Stericycle
Environmental Solutions

April 16, 2019

Ms. Kaia Petersen
Department of Ecology
Hazardous Waste and Toxics Reduction
Southwest Regional Office
PO Box 47775
Olympia, WA 98504-7775

Re: Burlington Environmental, LLC; a wholly-owned subsidiary of PSC Environmental Services, LLC, a wholly-owned subsidiary of Stericycle Environmental Solutions, Inc. Tacoma Facility, Dangerous Waste Permit No. WAD 020 257 945

Dear Ms. Petersen:

Enclosed, please find two copies of the Annual Progress Report for the period of January 1, 2018 through December 31, 2018 which includes the groundwater sampling conducted in 2018, and water level measurements conducted in June and December 2018, as required by Section E of the Stericycle Tacoma Facility dangerous waste permit No. WAD 020 257 945.

If you have questions or concerns related to this report, please contact me at (425) 227-6149 or at William.Beck@STERICYCLE.com.

Respectfully,

William Beck
Project Manager
Corrective Action Group

Enclosures: 2018 Progress Report, Stericycle Facility, Tacoma, Washington

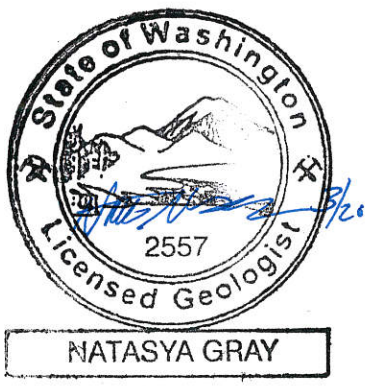
Cc: Tacoma Main Public Library – Repository
Citizens for a Healthy Bay – Repository
Steve Teel, Ecology
Mr. Russell Post, Tacoma Public Utilities
Mr. Bill Sullivan, Puyallup Tribe of Indians
Mr. Desiree Pooley, Tacoma Public Works
Mr. Jerry Bartlett, Emerald Recycling
Mr. Doug Kunkle, EPI
Mr. Scott Hooten, Port of Tacoma
Ms. Natasya Gray, DOF

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.

William Beck
Stericycle CA Project Manager

This report was prepared by Stericycle Environmental Solutions, Inc. under the supervision of the Geologist whose seal and signature appears below.

The findings, recommendations, specifications, or professional opinions are presented in accordance with generally accepted professional geologic practice.



Natasya Gray, LG.
Licensed Geologist #2557
Expiration Date: March 14, 2020

ANNUAL
PROGRESS REPORT

2018

STERICYCLE
ENVIRONMENTAL
SOLUTIONS, INC.

TACOMA FACILITY

TACOMA, WASHINGTON

April 16, 2019

STERICYCLE ENVIRONMENTAL
SOLUTIONS, INC.
Corrective Action Group
18000 72nd Avenue South, Suite 201
Kent, WA 98032
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1 DESCRIPTION OF WORK COMPLETED

Stericycle Environmental Solutions, Inc. prepared this Annual Progress Report to document the corrective action activities conducted in 2018 and to present the results of the sampling activities conducted in the second quarter 2018 for the Burlington Environmental LLC. (Burlington) Tacoma Facility located at 1701 Alexander Avenue in the City of Tacoma, Washington (the "Facility"). Burlington is a wholly owned subsidiary of PSC Environmental Services, LLC. (PSC), a wholly owned subsidiary of Stericycle Environmental Solutions, Inc., hereafter referred to in this report as Stericycle. This report was prepared in accordance with the requirements of Section E of the Facility's Dangerous Waste Permit (Permit No. WAD 020 257 945) (the "Permit"), reissued in March 2012 for the period of March 22, 2012 through March 22, 2022.

Stericycle submitted a revised Long Term Groundwater Monitoring Plan (GWMP) to Ecology during the fourth quarter 2011. The GWMP included a reduction of the sampling program to an annual sampling in June of each subsequent year. The draft groundwater monitoring plan was submitted to Ecology in October 2011 for review and was included as Section I-5 in the RCRA Part B Permit Application in December 2011, which is a part of the revised permit effective through March 22, 2022.

The GWMP requires groundwater sampling during the 2nd Quarter of each year, but also requires that groundwater level measurements are also taken in the 4th Quarter (December). Well inspections are required for every quarter.

This report, therefore, relates information on the 2nd Quarter 2018 Groundwater Monitoring event and the 4th Quarter 2018 groundwater level measurements.

1.1 Construction Activities

Extensive construction-related activities were completed at the Tacoma facility in 2018 under permit approval from Ecology.

1.2 Second / Fourth Quarter 2018 Liquid-Level Measurements and LNAPL Recovery

Stericycle conducted groundwater monitoring at the Tacoma facility during the second and fourth quarters on June 4, 2018 and again on December 3, 2018. Field activities included gauging the depth to groundwater, and where present, the depth to LNAPL. Sampling was conducted at the following monitoring points:

- Monitoring points that are part of the routine quarterly groundwater sampling program:
  - Facility groundwater-monitoring wells: CTMW-1, CTMW-5 through CTMW-10, CTMW-11R, CTMW-12, CTMW-14, CTMW-15, CTMW-17, CTMW-17D, CTMW-18, CTMW-20, CTMW-21, CTMW-23. CTMW-24, CTMW-24D, and CTMW-25D.
  - Potter Properties well MW-1.

  - Stericycle piezometers: PZ-1, and PZ-4 through PZ-10.

- Shallow-aquifer monitoring points associated with the Interim Measure:
  - 1999 LNAPL-interceptor trench piezometers: TP-1 through TP-5.
  - 2000 LNAPL-interceptor trench piezometers: TP-8 through TP-10.

- Monitoring points added to the quarterly groundwater gauging program at the request of Ecology:
  - Three shallow-aquifer monitoring wells (SB-1A, SB-2A and SB-3A) on the Port of Tacoma property that abuts the Facility on the west.
  - Three monitoring well nests (CCW-2, CCW-3 and CCW-5) on the CleanCare property that abuts the Facility on the east.

- In addition, Stericycle obtained groundwater elevation data from the adjacent property owner for the following wells:
  - Monitoring wells (EMW-1 through EMW-4) located on the Emerald Services, Inc. (Emerald) property located southeast of the Facility.

1.3 Second Quarter 2018 Groundwater Sampling

As part of the second quarter 2018 groundwater monitoring event, Stericycle collected groundwater samples from the groundwater monitoring wells in the Stericycle monitoring network from June 5 through June 11, 2018. Prior to sampling, Stericycle personnel purged each well. During purging, Stericycle personnel monitored the following groundwater stabilization criteria: purging flow rate; volume purged; water temperature; dissolved oxygen; turbidity; specific conductivity; redox potential; pH; pump speed; and total volume purged before and at stabilization. Attachment A provides a summary of these and other measurements taken in the field during sampling. When the field purging parameter measurements indicated that the groundwater quality in the well had stabilized, Stericycle collected groundwater samples into laboratory-provided sample containers, and placed the sample containers in a cooler with ice.

The groundwater samples from select wells were submitted to an independent laboratory [ALS Environmental (ALS)] for analysis. The sampling program includes analysis of: volatile organic compounds (VOCs); one semi-volatile organic compound (SVOC), 1,4-dioxane; gasoline-range organics (GRO) as total petroleum hydrocarbons (TPH); diesel-range organics (DRO) and lube oil-range organics (LRO); total metals from unfiltered samples and, when necessary, dissolved from filtered samples. Groundwater samples are not collected from wells CTMW-1, CTMW-6, CTMW-10 and MW-1 because of the historic presence of LNAPL.

2 SUMMARY OF FINDINGS

2.1 Second Quarter 2018

2.1.1 Interim Measure

The results of the Interim Measure activities are summarized below:

Upon completion of the water level measurement activities, Stericycle personnel attempted to recover light non-aqueous phase liquids (LNAPL) from all wells with measurable LNAPL using a peristaltic pump and disposable tubing. The following documents the LNAPL recovery effort conducted during the second quarter field work on June 4, 2016:

- CTMW-1: Purged ~20 ml of product
- CTMW-6: LNAPL too viscous for WL/ Purged ~ 80 ml of product.
- CTMW-10: No LNAPL Present; no purge recovery
- PZ-1: Purged ~20 ml of product
- PZ-6: LNAPL too viscous for WL/ Purged ~ 100 ml of product.
- MW-1: No LNAPL Present; no purge recovery

The gauging data associated with the Interim Measure are presented in Table 1.

The following documents the LNAPL recovery effort conducted during the fourth quarter field work on December 3, 2018:

- CTMW-1: Purged ~10 ml of product
- CTMW-6: LNAPL too viscous for WL readings and purge recovery
- CTMW-10: No LNAPL Present; no purge recovery
- PZ-1: No LNAPL Present; no purge recovery
- PZ-6: LNAPL too viscous for WL readings and purge recovery
- MW-1: No LNAPL Present; no purge recovery

The gauging data associated with the Interim Measure are presented in Table 1.

2.1.2 Hydrogeologic Results

On June 4 and December 3, 2018, Stericycle conducted groundwater monitoring activities that included gauging the depth to groundwater from the wells located on the Facility and in select wells on the former CleanCare facility. The depth to groundwater, LNAPL thickness, and the calculated groundwater elevations for data are summarized in the Table 1.

The results of the second quarter 2018 gauging activities are summarized below:

Second Quarter 2018

Shallow Aquifer

- The calculated groundwater elevation contours for the shallow-aquifer monitoring points are illustrated on Figure 2. The groundwater contours indicate the presence of one elongated mound in the groundwater elevation surface in the central portion of the Facility.

- LNAPL was detected in all of the wells and piezometers tested, but mostly at trace levels, see Section 2.1.1 for recovery volumes. In order to accurately measure the LNAPL thickness and calculate the potentiometric surface, Stericycle placed small diameter piezometers (1-inch diameter PVC casing) inside the annulus of wells CTMW-1, CTMW-6, CTMW-10, and MW-1. The depth to the potentiometric surface is measured inside the piezometer and the depth to LNAPL is measured outside the piezometer. The thickness of LNAPL in these wells is calculated in accordance with the following formula:

$$LNAPL_{thickness} = \frac{DepthToPS - DepthToLNAPL}{1 - SpecificGravity}$$

  The maximum LNAPL-thickness in the shallow aquifer was observed in well PZ-1 at 1 ft. Due to the high viscosity of the LNAPL only 220 ml of LNAPL was recovered from the wells (see Section 2.1.1). The calculated LNAPL thickness in monitoring points and the historic extent of LNAPL are documented in Table 1 and illustrated on Figure 3.

Deep Aquifer

- The deep aquifer beneath the Facility is influenced by tidal fluctuations in Commencement Bay. Of the important tidal constituents for Commencement Bay, the one with the highest frequency is semidiurnal (i.e., with a period of about 12 hours). Because of this, the water level can fluctuate over its entire range of values within about 6 hours. Therefore, to obtain representative estimates of deep-aquifer groundwater elevations, hydraulic gradients, and groundwater flow rates; the deep-aquifer water-level measurements must be completed within a period less than four hours. Stericycle measured the water levels at the deep-aquifer monitoring wells (Stericycle wells CTMW-7, CTMW-9, CTMW-12, CTMW-17D; CTMW-24D, and CTMW-25D and CleanCare wells CCW-2C, CCW-3C and CCW-5C) within a 4-hour period. The depth to groundwater and the calculated groundwater elevations at the deep-aquifer monitoring points for these measurements are summarized in Table 1.

- The deep-aquifer groundwater-elevation contours indicate that the direction of groundwater flow during the monitoring period flows to the south and southwest of the facility. The calculated groundwater elevation contours for the deep-aquifer monitoring points are illustrated on Figure 4.

Fourth Quarter 2018

Shallow Aquifer

- The calculated groundwater elevation contours for the shallow-aquifer monitoring points are illustrated on Figure 5. The groundwater contours indicate the presence of one elongated mound in the groundwater elevation surface in the central portion of the Facility.

- LNAPL was detected in two of the wells and piezometers tested, except wells CTMW-6 and PZ-6 see Section 2.1.1 for recovery volumes. In order to accurately measure the LNAPL thickness and calculate the potentiometric surface, Stericycle placed small diameter piezometers (1-inch diameter PVC casing) inside the annulus of wells CTMW-1, CTMW-6, CTMW-10, and MW-1. The depth to the potentiometric surface is measured inside the piezometer and the depth to LNAPL is measured outside the piezometer. The thickness of LNAPL in these wells is calculated in accordance with the following formula:

$$LNAPL_{thickness} = \frac{DepthToPS - DepthToLNAPL}{1 - SpecificGravity}$$

  LNAPL-thickness in the shallow aquifer was not determined. Due to the high viscosity of the LNAPL only 10 ml were recovered from the wells (see Section 2.1.1). The calculated LNAPL thickness in monitoring points and the historic extent of LNAPL are documented in Table 1 and illustrated on Figure 6.

Deep Aquifer

- The deep aquifer beneath the Facility is influenced by tidal fluctuations in Commencement Bay. Of the important tidal constituents for Commencement Bay, the one with the highest frequency is semidiurnal (i.e., with a period of about 12 hours). Because of this, the water level can fluctuate over its entire range of values within about 6 hours. Therefore, to obtain representative estimates of deep-aquifer groundwater elevations, hydraulic gradients, and groundwater flow rates; the deep-aquifer water-level measurements must be completed within a period less than four hours. Stericycle measured the water levels at the deep-aquifer monitoring wells (Stericycle wells CTMW-7, CTMW-9, CTMW-12, CTMW-17D; CTMW-24D, and CTMW-25D and CleanCare wells CCW-2C, CCW-3C and CCW-5C) within a 4-hour period. The depth to groundwater and the calculated groundwater elevations at the deep-aquifer monitoring points for these measurements are summarized in Table 5.

- The deep-aquifer groundwater-elevation contours indicate that the direction of groundwater flow during the monitoring period flows to the southwest and west. The calculated groundwater elevation contours for the deep-aquifer monitoring points are illustrated on Figure 7.

2.1.3 Groundwater Sampling Results

Stericycle personnel conducted groundwater sampling activities at the Tacoma facility during the second quarter 2018 between June 5 and June 11, 2018. Prior to sampling, Stericycle personnel purged each well. During purging, Stericycle personnel monitored the following groundwater stabilization criteria: purging flow rate; water temperature; dissolved oxygen; turbidity; specific conductivity; redox potential; pH; pump speed; and total volume purged. A table summarizing the field purging parameter measurements is provided in Attachment A. When the field purging parameter measurements indicated that the groundwater quality in the well had stabilized, Stericycle collected groundwater samples for laboratory analysis into laboratory provided sample containers, and placed the sample containers in a cooler with ice.

The groundwater samples collected from select wells were submitted to the project laboratory (ALS) for laboratory analysis. The sampling program includes analysis of: VOCs; one SVOC, 1,4-dioxane; GRO as TPH; DRO and LRO; total metals from unfiltered samples and, where necessary, dissolved metals from filtered samples. CAS analyzed the samples and prepared reports documenting the results. Copies of the analytical reports are provided in Attachment B.

The data validation report was generated for the second quarter 2018 sampling event was submitted to Stericycle on August 29, 2018. The groundwater analytical results were reviewed and validated by Stericycle consultant, QA/QC Solutions, Inc. (QA/QC Solutions). QA/QC Solutions' review indicated the following:

- Overall, the data are of good quality; 164 results were qualified as estimated (J), 9 results reported as detected and were restated as undetected (U); and no results were rejected (*R*).

Copies of the validation reports are provided in Attachment C.

