
Project/Site: Emerald Services Tacoma FY 2017

Client Sample ID: ERI-MW-3R
Lab Sample ID: 580-108655-1
Date Collected: 12/21/21 10:56
Matrix: Water
Date Received: 12/21/21 12:30

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0		ug/L			01/01/22 04:34	1
Chloromethane	ND		1.0		ug/L			01/01/22 04:34	1
Vinyl chloride	ND		1.0		ug/L			01/01/22 04:34	1
Bromomethane	ND		1.0		ug/L			01/01/22 04:34	1
Chloroethane	ND		1.0		ug/L			01/01/22 04:34	1
Trichlorofluoromethane	ND		1.0		ug/L			01/01/22 04:34	1
1,1-Dichloroethene	ND		1.0		ug/L			01/01/22 04:34	1
Methylene Chloride	ND		3.0		ug/L			01/01/22 04:34	1
Methyl tert-butyl ether	ND		1.0		ug/L			01/01/22 04:34	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			01/01/22 04:34	1
1,1-Dichloroethane	ND		1.0		ug/L			01/01/22 04:34	1
2,2-Dichloropropane	ND		1.0		ug/L			01/01/22 04:34	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			01/01/22 04:34	1
Bromochloromethane	ND		1.0		ug/L			01/01/22 04:34	1
Chloroform	ND		1.0		ug/L			01/01/22 04:34	1
1,1,1-Trichloroethane	ND		1.0		ug/L			01/01/22 04:34	1
Carbon tetrachloride	ND		1.0		ug/L			01/01/22 04:34	1
1,1-Dichloropropene	ND		1.0		ug/L			01/01/22 04:34	1
Benzene	ND		1.0		ug/L			01/01/22 04:34	1
1,2-Dichloroethane	ND		1.0		ug/L			01/01/22 04:34	1
Trichloroethene	ND		1.0		ug/L			01/01/22 04:34	1
1,2-Dichloropropane	ND		1.0		ug/L			01/01/22 04:34	1
Dibromomethane	ND		1.0		ug/L			01/01/22 04:34	1
Bromodichloromethane	ND		1.0		ug/L			01/01/22 04:34	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			01/01/22 04:34	1
Toluene	ND		1.0		ug/L			01/01/22 04:34	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			01/01/22 04:34	1
1,1,2-Trichloroethane	ND		1.0		ug/L			01/01/22 04:34	1
Tetrachloroethene	ND		1.0		ug/L			01/01/22 04:34	1
1,3-Dichloropropane	ND		1.0		ug/L			01/01/22 04:34	1
Dibromochloromethane	ND		1.0		ug/L			01/01/22 04:34	1
1,2-Dibromoethane	ND		1.0		ug/L			01/01/22 04:34	1
Chlorobenzene	ND		1.0		ug/L			01/01/22 04:34	1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			01/01/22 04:34	1
Ethylbenzene	ND		1.0		ug/L			01/01/22 04:34	1
m-Xylene & p-Xylene	ND		2.0		ug/L			01/01/22 04:34	1
o-Xylene	ND		1.0		ug/L			01/01/22 04:34	1
Styrene	ND		1.0		ug/L			01/01/22 04:34	1
Bromoform	ND		1.0		ug/L			01/01/22 04:34	1
Isopropylbenzene	ND		1.0		ug/L			01/01/22 04:34	1
Bromobenzene	ND		1.0		ug/L			01/01/22 04:34	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			01/01/22 04:34	1
1,2,3-Trichloropropane	ND		1.0		ug/L			01/01/22 04:34	1
N-Propylbenzene	ND		1.0		ug/L			01/01/22 04:34	1
2-Chlorotoluene	ND		1.0		ug/L			01/01/22 04:34	1
4-Chlorotoluene	ND		1.0		ug/L			01/01/22 04:34	1
t-Butylbenzene	ND		2.0		ug/L			01/01/22 04:34	1
1,2,4-Trimethylbenzene	ND		3.0		ug/L			01/01/22 04:34	1
sec-Butylbenzene	ND		1.0		ug/L			01/01/22 04:34	1

Client: Trihydro Corporation
Job ID: 580-108655-1
Project/Site: Emerald Services Tacoma FY 2017

Client Sample ID: ERI-MW-3R
Lab Sample ID: 580-108655-1
Date Collected: 12/21/21 10:56
Matrix: Water
Date Received: 12/21/21 12:30

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Isopropyltoluene	ND		1.0		ug/L			01/01/22 04:34	1
1,3-Dichlorobenzene	ND		1.0		ug/L			01/01/22 04:34	1
1,4-Dichlorobenzene	ND		1.0		ug/L			01/01/22 04:34	1
n-Butylbenzene	ND		1.0		ug/L			01/01/22 04:34	1
1,2-Dichlorobenzene	ND		1.0		ug/L			01/01/22 04:34	1
1,2-Dibromo-3-Chloropropane	ND		3.0		ug/L			01/01/22 04:34	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			01/01/22 04:34	1
Hexachlorobutadiene	ND		3.0		ug/L			01/01/22 04:34	1
Naphthalene	ND		3.0		ug/L			01/01/22 04:34	1
1,2,3-Trichlorobenzene	ND		2.0		ug/L			01/01/22 04:34	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			01/01/22 04:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*83*		*80 - 120*		*01/01/22 04:34*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*01/01/22 04:34*	*1*
4-Bromofluorobenzene (Surr)	*131*	*S1+*	*80 - 120*		*01/01/22 04:34*	*1*
Dibromofluoromethane (Surr)	*113*		*80 - 120*		*01/01/22 04:34*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**0.77**		0.11		mg/L		01/04/22 11:18	01/04/22 18:51	1
Motor Oil (>C24-C36)	**1.2**		0.36		mg/L		01/04/22 11:18	01/04/22 18:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*69*		*50 - 150*	*01/04/22 11:18*	*01/04/22 18:51*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0092**		0.0050		mg/L		01/03/22 18:17	01/05/22 10:48	5
Lead	ND		0.0020		mg/L		01/03/22 18:17	01/05/22 10:48	5

Client: Trihydro Corporation
Job ID: 580-108655-1
Project/Site: Emerald Services Tacoma FY 2017

Client Sample ID: ERI-MW-4
Lab Sample ID: 580-108655-2
Date Collected: 12/21/21 11:45
Matrix: Water
Date Received: 12/21/21 12:30

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0		ug/L			01/01/22 04:58	1
Chloromethane	ND		1.0		ug/L			01/01/22 04:58	1
Vinyl chloride	ND		1.0		ug/L			01/01/22 04:58	1
Bromomethane	ND		1.0		ug/L			01/01/22 04:58	1
Chloroethane	ND		1.0		ug/L			01/01/22 04:58	1
Trichlorofluoromethane	ND		1.0		ug/L			01/01/22 04:58	1
1,1-Dichloroethene	ND		1.0		ug/L			01/01/22 04:58	1
Methylene Chloride	ND		3.0		ug/L			01/01/22 04:58	1
Methyl tert-butyl ether	ND		1.0		ug/L			01/01/22 04:58	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			01/01/22 04:58	1
1,1-Dichloroethane	ND		1.0		ug/L			01/01/22 04:58	1
2,2-Dichloropropane	ND		1.0		ug/L			01/01/22 04:58	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			01/01/22 04:58	1
Bromochloromethane	ND		1.0		ug/L			01/01/22 04:58	1
Chloroform	ND		1.0		ug/L			01/01/22 04:58	1
1,1,1-Trichloroethane	ND		1.0		ug/L			01/01/22 04:58	1
Carbon tetrachloride	ND		1.0		ug/L			01/01/22 04:58	1
1,1-Dichloropropene	ND		1.0		ug/L			01/01/22 04:58	1
Benzene	ND		1.0		ug/L			01/01/22 04:58	1
1,2-Dichloroethane	ND		1.0		ug/L			01/01/22 04:58	1
Trichloroethene	ND		1.0		ug/L			01/01/22 04:58	1
1,2-Dichloropropane	ND		1.0		ug/L			01/01/22 04:58	1
Dibromomethane	ND		1.0		ug/L			01/01/22 04:58	1
Bromodichloromethane	ND		1.0		ug/L			01/01/22 04:58	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			01/01/22 04:58	1
Toluene	ND		1.0		ug/L			01/01/22 04:58	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			01/01/22 04:58	1
1,1,2-Trichloroethane	ND		1.0		ug/L			01/01/22 04:58	1
Tetrachloroethene	ND		1.0		ug/L			01/01/22 04:58	1
1,3-Dichloropropane	ND		1.0		ug/L			01/01/22 04:58	1
Dibromochloromethane	ND		1.0		ug/L			01/01/22 04:58	1
1,2-Dibromoethane	ND		1.0		ug/L			01/01/22 04:58	1
Chlorobenzene	ND		1.0		ug/L			01/01/22 04:58	1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			01/01/22 04:58	1
Ethylbenzene	ND		1.0		ug/L			01/01/22 04:58	1
m-Xylene & p-Xylene	ND		2.0		ug/L			01/01/22 04:58	1
o-Xylene	ND		1.0		ug/L			01/01/22 04:58	1
Styrene	ND		1.0		ug/L			01/01/22 04:58	1
Bromoform	ND		1.0		ug/L			01/01/22 04:58	1
Isopropylbenzene	ND		1.0		ug/L			01/01/22 04:58	1
Bromobenzene	ND		1.0		ug/L			01/01/22 04:58	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			01/01/22 04:58	1
1,2,3-Trichloropropane	ND		1.0		ug/L			01/01/22 04:58	1
N-Propylbenzene	ND		1.0		ug/L			01/01/22 04:58	1
2-Chlorotoluene	ND		1.0		ug/L			01/01/22 04:58	1
4-Chlorotoluene	ND		1.0		ug/L			01/01/22 04:58	1
t-Butylbenzene	ND		2.0		ug/L			01/01/22 04:58	1
1,2,4-Trimethylbenzene	ND		3.0		ug/L			01/01/22 04:58	1
sec-Butylbenzene	ND		1.0		ug/L			01/01/22 04:58	1