The laboratory analytical results and QA/QC Solutions' validation qualifiers are summarized in Tables 2 through 6. The lowest of the Washington State Model Toxics Control Act (MTCA) Method A and Method B groundwater cleanup levels (minimum CULs) were compared to the groundwater analytical results in the attached tables and are summarized bellow.

- Concentrations of VOCs in excess of their minimum CULs were not detected in the groundwater samples collected from the wells completed within the deep-aquifer. The following shallow zone well had one VOC detected in excess of its minimum CUL in groundwater: Benzene in well CTMW-20 at 1.8 ug/L (the CUL is 0.7955 ug/L. The laboratory analytical results for VOCs and minimum CULs are presented in Table 2.

- Concentrations of 1,4-dioxane were detected in excess of the minimum CUL in both shallow and deep aquifer wells, specifically wells CTMW-7, CTMW-9, CTMW-15, CTMW-24D and CTMW-25D. The laboratory analytical results and minimum CUL for 1,4-dioxane are presented in Table 3. Of note, the 1,4-Dioxane Method B value decreased in 2011 by a factor of approximately 18 (from 7.955 ug/L to 0.438 ug/L), based on revisions to Ecology's CLARC table.

- Gasoline range organics (GRO), diesel range organics (DRO), and lube oil range organic (LRO) were not detected in excess of their minimum CULs. However, the laboratory reporting limit (RL) for lube oil range organics was reported as slightly higher than the MTCA CUL of 500 ug/L – ranging from 500 to 630 ug/L. The laboratory analytical results for petroleum hydrocarbons is presented in Table 4.

- Concentrations of arsenic were detected in excess of its minimum CUL in all of the groundwater samples using EPA Method 6020 (see Table 5). In addition, lead was detected excess of its minimum CUL in shallow well CTMW-17, similar to the 2016 and 2017 results. The laboratory analytical results for total metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc) are presented in Table 5.

- In the Draft Remedial Investigation Report submitted in July 2002, Stericycle proposed to collect both filtered and unfiltered samples for metals analysis for one year in order to determine the effect of suspended particulates on reported dissolved and total metals concentrations. However, no consistent trends between concentrations of filtered and unfiltered samples have been observed, suggesting that elevated metals concentrations in groundwater samples from permanent monitoring wells do not appear to be associated with quantification of suspended particulates. As a result, Stericycle no longer routinely analyzes groundwater samples for dissolved metals, unless turbidity stabilizes at a reading of 5 NTU or greater during purging. During the second quarter 2018, turbidity measurements stabilized at a levels less than 5 NTU in all the wells tested on site.

2.1.4 Problems Encountered

Six VOCs both had reporting limits above their applicable MTCA cleanup criteria but only two of these also exceeded the applicable method detection limits (see Table 6). The VOCs included: 1,2,3-Trichloropropane, acrolein, acrylonitrile, cis-1,3-dichloropropene, methacrylonitrile, trans-1,3-Dichloropropene, and lube oil. Also, arsenic had a reporting limit and method detection limit above it's MTCA cleanup criteria (see Table 6).

2.2 Annual 2019 Progress Report

The next progress report Stericycle will submit to Ecology for the Tacoma Facility will be on April 15, 2020, per the Groundwater Monitoring Plan approved by Ecology in effect as of March 2012 and recently revised in April 2019. The report will include a summary of all annual activities, including the quarterly well assessments, the second quarter 2019 groundwater sampling, and the December 2018 Groundwater Level Measurements.

3 PROJECTED WORK FOR THE NEXT REPORTING PERIOD

The projected corrective action activities for the next reporting period are summarized below:

- Stericycle personnel plan to conduct second quarter 2019 groundwater-monitoring event in May 2019. As part of the second quarter 2019 groundwater-sampling event, Stericycle personnel will measure water levels (and where appropriate, LNAPL thicknesses) at monitoring wells and piezometers in the network. Stericycle will submit the groundwater samples collected during the event to CAS for laboratory analysis. Laboratory data will be reviewed and validated by an independent expert chemist at QA/QC Solutions.

- The Parcel B interceptor Trench and associated wells to be closed in place during the next reporting period under a Class 1 Permit Modification. This was completed in March 2019 and the resulting revised Groundwater Monitoring Plan submitted in April 2019.

TABLES

Table 1
Groundwater Elevation Data and LNAPL Thickness
January through December 2018
Stericycle Tacoma Facility

PERIOD: From 06/04/2018 thru 12/03/2018 - Inclusive

Site ID	Date	Measuring Point Elevation (feet)	Time	Depth To Water (feet)	LNAPL Thickness (feet)	Potentiometric Surface Elevation (feet)	Change in Groundwater Elevation (feet)	Freshwater Head Surface Elevation (feet)
CCW-2A	6/4/2018	12.22	11:23	4.50	0.00	7.72	NA	7.72
CCW-2A	12/3/2018	12.22	11:29	3.85	0.00	8.37	0.65	8.37
CCW-2B	6/4/2018	12.12	11:25	4.00	0.00	8.12	NA	8.12
CCW-2B	12/3/2018	12.12	11:31	3.51	0.00	8.61	0.49	8.61
CCW-2C	6/4/2018	12.06	11:21	9.34	0.00	2.72	NA	2.72
CCW-2C	12/3/2018	12.06	11:27	9.23	0.00	2.83	0.11	2.83
CCW-3A	6/4/2018	13.75	11:32	5.60	0.00	8.15	NA	8.15
CCW-3A	12/3/2018	13.75	11:39	5.50	0.00	8.25	0.10	8.25
CCW-3B	6/4/2018	14.11	11:34	6.41	0.00	7.70	NA	7.70
CCW-3B	12/3/2018	14.11	11:41	5.60	0.00	8.51	0.81	8.51
CCW-3C	6/4/2018	15.68	11:30	12.92	0.00	2.76	NA	2.76
CCW-3C	12/3/2018	15.68	11:37	12.80	0.00	2.88	0.12	2.88
CCW-5B	6/4/2018	12.62	11:26	5.42	0.00	7.20	NA	7.20
CCW-5B	12/3/2018	12.62	11:33	4.15	0.00	8.47	1.27	8.47
CCW-5C	6/4/2018	12.40	11:28	9.61	0.00	2.79	NA	2.79
CCW-5C	12/3/2018	12.40	11:35	9.45	0.00	2.95	0.16	2.95
CTMW-1	6/4/2018	13.43	13:50	5.30	0.83	8.13	NA	8.93
CTMW-1	12/3/2018	13.43	12:54	5.30	0.28	8.13	0.00	8.40
CTMW-10	6/4/2018	12.80	13:00	4.75	0.00	8.05	NA	8.05
CTMW-10	12/3/2018	12.80	12:47	3.69	0.00	9.11	1.06	9.11
CTMW-12	6/4/2018	18.29	11:09	15.65	0.00	2.64	NA	2.64
CTMW-12	12/3/2018	18.29	11:10	15.70	0.00	2.59	-0.05	2.59
CTMW-14	6/4/2018	13.13	11:03	8.23	0.00	4.90	NA	4.90
CTMW-14	12/3/2018	13.13	11:21	6.49	0.00	6.64	1.74	6.64
CTMW-15	6/4/2018	13.28	12:15	6.33	0.00	6.95	NA	6.95
CTMW-15	12/3/2018	13.28	12:25	5.96	0.00	7.32	0.37	7.32
CTMW-17	6/4/2018	19.32	11:15	9.81	0.00	9.51	NA	9.51
CTMW-17	12/3/2018	19.32	11:07	9.31	0.00	10.01	0.50	10.01

Elevations based on Datum NGVD 1929
NM = Not Measured, D = Dry Well

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Groundwater Elevation Data and LNAPL Thickness
January through December 2018
Stericycle Tacoma Facility

PERIOD: From 06/04/2018 thru 12/03/2018 - Inclusive

Site ID	Date	Measuring Point Elevation (feet)	Time	Depth To Water (feet)	LNAPL Thickness (feet)	Potentiometric Surface Elevation (feet)	Change in Groundwater Elevation (feet)	Freshwater Head Surface Elevation (feet)
CTMW-17D	6/4/2018	16.64	11:13	13.95	0.00	2.69	NA	2.69
CTMW-17D	12/3/2018	16.64	11:05	13.86	0.00	2.78	0.09	2.78
CTMW-18	6/4/2018	19.36	12:29	9.54	0.00	9.82	NA	9.82
CTMW-18	12/3/2018	19.36	11:13	9.44	0.00	9.92	0.10	9.92
CTMW-20	6/4/2018	11.03	12:00	3.00	0.00	8.03	NA	8.03
CTMW-20	12/3/2018	11.03	00:00	NM	NA	NA	NA	NA
CTMW-24	6/4/2018	16.35	11:38	8.24	0.00	8.11	NA	8.11
CTMW-24	12/3/2018	16.35	12:06	6.75	0.00	9.60	1.49	9.60
CTMW-24D	6/4/2018	16.39	11:40	13.78	0.00	2.61	NA	2.61
CTMW-24D	12/3/2018	16.39	12:08	14.00	0.00	2.39	-0.22	2.39
CTMW-25D	6/4/2018	13.06	12:17	10.65	0.00	2.41	NA	2.41
CTMW-25D	12/3/2018	13.06	12:23	10.56	0.00	2.50	0.09	2.50
CTMW-5	6/4/2018	14.10	11:56	5.70	0.00	8.40	NA	8.40
CTMW-5	12/3/2018	14.10	12:29	5.35	0.00	8.75	0.35	8.75
CTMW-6	6/4/2018	14.80	14:22	NM	NA	NA	NA	NA
CTMW-6	12/3/2018	14.80	13:13	NM	NA	NA	NA	NA
CTMW-7	6/4/2018	14.75	11:06	12.23	0.00	2.52	NA	2.52
CTMW-7	12/3/2018	14.75	11:15	12.14	0.00	2.61	0.09	2.61
CTMW-8	6/4/2018	14.77	10:59	6.28	0.00	8.49	NA	8.49
CTMW-8	12/3/2018	14.77	11:19	5.95	0.00	8.82	0.33	8.82
CTMW-9	6/4/2018	14.38	11:01	11.80	0.00	2.58	NA	2.58
CTMW-9	12/3/2018	14.38	11:17	11.86	0.00	2.52	-0.06	2.52
EMW-1	6/4/2018	10.84	09:19	2.96	0.00	7.88	NA	7.88
EMW-1	12/3/2018	10.84	13:52	2.71	0.00	8.13	0.25	8.13
EMW-2	6/4/2018	10.44	09:30	3.17	0.00	7.27	NA	7.27
EMW-2	12/3/2018	10.44	14:09	2.82	0.00	7.62	0.35	7.62
EMW-3R	6/4/2018	11.15	09:41	4.90	0.00	6.25	NA	6.25

Elevations based on Datum NGVD 1929
NM = Not Measured, D = Dry Well

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January through December 2018
Stericycle Tacoma Facility

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Site ID	Date	Measuring Point Elevation (feet)	Time	Depth To Water (feet)	LNAPL Thickness (feet)	Potentiometric Surface Elevation (feet)	Change in Groundwater Elevation (feet)	Freshwater Head Surface Elevation (feet)
EMW-3R	12/3/2018	11.15	13:25	5.30	0.00	5.85	-0.40	5.85
EMW-4	6/4/2018	10.60	09:50	3.13	0.00	7.47	NA	7.47
EMW-4	12/3/2018	10.60	13:42	3.21	0.00	7.39	-0.08	7.39
MW-1	6/4/2018	10.84	13:48	2.80	0.00	8.04	NA	8.04
MW-1	12/3/2018	10.84	12:51	2.60	0.00	8.24	0.20	8.24
PZ-1	6/4/2018	13.79	14:08	3.68	0.03	10.11	NA	10.14
PZ-1	12/3/2018	13.79	13:10	NM	NA	NA	NA	NA
PZ-10	6/4/2018	12.61	12:32	2.15	0.00	10.46	NA	10.46
PZ-10	12/3/2018	12.61	12:43	2.02	0.00	10.59	0.13	10.59
PZ-5	6/4/2018	12.86	11:36	4.59	0.00	8.27	NA	8.27
PZ-5	12/3/2018	12.86	12:11	4.14	0.00	8.72	0.45	8.72
PZ-6	6/4/2018	12.10	14:42	NM	NA	NA	NA	NA
PZ-6	12/3/2018	12.10	13:30	NM	NA	NA	NA	NA
PZ-7	6/4/2018	20.97	11:49	11.85	0.00	9.12	NA	9.12
PZ-7	12/3/2018	20.97	11:59	12.67	0.00	8.30	-0.82	8.30
PZ-8	6/4/2018	14.84	11:46	8.72	0.00	6.12	NA	6.12
PZ-8	12/3/2018	14.84	11:57	7.62	0.00	7.22	1.10	7.22
PZ-9	6/4/2018	15.55	11:44	8.15	0.00	7.40	NA	7.40
PZ-9	12/3/2018	15.55	11:55	6.96	0.00	8.59	1.19	8.59
SB-1A	6/4/2018	12.34	12:44	5.15	0.00	7.19	NA	7.19
SB-1A	12/3/2018	12.34	11:47	5.71	0.00	6.63	-0.56	6.63
SB-2A	6/4/2018	11.91	12:47	5.65	0.00	6.26	NA	6.26
SB-2A	12/3/2018	11.91	11:45	5.60	0.00	6.31	0.05	6.31
SB-3A	6/4/2018	13.58	12:40	5.10	0.00	8.48	NA	8.48
SB-3A	12/3/2018	13.58	11:51	4.90	0.00	8.68	0.20	8.68
TP-1	6/4/2018	13.88	12:27	2.35	0.00	11.53	NA	11.53
TP-1	12/3/2018	13.88	12:41	1.35	0.00	12.53	1.00	12.53

Elevations based on Datum NGVD 1929
NM = Not Measured, D = Dry Well

Table 1
Groundwater Elevation Data and LNAPL Thickness
January through December 2018
Stericycle Tacoma Facility

PERIOD: From 06/04/2018 thru 12/03/2018 - Inclusive

Site ID	Date	Measuring Point Elevation (feet)	Time	Depth To Water (feet)	LNAPL Thickness (feet)	Potentiometric Surface Elevation (feet)	Change in Groundwater Elevation (feet)	Freshwater Head Surface Elevation (feet)
TP-10	6/4/2018	10.62	12:13	2.63	0.00	7.99	NA	7.99
TP-10	12/3/2018	10.62	12:21	2.00	0.00	8.62	0.63	8.62
TP-2	6/4/2018	13.92	12:25	2.50	0.00	11.42	NA	11.42
TP-2	12/3/2018	13.92	12:38	1.50	0.00	12.42	1.00	12.42
TP-3	6/4/2018	13.65	12:23	2.24	0.00	11.41	NA	11.41
TP-3	12/3/2018	13.65	12:36	1.24	0.00	12.41	1.00	12.41
TP-4	6/4/2018	13.81	12:21	2.37	0.00	11.44	NA	11.44
TP-4	12/3/2018	13.81	12:34	1.40	0.00	12.41	0.97	12.41
TP-5	6/4/2018	13.84	12:19	2.50	0.00	11.34	NA	11.34
TP-5	12/3/2018	13.84	12:32	1.51	0.00	12.33	0.99	12.33
TP-6	6/4/2018	10.69	12:04	2.63	0.00	8.06	NA	8.06
TP-6	12/3/2018	10.69	12:15	2.00	0.00	8.69	0.63	8.69
TP-7	6/4/2018	9.89	12:06	2.01	0.00	7.88	NA	7.88
TP-7	12/3/2018	9.89	00:00	NM	NA	NA	NA	NA
TP-8	6/4/2018	10.32	12:08	2.30	0.00	8.02	NA	8.02
TP-8	12/3/2018	10.32	12:17	1.65	0.00	8.67	0.65	8.67
TP-9	6/4/2018	10.21	12:10	2.20	0.00	8.01	NA	8.01
TP-9	12/3/2018	10.21	12:19	1.58	0.00	8.63	0.62	8.63