Client: Trihydro Corporation
Job ID: 580-108655-1
Project/Site: Emerald Services Tacoma FY 2017

Client Sample ID: ERI-MW-4
Lab Sample ID: 580-108655-2
Date Collected: 12/21/21 11:45
Matrix: Water
Date Received: 12/21/21 12:30

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Isopropyltoluene	ND		1.0		ug/L			01/01/22 04:58	1
1,3-Dichlorobenzene	ND		1.0		ug/L			01/01/22 04:58	1
1,4-Dichlorobenzene	ND		1.0		ug/L			01/01/22 04:58	1
n-Butylbenzene	ND		1.0		ug/L			01/01/22 04:58	1
1,2-Dichlorobenzene	ND		1.0		ug/L			01/01/22 04:58	1
1,2-Dibromo-3-Chloropropane	ND		3.0		ug/L			01/01/22 04:58	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			01/01/22 04:58	1
Hexachlorobutadiene	ND		3.0		ug/L			01/01/22 04:58	1
Naphthalene	ND		3.0		ug/L			01/01/22 04:58	1
1,2,3-Trichlorobenzene	ND		2.0		ug/L			01/01/22 04:58	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			01/01/22 04:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*80 - 120*		*01/01/22 04:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*01/01/22 04:58*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*01/01/22 04:58*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*01/01/22 04:58*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**1.2**		0.11		mg/L		01/04/22 11:18	01/04/22 19:11	1
Motor Oil (>C24-C36)	**0.59**		0.36		mg/L		01/04/22 11:18	01/04/22 19:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*78*		*50 - 150*	*01/04/22 11:18*	*01/04/22 19:11*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050		mg/L		01/03/22 18:17	01/05/22 10:52	5
Lead	ND		0.0020		mg/L		01/03/22 18:17	01/05/22 10:52	5

Client: Trihydro Corporation
Job ID: 580-108655-1
Project/Site: Emerald Services Tacoma FY 2017

Client Sample ID: ERI-MW-50
Lab Sample ID: 580-108655-3
Date Collected: 12/21/21 00:01
Matrix: Water
Date Received: 12/21/21 12:30

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0		ug/L			01/01/22 05:22	1
Chloromethane	ND		1.0		ug/L			01/01/22 05:22	1
Vinyl chloride	ND		1.0		ug/L			01/01/22 05:22	1
Bromomethane	ND		1.0		ug/L			01/01/22 05:22	1
Chloroethane	ND		1.0		ug/L			01/01/22 05:22	1
Trichlorofluoromethane	ND		1.0		ug/L			01/01/22 05:22	1
1,1-Dichloroethene	ND		1.0		ug/L			01/01/22 05:22	1
Methylene Chloride	ND		3.0		ug/L			01/01/22 05:22	1
Methyl tert-butyl ether	ND		1.0		ug/L			01/01/22 05:22	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			01/01/22 05:22	1
1,1-Dichloroethane	ND		1.0		ug/L			01/01/22 05:22	1
2,2-Dichloropropane	ND		1.0		ug/L			01/01/22 05:22	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			01/01/22 05:22	1
Bromochloromethane	ND		1.0		ug/L			01/01/22 05:22	1
Chloroform	ND		1.0		ug/L			01/01/22 05:22	1
1,1,1-Trichloroethane	ND		1.0		ug/L			01/01/22 05:22	1
Carbon tetrachloride	ND		1.0		ug/L			01/01/22 05:22	1
1,1-Dichloropropene	ND		1.0		ug/L			01/01/22 05:22	1
Benzene	ND		1.0		ug/L			01/01/22 05:22	1
1,2-Dichloroethane	ND		1.0		ug/L			01/01/22 05:22	1
Trichloroethene	ND		1.0		ug/L			01/01/22 05:22	1
1,2-Dichloropropane	ND		1.0		ug/L			01/01/22 05:22	1
Dibromomethane	ND		1.0		ug/L			01/01/22 05:22	1
Bromodichloromethane	ND		1.0		ug/L			01/01/22 05:22	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			01/01/22 05:22	1
Toluene	ND		1.0		ug/L			01/01/22 05:22	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			01/01/22 05:22	1
1,1,2-Trichloroethane	ND		1.0		ug/L			01/01/22 05:22	1
Tetrachloroethene	ND		1.0		ug/L			01/01/22 05:22	1
1,3-Dichloropropane	ND		1.0		ug/L			01/01/22 05:22	1
Dibromochloromethane	ND		1.0		ug/L			01/01/22 05:22	1
1,2-Dibromoethane	ND		1.0		ug/L			01/01/22 05:22	1
Chlorobenzene	ND		1.0		ug/L			01/01/22 05:22	1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			01/01/22 05:22	1
Ethylbenzene	ND		1.0		ug/L			01/01/22 05:22	1
m-Xylene & p-Xylene	ND		2.0		ug/L			01/01/22 05:22	1
o-Xylene	ND		1.0		ug/L			01/01/22 05:22	1
Styrene	ND		1.0		ug/L			01/01/22 05:22	1
Bromoform	ND		1.0		ug/L			01/01/22 05:22	1
Isopropylbenzene	ND		1.0		ug/L			01/01/22 05:22	1
Bromobenzene	ND		1.0		ug/L			01/01/22 05:22	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			01/01/22 05:22	1
1,2,3-Trichloropropane	ND		1.0		ug/L			01/01/22 05:22	1
N-Propylbenzene	ND		1.0		ug/L			01/01/22 05:22	1
2-Chlorotoluene	ND		1.0		ug/L			01/01/22 05:22	1
4-Chlorotoluene	ND		1.0		ug/L			01/01/22 05:22	1
t-Butylbenzene	ND		2.0		ug/L			01/01/22 05:22	1
1,2,4-Trimethylbenzene	ND		3.0		ug/L			01/01/22 05:22	1
sec-Butylbenzene	ND		1.0		ug/L			01/01/22 05:22	1

Client: Trihydro Corporation
Job ID: 580-108655-1
Project/Site: Emerald Services Tacoma FY 2017

Client Sample ID: ERI-MW-50
Lab Sample ID: 580-108655-3
Date Collected: 12/21/21 00:01
Matrix: Water
Date Received: 12/21/21 12:30

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Isopropyltoluene	ND		1.0		ug/L			01/01/22 05:22	1
1,3-Dichlorobenzene	ND		1.0		ug/L			01/01/22 05:22	1
1,4-Dichlorobenzene	ND		1.0		ug/L			01/01/22 05:22	1
n-Butylbenzene	ND		1.0		ug/L			01/01/22 05:22	1
1,2-Dichlorobenzene	ND		1.0		ug/L			01/01/22 05:22	1
1,2-Dibromo-3-Chloropropane	ND		3.0		ug/L			01/01/22 05:22	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			01/01/22 05:22	1
Hexachlorobutadiene	ND		3.0		ug/L			01/01/22 05:22	1
Naphthalene	ND		3.0		ug/L			01/01/22 05:22	1
1,2,3-Trichlorobenzene	ND		2.0		ug/L			01/01/22 05:22	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			01/01/22 05:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*01/01/22 05:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*01/01/22 05:22*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*01/01/22 05:22*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*01/01/22 05:22*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**1.1**		0.11		mg/L		01/04/22 11:18	01/04/22 19:31	1
Motor Oil (>C24-C36)	**0.56**		0.36		mg/L		01/04/22 11:18	01/04/22 19:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*67*		*50 - 150*	*01/04/22 11:18*	*01/04/22 19:31*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050		mg/L		01/03/22 18:17	01/05/22 10:56	5
Lead	ND		0.0020		mg/L		01/03/22 18:17	01/05/22 10:56	5

Client: Trihydro Corporation
Job ID: 580-108655-1
Project/Site: Emerald Services Tacoma FY 2017

Client Sample ID: Trip Blank
Lab Sample ID: 580-108655-4
Date Collected: 12/21/21 00:01
Matrix: Water
Date Received: 12/21/21 12:30

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0		ug/L			01/01/22 00:57	1
Chloromethane	ND		1.0		ug/L			01/01/22 00:57	1
Vinyl chloride	ND		1.0		ug/L			01/01/22 00:57	1
Bromomethane	ND		1.0		ug/L			01/01/22 00:57	1
Chloroethane	ND		1.0		ug/L			01/01/22 00:57	1
Trichlorofluoromethane	ND		1.0		ug/L			01/01/22 00:57	1
1,1-Dichloroethene	ND		1.0		ug/L			01/01/22 00:57	1
Methylene Chloride	ND		3.0		ug/L			01/01/22 00:57	1
Methyl tert-butyl ether	ND		1.0		ug/L			01/01/22 00:57	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			01/01/22 00:57	1
1,1-Dichloroethane	ND		1.0		ug/L			01/01/22 00:57	1
2,2-Dichloropropane	ND		1.0		ug/L			01/01/22 00:57	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			01/01/22 00:57	1
Bromochloromethane	ND		1.0		ug/L			01/01/22 00:57	1
Chloroform	ND		1.0		ug/L			01/01/22 00:57	1
1,1,1-Trichloroethane	ND		1.0		ug/L			01/01/22 00:57	1
Carbon tetrachloride	ND		1.0		ug/L			01/01/22 00:57	1
1,1-Dichloropropene	ND		1.0		ug/L			01/01/22 00:57	1
Benzene	ND		1.0		ug/L			01/01/22 00:57	1
1,2-Dichloroethane	ND		1.0		ug/L			01/01/22 00:57	1
Trichloroethene	ND		1.0		ug/L			01/01/22 00:57	1
1,2-Dichloropropane	ND		1.0		ug/L			01/01/22 00:57	1
Dibromomethane	ND		1.0		ug/L			01/01/22 00:57	1
Bromodichloromethane	ND		1.0		ug/L			01/01/22 00:57	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			01/01/22 00:57	1
Toluene	ND		1.0		ug/L			01/01/22 00:57	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			01/01/22 00:57	1
1,1,2-Trichloroethane	ND		1.0		ug/L			01/01/22 00:57	1
Tetrachloroethene	ND		1.0		ug/L			01/01/22 00:57	1
1,3-Dichloropropane	ND		1.0		ug/L			01/01/22 00:57	1
Dibromochloromethane	ND		1.0		ug/L			01/01/22 00:57	1
1,2-Dibromoethane	ND		1.0		ug/L			01/01/22 00:57	1
Chlorobenzene	ND		1.0		ug/L			01/01/22 00:57	1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			01/01/22 00:57	1
Ethylbenzene	ND		1.0		ug/L			01/01/22 00:57	1
m-Xylene & p-Xylene	ND		2.0		ug/L			01/01/22 00:57	1
o-Xylene	ND		1.0		ug/L			01/01/22 00:57	1
Styrene	ND		1.0		ug/L			01/01/22 00:57	1
Bromoform	ND		1.0		ug/L			01/01/22 00:57	1
Isopropylbenzene	ND		1.0		ug/L			01/01/22 00:57	1
Bromobenzene	ND		1.0		ug/L			01/01/22 00:57	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			01/01/22 00:57	1
1,2,3-Trichloropropane	ND		1.0		ug/L			01/01/22 00:57	1
N-Propylbenzene	ND		1.0		ug/L			01/01/22 00:57	1
2-Chlorotoluene	ND		1.0		ug/L			01/01/22 00:57	1
4-Chlorotoluene	ND		1.0		ug/L			01/01/22 00:57	1
t-Butylbenzene	ND		2.0		ug/L			01/01/22 00:57	1
1,2,4-Trimethylbenzene	ND		3.0		ug/L			01/01/22 00:57	1
sec-Butylbenzene	ND		1.0		ug/L			01/01/22 00:57	1

Client: Trihydro Corporation
Job ID: 580-108655-1
Project/Site: Emerald Services Tacoma FY 2017

Client Sample ID: Trip Blank
Lab Sample ID: 580-108655-4
Date Collected: 12/21/21 00:01
Matrix: Water
Date Received: 12/21/21 12:30

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Isopropyltoluene	ND		1.0		ug/L			01/01/22 00:57	1
1,3-Dichlorobenzene	ND		1.0		ug/L			01/01/22 00:57	1
1,4-Dichlorobenzene	ND		1.0		ug/L			01/01/22 00:57	1
n-Butylbenzene	ND		1.0		ug/L			01/01/22 00:57	1
1,2-Dichlorobenzene	ND		1.0		ug/L			01/01/22 00:57	1
1,2-Dibromo-3-Chloropropane	ND		3.0		ug/L			01/01/22 00:57	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			01/01/22 00:57	1
Hexachlorobutadiene	ND		3.0		ug/L			01/01/22 00:57	1
Naphthalene	ND		3.0		ug/L			01/01/22 00:57	1
1,2,3-Trichlorobenzene	ND		2.0		ug/L			01/01/22 00:57	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			01/01/22 00:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*01/01/22 00:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*01/01/22 00:57*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*01/01/22 00:57*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*01/01/22 00:57*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-377212/6
Matrix: Water
Analysis Batch: 377212

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0		ug/L			01/01/22 00:32	1
Chloromethane	ND		1.0		ug/L			01/01/22 00:32	1
Vinyl chloride	ND		1.0		ug/L			01/01/22 00:32	1
Bromomethane	ND		1.0		ug/L			01/01/22 00:32	1
Chloroethane	ND		1.0		ug/L			01/01/22 00:32	1
Trichlorofluoromethane	ND		1.0		ug/L			01/01/22 00:32	1
1,1-Dichloroethene	ND		1.0		ug/L			01/01/22 00:32	1
Methylene Chloride	ND		3.0		ug/L			01/01/22 00:32	1
Methyl tert-butyl ether	ND		1.0		ug/L			01/01/22 00:32	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			01/01/22 00:32	1
1,1-Dichloroethane	ND		1.0		ug/L			01/01/22 00:32	1
2,2-Dichloropropane	ND		1.0		ug/L			01/01/22 00:32	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			01/01/22 00:32	1
Bromochloromethane	ND		1.0		ug/L			01/01/22 00:32	1
Chloroform	ND		1.0		ug/L			01/01/22 00:32	1
1,1,1-Trichloroethane	ND		1.0		ug/L			01/01/22 00:32	1
Carbon tetrachloride	ND		1.0		ug/L			01/01/22 00:32	1
1,1-Dichloropropene	ND		1.0		ug/L			01/01/22 00:32	1
Benzene	ND		1.0		ug/L			01/01/22 00:32	1
1,2-Dichloroethane	ND		1.0		ug/L			01/01/22 00:32	1
Trichloroethene	ND		1.0		ug/L			01/01/22 00:32	1
1,2-Dichloropropane	ND		1.0		ug/L			01/01/22 00:32	1
Dibromomethane	ND		1.0		ug/L			01/01/22 00:32	1
Bromodichloromethane	ND		1.0		ug/L			01/01/22 00:32	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			01/01/22 00:32	1
Toluene	ND		1.0		ug/L			01/01/22 00:32	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			01/01/22 00:32	1
1,1,2-Trichloroethane	ND		1.0		ug/L			01/01/22 00:32	1
Tetrachloroethene	ND		1.0		ug/L			01/01/22 00:32	1
1,3-Dichloropropane	ND		1.0		ug/L			01/01/22 00:32	1
Dibromochloromethane	ND		1.0		ug/L			01/01/22 00:32	1
1,2-Dibromoethane	ND		1.0		ug/L			01/01/22 00:32	1
Chlorobenzene	ND		1.0		ug/L			01/01/22 00:32	1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			01/01/22 00:32	1
Ethylbenzene	ND		1.0		ug/L			01/01/22 00:32	1
m-Xylene & p-Xylene	ND		2.0		ug/L			01/01/22 00:32	1
o-Xylene	ND		1.0		ug/L			01/01/22 00:32	1
Styrene	ND		1.0		ug/L			01/01/22 00:32	1
Bromoform	ND		1.0		ug/L			01/01/22 00:32	1
Isopropylbenzene	ND		1.0		ug/L			01/01/22 00:32	1
Bromobenzene	ND		1.0		ug/L			01/01/22 00:32	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			01/01/22 00:32	1
1,2,3-Trichloropropane	ND		1.0		ug/L			01/01/22 00:32	1
N-Propylbenzene	ND		1.0		ug/L			01/01/22 00:32	1
2-Chlorotoluene	ND		1.0		ug/L			01/01/22 00:32	1
4-Chlorotoluene	ND		1.0		ug/L			01/01/22 00:32	1
t-Butylbenzene	ND		2.0		ug/L			01/01/22 00:32	1
1,2,4-Trimethylbenzene	ND		3.0		ug/L			01/01/22 00:32	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-377212/6
Matrix: Water
Analysis Batch: 377212

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	ND		1.0		ug/L			01/01/22 00:32	1
4-Isopropyltoluene	ND		1.0		ug/L			01/01/22 00:32	1
1,3-Dichlorobenzene	ND		1.0		ug/L			01/01/22 00:32	1
1,4-Dichlorobenzene	ND		1.0		ug/L			01/01/22 00:32	1
n-Butylbenzene	ND		1.0		ug/L			01/01/22 00:32	1
1,2-Dichlorobenzene	ND		1.0		ug/L			01/01/22 00:32	1
1,2-Dibromo-3-Chloropropane	ND		3.0		ug/L			01/01/22 00:32	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			01/01/22 00:32	1
Hexachlorobutadiene	ND		3.0		ug/L			01/01/22 00:32	1
Naphthalene	ND		3.0		ug/L			01/01/22 00:32	1
1,2,3-Trichlorobenzene	ND		2.0		ug/L			01/01/22 00:32	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			01/01/22 00:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*01/01/22 00:32*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*01/01/22 00:32*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*01/01/22 00:32*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*01/01/22 00:32*	*1*