Elevations based on Datum NGVD 1929
NM = Not Measured, D = Dry Well

Table 2
Volatile Organic Compounds in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	1,1,1,2-Tetra chloroethane (ug/l)	Lab Quals	Expert Qual	1,1,1-Tri-chloroethane (ug/l)	Lab Quals	Expert Qual	1,1,2,2,-Tetra chloroethane (ug/l)	Lab Qual	Expert Qual	1,1,2-Tri-chloroethane (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**1.6827**			**200**			**0.2188**			**0.7675**		
CTMW-12	06/11/2018 - 08:50	26.000	<0.50	U		<0.50	U		<0.20	U	J	<0.50	U	
CTMW-14	06/05/2018 - 09:30	9.700	<0.50	U		<0.50	U		<0.20	U	J	<0.50	U	
CTMW-15	06/07/2018 - 09:21	9.600	<0.50	U		<0.50	U		<0.20	U	J	<0.50	U	
CTMW-17	06/07/2018 - 10:57	13.700	<0.50	U		<0.50	U		<0.20	U	J	<0.50	U	
CTMW-17D	06/07/2018 - 11:32	28.000	<0.50	U		<0.50	U		<0.20	U	J	<0.50	U	
CTMW-18	06/11/2018 - 12:11	12.400	<0.50	U		<0.50	U		<0.20	U	J	<0.50	U	
CTMW-20	06/11/2018 - 09:39	6.600	<0.50	U		<0.50	U		<0.20	U	J	<0.50	U	
CTMW-24	06/05/2018 - 13:40	10.900	<0.50	U		<0.50	U		0.011	J	J	<0.50	U	
CTMW-24D	06/05/2018 - 14:20	24.000	<0.50	U		<0.50	U		<0.20	U	J	<0.50	U	
CTMW-25D	06/07/2018 - 10:19	19.700	<0.50	U		<0.50	U		<0.20	U	J	<0.50	U	
CTMW-5	06/11/2018 - 10:16	9.950	<0.50	U		<0.50	U		<0.20	U	J	<0.50	U	
CTMW-7	06/11/2018 - 10:57	25.000	<0.50	U		<0.50	U		<0.20	U	J	<0.50	U	
CTMW-8	06/07/2018 - 13:53	9.000	<0.50	U	J	<0.50	U	J	<0.20	U	J	<0.50	U	J
CTMW-9	06/07/2018 - 13:11	24.000	<0.50	U		<0.50	U		<0.20	U	J	<0.50	U	

Methods 8260C, 8260C SIM

( ) = Below reporting limit.

[ ] = Equal to or exceeds minimum clean up level.

Table 2
Volatile Organic Compounds in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	1,1-Dichloro-ethane (ug/l)	Lab Quals	Expert Qual	1,1-Dichloro-ethene (ug/l)	Lab Quals	Expert Qual	1,2,3-Trichloro propane (ug/l)	Lab Qual	Expert Qual	1,2-Dichloro-ethane (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**7.68**			**400**			**0.00146**			**0.4808**		
CTMW-12	06/11/2018 - 08:50	26.000	<0.50	U		<0.020	U	J	[<0.50]	U		<0.20	U	J
CTMW-14	06/05/2018 - 09:30	9.700	<0.50	U		<0.020	U		[<0.50]	U		<0.20	U	
CTMW-15	06/07/2018 - 09:21	9.600	<0.50	U		<0.020	U		[<0.50]	U		<0.20	U	
CTMW-17	06/07/2018 - 10:57	13.700	<0.50	U		<0.020	U		[<0.50]	U		<0.20	U	
CTMW-17D	06/07/2018 - 11:32	28.000	<0.50	U		<0.020	U		[<0.50]	U		<0.20	U	
CTMW-18	06/11/2018 - 12:11	12.400	<0.50	U		<0.020	U	J	[<0.50]	U		0.019	J	J
CTMW-20	06/11/2018 - 09:39	6.600	<0.50	U		<0.020	U	J	[<0.50]	U		0.017	J	J
CTMW-24	06/05/2018 - 13:40	10.900	<0.50	U		<0.020	U		[<0.50]	U		<0.20	U	
CTMW-24D	06/05/2018 - 14:20	24.000	<0.50	U		<0.020	U		[<0.50]	U		<0.20	U	
CTMW-25D	06/07/2018 - 10:19	19.700	<0.50	U		<0.020	U		[<0.50]	U		<0.20	U	
CTMW-5	06/11/2018 - 10:16	9.950	<0.50	U		<0.020	U	J	[<0.50]	U		<0.20	U	J
CTMW-7	06/11/2018 - 10:57	25.000	<0.50	U		<0.020	U	J	[<0.50]	U		<0.20	U	J
CTMW-8	06/07/2018 - 13:53	9.000	<0.50	U	J	<0.020	U		[<0.50]	U	J	<0.20	U	
CTMW-9	06/07/2018 - 13:11	24.000	<0.50	U		<0.020	U		[<0.50]	U		<0.20	U	

Methods 8260C, 8260C SIM

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Table 2
Volatile Organic Compounds in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	1,2-Dichloro-propane (ug/l)	Lab Quals	Expert Qual	2-Butanone (ug/l)	Lab Quals	Expert Qual	2-chloroethyl vinylether (ug/l)	Lab Qual	Expert Qual	2-Hexanone (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**1.22**			**4800**								
CTMW-12	06/11/2018 - 08:50	26.000	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-14	06/05/2018 - 09:30	9.700	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-15	06/07/2018 - 09:21	9.600	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-17	06/07/2018 - 10:57	13.700	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-17D	06/07/2018 - 11:32	28.000	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-18	06/11/2018 - 12:11	12.400	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-20	06/11/2018 - 09:39	6.600	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-24	06/05/2018 - 13:40	10.900	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-24D	06/05/2018 - 14:20	24.000	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-25D	06/07/2018 - 10:19	19.700	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-5	06/11/2018 - 10:16	9.950	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-7	06/11/2018 - 10:57	25.000	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-8	06/07/2018 - 13:53	9.000	<0.50	U	J	<20	U	J	<5.0	U	J	<20	U	J
CTMW-9	06/07/2018 - 13:11	24.000	<0.50	U		<20	U		<5.0	U		<20	U	

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Table 2
Volatile Organic Compounds in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	4-Methyl-2-pentanone (ug/l)	Lab Quals	Expert Qual	Acetone (ug/l)	Lab Quals	Expert Qual	Acetonitrile (ug/l)	Lab Qual	Expert Qual	Acrolein (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**640**			**7200**						**4**		
CTMW-12	06/11/2018 - 08:50	26.000	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-14	06/05/2018 - 09:30	9.700	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-15	06/07/2018 - 09:21	9.600	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-17	06/07/2018 - 10:57	13.700	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-17D	06/07/2018 - 11:32	28.000	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-18	06/11/2018 - 12:11	12.400	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-20	06/11/2018 - 09:39	6.600	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-24	06/05/2018 - 13:40	10.900	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-24D	06/05/2018 - 14:20	24.000	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-25D	06/07/2018 - 10:19	19.700	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-5	06/11/2018 - 10:16	9.950	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-7	06/11/2018 - 10:57	25.000	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-8	06/07/2018 - 13:53	9.000	<20	U	J	39		J	<50	U	J	[<20]	U	J
CTMW-9	06/07/2018 - 13:11	24.000	<20	U		<20	U		<50	U	J	[<20]	U	

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Table 2
Volatile Organic Compounds in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Acrylonitrile (ug/l)	Lab Quals	Expert Qual	Allyl chloride (ug/l)	Lab Quals	Expert Qual	Benzene (ug/l)	Lab Qual	Expert Qual	Bromo-dichloro-methane (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**0.081**			**800**			**0.7955**			**0.7056**		
CTMW-12	06/11/2018 - 08:50	26.000	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-14	06/05/2018 - 09:30	9.700	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-15	06/07/2018 - 09:21	9.600	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-17	06/07/2018 - 10:57	13.700	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-17D	06/07/2018 - 11:32	28.000	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-18	06/11/2018 - 12:11	12.400	[<5.0]	U		<5.0	U		0.070	J	J	<0.50	U	
CTMW-20	06/11/2018 - 09:39	6.600	[<5.0]	U		<5.0	U		[1.8]			<0.50	U	
CTMW-24	06/05/2018 - 13:40	10.900	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-24D	06/05/2018 - 14:20	24.000	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-25D	06/07/2018 - 10:19	19.700	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-5	06/11/2018 - 10:16	9.950	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-7	06/11/2018 - 10:57	25.000	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-8	06/07/2018 - 13:53	9.000	[<5.0]	U	J	<5.0	U	J	0.10	J	J	<0.50	U	J
CTMW-9	06/07/2018 - 13:11	24.000	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	

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Table 2
Volatile Organic Compounds in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Bromoform (ug/l)	Lab Quals	Expert Qual	Bromomethane (ug/l)	Lab Quals	Expert Qual	Carbon disulfide (ug/l)	Lab Qual	Expert Qual	Carbon tetrachloride (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**5.5380**			**11.2**			**800**			**0.625**		
CTMW-12	06/11/2018 - 08:50	26.000	<0.50	U		<0.50	U		<0.50	U		<0.20	U	J
CTMW-14	06/05/2018 - 09:30	9.700	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-15	06/07/2018 - 09:21	9.600	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-17	06/07/2018 - 10:57	13.700	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-17D	06/07/2018 - 11:32	28.000	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-18	06/11/2018 - 12:11	12.400	<0.50	U		<0.50	U		<0.50	U		<0.20	U	J
CTMW-20	06/11/2018 - 09:39	6.600	<0.50	U		<0.50	U		<0.50	U		<0.20	U	J
CTMW-24	06/05/2018 - 13:40	10.900	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-24D	06/05/2018 - 14:20	24.000	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-25D	06/07/2018 - 10:19	19.700	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-5	06/11/2018 - 10:16	9.950	<0.50	U		<0.50	U		<0.50	U		<0.20	U	J
CTMW-7	06/11/2018 - 10:57	25.000	<0.50	U		<0.50	U		<0.50	U		<0.20	U	J
CTMW-8	06/07/2018 - 13:53	9.000	<0.50	U	J	<0.50	U	J	0.070	J	J	<0.20	U	
CTMW-9	06/07/2018 - 13:11	24.000	<0.50	U		<0.50	U		<0.50	U		<0.20	U	

Methods 8260C, 8260C SIM

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Table 2
Volatile Organic Compounds in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Chlorobenzene (ug/l)	Lab Quals	Expert Qual	Chloroethane (ug/l)	Lab Quals	Expert Qual	Chloroform (ug/l)	Lab Qual	Expert Qual	Chloromethane (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**160**						**1.41**					
CTMW-12	06/11/2018 - 08:50	26.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-14	06/05/2018 - 09:30	9.700	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-15	06/07/2018 - 09:21	9.600	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-17	06/07/2018 - 10:57	13.700	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-17D	06/07/2018 - 11:32	28.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-18	06/11/2018 - 12:11	12.400	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-20	06/11/2018 - 09:39	6.600	0.26	J	J	0.68			<0.50	U		<0.50	U	
CTMW-24	06/05/2018 - 13:40	10.900	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-24D	06/05/2018 - 14:20	24.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-25D	06/07/2018 - 10:19	19.700	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-5	06/11/2018 - 10:16	9.950	0.52			<0.50	U		<0.50	U		<0.50	U	
CTMW-7	06/11/2018 - 10:57	25.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-8	06/07/2018 - 13:53	9.000	<0.50	U	J	<0.50	U	J	<0.50	U	J	<0.50	U	J
CTMW-9	06/07/2018 - 13:11	24.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	

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Table 2
Volatile Organic Compounds in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	cis-1,2-Dichloroethylene (ug/l)	Lab Quals	Expert Qual	cis-1,3-Dichloropropene (ug/l)	Lab Quals	Expert Qual	Dibromochloro-methane (ug/l)	Lab Qual	Expert Qual	Dichloro-difluoro-methane (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**16**			**0.438**			**0.5208**			**1600**		
CTMW-12	06/11/2018 - 08:50	26.000	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-14	06/05/2018 - 09:30	9.700	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-15	06/07/2018 - 09:21	9.600	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-17	06/07/2018 - 10:57	13.700	0.46	J	J	[<0.50]	U		<0.50	U		<0.50	U	
CTMW-17D	06/07/2018 - 11:32	28.000	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-18	06/11/2018 - 12:11	12.400	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-20	06/11/2018 - 09:39	6.600	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-24	06/05/2018 - 13:40	10.900	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-24D	06/05/2018 - 14:20	24.000	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-25D	06/07/2018 - 10:19	19.700	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-5	06/11/2018 - 10:16	9.950	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-7	06/11/2018 - 10:57	25.000	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-8	06/07/2018 - 13:53	9.000	<0.50	U	J	[<0.50]	U	J	<0.50	U	J	<0.50	U	J
CTMW-9	06/07/2018 - 13:11	24.000	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	

Methods 8260C, 8260C SIM

( ) = Below reporting limit.

[ ] = Equal to or exceeds minimum clean up level.

Table 2
Volatile Organic Compounds in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Ethyl methacrylate (ug/l)	Lab Quals	Expert Qual	Ethylbenzene (ug/l)	Lab Quals	Expert Qual	Isobutyl alcohol (ug/l)	Lab Qual	Expert Qual	m, p-Xylene (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**720**			**700**			**2400**			**1600**		
CTMW-12	06/11/2018 - 08:50	26.000	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-14	06/05/2018 - 09:30	9.700	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-15	06/07/2018 - 09:21	9.600	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-17	06/07/2018 - 10:57	13.700	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-17D	06/07/2018 - 11:32	28.000	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-18	06/11/2018 - 12:11	12.400	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-20	06/11/2018 - 09:39	6.600	<5.0	U		<0.50	U		<100	U	J	0.12	J	J
CTMW-24	06/05/2018 - 13:40	10.900	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-24D	06/05/2018 - 14:20	24.000	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-25D	06/07/2018 - 10:19	19.700	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-5	06/11/2018 - 10:16	9.950	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-7	06/11/2018 - 10:57	25.000	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-8	06/07/2018 - 13:53	9.000	<5.0	U	J	<0.50	U	J	<100	U	J	<0.50	U	J
CTMW-9	06/07/2018 - 13:11	24.000	<5.0	U		<0.50	U		<100	U	J	<0.50	U	

Methods 8260C, 8260C SIM

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Table 2
Volatile Organic Compounds in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Methacrylonitrile (ug/l)	Lab Quals	Expert Qual	Methyl iodide (ug/l)	Lab Quals	Expert Qual	Methylene bromide (ug/l)	Lab Qual	Expert Qual	Methylene chloride (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**1.6**						**80**			**5.0**		
CTMW-12	06/11/2018 - 08:50	26.000	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-14	06/05/2018 - 09:30	9.700	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-15	06/07/2018 - 09:21	9.600	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-17	06/07/2018 - 10:57	13.700	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-17D	06/07/2018 - 11:32	28.000	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-18	06/11/2018 - 12:11	12.400	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-20	06/11/2018 - 09:39	6.600	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-24	06/05/2018 - 13:40	10.900	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-24D	06/05/2018 - 14:20	24.000	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-25D	06/07/2018 - 10:19	19.700	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-5	06/11/2018 - 10:16	9.950	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-7	06/11/2018 - 10:57	25.000	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-8	06/07/2018 - 13:53	9.000	[<5.0]	U	J	<5.0	U	J	<0.50	U	J	<2.0	U	J
CTMW-9	06/07/2018 - 13:11	24.000	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	

Methods 8260C, 8260C SIM

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Table 2
Volatile Organic Compounds in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	o-Xylene (ug/l)	Lab Quals	Expert Qual	Tetrachloro-ethene (ug/l)	Lab Quals	Expert Qual	Toluene (ug/l)	Lab Qual	Expert Qual	trans-1,2-Dichloroethene (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**1600**			**5**			**640**			**160**		
CTMW-12	06/11/2018 - 08:50	26.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-14	06/05/2018 - 09:30	9.700	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-15	06/07/2018 - 09:21	9.600	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-17	06/07/2018 - 10:57	13.700	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-17D	06/07/2018 - 11:32	28.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-18	06/11/2018 - 12:11	12.400	<0.50	U		<0.50	U		0.070	J	J	<0.50	U	
CTMW-20	06/11/2018 - 09:39	6.600	<0.50	U		<0.50	U		0.070	J	J	<0.50	U	
CTMW-24	06/05/2018 - 13:40	10.900	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-24D	06/05/2018 - 14:20	24.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-25D	06/07/2018 - 10:19	19.700	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-5	06/11/2018 - 10:16	9.950	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-7	06/11/2018 - 10:57	25.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-8	06/07/2018 - 13:53	9.000	<0.50	U	J	<0.50	U	J	0.86		J	<0.50	U	J
CTMW-9	06/07/2018 - 13:11	24.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	

Methods 8260C, 8260C SIM

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Table 2
Volatile Organic Compounds in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Trans-1,3-Dichloropropene (ug/l)	Lab Quals	Expert Qual	trans-1,4-Dichloro-2-butene (ug/l)	Lab Quals	Expert Qual	Trichloro-ethene (ug/l)	Lab Qual	Expert Qual	Trichloro fluoromethane (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**0.4375**						**0.54**			**2400**		
CTMW-12	06/11/2018 - 08:50	26.000	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-14	06/05/2018 - 09:30	9.700	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-15	06/07/2018 - 09:21	9.600	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-17	06/07/2018 - 10:57	13.700	[<0.50]	U		<10	U		0.26	J	J	<0.50	U	
CTMW-17D	06/07/2018 - 11:32	28.000	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-18	06/11/2018 - 12:11	12.400	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-20	06/11/2018 - 09:39	6.600	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-24	06/05/2018 - 13:40	10.900	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-24D	06/05/2018 - 14:20	24.000	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-25D	06/07/2018 - 10:19	19.700	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-5	06/11/2018 - 10:16	9.950	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-7	06/11/2018 - 10:57	25.000	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-8	06/07/2018 - 13:53	9.000	[<0.50]	U	J	<10	U	J	<0.50	U	J	<0.50	U	J
CTMW-9	06/07/2018 - 13:11	24.000	[<0.50]	U		<10	U		<0.50	U		<0.50	U	

Methods 8260C, 8260C SIM

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Table 2
Volatile Organic Compounds in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Vinyl acetate (ug/l)	Lab Quals	Expert Qual	Vinyl chloride (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**8000**			**0.029**		
CTMW-12	06/11/2018 - 08:50	26.000	<5.0	U		<0.020	U	J
CTMW-14	06/05/2018 - 09:30	9.700	<5.0	U		<0.020	U	
CTMW-15	06/07/2018 - 09:21	9.600	<5.0	U		<0.020	U	
CTMW-17	06/07/2018 - 10:57	13.700	<5.0	U		<0.020	U	
CTMW-17D	06/07/2018 - 11:32	28.000	<5.0	U		<0.020	U	
CTMW-18	06/11/2018 - 12:11	12.400	<5.0	U		<0.020	U	J
CTMW-20	06/11/2018 - 09:39	6.600	<5.0	U		<0.020	U	J
CTMW-24	06/05/2018 - 13:40	10.900	<5.0	U		<0.020	U	
CTMW-24D	06/05/2018 - 14:20	24.000	<5.0	U		<0.020	U	
CTMW-25D	06/07/2018 - 10:19	19.700	<5.0	U		<0.020	U	
CTMW-5	06/11/2018 - 10:16	9.950	<5.0	U		<0.020	U	J
CTMW-7	06/11/2018 - 10:57	25.000	<5.0	U		<0.020	U	J
CTMW-8	06/07/2018 - 13:53	9.000	<5.0	U	J	<0.020	U	
CTMW-9	06/07/2018 - 13:11	24.000	<5.0	U		<0.020	U	

Methods 8260C, 8260C SIM

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Table 3
1,4-Dioxane in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	1,4-Dioxane (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**0.438**		
CTMW-15	06/07/2018 - 09:21	9.600	[3.8]		
CTMW-18	06/11/2018 - 12:11	12.400	0.33	J	J
CTMW-24	06/05/2018 - 13:40	10.900	<0.40	U	
CTMW-24D	06/05/2018 - 14:20	24.000	[3.5]		
CTMW-25D	06/07/2018 - 10:19	19.700	[48]		
CTMW-5	06/11/2018 - 10:16	9.950	<0.40	U	
CTMW-7	06/11/2018 - 10:57	25.000	[23]		
CTMW-8	06/07/2018 - 13:53	9.000	<0.40	U	
CTMW-9	06/07/2018 - 13:11	24.000	[34]		

Methods 8270D SIM

( ) = Below reporting limit.

[ ] = Equal to or exceeds minimum clean up level.

Table 4
Total Petroleum Hydrocarbons in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Diesel (ug/l)	Lab Quals	Expert Qual	Gasoline (ug/l)	Lab Quals	Expert Qual	Lube Oil (ug/l)	Lab Qual	Expert Qual
MTCA A & B Minimum Level			**500**			**800**			**500**		
CTMW-12	06/11/2018 - 08:50	26.000	<260	U		NT			[<520]	U	
CTMW-14	06/05/2018 - 09:30	9.700	<320	U		NT			[<630]	U	
CTMW-15	06/07/2018 - 09:21	9.600	<250	U		NT			[<500]	U	
CTMW-17	06/07/2018 - 10:57	13.700	<260	U		NT			[<520]	U	
CTMW-17D	06/07/2018 - 11:32	28.000	<260	U		NT			[<520]	U	
CTMW-18	06/11/2018 - 12:11	12.400	<260	U		<50	U		[<520]	U	
CTMW-20	06/11/2018 - 09:39	6.600	<260	U		54			[<520]	U	
CTMW-24	06/05/2018 - 13:40	10.900	<250	U		NT			[<500]	U	
CTMW-24D	06/05/2018 - 14:20	24.000	<270	U		NT			[<530]	U	
CTMW-25D	06/07/2018 - 10:19	19.700	<270	U		NT			[<530]	U	
CTMW-5	06/11/2018 - 10:16	9.950	<270	U		NT			[<530]	U	
CTMW-7	06/11/2018 - 10:57	25.000	<260	U		NT			[<520]	U	
CTMW-8	06/07/2018 - 13:53	9.000	<260	U		NT			[<520]	U	
CTMW-9	06/07/2018 - 13:11	24.000	<260	U		NT			[<520]	U	

Methods NWTPH-Dx-SG, GX

( ) = Below reporting limit.

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Table 5
Total Inorganic Compounds in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Arsenic (mg/l)	Lab Quals	Expert Qual	Cadmium (mg/l)	Lab Quals	Expert Qual	Chromium (mg/l)	Lab Qual	Expert Qual	Copper (mg/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**0.000058**			**0.0050**			**0.050**			**0.59**		
CTMW-12	06/11/2018 - 08:50	26.000	[0.00032]	J	J	0.000011	J	J	0.00440			0.00039		
CTMW-14	06/05/2018 - 09:30	9.700	[0.00216]			0.000695			0.00022		J	0.00894		
CTMW-15	06/07/2018 - 09:21	9.600	[0.00170]			0.000043			0.00044			0.00045		
CTMW-17	06/07/2018 - 10:57	13.700	[0.00721]			0.000450			0.00115			0.0305		
CTMW-17D	06/07/2018 - 11:32	28.000	[0.00042]	J	J	0.000090			0.00313			0.00042		
CTMW-18	06/11/2018 - 12:11	12.400	[0.00605]			0.000032			0.00042			0.00167		
CTMW-20	06/11/2018 - 09:39	6.600	[0.00335]			0.000009	J	J	0.00050			0.00050		
CTMW-24	06/05/2018 - 13:40	10.900	[0.00286]			0.000020			0.00027		U	0.00055		
CTMW-24D	06/05/2018 - 14:20	24.000	[0.00077]			<0.000020	U		0.00751			0.00048		
CTMW-25D	06/07/2018 - 10:19	19.700	[0.00209]			0.000017	J	J	0.0186			0.00341		
CTMW-5	06/11/2018 - 10:16	9.950	[0.0283]			0.000090			0.00283			0.00840		
CTMW-7	06/11/2018 - 10:57	25.000	[0.00036]	J	J	0.000006	J	J	0.00297			0.00037		J
CTMW-8	06/07/2018 - 13:53	9.000	[0.00472]			0.000027			0.00006	J	U	0.00044		
CTMW-9	06/07/2018 - 13:11	24.000	[0.00010]	J	J	0.000007	J	J	0.00316			0.00046		

Methods 6000/7000 Series

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Table 5
Total Inorganic Compounds in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Lead (mg/l)	Lab Quals	Expert Qual	Mercury (mg/l)	Lab Quals	Expert Qual	Nickel (mg/l)	Lab Qual	Expert Qual	Zinc (mg/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**0.015**			**0.0020**			**0.32**			**4.8**		
CTMW-12	06/11/2018 - 08:50	26.000	0.000040			<0.00020	U		0.00066			0.0005	J	J
CTMW-14	06/05/2018 - 09:30	9.700	0.000378			<0.00020	U		0.00136			0.0074		
CTMW-15	06/07/2018 - 09:21	9.600	0.000032			<0.00020	U		0.00100		U	0.0011	J	U
CTMW-17	06/07/2018 - 10:57	13.700	[0.0236]			<0.00020	U		0.00555			0.0194		
CTMW-17D	06/07/2018 - 11:32	28.000	0.000158			<0.00020	U		0.00154			0.0052		
CTMW-18	06/11/2018 - 12:11	12.400	0.000395			<0.00020	U		0.00476			0.0006	J	J
CTMW-20	06/11/2018 - 09:39	6.600	0.000026			<0.00020	U		0.00126			0.0007	J	J
CTMW-24	06/05/2018 - 13:40	10.900	0.000110			<0.00020	U		0.00238			0.0055		
CTMW-24D	06/05/2018 - 14:20	24.000	0.000043			<0.00020	U		0.00069			0.0003	J	U
CTMW-25D	06/07/2018 - 10:19	19.700	0.000321			<0.00020	U		0.00593			0.0014	J	U
CTMW-5	06/11/2018 - 10:16	9.950	0.00193			<0.00020	U		0.00314			0.0182		
CTMW-7	06/11/2018 - 10:57	25.000	0.000018	J	J	<0.00020	U		0.00248			0.0020		
CTMW-8	06/07/2018 - 13:53	9.000	0.000199			<0.00020	U		0.00119		U	0.0009	J	U
CTMW-9	06/07/2018 - 13:11	24.000	<0.000020	U		<0.00020	U		0.00034		U	0.00021	J	J

Methods 6000/7000 Series

( ) = Below reporting limit.

[ ] = Equal to or exceeds minimum clean up level.

Table 6
Selected Constituents Reported to the MDL in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	1,2,3-Trichloropropane (ug/l)	Lab Quals	Expert Qual	Acrolein (ug/l)	Lab Quals	Expert Qual	Acrylonitrile (ug/l)	Lab Qual	Expert Qual	cis-1,3-Dichloropropene (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**0.00146**			**4**			**0.081**			**0.438**		
CTMW-12	06/11/2018 - 08:50	26.000	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-14	06/05/2018 - 09:30	9.700	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-15	06/07/2018 - 09:21	9.600	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-17	06/07/2018 - 10:57	13.700	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-17D	06/07/2018 - 11:32	28.000	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-18	06/11/2018 - 12:11	12.400	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-20	06/11/2018 - 09:39	6.600	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-24	06/05/2018 - 13:40	10.900	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-24D	06/05/2018 - 14:20	24.000	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-25D	06/07/2018 - 10:19	19.700	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-5	06/11/2018 - 10:16	9.950	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-7	06/11/2018 - 10:57	25.000	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-8	06/07/2018 - 13:53	9.000	[<0.20]	U	J	<1.2	U	J	[<0.53]	U	J	<0.18	U	J
CTMW-9	06/07/2018 - 13:11	24.000	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	

Methods 8260C, 8260C SIM, 8270D SIM, 6020A, NWTPH-Dx

( ) = Below reporting limit.

[ ] = Equal to or exceeds minimum clean up level.

Table 6
Selected Constituents Reported to the MDL in Groundwater
2018 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/05/2018 thru 06/11/2018 - Inclusive
SAMPLE TYPE: Water