Lab Sample ID: LCS 580-377212/4
Matrix: Water
Analysis Batch: 377212

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	10.0	8.10		ug/L		81	20 - 150
Chloromethane	10.0	9.04		ug/L		90	25 - 150
Vinyl chloride	10.0	9.61		ug/L		96	31 - 150
Bromomethane	10.0	10.2		ug/L		102	36 - 150
Chloroethane	10.0	9.74		ug/L		97	38 - 150
Trichlorofluoromethane	10.0	9.84		ug/L		98	45 - 148
1,1-Dichloroethene	10.0	9.80		ug/L		98	70 - 129
Methylene Chloride	10.0	10.3		ug/L		103	77 - 125
Methyl tert-butyl ether	10.0	10.6		ug/L		106	72 - 120
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	75 - 120
1,1-Dichloroethane	10.0	10.2		ug/L		102	80 - 120
2,2-Dichloropropane	10.0	10.5		ug/L		105	66 - 126
cis-1,2-Dichloroethene	10.0	10.1		ug/L		101	76 - 120
Bromochloromethane	10.0	10.3		ug/L		103	78 - 120
Chloroform	10.0	10.6		ug/L		106	78 - 127
1,1,1-Trichloroethane	10.0	10.3		ug/L		103	74 - 130
Carbon tetrachloride	10.0	10.2		ug/L		102	72 - 129
1,1-Dichloropropene	10.0	10.2		ug/L		102	74 - 120
Benzene	10.0	10.7		ug/L		107	80 - 122
1,2-Dichloroethane	10.0	9.94		ug/L		99	69 - 126
Trichloroethene	10.0	10.5		ug/L		105	80 - 125
1,2-Dichloropropane	10.0	10.0		ug/L		100	80 - 120
Dibromomethane	10.0	9.37		ug/L		94	80 - 120
Bromodichloromethane	10.0	10.0		ug/L		100	75 - 124

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-377212/4
Matrix: Water
Analysis Batch: 377212

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,3-Dichloropropene	10.0	9.78		ug/L		98	77 - 120
Toluene	10.0	10.4		ug/L		104	80 - 120
trans-1,3-Dichloropropene	10.0	9.12		ug/L		91	76 - 122
1,1,2-Trichloroethane	10.0	9.31		ug/L		93	80 - 121
Tetrachloroethene	10.0	9.87		ug/L		99	76 - 125
1,3-Dichloropropane	10.0	9.61		ug/L		96	79 - 120
Dibromochloromethane	10.0	9.95		ug/L		100	73 - 125
1,2-Dibromoethane	10.0	9.62		ug/L		96	79 - 126
Chlorobenzene	10.0	9.92		ug/L		99	80 - 120
1,1,1,2-Tetrachloroethane	10.0	9.63		ug/L		96	79 - 120
Ethylbenzene	10.0	10.1		ug/L		101	80 - 120
m-Xylene & p-Xylene	10.0	9.64		ug/L		96	80 - 120
o-Xylene	10.0	9.71		ug/L		97	80 - 120
Styrene	10.0	9.67		ug/L		97	76 - 122
Bromoform	10.0	9.43		ug/L		94	56 - 139
Isopropylbenzene	10.0	9.95		ug/L		100	80 - 123
Bromobenzene	10.0	9.24		ug/L		92	80 - 120
1,1,2,2-Tetrachloroethane	10.0	8.42		ug/L		84	74 - 124
1,2,3-Trichloropropane	10.0	8.52		ug/L		85	76 - 124
N-Propylbenzene	10.0	9.58		ug/L		96	80 - 122
2-Chlorotoluene	10.0	9.29		ug/L		93	80 - 120
4-Chlorotoluene	10.0	9.09		ug/L		91	73 - 129
t-Butylbenzene	10.0	9.46		ug/L		95	75 - 123
1,2,4-Trimethylbenzene	10.0	9.43		ug/L		94	80 - 120
sec-Butylbenzene	10.0	9.81		ug/L		98	78 - 122
4-Isopropyltoluene	10.0	9.68		ug/L		97	77 - 126
1,3-Dichlorobenzene	10.0	8.86		ug/L		89	77 - 127
1,4-Dichlorobenzene	10.0	9.70		ug/L		97	80 - 120
n-Butylbenzene	10.0	9.85		ug/L		98	57 - 133
1,2-Dichlorobenzene	10.0	9.43		ug/L		94	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	7.73		ug/L		77	65 - 133
1,2,4-Trichlorobenzene	10.0	10.3		ug/L		103	61 - 148
Hexachlorobutadiene	10.0	10.7		ug/L		107	74 - 131
Naphthalene	10.0	9.25		ug/L		93	63 - 150
1,2,3-Trichlorobenzene	10.0	10.1		ug/L		101	65 - 150
1,3,5-Trimethylbenzene	10.0	9.31		ug/L		93	80 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*105*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-377212/5
Matrix: Water
Analysis Batch: 377212

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dichlorodifluoromethane			10.0	8.22		ug/L		82	20 - 150	2	33
Chloromethane			10.0	9.05		ug/L		91	25 - 150	0	26
Vinyl chloride			10.0	9.65		ug/L		97	31 - 150	0	26
Bromomethane			10.0	10.5		ug/L		105	36 - 150	2	33
Chloroethane			10.0	9.76		ug/L		98	38 - 150	0	28
Trichlorofluoromethane			10.0	9.84		ug/L		98	45 - 148	0	35
1,1-Dichloroethene			10.0	9.59		ug/L		96	70 - 129	2	23
Methylene Chloride			10.0	10.3		ug/L		103	77 - 125	0	18
Methyl tert-butyl ether			10.0	10.7		ug/L		107	72 - 120	1	18
trans-1,2-Dichloroethene			10.0	10.2		ug/L		102	75 - 120	1	21
1,1-Dichloroethane			10.0	10.3		ug/L		103	80 - 120	0	15
2,2-Dichloropropane			10.0	10.3		ug/L		103	66 - 126	1	22
cis-1,2-Dichloroethene			10.0	10.1		ug/L		101	76 - 120	1	20
Bromochloromethane			10.0	10.1		ug/L		101	78 - 120	2	13
Chloroform			10.0	10.5		ug/L		105	78 - 127	1	14
1,1,1-Trichloroethane			10.0	10.1		ug/L		101	74 - 130	2	19
Carbon tetrachloride			10.0	10.1		ug/L		101	72 - 129	1	19
1,1-Dichloropropene			10.0	10.2		ug/L		102	74 - 120	0	14
Benzene			10.0	10.4		ug/L		104	80 - 122	2	14
1,2-Dichloroethane			10.0	9.73		ug/L		97	69 - 126	2	11
Trichloroethene			10.0	10.5		ug/L		105	80 - 125	0	13
1,2-Dichloropropane			10.0	10.1		ug/L		101	80 - 120	0	14
Dibromomethane			10.0	9.42		ug/L		94	80 - 120	1	11
Bromodichloromethane			10.0	9.99		ug/L		100	75 - 124	0	13
cis-1,3-Dichloropropene			10.0	9.75		ug/L		98	77 - 120	0	35
Toluene			10.0	10.3		ug/L		103	80 - 120	1	13
trans-1,3-Dichloropropene			10.0	8.99		ug/L		90	76 - 122	1	20
1,1,2-Trichloroethane			10.0	9.29		ug/L		93	80 - 121	0	14
Tetrachloroethene			10.0	10.1		ug/L		101	76 - 125	2	13
1,3-Dichloropropane			10.0	9.50		ug/L		95	79 - 120	1	19
Dibromochloromethane			10.0	9.81		ug/L		98	73 - 125	1	13
1,2-Dibromoethane			10.0	9.27		ug/L		93	79 - 126	4	12
Chlorobenzene			10.0	9.59		ug/L		96	80 - 120	3	10
1,1,1,2-Tetrachloroethane			10.0	9.49		ug/L		95	79 - 120	1	16
Ethylbenzene			10.0	9.75		ug/L		98	80 - 120	4	14
m-Xylene & p-Xylene			10.0	9.62		ug/L		96	80 - 120	0	14
o-Xylene			10.0	9.85		ug/L		98	80 - 120	1	16
Styrene			10.0	9.42		ug/L		94	76 - 122	3	16
Bromoform			10.0	9.32		ug/L		93	56 - 139	1	21
Isopropylbenzene			10.0	9.81		ug/L		98	80 - 123	1	19
Bromobenzene			10.0	9.34		ug/L		93	80 - 120	1	24
1,1,2,2-Tetrachloroethane			10.0	8.40		ug/L		84	74 - 124	0	25
1,2,3-Trichloropropane			10.0	8.62		ug/L		86	76 - 124	1	26
N-Propylbenzene			10.0	9.45		ug/L		95	80 - 122	1	22
2-Chlorotoluene			10.0	9.23		ug/L		92	80 - 120	1	20
4-Chlorotoluene			10.0	9.23		ug/L		92	73 - 129	2	29
t-Butylbenzene			10.0	9.44		ug/L		94	75 - 123	0	21
1,2,4-Trimethylbenzene			10.0	9.28		ug/L		93	80 - 120	2	16

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-377212/5
Matrix: Water
Analysis Batch: 377212