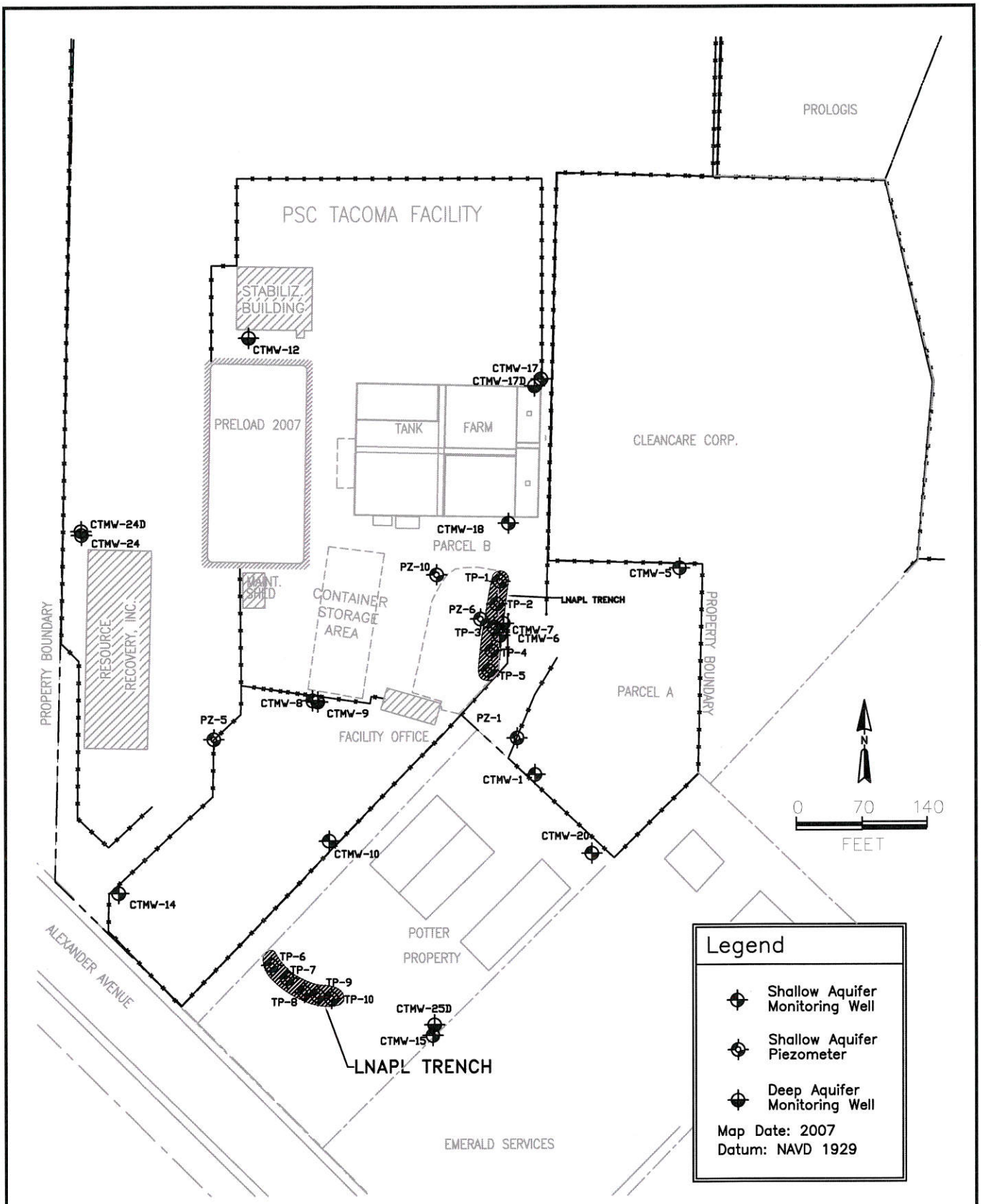
Site	Date / Time	Sample Depth	Lube Oil (ug/l)	Lab Quals	Expert Qual	Methacrylonitrile (ug/l)	Lab Quals	Expert Qual	Trans-1,3-Dichloropropene (ug/l)	Lab Qual	Expert Qual
MTCA A & B Minimum Level			**500**			**1.6**			**0.4375**		
CTMW-12	06/11/2018 - 08:50	26.000	[<520]	U		<0.35	U		<0.068	U	
CTMW-14	06/05/2018 - 09:30	9.700	[<630]	U		<0.35	U		<0.068	U	
CTMW-15	06/07/2018 - 09:21	9.600	[<500]	U		<0.35	U		<0.068	U	
CTMW-17	06/07/2018 - 10:57	13.700	[<520]	U		<0.35	U		<0.068	U	
CTMW-17D	06/07/2018 - 11:32	28.000	[<520]	U		<0.35	U		<0.068	U	
CTMW-18	06/11/2018 - 12:11	12.400	[<520]	U		<0.35	U		<0.068	U	
CTMW-20	06/11/2018 - 09:39	6.600	[<520]	U		<0.35	U		<0.068	U	
CTMW-24	06/05/2018 - 13:40	10.900	[<500]	U		<0.35	U		<0.068	U	
CTMW-24D	06/05/2018 - 14:20	24.000	[<530]	U		<0.35	U		<0.068	U	
CTMW-25D	06/07/2018 - 10:19	19.700	[<530]	U		<0.35	U		<0.068	U	
CTMW-5	06/11/2018 - 10:16	9.950	[<530]	U		<0.35	U		<0.068	U	
CTMW-7	06/11/2018 - 10:57	25.000	[<520]	U		<0.35	U		<0.068	U	
CTMW-8	06/07/2018 - 13:53	9.000	[<520]	U		<0.35	U	J	<0.068	U	J
CTMW-9	06/07/2018 - 13:11	24.000	[<520]	U		<0.35	U		<0.068	U	

Methods 8260C, 8260C SIM, 8270D SIM, 6020A, NWTPH-Dx

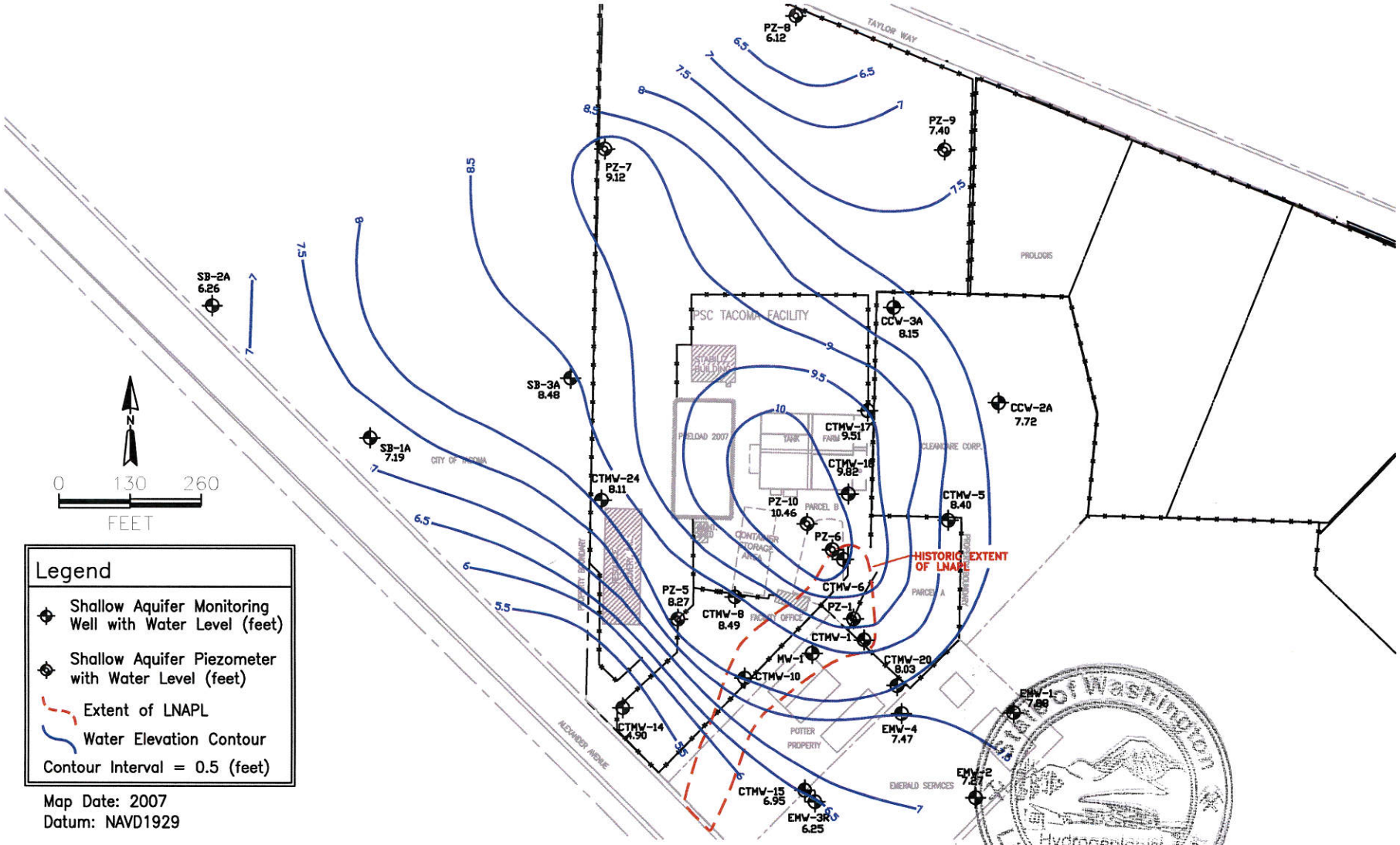
( ) = Below reporting limit.

[ ] = Equal to or exceeds minimum clean up level.

FIGURES



Stericycle	TITLE: Site Map Stericycle Tacoma Facility	DWN: dtb	DES.:	PROJECT NO.: Annual 2018
		CHKD:	APPD:	FIGURE NO.: 1
		DATE: 3/20/19	REV.:	



Stericycle

TITLE:

Groundwater Elevations
Shallow Aquifer, June 4, 2018
Stericycle Tacoma Facility

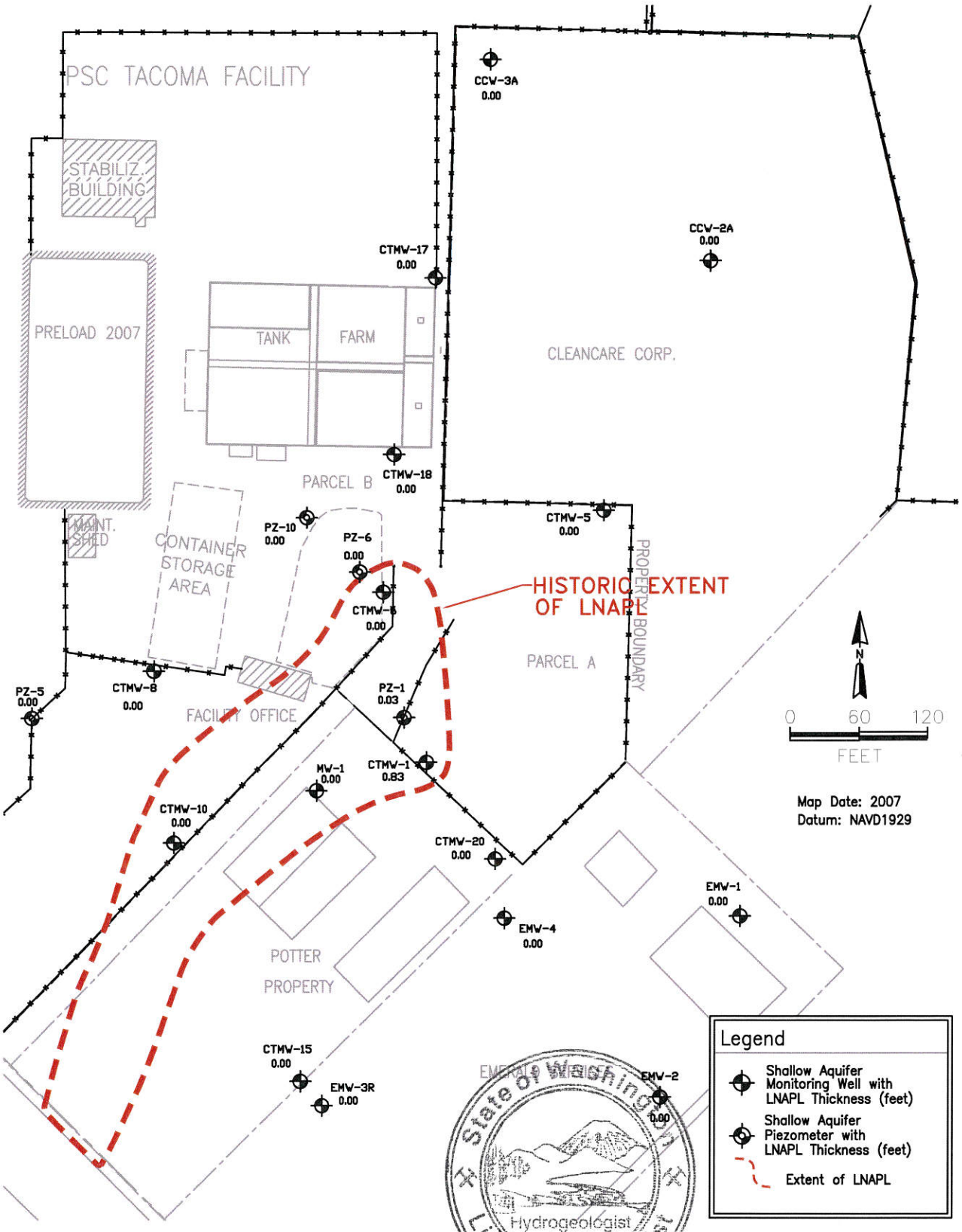
State of Washington
Hydrogeologist
1600
Licensed Geologist
David E. Cooper

DATE: 3/28/19

REV.:

PROJECT NO.: Annual 2018

FIGURE NO.: 2



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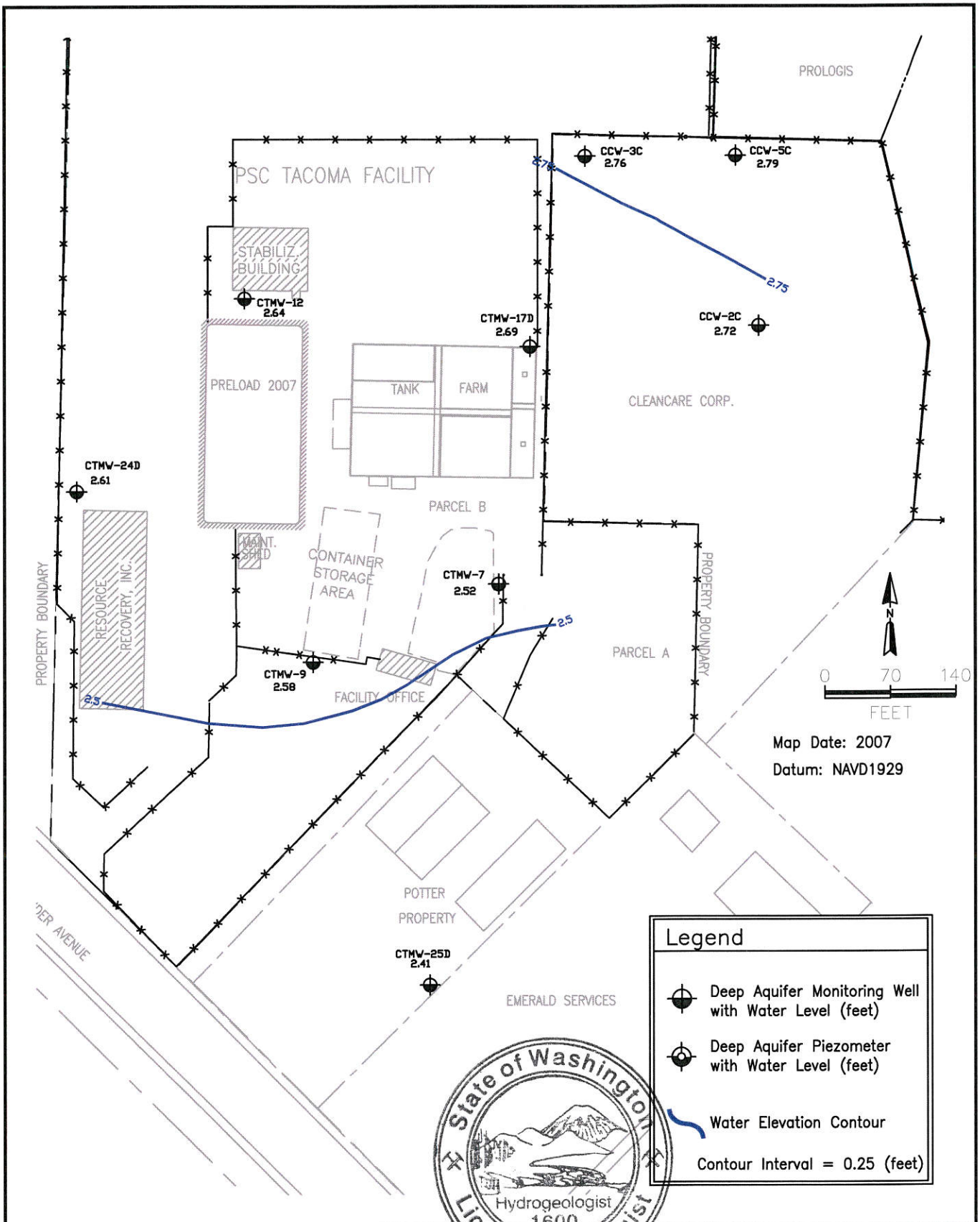
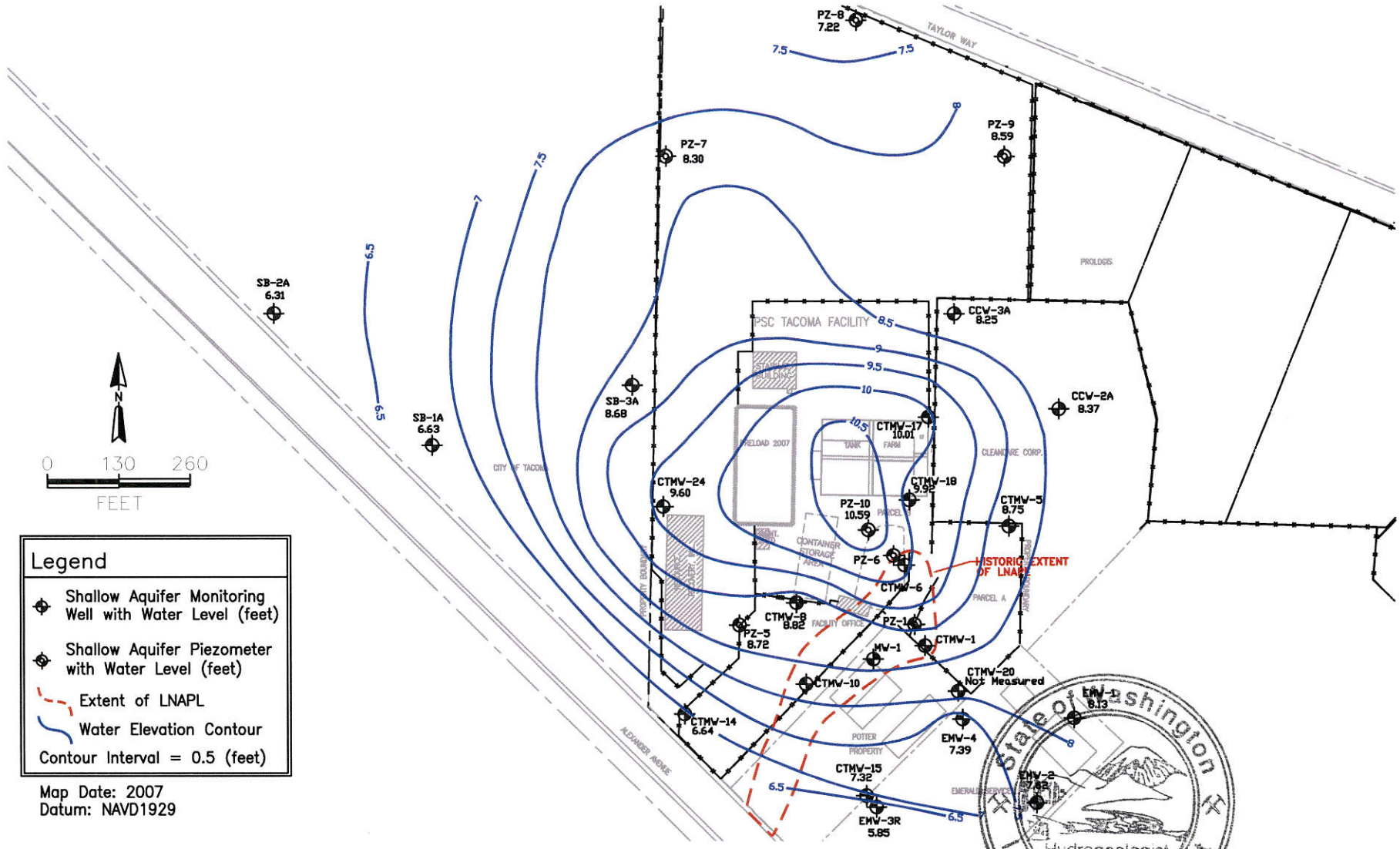
		CHKD:	APPD:	FIGURE NO.: 3
		DATE: 3/28/19	REV.:	



Stericycle

TITLE:
Groundwater Elevations
Deep Aquifer, June 4, 2018
Stericycle Tacoma Facility

DWN: dtb	DES.:	PROJECT NO.: Annual 2018	
CHKD:	APPD:	FIGURE NO.: 4	
DATE: 3/28/19	REV.:		



Stericycle®

TITLE:

Groundwater Elevations
Shallow Aquifer, December 3, 2018
Stericycle Tacoma Facility

DRAWN:

DESIGNED: David G. Cooper

APPROVED:

DATE: 3/28/19

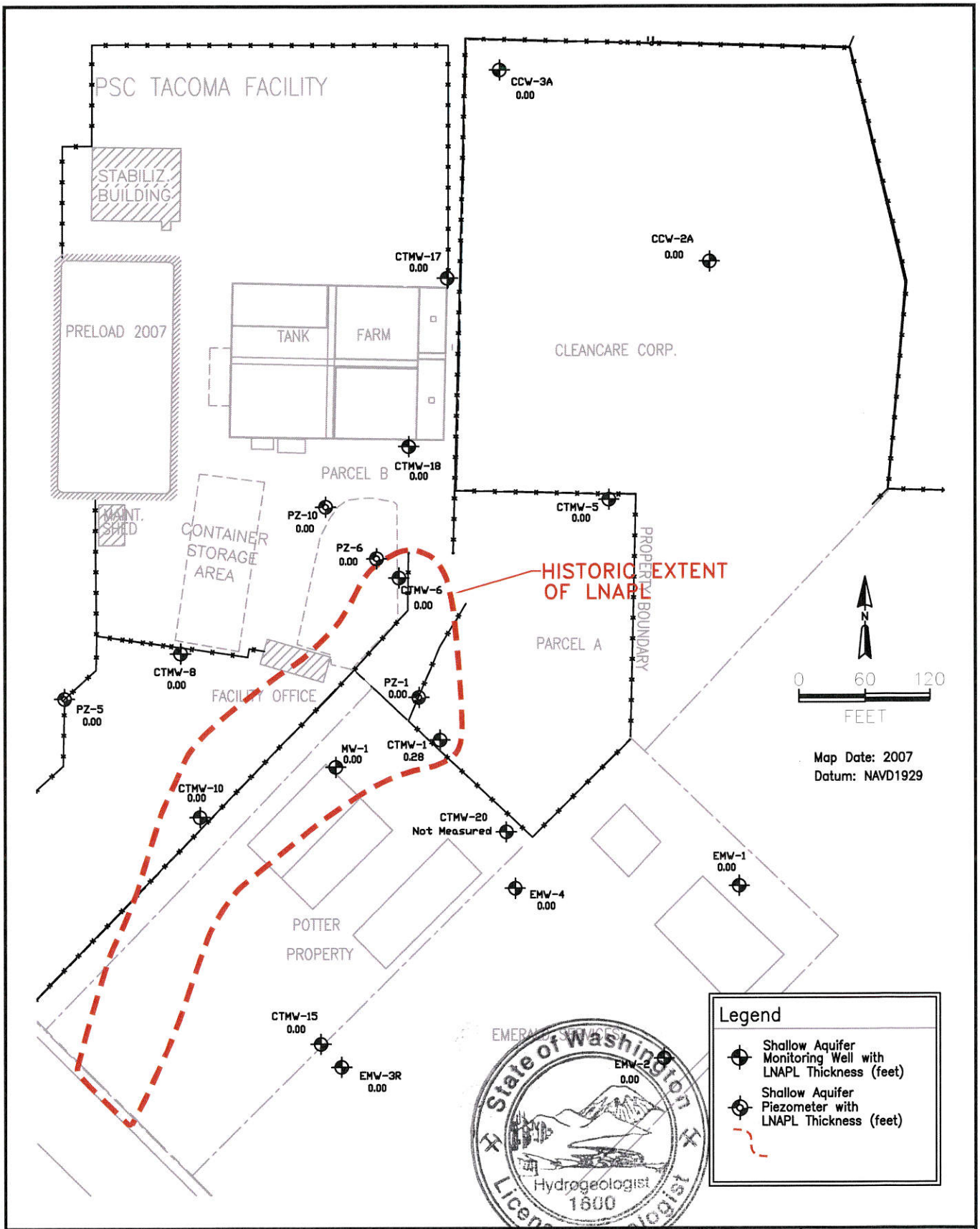
REV.:

PROJECT NO.:

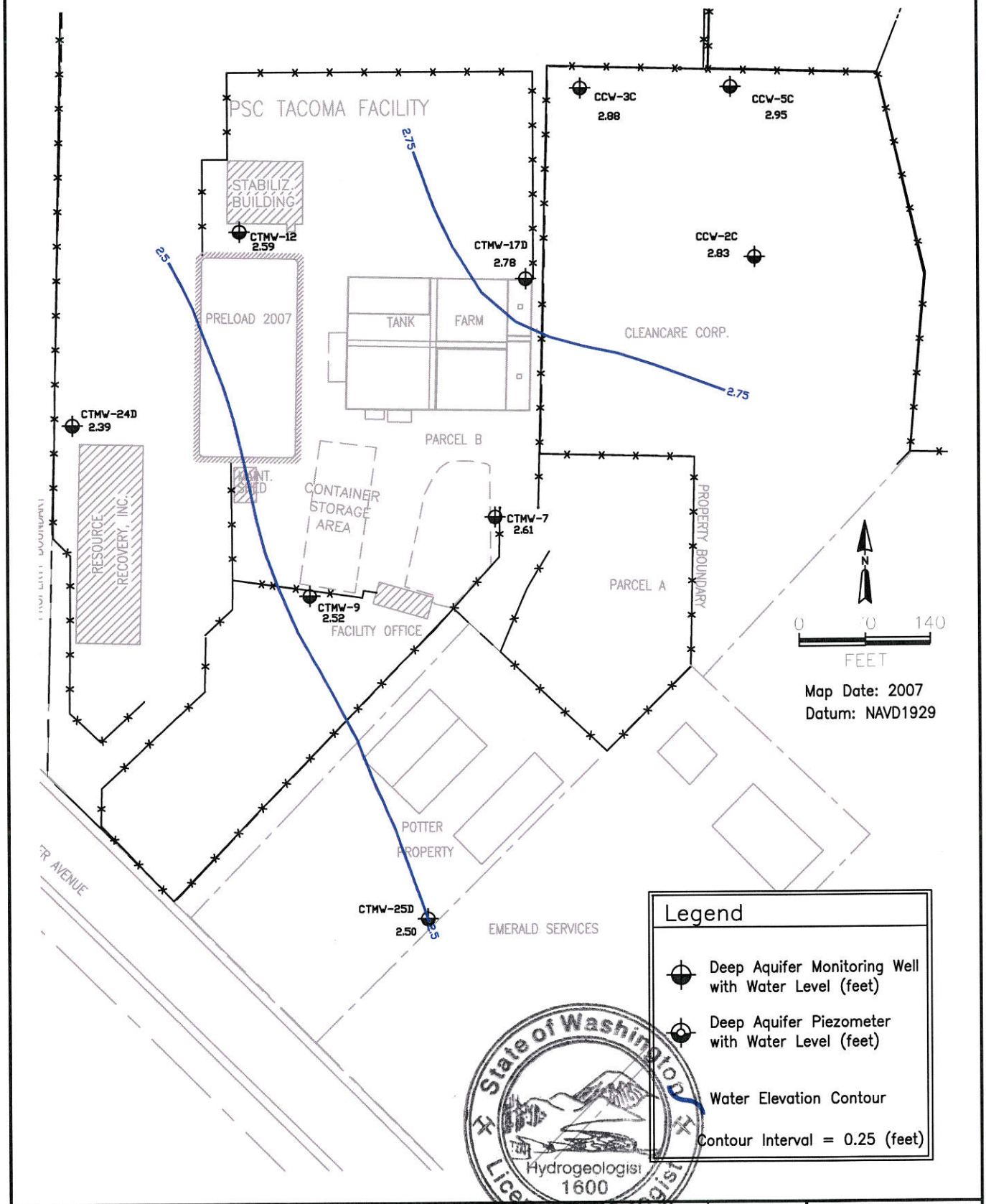
Annual 2018

FIGURE NO.:

5



Stericycle	TITLE: Calculated LNAPL Thickness December 3, 2018 Stericycle Tacoma Facility	DWN: dtb CHKD: DATE: 3/29/19	DES.: APPD: REV.:	PROJECT NO.: Annual 2018 FIGURE NO.: 6



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		DATE: 3/28/19	REV.:	

ATTACHMENT A

Groundwater Quality Worksheet, Stericycle Tacoma Annual 2018

Time	Flow rate (ml/min)	Volume Purged (L)	Temp. (C)	Dissolved Oxygen (ppm)	Relative Change (ppm) +/- 0.3ppm	Turbidity (NTU)	Relative Change (%) +/- 10%	Specific Conductivity (mS/cm)	Relative Change (%) +/- 3%	Redox Potential (mV)	Relative Change (mV) +/- 10mV	pH	Relative Change +/- 0.1	Pump Speed (Hz or cpm)	Total Purge Time Before Stabilization (min)	Total Volume Purged at Stabilization (gallons)	Draw-down (0.01 ft)	Comments
Well CTMW-12 6\11\18 FC5000T	Volume purged before 1st reading	1.2													12	1.6	0.02	
8:38:35	400		15.04	1.26		0.86		1.610		-24		6.5		3.0	All parameters stable when sample was collected.			
8:41:13	400	1.2	15.05	0.62	-0.64	0.67	-28.36	1.604	-0.37	-67	-43	6.52	0.02	3.0	Turbidity < 5 NTU			
8:44:13	400	1.2	15.19	0.43	-0.19	0.42	-59.52	1.625	1.29	-76	-9	6.56	0.04	3.0	Do > 0.20 mg/L			
8:47:29	400	1.2	15.25	0.42	-0.01	0.15	-180	1.629	0.25	-81	-5	6.53	-0.03	3.0				
8:50:05	400	1.2	15.28	0.41	-0.01	0.11	-36.36	1.637	0.49	-82	-1	6.6	0.07	3.0				
Well CTMW-14 6\05\18 FC5000T	Volume purged before 1st reading	0.3													12	0.4	1.47	
9:18:22	100		15.34	2.99	#Error	4.41	#Error	0.334	#Error	92	#Error	6.61		0.2	All parameters stable when sample was collected.			
9:21:54	100	0.3	15.37	2.57	-0.42	1.88	-134.57	0.331	-0.72	95	3	6.5	-0.11	0.2	Turbidity < 5 NTU			
9:24:06	100	0.3	15.37	2.37	-0.20	2.02	6.93	0.330	-0.21	96	1	6.5	0.00	0.2	Do > 0.20 mg/L			
9:27:18	100	0.3	15.42	2.19	-0.18	2.44	17.21	0.331	0.12	98	2	6.52	0.02	0.2				
9:30:15	100	0.3	15.50	2.39	0.20	1.75	-39.43	0.331	0.06	100	2	6.56	0.04	0.2				
Well CTMW-15 6\07\18 FC5000T	Volume purged before 1st reading	0.3													30	0.9	1.73	
8:51:28	100		16.33	3.36		13.0		1.235		-86		6.84		0.2	All parameters stable when sample was collected.			
8:54:37	100	0.3	16.17	3.10	-0.26	9.47	-37.28	1.188	-3.96	-84	2	6.83	-0.01	0.2	Turbidity < 5 NTU			
8:57:05	100	0.3	16.19	2.88	-0.22	8.56	-10.63	1.115	-6.55	-80	4	6.81	-0.02	0.2	Do > 0.20 mg/L			
9:00:43	100	0.3	16.25	2.81	-0.07	5.74	-49.13	0.993	-12.27	-72	8	6.81	0.00	0.2				
9:03:39	100	0.3	16.37	2.52	-0.29	5.23	-9.75	0.940	-5.67	-66	6	6.83	0.02	0.2				
9:06:43	100	0.3	16.45	2.87	0.35	4.96	-5.44	0.851	-10.41	-61	5	6.79	-0.04	0.2				
9:09:19	100	0.3	16.44	2.61	-0.26	4.83	-2.69	0.774	-9.95	-59	2	6.83	0.04	0.2				
9:12:52	100	0.3	16.39	2.55	-0.06	4.71	-2.55	0.717	-8.05	-53	6	6.78	-0.05	0.2				
9:15:34	100	0.3	16.37	2.56	0.01	4.62	-1.95	0.642	-11.66	-49	4	6.81	0.03	0.2				
9:18:40	100	0.3	16.27	2.53	-0.03	4.51	-2.44	0.639	-0.45	-47	2	6.82	0.01	0.2				
9:21:32	100	0.3	16.25	2.52	-0.01	4.23	-6.62	0.588	-8.62	-45	2	6.82	0.00	0.2				
Well CTMW-17 6\07\18 FC5000T	Volume purged before 1st reading	0.6													12	0.8	2.32	
10:45:05	200		14.87	2.20		4.45		0.427		-19		6.48		1.0	All parameters stable when sample was collected.			
10:48:05	200	0.6	14.81	0.98	-1.22	3.81	-16.8	0.396	-7.99	-11	8	6.26	-0.22	1.0	Turbidity < 5 NTU			
10:51:15	200	0.6	14.88	0.85	-0.13	3.60	-5.83	0.385	-2.73	-9	2	6.42	0.16	1.0	Do > 0.20 mg/L			
10:54:16	200	0.6	14.99	0.80	-0.05	2.43	-48.15	0.388	0.65	-11	-2	6.37	-0.05	1.0				
10:57:06	200	0.6	15.01	0.85	0.05	1.86	-30.65	0.391	0.84	-15	-4	6.38	0.01	1.0				