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene			10.0	9.64		ug/L		96	78 - 122	2	15
4-Isopropyltoluene			10.0	9.51		ug/L		95	77 - 126	2	20
1,3-Dichlorobenzene			10.0	8.93		ug/L		89	77 - 127	1	35
1,4-Dichlorobenzene			10.0	9.72		ug/L		97	80 - 120	0	17
n-Butylbenzene			10.0	9.66		ug/L		97	57 - 133	2	14
1,2-Dichlorobenzene			10.0	9.48		ug/L		95	80 - 120	1	15
1,2-Dibromo-3-Chloropropane			10.0	7.69		ug/L		77	65 - 133	1	25
1,2,4-Trichlorobenzene			10.0	9.28		ug/L		93	61 - 148	10	27
Hexachlorobutadiene			10.0	10.5		ug/L		105	74 - 131	2	22
Naphthalene			10.0	8.62		ug/L		86	63 - 150	7	33
1,2,3-Trichlorobenzene			10.0	9.09		ug/L		91	65 - 150	11	33
1,3,5-Trimethylbenzene			10.0	9.40		ug/L		94	80 - 122	1	21

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*105*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-377387/1-A
Matrix: Water
Analysis Batch: 377440

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 377387

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.11		mg/L		01/04/22 11:18	01/04/22 17:30	1
Motor Oil (>C24-C36)	ND		0.35		mg/L		01/04/22 11:18	01/04/22 17:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*79*		*50 - 150*	*01/04/22 11:18*	*01/04/22 17:30*	*1*

Lab Sample ID: LCS 580-377387/2-A
Matrix: Water
Analysis Batch: 377440

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 377387

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)			4.00	2.89		mg/L		72	50 - 120
Motor Oil (>C24-C36)			4.00	3.27		mg/L		82	64 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*62*		*50 - 150*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 580-377387/3-A
Matrix: Water
Analysis Batch: 377440

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 377387

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			4.00	3.06		mg/L		76	50 - 120	6	26
Motor Oil (>C24-C36)			4.00	3.44		mg/L		86	64 - 120	5	24

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*72*		*50 - 150*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 580-377342/21-A
Matrix: Water
Analysis Batch: 377487

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 377342

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		01/03/22 18:17	01/05/22 09:41	1
Lead	ND		0.00040		mg/L		01/03/22 18:17	01/05/22 09:41	1

Lab Sample ID: LCS 580-377342/22-A
Matrix: Water
Analysis Batch: 377487

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 377342

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic			1.00	1.07		mg/L		107	80 - 120
Lead			1.00	1.10		mg/L		110	80 - 120

Lab Sample ID: LCSD 580-377342/23-A
Matrix: Water
Analysis Batch: 377487

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 377342

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic			1.00	1.04		mg/L		104	80 - 120	2	20
Lead			1.00	1.05		mg/L		105	80 - 120	5	20

Lab Chronicle

Client: Trihydro Corporation
Job ID: 580-108655-1
Project/Site: Emerald Services Tacoma FY 2017

Client Sample ID: ERI-MW-3R
Lab Sample ID: 580-108655-1
Date Collected: 12/21/21 10:56
Matrix: Water
Date Received: 12/21/21 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	377212	01/01/22 04:34	B1M	FGS SEA
Total/NA	Prep	3510C			377387	01/04/22 11:18	M1E	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	377440	01/04/22 18:51	JAE	FGS SEA
Total Recoverable	Prep	3005A			377342	01/03/22 18:17	TMH	FGS SEA
Total Recoverable	Analysis	6020B		5	377487	01/05/22 10:48	FCW	FGS SEA

Client Sample ID: ERI-MW-4
Lab Sample ID: 580-108655-2
Date Collected: 12/21/21 11:45
Matrix: Water
Date Received: 12/21/21 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	377212	01/01/22 04:58	B1M	FGS SEA
Total/NA	Prep	3510C			377387	01/04/22 11:18	M1E	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	377440	01/04/22 19:11	JAE	FGS SEA
Total Recoverable	Prep	3005A			377342	01/03/22 18:17	TMH	FGS SEA
Total Recoverable	Analysis	6020B		5	377487	01/05/22 10:52	FCW	FGS SEA

Client Sample ID: ERI-MW-50
Lab Sample ID: 580-108655-3
Date Collected: 12/21/21 00:01
Matrix: Water
Date Received: 12/21/21 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	377212	01/01/22 05:22	B1M	FGS SEA
Total/NA	Prep	3510C			377387	01/04/22 11:18	M1E	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	377440	01/04/22 19:31	JAE	FGS SEA
Total Recoverable	Prep	3005A			377342	01/03/22 18:17	TMH	FGS SEA
Total Recoverable	Analysis	6020B		5	377487	01/05/22 10:56	FCW	FGS SEA

Client Sample ID: Trip Blank
Lab Sample ID: 580-108655-4
Date Collected: 12/21/21 00:01
Matrix: Water
Date Received: 12/21/21 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	377212	01/01/22 00:57	B1M	FGS SEA

Laboratory References:
FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Trihydro Corporation
Job ID: 580-108655-1
Project/Site: Emerald Services Tacoma FY 2017

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

Sample Summary

Client: Trihydro Corporation
Job ID: 580-108655-1
Project/Site: Emerald Services Tacoma FY 2017

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-108655-1	ERI-MW-3R	Water	12/21/21 10:56	12/21/21 12:30
580-108655-2	ERI-MW-4	Water	12/21/21 11:45	12/21/21 12:30
580-108655-3	ERI-MW-50	Water	12/21/21 00:01	12/21/21 12:30
580-108655-4	Trip Blank	Water	12/21/21 00:01	12/21/21 12:30

Eurofins FGS, Seattle
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310 Fax: 425-420-9210

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: Katie Mitchell	Lab PM: Lewis, Nathan A	Carrier Tracking No(s):	COC No: 580-46421-14819.1
Client Contact: Katie Mitchell	Phone: 936-697-4851	E-Mail: Nathan.Lewis@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: Trihydro Corporation	PWSID:			Job #: 108655
Address: 1252 Commerce Drive	Due Date Requested: normal TAT			
City: Laramie	TAT Requested (days): normal TAT			
State, Zip: WY, 82070	Compliance Project: Δ Yes Δ No			
Phone: 307-745-7474(Tel)	PO #: 46Y-001-004			
Email: kmitchell@trihydro.com	WO #:			
Project Name: Emerald Services Tacoma FY 2017	Project #: 58011140			
Site:	SSOW#:			

Analysis Requested

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)

Other:

Sample Identification	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)	6020B - Total Metals (As,Pb)	NWTPH_Dx - Northwest - DRO/RRO	8260D - Volatiles, standard list	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	A	A		
ERI-MW-3R	12/21/21	10:50	G	Water			X	X	X		
ERI-MW-4	↓	1145	G	Water			X	X	X		
ERI-MW-50	↓	—	G	Water			X	X	X		
				Water							
				Water							
Trip Blank	12/21/21	—	-	Water					X		
Trip Blank				Water							

580-108655 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ 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:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Katie Mitchell	12/21/21 1230	TRIHYDRO	Tom	12/21 1230	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: clidso 2g Blu/wet/bub A1 4.7/5.2

Login Sample Receipt Checklist

Client: Trihydro Corporation

Job Number: 580-108655-1

Login Number: 108655
List Number: 1
Creator: Blankinship, Tom X

List Source: Eurofins Seattle

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.	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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX C

DATA VALIDATION REPORTS

C-1. DATA VALIDATION REPORT (JUNE 2021)

C-2. DATA VALIDATION REPORT (DECEMBER 2021)

APPENDIX C-1

DATA VALIDATION REPORT (JUNE 2021)

Tier II Data Validation Report Summary

Client: Safety-Kleen Systems	Laboratory: Eurofins TestAmerica Inc.
Project Name: Spring 2021 Groundwater Monitoring	Sample Matrix: Groundwater
Project Number: 46Y-001-005 Task: 0002	Sample Start Date: 06/02/2021
Date Validated: 07/01/2021	Sample End Date: 06/02/2021
Parameters Included: ▪ Volatile Organic Compounds (VOC) by Test Methods for Evaluating Solid Waste (SW-846) Method 8260D ▪ Semivolatile Petroleum Products and Total Petroleum Hydrocarbons (TPH) by Washington Department of Ecology Method NWTPH-Dx ▪ Total Metals (Arsenic and Lead) by SW-846 Method 6020B	
Laboratory Project ID: 580-103512-1	
Data Validator: Maggie Van Amburg, Staff Scientist	
Reviewer: Charles Ballek, Senior Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services Group on the analytical data report package generated by Eurofins TestAmerica in Seattle, Washington, evaluating samples from the Safety-Kleen Systems site, located in Tacoma, Washington.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values from:

- Field duplicate pairs
- Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) pairs

Laboratory accuracy was established by reviewing the demonstrated percent recoveries (%R) of the following items to verify that data are not biased.

- LCS/LCSD samples
- Organic system monitoring compounds (surrogates)

Field accuracy was established by collecting and analyzing the following samples to monitor for possible ambient or cross contamination during sampling and transportation.

- Trip blanks

Method compliance was established by reviewing sample integrity, holding times, detection limits, surrogate recoveries, laboratory blanks, initial and continuing calibrations (where applicable), and the LCS/LCSD percent recoveries against method-specific requirements.

Completeness was evaluated by determining the overall ratio of the number of samples and analyses planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody (CoC), laboratory analytical methods, and other laboratory and field documents associated with this analytical data set.

Tier II Data Validation Report Summary

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
ERI-MW-1	580-103512-1
ERI-MW-2	580-103512-2
ERI-MW-3R	580-103512-3
ERI-MW-4	580-103512-4
ERI-MW-50	580-103512-5
Trip Blank	580-103512-6

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Tier II Data Validation Report Summary

The laboratory data were reviewed to evaluate compliance with the methods and the quality of the reported data. Assessment of CoC completeness is included in Item 3 of the Data Validation Checklist. A check mark (✓) indicates that the referenced validation criteria were deemed acceptable, whereas a crossed circle (⊗) indicates validation criteria for which the data have been qualified by the data validator. An empty circle (○) indicates that the specified criterion does not apply to the reviewed data. Details are noted in the tables below.

Validation Criteria

- ✓ Data Completeness*
- ✓ Laboratory Identified Issues (Item 1)
- ✓ CoC Documentation (Item 3)
- ✓ Holding Times and Preservation (Items 6 and 7)
- ⊗ Initial and Continuing Calibrations (Items 9 and 10)
- ✓ Laboratory Blanks (Items 11 and 12)
- ○ Matrix Spike (MS) and Matrix Spike Duplicate (MSD) (Items 13 and 14)
- ✓ LCS/LCSD (Items 15 and 16)
- ✓ System Monitoring Compounds (i.e., Surrogates) (Item 17)
- ✓ Trip Blanks (Items 18 and 19)
- ✓ Field Duplicates (Items 20 and 21)
- ○ Laboratory Duplicates (Item 22)
- ○ Data Relationships (Item 23)

Guidance References

Chemical data validation was conducted in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for the analyses listed below, or by the appropriate method if not covered in the National Functional Guidelines.

- Data for organic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA-540-R-2017-002, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99/008, October 1999.
- Data for inorganic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review, document number EPA-540-R-2017-001, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Inorganic Data Review, document number EPA 540-R-04-004, October 2004.
- Review of field duplicates was conducted according to the USEPA Region I – New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020
- Trihydro Data Validation Variance Documentation, February 2021.

Tier II Data Validation Report Summary

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Item 2 of the Validation Criteria Checklist.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data that are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R (rejected, data not usable), the data may be used for site evaluation; however, consideration should be given to the reasons for qualification when interpreting sample concentrations. Data points that are assigned an R qualifier should not be used for site evaluation purposes.

If applicable, text was identified in **bold font** in the Validation Criteria Checklist to indicate that further action and/or qualification of the data were required. Data may have been qualified with J data flags by the laboratory if the result was greater than or equal to the method detection limit (MDL) but less than the reporting limit (RL). These laboratory-applied J flags were preserved, if present, and included in the Data Qualification Summary table at the end of this report. If applicable, data validation qualifiers were added for the items noted with crossed circles in the Validation Criteria section above. Please see the Data Qualification Summary table at the end of this report for a complete list of samples and analytes qualified.

If data would be qualified with more than one flag, one qualifier was assigned based on the severity; however, all reasons for qualification were retained. Data that would be qualified with both J+ and J- flags were evaluated based on validation criteria and assigned the appropriate flag. The hierarchy of qualifiers from the most to least severe is as follows:

- R > JB/U > NJ > J+/J- > J/UJ

Data qualifiers used during this validation are included in the following table.

Qualifier	Definition
UJ	Estimated reporting limit

Data Completeness

The analyses were performed as requested on the CoC records. The associated samples were received by the laboratory and analyzed properly unless otherwise noted in the Criteria Checklist below. The complete data package consisted of 320 data points. The data completeness calculation does not include any submitted blank sample results. Data points were not rejected. The data completeness measure for this data package is calculated to be 100% and is acceptable.

VALIDATION CRITERIA CHECKLIST	
1. Was the report free of non-conformances identified by the laboratory?	No
Comments: The laboratory noted the following non-conformance regarding the analytical data. Method 8260D: The laboratory control sample (LCS) for analytical batch 580-358637 recovered outside control limits for the following analytes: Dichlorodifluoromethane, Tetrachloroethene and Ethylene Dibromide. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported. The continuing calibration verification (CCV) associated with batch 580-358637 recovered above the upper control limit for Dichlorodifluoromethane, 1,1,2-Trichloro-1,2,2-trifluoroethane and Carbon tetrachloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: ERI-MW-4 (580-103512-4), ERI-MW-50 (580-103512-5), TRIP BLANK (580-103512-6) and (CCVIS 580-358637/3). The continuing calibration verification (CCV) associated with batch 580-358637 recovered outside acceptance criteria, low biased, for n-Butylbenzene. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported. The continuing calibration verification (CCV) associated with batch 580-358759 recovered outside acceptance criteria, low biased, for Chloromethane, Bromomethane and cis-1,3-Dichloropropene. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported. The method blank for preparation batch 358759 contained Methylene Chloride above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed. The laboratory control sample duplicate (LCSD) for analytical batch 580-358759 recovered outside control limits for the following analytes: Methylene Chloride. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported. Method NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: ERI-MW-1 (580-103512-1), ERI-MW-2R (580-103512-2), ERI-MW-3R (580-103512-3), ERI-MW-4 (580-103512-4) and ERI-MW-50 (580-103512-5). *Since the results were reported as a carbon range and not as TPH-Diesel, qualification was not applied based on this observation.*	
2. Were the data free of data qualification flags and/or notes used by the laboratory? If no, define.	No
Comments: The laboratory used the following data qualification flags with this data set. *+ – LCS and/or LCDS is outside acceptance limits, high biased.	
3. Were sample CoC forms and custody procedures complete?	Yes
Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt. Custody seals were not present and were not required since the samples were delivered to the laboratory by field personnel and custody was maintained at all times.	
4. Were detection limits in accordance with the quality assurance project plan (QAPP), permit, or method, or indicated as acceptable?	Yes
Comments: The reporting limits for the analyses were reviewed and appeared to be acceptable. Dilutions were not applied for the analyses of the submitted samples.	
5. Were the reported analytical methods and constituents in compliance with the QAPP, permit, or CoC?	Yes
Comments: The reported analytical methods were in compliance with the CoC, and the laboratory reported the requested constituents in accordance with the CoC.	

VALIDATION CRITERIA CHECKLIST	
6. Were samples received in good condition within method-specified requirements?	No
Comments: Samples were received at the laboratory on ice, in good condition, and with the cooler temperature outside the recommended temperature range of 4°C ± 2°C at 9.0°C as noted in the Case Narrative and on the CoC. The cooler temperature above 6°C was acceptable since the samples were received at the laboratory on the same day (within 24 hours) of the last sample collection time, and temperature equilibrium had not been established.	
7. Were samples extracted/digested and analyzed within method-specified or technical holding times?	No
Comments: The samples were extracted/digested and analyzed within method-specific holding times.	
8. Were reported units appropriate for the sample matrix/matrices and analytical method(s)? Specify if wet or dry units were used for soil.	Yes
Comments: The results were reported in concentration units of micrograms per liter (µg/L) and milligrams per liter (mg/L), which were acceptable for the sample matrix and the analyses requested.	
9. Did the laboratory provide any specific initial and/or continuing calibration results?	No
Comments: Detailed initial and continuing calibration data were not included as part of this data set.	
10. If initial and/or continuing calibration results were provided, were the results within acceptable limits?	No
Comments: Detailed initial and continuing calibration data were not included as part of this data set. **However, the laboratory noted that the recoveries for dichlorodifluoromethane, 1,1,2-trichloro-1,2,2-trifluoroethane carbon tetrachloride, and n-butylbenzene were outside the control limits in the continuing calibration verification (CCV) for Method 8260D batch 358637. Dichlorodifluoromethane, carbon tetrachloride, and n-butylbenzene were not detected in the associated samples analyzed in this batch and the results were assigned UJ qualifiers due to the calibration non-conformances.** 1,1,2-Trichloro-1,2,2-trifluoroethane was not a target analyte for this project and qualification of sample results was not required based on this CCV information. **The laboratory identified that the recoveries for chloromethane, bromomethane and cis-1,3-dichloropropene were outside the acceptance limits in the CCV for Method 8260D batch 358759, Chloromethane, bromomethane and cis-1,3-dichloropropene were not detected in the associated samples in batch 358759 and the results were assigned UJ qualifiers due to the calibration non-conformances.**	
11. Was the total number of laboratory blank samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method?	Yes
Comments: The total number of laboratory blank samples prepared was equal to at least 5% of the total number of samples.	
12. Were target analytes reported as not detected in the laboratory blanks?	No
Comments: Target analytes were reported as not detected in the laboratory blanks samples, with the following exception. The target analyte methylene chloride was detected in the laboratory blank for Method 8260B batch 358759 at a concentration of 3.57 mg/L. Methylene Chloride was not detected in the associated samples; therefore, qualification of sample results based on the method blank detection was not required.	