relative change calculated after 2nd reading

Groundwater Quality Worksheet, Stericycle Tacoma Annual 2018

Time	Flow rate (ml/min)	Volume Purged (L)	Temp. (C)	Dissolved Oxygen (ppm)	Relative Change (ppm) +/- 0.3ppm	Turbidity (NTU)	Relative Change (%) +/- 10%	Specific Conductivity (mS/cm)	Relative Change (%) +/- 3%	Redox Potential (mV)	Relative Change (mV) +/- 10mV	pH	Relative Change +/- 0.1	Pump Speed (Hz or cpm)	Total Purge Time Before Stabilization (min)	Total Volume Purged at Stabilization (gallons)	Draw-down (0.01 ft)	Comments
Well CTMW-17D 6\07\18 FC5000T	Volume purged before 1st reading	1.2													12	1.6	0.03	
11:20:26	400		14.74	1.81		2.25		1.552		-29		6.61		3.0	All parameters stable when sample was collected.			
11:23:11	400	1.2	14.40	0.76	-1.05	3.14	28.34	1.582	1.9	-52	-23	6.55	-0.06	3.0	Turbidity < 5 NTU			
11:26:49	400	1.2	14.35	0.53	-0.23	2.74	-14.6	1.567	-0.96	-58	-6	6.46	-0.09	3.0	Do > 0.20 mg/L			
11:29:37	400	1.2	14.37	0.51	-0.02	0.89	-207.87	1.561	-0.38	-61	-3	6.45	-0.01	3.0				
11:32:11	400	1.2	14.37	0.49	-0.02	0.67	-32.84	1.545	-1.04	-62	-1	6.45	0.00	3.0				
Well CTMW-18 6\11\18 FC5000T	Volume purged before 1st reading	0.6													12	0.8		
11:59:08	200		16.73	1.80		1.97		0.562		-18		6.47		1.0	All parameters stable when sample was collected.			
12:02:56	200	0.6	16.69	1.01	-0.79	1.26	-56.35	0.537	-4.67	-22	-4	6.49	0.02	1.0	Turbidity < 5 NTU			
12:05:06	200	0.6	16.67	0.78	-0.23	2.32	45.69	0.537	-0.11	-23	-1	6.58	0.09	1.0	Do > 0.20 mg/L			
12:08:11	200	0.6	16.67	0.73	-0.05	0.88	-163.64	0.538	0.28	-24	-1	6.61	0.03	1.0				
12:11:15	200	0.6	16.76	0.72	-0.01	0.70	-25.71	0.539	0.13	-24	0	6.62	0.01	1.0				
Well CTMW-20 6\11\18 FC5000T	Volume purged before 1st reading	1.2													21	2.5	0.07	
9:18:05	400		12.89	1.32		2.07		0.845		-108		6.71		3.0	All parameters stable when sample was collected.			
9:21:05	400	1.2	13.06	0.49	-0.83	1.87	-10.7	0.823	-2.71	-123	-15	6.62	-0.09	3.0	Turbidity < 5 NTU			
9:24:34	400	1.2	13.29	0.38	-0.11	22.8	91.8	0.761	-8.08	-121	2	6.64	0.02	3.0	Do > 0.20 mg/L			
9:27:08	400	1.2	13.39	0.36	-0.02	15.9	-43.4	0.707	-7.61	-116	5	6.7	0.06	3.0				
9:30:08	400	1.2	13.46	0.32	-0.04	8.42	-88.84	0.651	-8.6	-115	1	6.7	0.00	3.0				
9:33:36	400	1.2	13.62	0.32	0.00	2.43	-246.5	0.618	-5.39	-117	-2	6.73	0.03	3.0				
9:36:21	400	1.2	13.55	0.29	-0.03	1.60	-51.88	0.604	-2.35	-117	0	6.73	0.00	3.0				
9:39:04	400	1.2	13.56	0.29	0.00	0.29	-451.72	0.601	-0.57	-116	1	6.73	0.00	3.0				
Well CTMW-24 6\05\18 FC5000T	Volume purged before 1st reading	0.6													12	0.8	0.41	
13:28:07	200		15.25	1.80		1.31		0.413		36		6.11		1.0	All parameters stable when sample was collected.			
13:31:17	200	0.6	14.94	1.00	-0.80	1.84	28.8	0.406	-1.6	13	-23	6.17	0.06	1.0	Turbidity < 5 NTU			
13:34:07	200	0.6	14.74	0.80	-0.20	0.75	-145.33	0.400	-1.45	4	-9	6.13	-0.04	1.0	Do > 0.20 mg/L			
13:37:23	200	0.6	14.96	0.75	-0.05	0.61	-22.95	0.396	-0.98	-2	-6	6.14	0.01	1.0				
13:40:19	200	0.6	14.83	0.74	-0.01	0.56	-8.93	0.393	-0.76	-4	-2	6.12	-0.02	1.0				
Well CTMW-24D 6\05\18 FC5000T	Volume purged before 1st reading	1.2													12	1.6	0.03	
14:08:10	400		14.78	1.01		2.17		2.800		-47		6.7		3.0	All parameters stable when sample was collected.			
14:11:38	400	1.2	14.58	0.62	-0.39	1.17	-85.47	2.814	0.5	-70	-23	6.59	-0.11	3.0	Turbidity < 5 NTU			
14:14:12	400	1.2	14.62	0.50	-0.12	0.78	-50	2.810	-0.14	-77	-7	6.57	-0.02	3.0	Do > 0.20 mg/L			

relative change calculated after 2nd reading

Groundwater Quality Worksheet, Stericycle Tacoma Annual 2018

Time	Flow rate (ml/min)	Volume Purged (L)	Temp. (C)	Dissolved Oxygen (ppm)	Relative Change (ppm) +/- 0.3ppm	Turbidity (NTU)	Relative Change (%) +/- 10%	Specific Conductivity (mS/cm)	Relative Change (%) +/- 3%	Redox Potential (mV)	Relative Change (mV) +/- 10mV	pH	Relative Change +/- 0.1	Pump Speed (Hz or cpm)	Total Purge Time Before Stabilization (min)	Total Volume Purged at Stabilization (gallons)	Draw-down (0.01 ft)	Comments
14:17:09	400	1.2	14.49	0.48	-0.02	0.78	0	2.788	-0.79	-82	-5	6.57	0.00	3.0				
14:20:06	400	1.2	14.56	0.46	-0.02	0.83	6.02	2.781	-0.25	-85	-3	6.65	0.08	3.0				
Well CTMW-25D	Volume purged before 1st reading	1.2													12	1.6	0.04	
6\07\18 FC5000T																		
10:07:04	400		13.95	1.39		1.75		1.323		-41		6.75		3.0	All parameters stable when sample was collected.			
10:10:16	400	1.2	13.76	0.57	-0.82	1.26	-38.89	1.736	23.79	-79	-38	6.49	-0.26	3.0	Turbidity < 5 NTU			
10:13:08	400	1.2	13.75	0.45	-0.12	1.17	-7.69	1.889	8.1	-84	-5	6.65	0.16	3.0	Do > 0.20 mg/L			
10:16:15	400	1.2	13.79	0.43	-0.02	0.98	-19.39	1.906	0.89	-86	-2	6.56	-0.09	3.0				
10:19:14	400	1.2	13.79	0.41	-0.02	0.79	-24.05	1.925	0.99	-87	-1	6.56	0.00	3.0				
Well CTMW-5	Volume purged before 1st reading	1.05													12	1.4	0.21	
6\11\18 FC5000T																		
10:04:26	350		13.67	2.22		2.10		0.159		12		5.83		4.0	All parameters stable when sample was collected.			
10:07:24	350	1.05	13.92	1.52	-0.70	1.38	-52.17	0.160	0.19	19	7	5.8	-0.03	4.0	Turbidity < 5 NTU			
10:10:56	350	1.05	14.05	1.31	-0.21	1.42	2.82	0.163	2.21	21	2	5.86	0.06	4.0	Do > 0.20 mg/L			
10:13:06	350	1.05	14.10	1.26	-0.05	1.22	-16.39	0.164	0.18	19	-2	5.88	0.02	4.0				
10:16:05	350	1.05	14.05	1.20	-0.06	1.09	-11.93	0.164	0.18	16	-3	5.92	0.04	4.0				
Well CTMW-7	Volume purged before 1st reading	1.2													18	2.2	0.10	
6\11\18 FC5000T																		
10:39:07	400		15.55	1.21		3.26		2.259		-71		6.54		3.0	All parameters stable when sample was collected.			
10:42:08	400	1.2	15.30	0.53	-0.68	2.31	-41.13	2.283	1.05	-90	-19	6.33	-0.21	3.0	Turbidity < 5 NTU			
10:45:22	400	1.2	15.75	0.74	0.21	3.05	24.26	2.302	0.83	-94	-4	6.61	0.28	3.0	Do > 0.20 mg/L			
10:48:05	400	1.2	16.16	0.66	-0.08	2.30	-32.61	2.301	-0.04	-95	-1	6.76	0.15	3.0				
10:51:12	400	1.2	15.19	0.36	-0.30	2.88	20.14	2.315	0.6	-97	-2	6.54	-0.22	3.0				
10:54:15	400	1.2	15.07	0.34	-0.02	2.94	2.04	2.301	-0.61	-99	-2	6.56	0.02	3.0				
10:57:28	400	1.2	15.10	0.34	0.00	2.09	-40.67	2.303	0.09	-100	-1	6.52	-0.04	3.0				
Well CTMW-8	Volume purged before 1st reading	0.6													12	0.8	1.85	
6\07\18 FC5000T																		
13:41:05	200		17.65	1.69		29.50		6.611		-190		12.36		1.0	All parameters stable when sample was collected.			
13:44:10	200	0.6	17.50	1.06	-0.63	5.57	-429.62	6.761	2.22	-199	-9	12.39	0.03	1.0	Turbidity < 5 NTU			
13:47:20	200	0.6	17.40	0.78	-0.28	4.45	-25.17	6.796	0.52	-202	-3	12.28	-0.11	1.0	Do > 0.20 mg/L			
13:50:12	200	0.6	17.24	0.77	-0.01	2.83	-57.24	6.795	-0.01	-203	-1	12.34	0.06	1.0				
13:53:17	200	0.6	17.28	0.72	-0.05	1.89	-49.74	6.793	-0.03	-203	0	12.35	0.01	1.0				
Well CTMW-9	Volume purged before 1st reading	1.2													12	1.6	0.05	
6\07\18 FC5000T																		

relative change calculated after 2nd reading

Groundwater Quality Worksheet, Stericycle Tacoma Annual 2018

Time	Flow rate (ml/min)	Volume Purged (L)	Temp. (C)	Dissolved Oxygen (ppm)	Dissolved Oxygen Relative Change (ppm) +/- 0.3ppm	Turbidity (NTU)	Turbidity Relative Change (%) +/- 10%	Specific Conductivity (mS/cm)	Specific Conductivity Relative Change (%) +/- 3%	Redox Potential (mV)	Redox Potential Relative Change (mV) +/- 10mV	pH	pH Relative Change +/- 0.1	Pump Speed (Hz or cpm)	Total Purge Time Before Stabilization (min)	Total Volume Purged at Stabilization (gallons)	Draw-down (0.01 ft)	Comments
12:59:29	400		15.87	1.80		1.85		4.399		-44		6.85		3.0	All parameters stable when sample was collected.			
13:02:00	400	1.2	15.41	0.52	-1.28	0.73	-153.42	4.352	-1.08	-84	-40	6.72	-0.13	3.0	Turbidity < 5 NTU			
13:05:05	400	1.2	15.37	0.38	-0.14	0.75	2.67	4.345	-0.16	-88	-4	6.92	0.20	3.0	Do > 0.20 mg/L			
13:08:05	400	1.2	15.35	0.36	-0.02	0.39	-92.31	4.362	0.39	-91	-3	6.84	-0.08	3.0				
13:11:13	400	1.2	15.35	0.36	0.00	0.36	-8.33	4.347	-0.35	-93	-2	6.84	0.00	3.0				

relative change calculated after 2nd reading

GENERAL Field Event: Tacoma 2Q18 Date (mm / dd / yyyy): 06 / 04 / 2018

PERSONNEL Name(s): Jimmy McKechnie/Slavik Karashchuk Organization: Stericycle

LIQUID-LEVEL METER Brand: WLM Series Water Level Meter Model: Mini EZ Reel Serial No.: 001