VALIDATION CRITERIA CHECKLIST

13. Was the total number of MS samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? No

Comments: The total number of matrix spike samples prepared was not equal to at least 5% of the total number of samples. The matrix spike sample source for each analytical batch in this sample set has been indicated below

Method	Analytes	Batch	MS Sample Source
6020B	Arsenic and Lead	358992	Not Prepared
8260D	VOCs	358759, 358637	Not Prepared
NWTPH-Dx	C10-C24 and Motor Oil	358299	Not Prepared

Not Prepared – Matrix spikes were not prepared for this batch. Other QC data were used to evaluate accuracy and precision.

14. For MS/MSDs prepared from project samples, were percent recoveries and RPDs within data validation or laboratory quality control (QC) limits? N/A

Comments: MS samples were not prepared using project samples as the sample source.

15. Was the total number of LCSs analyzed equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of LCS samples analyzed was equal to at least 5% of the total number of samples.

16. Were LCS/LCSD percent recoveries and LCS/LCSD RPDs within data validation or laboratory QC limits? No

Comments: The LCS and LCSD percent recoveries and LCS/LCSD RPDs were within laboratory QC limits, with the following exceptions.

Method	Analyte	Batch	LCS Recovery	LCSD Recovery	LCS/LCSD QC Limits
8260D	Dichlorodifluoromethane	358637	138%	Acceptable	47-133%
8260D	Tetrachloroethene	358637	121%	Acceptable	76-120%
8260D	1,2-Dibromoethane	358637	122%	Acceptable	79-120%
8260D	Methylene Chloride	358759	Acceptable	122%	77-120%

The identified analytes were not detected in the associated samples and qualification of the results was not required based on the evidence of potential high bias.

17. Were surrogate recoveries within laboratory QC limits? Yes

Comments: Surrogate recoveries were within laboratory QC limits.

18. Were the number of trip blank, field blank, and/or equipment blank samples collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of trip, field, and equipment blanks collected was equal to at least 10% of the number of samples. One trip blank sample, Trip Blank, was collected as part of this sample set.

19. Were target analytes reported as not detected in the trip blank, field blank, and/or equipment blank samples? Yes

Comments: Target analytes were reported as not detected in the trip blank sample.

20. Was the number of field duplicates collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of field duplicates collected was equal to at least 10% of the number of samples. Sample ERI-MW-50 was collected as a field duplicate of sample ERI-MW-4.

VALIDATION CRITERIA CHECKLIST	
21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)?	Yes
Comments: As indicated in the Field Duplicate Summary Table at the end of this report, field duplicate RPD values were within the data validation QC limits of 0-30% for water samples. Qualification of sample data was not required.	
22. For laboratory duplicates prepared from project samples, were RPDs within data validation or laboratory QC limits?	N/A
Comments: Laboratory duplicates were not prepared for this dataset.	
23. Were the following data relationships realistic and acceptable?	
• Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270), and the results were in agreement?	N/A
Comments: Target analytes were not reported by more than one method.	
• Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results?	N/A
Comments: Dissolved metals were not analyzed for the samples in this data set.	

FIELD DUPLICATE SUMMARY

Client Sample ID: ERI-MW-4 Field Duplicate Sample ID: ERI-MW-50				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
C10-C24	NWTPH-Dx	1.6 mg/L	1.7 mg/L	6.1%
Motor Oil	NWTPH-Dx	0.57 mg/L	0.60 mg/L	5.1%
Field duplicate RPD control limits are not to exceed 30% for water as established by USEPA Region 1 - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.				

DATA QUALIFICATION SUMMARY

Abbreviation	Reason
HDRRF	The %D between the initial calibration RRF and the opening CCV RRF was outside the acceptable limits.

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Bromomethane	SW 8260	ERI-MW-1	580-103512-1	ND	1	µg/L	UJ	HDRRF
Bromomethane	SW 8260	ERI-MW-2R	580-103512-2	ND	1	µg/L	UJ	HDRRF
Bromomethane	SW 8260	ERI-MW-3R	580-103512-3	ND	1	µg/L	UJ	HDRRF
Carbon tetrachloride	SW 8260	ERI-MW-4	580-103512-4	ND	1	µg/L	UJ	HDRRF
Carbon tetrachloride	SW 8260	ERI-MW-50	580-103512-5	ND	1	µg/L	UJ	HDRRF
Carbon tetrachloride	SW 8260	TRIP BLANK	580-103512-6	ND	1	µg/L	UJ	HDRRF
Chloromethane	SW 8260	ERI-MW-1	580-103512-1	ND	1	µg/L	UJ	HDRRF
Chloromethane	SW 8260	ERI-MW-2R	580-103512-2	ND	1	µg/L	UJ	HDRRF
Chloromethane	SW 8260	ERI-MW-3R	580-103512-3	ND	1	µg/L	UJ	HDRRF
cis-1,3-Dichloropropene	SW 8260	ERI-MW-1	580-103512-1	ND	1	µg/L	UJ	HDRRF
cis-1,3-Dichloropropene	SW 8260	ERI-MW-2R	580-103512-2	ND	1	µg/L	UJ	HDRRF
cis-1,3-Dichloropropene	SW 8260	ERI-MW-3R	580-103512-3	ND	1	µg/L	UJ	HDRRF
Dichlorodifluoromethane	SW 8260	ERI-MW-4	580-103512-4	ND	1	µg/L	UJ	HDRRF
Dichlorodifluoromethane	SW 8260	ERI-MW-50	580-103512-5	ND	1	µg/L	UJ	HDRRF
Dichlorodifluoromethane	SW 8260	TRIP BLANK	580-103512-6	ND	1	µg/L	UJ	HDRRF
n-Butylbenzene	SW 8260	ERI-MW-4	580-103512-4	ND	1	µg/L	UJ	HDRRF
n-Butylbenzene	SW 8260	ERI-MW-50	580-103512-5	ND	1	µg/L	UJ	HDRRF
n-Butylbenzene	SW 8260	TRIP BLANK	580-103512-6	ND	1	µg/L	UJ	HDRRF

APPENDIX C-2

DATA VALIDATION REPORT (DECEMBER 2021)

Tier II Data Validation Report Summary

Client: Safety-Kleen Systems	Laboratory: Eurofins TestAmerica Inc.
Project Name: Tacoma 2021 Groundwater Monitoring	Sample Matrix: Groundwater
Project Number: 46Y-001-005 Task: 0002	Sample Start Date: 12/21/2021
Date Validated: 01/19/2022	Sample End Date: 12/21/2021
Parameters Included: ▪ Volatile Organic Compounds (VOC) by Test Methods for Evaluating Solid Waste (SW-846) Method 8260D ▪ Semivolatile Petroleum Products and Total Petroleum Hydrocarbons (TPH) by Washington Department of Ecology Method NWTPH-Dx ▪ Total Metals (Arsenic and Lead) by SW-846 Method 6020B	
Laboratory Project ID: 580-108655-1	
Data Validator: Daran O'Hollearn, Lead Project Scientist	
Reviewer: Mike Phillips, Senior Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services Group on the analytical data report package generated by Eurofins TestAmerica in Seattle, Washington, evaluating samples from the Safety-Kleen Systems site, located in Tacoma, Washington.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values from:

- Field duplicate pairs
- Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) pairs

Laboratory accuracy was established by reviewing the demonstrated percent recoveries (%R) of the following items to verify that data are not biased.

- LCS/LCSD samples
- Organic system monitoring compounds (surrogates)

Field accuracy was established by collecting and analyzing the following samples to monitor for possible ambient or cross contamination during sampling and transportation.

- Trip blanks

Method compliance was established by reviewing sample integrity, holding times, detection limits, surrogate recoveries, laboratory blanks, initial and continuing calibrations (where applicable), and the LCS/LCSD percent recoveries against method-specific requirements.

Completeness was evaluated by determining the overall ratio of the number of samples and analyses planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody (CoC), laboratory analytical methods, and other laboratory and field documents associated with this analytical data set.

Tier II Data Validation Report Summary

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
ERI-MW-3R	580-108655-1
ERI-MW-4	580-108655-2
ERI-MW-50	580-108655-3
Trip Blank	580-108655-4

Tier II Data Validation Report Summary

The laboratory data were reviewed to evaluate compliance with the methods and the quality of the reported data. Assessment of CoC completeness is included in Item 3 of the Data Validation Checklist. A check mark (✓) indicates that the referenced validation criteria were deemed acceptable, whereas a crossed circle (⊗) indicates validation criteria for which the data have been qualified by the data validator. An empty circle (○) indicates that the specified criterion does not apply to the reviewed data. Details are noted in the tables below.

Validation Criteria

- ✓ Data Completeness
- ✓ CoC Documentation (Item 3)
- ✓ Holding Times and Preservation (Items 6 and 7)
- ⊗ Initial and Continuing Calibrations (Items 9 and 10)
- ✓ Laboratory Blanks (Items 11 and 12)
- ○ Matrix Spikes (MS) and Matrix Spike Duplicates (MSD) (Items 13 and 14)
- ✓ LCS/LCSD (Items 15 and 16)
- ✓ System Monitoring Compounds (i.e., Surrogates) (Item 17)
- ✓ Trip Blanks (Items 18 and 19)
- ✓ Field Duplicates (Items 20 and 21)
- ○ Laboratory Duplicates (Item 22)
- ○ Data Relationships (Item 23)

Guidance References

Chemical data validation was conducted in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for the analyses listed below, or by the appropriate method if not covered in the National Functional Guidelines.

- Data for organic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA-540-R-20-005, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99/008, October 1999.
- Data for inorganic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review, document number EPA-542-R-20-006, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Inorganic Data Review, document number EPA 540-R-04-004, October 2004.
- Review of field duplicates was conducted according to the USEPA Region 1 - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.
- Trihydro Data Validation Variance Documentation, February 2021.

Tier II Data Validation Report Summary

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Item 2 of the Validation Criteria Checklist.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data that are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R (rejected, data not usable), the data may be used for site evaluation; however, consideration should be given to the reasons for qualification when interpreting sample concentrations. Data points that are assigned an R qualifier should not be used for site evaluation purposes.

If applicable, text was identified in **bold font** in the Validation Criteria Checklist to indicate that further action and/or qualification of the data were required. Data may have been qualified with J data flags by the laboratory if the result was greater than or equal to the method detection limit (MDL) but less than the reporting limit (RL). These laboratory-applied J flags were preserved, if present, and included in the Data Qualification Summary table at the end of this report. If applicable, data validation qualifiers were added for the items noted with crossed circles in the Validation Criteria section above. Please see the Data Qualification Summary table at the end of this report for a complete list of samples and analytes qualified.

If data would be qualified with more than one flag, one qualifier was assigned based on the severity; however, all reasons for qualification were retained. Data that would be qualified with both J+ and J- flags were evaluated based on validation criteria and assigned the appropriate flag. The hierarchy of qualifiers from the most to least severe is as follows:

- R > JB/U > NJ > J+/J- > J/UJ

Data qualifiers used during this validation are included in the following table.

Qualifier	Definition
UJ	Estimated reporting limit

Data Completeness

The analyses were performed as requested on the CoC records. The associated samples were received by the laboratory and analyzed properly unless otherwise noted in the Criteria Checklist below. The complete data package consisted of 192 data points. The data completeness calculation does not include any submitted blank sample results. Data points were not rejected. The data completeness measure for this data package is calculated to be 100% and is acceptable.

VALIDATION CRITERIA CHECKLIST	
1. Was the report free of non-conformances identified by the laboratory?	No
Comments: The laboratory noted the following non-conformance regarding the analytical data. Method 8260D: The Continuing Calibration Verification (CCV) for analytical batch 580-377212 recovered outside control limits for the following analyte: Dichlorodifluoromethane. Dichlorodifluoromethane has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified. Surrogate recovery for the following sample was outside the upper control limit: ERI-MW-3R (580-108655-1). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed. Method 3510C/ NWTPH-Dx: The following samples formed emulsions during the extraction procedure: ERI-MW-3R (580-108655-1). The emulsions were broken up using additional sodium sulfate filtration and methylene chloride rinses. Insufficient sample volume was available to perform a MS/MSD associated with preparation batch 580-377387, so a LCS and LCSD were created and substituted for the MS/MSD.	
2. Were the data free of data qualification flags and/or notes used by the laboratory? If no, define.	No
Comments: The laboratory used the following data qualification flag with this data set. S1+– Surrogate recovery exceeds control limits, high biased.	
3. Were sample CoC forms and custody procedures complete?	Yes
Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt. The laboratory noted that the shipping containers were sealed, and custody seals were present and intact.	
4. Were detection limits in accordance with the quality assurance project plan (QAPP), permit, or method, or indicated as acceptable?	Yes
Comments: The reporting limits for the analyses were reviewed and appeared to be acceptable. The following dilutions were applied to the project samples. Method 6020B: Samples ERI-MW-3R, ERI-MW-4, and ERI-MW-50 were diluted by a factor of 5 times for the analyses of total arsenic and total lead.	
5. Were the reported analytical methods and constituents in compliance with the QAPP, permit, or CoC?	Yes
Comments: The reported analytical methods were in compliance with the CoC, and the laboratory reported the requested constituents in accordance with the CoC.	
6. Were samples received in good condition within method-specified requirements?	Yes
Comments: Samples were received at the laboratory on ice, in good condition, and with the cooler temperature within the recommended temperature range of 4°C ± 2°C at 4.7C as noted in the Case Narrative and on the CoC.	
7. Were samples extracted/digested and analyzed within method-specified or technical holding times?	Yes
Comments: The samples were extracted/digested and analyzed within method-specific holding times.	
8. Were reported units appropriate for the sample matrix/matrices and analytical method(s)? Specify if wet or dry units were used for soil.	Yes
Comments: The results were reported in concentration units of micrograms per liter (µg/L) and milligrams per liter (mg/L), which were acceptable for the sample matrix and the analyses requested.	

VALIDATION CRITERIA CHECKLIST	
9. Did the laboratory provide any specific initial and/or continuing calibration results?	No
Comments: Detailed initial and continuing calibration data were not included as part of this data set.	
10. If initial and/or continuing calibration results were provided, were the results within acceptable limits?	No
Comments: Detailed initial and continuing calibration data were not included as part of this data set. **Although detailed initial and continuing calibration data were not included as part of this data set, the laboratory reported in the case narrative that the CCV associated with Method 8260D batch 377212 recovered outside the control limits for dichlorodifluoromethane. Dichlorodifluoromethane was not detected in the samples associated with batch 377212. The results for dichlorodifluoromethane in samples ERI-MW-3R, ERI-MW-4, ERI-MW-50, and Trip Blank were qualified as UJ due to this calibration non-conformance.**	
11. Was the total number of laboratory blank samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method?	Yes
Comments: The total number of laboratory blank samples prepared was equal to at least 5% of the total number of samples.	
12. Were target analytes reported as not detected in the laboratory blanks?	Yes
Comments: Target analytes were reported as not detected in the laboratory blanks.	
13. Was the total number of MS samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method?	No
Comments: The total number of matrix spike samples prepared was not equal to at least 5% of the total number of samples. Matrix spikes were not prepared for the analyses in this data set.	
14. For MS/MSDs prepared from project samples, were percent recoveries and RPDs within data validation or laboratory quality control (QC) limits?	N/A
Comments: MS/MSD samples were not prepared using project samples as the sample source.	
15. Was the total number of LCSs analyzed equal to at least 5% of the total number of samples or analyzed as required by the method?	Yes
Comments: The total number of LCS samples analyzed was equal to at least 5% of the total number of samples.	
16. Were LCS/LCSD percent recoveries and LCS/LCSD RPDs within data validation or laboratory QC limits?	Yes
Comments: The LCS and LCSD percent recoveries and LCS/LCSD RPDs were within laboratory QC limits.	
17. Were surrogate recoveries within laboratory QC limits?	No
Comments: Surrogate recoveries were within laboratory QC limits, with the following exception. Method 8260D: The reported recovery for the surrogate 4-bromofluorobenzene was outside the laboratory acceptance range of 80-120% at 131% for sample ERI-MW-3R. The associated target analytes were not detected in the sample, and qualification of the results was not required based on the evidence of potential high bias.	
18. Were the number of trip blank, field blank, and/or equipment blank samples collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit?	Yes
Comments: The number of trip, field, and equipment blanks collected was equal to at least 10% of the number of samples. One trip blank sample, Trip Blank, was collected as part of this sample set.	

VALIDATION CRITERIA CHECKLIST	
19. Were target analytes reported as not detected in the trip blank, field blank, and/or equipment blank samples?	Yes
Comments: Target analytes were reported as not detected in the trip blank sample.	
20. Was the number of field duplicates collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit?	Yes
Comments: The number of field duplicates collected was equal to at least 10% of the number of samples. Sample ERI-MW-50 was collected as a field duplicate of sample ERI-MW-4.	
21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)?	Yes
Comments: As indicated in the Field Duplicate Summary Table at the end of this report, field duplicate RPD values were within the data validation QC limits of 0-30% for water samples. Qualification of sample data was not required.	
22. For laboratory duplicates prepared from project samples, were RPDs within data validation or laboratory QC limits?	N/A
Comments: Laboratory duplicate samples were not prepared for this sample set.	
23. Were the following data relationships realistic and acceptable?	
• Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270), and the results were in agreement?	N/A
Comments: Target analytes were not reported by more than one method.	
• Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results?	N/A
Comments: Dissolved metals were not analyzed for the samples in this data set.	

FIELD DUPLICATE SUMMARY

Client Sample ID: ERI-MW-4 Field Duplicate Sample ID: ERI-MW-50				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
C10-C24	NWTPH-Dx	1.2 mg/L	1.1 mg/L	8.7%
Motor Oil	NWTPH-Dx	0.59 mg/L	0.56 mg/L	5.2% +/-RL

Field duplicate RPD control limits are not to exceed 30% for water as established by USEPA Region 1 - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

DATA QUALIFICATION SUMMARY

Abbreviation	Reason
HDRRF	The %D between the initial calibration RRF and the opening CCV RRF was outside the acceptable limits.

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Dichlorodifluoromethane	8260D	ERI-MW-3R	580-108655-1	ND	1.0	µg/L	UJ	HDRRF
Dichlorodifluoromethane	8260D	ERI-MW-4	580-108655-2	ND	1.0	µg/L	UJ	HDRRF
Dichlorodifluoromethane	8260D	ERI-MW-50	580-108655-3	ND	1.0	µg/L	UJ	HDRRF
Dichlorodifluoromethane	8260D	Trip Blank	580-108655-4	ND	1.0	µg/L	UJ	HDRRF