Well or Piezometer	Dedicated Pump (VERIFY) (X = yes)	Well Venting		Liquid-Level Measurement			Total Well Depth (4th Q only) (feet)	Comments	NOTES
		Time (24-h clock) (hh:mm)	Headspace PID Reading (ppm)	Time (24-h clock) (hh:mm)	Depth to LNAPL (feet)	Depth to Water (feet)			
CTMW-1	--	0956		1350	5.27	5.30		**Purged ~ 20 ml of product.**	Inner casing for accurate water levels
CTMW-5	X	0953		1156		5.70			
CTMW-6	--	1022		1422	5.70	N/A		**LNAPL too viscous for WL/ Purged ~ 80 ml of product.**	Inner casing for accurate water levels
CTMW-7	X	1023		1106		12.23			
CTMW-8	X	0940		1059		6.28			
CTMW-9	--	0941		1101		11.80			
CTMW-10	--	0947		1300	N/A	4.75		**No LNAPL present.**	Inner casing for accurate water levels
CTMW-12		0937		1109		15.65			
CTMW-14	--	0945		1103		8.23			
CTMW-15	--	1010		1215		6.33			
CTMW-17	X	0934		1115		9.81			
CTMW-17D	--	0935		1113		13.95		Water in monument.	
CTMW-18	X	1025		1229		9.54			
CTMW-20	--	0958		1200		3.00			
CTMW-24		0925		1138		8.24			
CTMW-24D		0926		1140		13.78			
CTMW-25D		1011		1217		10.65			
PZ-1	--	0955		1408	3.65	3.68		**Purged ~ 20 ml of product.**	
PZ-5	--	0923		1136		4.59			
PZ-6	--	1029		1442	1.58	N/A		**LNAPL too viscous for WL/ Purged ~ 100 ml of product.**	Inner casing for accurate water levels
PZ-7		0931		1149		11.85			
PZ-8	--	0928		1146		8.72			
PZ-9	--	0929		1144		8.15			
PZ-10	--	1027		1232		2.15			
MW-1	--	1001		1348	N/A	2.80		**No LNAPL present.**	Inner casing for accurate water levels
TP-1		1021		1227		2.35			

Well or Piezometer	Dedicated Pump (VERIFY) (X = yes)*	Well Venting		Liquid-Level Measurement			Total Well Depth (4th Q only) (feet) *	Comments	NOTES
		Time (24-h clock) (hh:mm)	Headspace PID Reading (ppm)	Time (24-h clock) (hh:mm)	Depth to LNAPL (feet)	Depth to Water (feet)			
TP-2	--	1020		1225		2.50			
TP-3	--	1019		1223		2.24			
TP-4	--	1018		1221		2.37			
TP-5	--	1017		1219		2.50			
TP-6	--	1003		1204		2.63			
TP-7	--	1004		1206		2.01			
TP-8	--	1005		1208		2.30			
TP-9	--	1006		1210		2.20			
TP-10	--	1007		1213		2.63			
SB-1A	--	1032		1244		5.15			
SB-2A	--	1035		1247		5.65			
SB-3A	--	1027		1240		5.10			
CCW-2A	--	1041		1123		4.50		Water in monument.	
CCW-2B	--	1042		1125		4.00		Water in monument.	
CCW-2C	--	1040		1121		9.34			
CCW-3A	--	1051		1132		5.60			
CCW-3B	--	1052		1134		6.41			
CCW-3C	--	1050		1130		12.92			
CCW-5B	--	1048		1126		5.42		Water in monument.	
CCW-5C	--	1046		1128		9.61		Water in monument.	

Notes:

(1) Shading indicates wells/piezometers with a history of LNAPL accumulation.

(2) **Bold** indicates wells/piezometers whose water levels must be measured within a single one-hour period.

GENERAL Field Event: Tacoma 4Q18 Date (mm / dd / yyyy): 12 / 03 / 2018

PERSONNEL Name(s): Jimmy McKechnie/Slavik Karashchuk Organization: Stericycle

LIQUID-LEVEL METER Brand: WLM Series Water Level Meter Model: Mini EZ Reel Serial No.: 001

Well or Piezometer	Dedicated Pump (VERIFY) (X = yes)	Well Venting		Liquid-Level Measurement			Total Well Depth (4th Q only) (feet)	Comments	NOTES
		Time (24-h clock) (hh:mm)	Headspace PID Reading (ppm)	Time (24-h clock) (hh:mm)	Depth to LNAPL (feet)	Depth to Water (feet)			
CTMW-1	--	1001		1254	5.29	5.30		**Purged ~ 10 ml of product.**	Inner casing for accurate water levels
CTMW-5	X	0959		1229		5.35			
CTMW-6	--	1010		1313	5.15	N/A		**LNAPL too viscous for WL/ Product too thick to purge.**	Inner casing for accurate water levels
CTMW-7	X	1011		1115		12.14			
CTMW-8	X	0944		1119		5.95			
CTMW-9	--	0945		1117		11.86			
CTMW-10	--	0947		1247	N/A	3.69		**No LNAPL present.**	Inner casing for accurate water levels
CTMW-12		0928		1110		15.70			
CTMW-14	--	0942		1121		6.49			
CTMW-15	--	0955		1225		5.96			
CTMW-17	X	0924		1107		9.31			
CTMW-17D	--	0925		1105		13.86		H20 in monument.	
CTMW-18	X	1012		1113		9.44			
CTMW-20	--	N/A		N/A		N/A		Trailer parked on top of well.	
CTMW-24		0938		1206		6.75			
CTMW-24D		0939		1208		14.00			
CTMW-25D		0956		1223		10.56			
PZ-1	--	1002		1310	N/A	1.08		**No LNAPL present.**	
PZ-5	--	0941		1211		4.14			
PZ-6	--	1009		1330	0.93	N/A		**LNAPL too viscous for WL/ Product too thick to purge.**	Inner casing for accurate water levels
PZ-7		0936		1159		12.67			
PZ-8	--	0934		1157		7.62			
PZ-9	--	0932		1155		6.96			
PZ-10	--	1014		1243		2.02			
MW-1	--	0949		1251	N/A	2.60		**No LNAPL present.**	Inner casing for accurate water levels
TP-1		1008		1241		1.35			

Well or Piezometer	Dedicated Pump (VERIFY) (X = yes)	Well Venting		Liquid-Level Measurement			Total Well Depth (4th Q only) (feet)	Comments	NOTES
		Time (24-h clock) (hh:mm)	Headspace PID Reading (ppm)	Time (24-h clock) (hh:mm)	Depth to LNAPL (feet)	Depth to Water (feet)			
TP-2	--	1007		1238		1.50			
TP-3	--	1006		1236		1.24			
TP-4	--	1005		1234		1.40			
TP-5	--	1004		1232		1.51			
TP-6	--	0951		1215		2.00			
TP-7	--	N/A		N/A		N/A		Monument under water.	
TP-8	--	0952		1217		1.65			
TP-9	--	0953		1219		1.58			
TP-10	--	0954		1221		2.00			
SB-1A	--	1033		1147		5.71			
SB-2A	--	1035		1145		5.60			
SB-3A	--	1029		1151		4.90			
CCW-2A	--	1039		1129		3.85		H20 in monument.	
CCW-2B	--	1041		1131		3.51		H20 in monument.	
CCW-2C	--	1043		1127		9.23		H20 in monument.	
CCW-3A	--	1052		1139		5.50		H20 in monument.	
CCW-3B	--	1053		1141		5.60		H20 in monument.	
CCW-3C	--	1051		1137		12.80			
CCW-5B	--	1048		1133		4.15		H20 in monument.	
CCW-5C	--	1046		1135		9.45		H20 in monument.	

Notes:

(1) Shading indicates wells/piezometers with a history of LNAPL accumulation.

(2) **Bold** indicates wells/piezometers whose water levels must be measured within a single one-hour period.

TABLE 3-2. STATIC WATER LEVELS. EMERALD SERVICES, INC. TACOMA WASHINGTON

Location	Date 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						
ERI-MW-1	6/4/18 9:19	14.07	14.46	2.96	11.11	7.09
ERI-MW-2R	6/4/18 9:30	13.79	14.23	3.17	10.62	7.86
ERI-MW-3R	6/4/18 9:41	14.28	14.61	4.90	9.38	7.60
ERI-MW-4	6/4/18 9:50	14.11	14.40	3.13	10.98	9.21
Fourth Quarter						
ERI-MW-1	12/3/18 13:52	14.07	14.46	2.71	11.36	7.01
ERI-MW-2R	12/3/18 14:09	13.79	14.23	2.82	10.97	7.80
ERI-MW-3R	12/3/18 13:25	14.28	14.61	5.30	8.98	7.51
ERI-MW-4	12/3/18 13:42	14.11	14.40	3.21	10.90	9.18

ATTACHMENT B

See separate file on this disc for the Laboratory Analytical Reports

ATTACHMENT C

QA/QC SOLUTIONS, LLC

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April 4, 2019

William Beck and Duane Beery
Stericycle Environmental Solutions
18000 72nd Avenue South, Suite 201
Kent, Washington 98032

Subject: Tacoma 2nd Quarter 2018 Data Validation Review
Client Project No.: 376.01
QA/QC Solutions, LLC Project No.: 081718.1 (QA/QC Support, Tacoma 2ndQ18)

Dear Bill and Duane:

This letter documents the results of the data validation review of the chemical analyses of organic and inorganic compounds completed on groundwater samples associated with Stericycle Environmental Solutions Tacoma 2nd quarter 2018 sampling event.

The data were validated to verify the laboratory quality assurance and quality control (QA/QC) procedures were documented and that the overall quality is sufficient to support its intended purpose(s). A summary of the overall assessment of data quality, the data set, a summary of the analytical methods used to complete the chemical analyses, a summary of the data validation procedures used, and a summary of the reasons why data were qualified (including other items noted during data validation) is presented below.

Overall Assessment of Data Quality

Overall, the data reported are of good quality and the results for the applicable QA/QC procedures that were used by the laboratories during the analysis of the samples were generally acceptable. Selected sample results required qualification during data validation because method-specific QA/QC criteria were not met; results maybe qualified for more than one reason. During data validation, the following actions were taken:

- A total of 164 results reported as detected were qualified as estimated (assigned a *J* qualifier).
- A total of 9 results reported as detected were restated as undetected (assigned a *U* qualifier).
- No results were rejected (assigned an *R* qualifier).

Analytical data that did not meet method- and/or laboratory-established control limits for applicable quality control measurements were qualified as estimated (*J*) by the laboratory or during data validation. These qualified data are usable and represent data of good quality and reasonable confidence and have an acceptable degree of uncertainty (i.e., may be less precise or less accurate than unqualified data). Analytical data that were reported as undetected (*U*) by the laboratory or that were restated as undetected (*U*) during data validation are usable. A summary of the qualified sample data and the reason(s) for qualification is presented in Table 2.

Data users must note that results may be qualified for more than one reason. A summary of the qualified data and the reasons for qualification are summarized in Table 2

Data Set

The data set consisted of 19 water samples (i.e., 14 groundwater samples, 1 field duplicate, 3 trip blanks, and 1 field blank) that were collected in June 2017. A summary of the samples collected and the analyses completed is presented in Table 1.

All organic and inorganic chemical analyses were completed by ALS Group USA Corp. dba ALS Environmental (ALS) located in Kelso, Washington. The data were reported in two service requests (K1805355 and K1805524). ALS submitted a complete hardcopy data validation deliverables and electronic data deliverables (EDDs).

Analytical Methods

The analytical methods used to complete the chemical analyses included the following:

- Total metals (i.e., arsenic, cadmium, chromium, copper, lead, nickel, and zinc) by digestion with with nitric and hydrochloric acids (selected samples) and analysis by inductively coupled plasma-mass spectrometry (ICP-MS) using U.S. EPA SW-846 Method 6020A (U.S. EPA 2019).
- Total mercury by digestion with hydrogen peroxide and nitric acid, addition of nickel nitrate solution, and analysis by cold vapor atomic absorption (CVAA) using U.S. EPA SW-846 Method 7470A (U.S. EPA 2019).
- Gasoline-range petroleum hydrocarbons by purge and trap and analysis by gas chromatography/flame ionization detection (GC/FID) using the Washington Department of Ecology NWTPH-Gx method (Ecology 1997).
- Diesel- and oil-range petroleum hydrocarbons by extraction and analysis by GC/FID using the Washington Department of Ecology NWTPH-Dx (extended) method (Ecology 1997).
- Volatile organic compounds (VOCs) (50 target analytes with co-elutions included) by purge and trap and analysis by gas chromatography/mass spectrometry (GC/MS) operated in the full scan mode using U.S. EPA SW-846 Methods 5030B and 8260C, respectively (U.S. EPA 2019).
- VOCs (5 target analytes) by purge and trap and analysis by GC/MS operated in the selected ion monitoring (SIM) mode to achieve lower reporting limits using U.S. EPA SW-846 Methods 5030B and 8260C, respectively (U.S. EPA 2019).
- 1,4-Dioxane by separatory funnel extraction and analysis by GC/MS operated in the SIM mode using U.S. EPA SW-846 Methods 3510C and 8270D-SIM, respectively (U.S. EPA 2019).

Data Validation Procedures

Data validation procedures included evaluating a summary of the sample results and applicable quality control results that were reported by the laboratory; this level of validation is also referred to as an abbreviated data review (equivalent to "Stage 2B" review per U.S. EPA 2009, which is equivalent to "Level

EPA2B" for use with the Washington Department of Ecology EIMS database). The analytical data were validated generally following the applicable guidance and requirements:

- Guidance on Environmental Data Verification and Validation (U.S. EPA 2002)
- USEPA Contract Laboratory Program, National Functional Guidelines for Superfund Organic Methods Data Review. Final. OSWER 9240.1-45. USEPA/540/R-08/01 (U.S. EPA 2008).
- Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use. OSWER No. 9200.1-85. EPA 540-R-08-005. (U.S. EPA 2009).
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Superfund Data Review. Final. OSWER 9240.1-51. EPA 540-R-10-011 (U.S. EPA 2010).
- Method-specific and laboratory-established quality control requirements, as applicable.

Data validation procedures were modified to accommodate QA/QC requirements for methods (e.g., petroleum hydrocarbon analyses and hydrocarbons) that are not specifically addressed by the USEPA functional guidelines. Method-specific and laboratory-established control limits were used, as necessary, to determine if qualification of the data was necessary. The laboratory data deliverables that were validated included the following:

- Case narratives discussing analytical problems (if any) and procedures.
- Chain-of-custody documentation to verify completeness of the data set.
- Sample preparation logs or laboratory summary result forms to verify analytical holding times were met.
- Results for applicable instrument tuning, initial calibration, and continuing calibration verification (CCV) results to assess instrument performance.
- Results for applicable instrument blanks (i.e., initial calibration blanks [ICBs] and continuing calibration blanks [CCBs]), method blanks, trip blanks, and field blanks to determine whether an analyte that was reported as detected in any sample was the result of possible contamination introduced at the laboratory, during transport of samples, or during field sampling, respectively.
- Results for applicable internal standards performance (VOC and 1,4-Dioxane analyses) to verify that instrument sensitivity and response was stable during the analysis of the samples.
- Results for applicable method-specific quality control measurements for metals (i.e., serial dilutions and interference check samples for metals analyses) to assess potential matrix interference effects.
- Results for applicable surrogate compound (or system monitoring compound for VOC analyses), laboratory control sample (LCS) (i.e., blank spike), duplicate LCS, matrix spike (MS), and matrix spike duplicate (MSD) recoveries to assess analytical accuracy.
- Results for applicable laboratory duplicate sample, duplicate LCS, and MSD analyses to assess analytical precision.

- Results for the field duplicate samples to provide additional information in support of the quality assurance review.
- A review of instrument printouts (e.g., chromatograms and quantification reports analyses for gasoline-range petroleum hydrocarbons) to assess the validity of analyte identification reported as either detected or undetected.
- Laboratory summaries of analytical results.

Verification and validation of 100-percent of all applicable laboratory calculations, transcriptions, review of instrument printouts, and review of bench sheets were not completed during the data validation review. There may be analytical problems that could only be identified by reviewing every instrument printouts and associated analytical quality control results. Verification of all possible factors that could result in the degradation of data quality was not completed nor should be inferred at this time. The laboratory case narratives did not indicate any significant problems with data that were not reviewed during data validation. The adequacy of the sampling procedures was not completed during the data validation.

Performance based control limits established by the laboratory and applicable control limits specified in the analytical methods were used to evaluate data quality and to determine if specific data required qualification. Data qualifiers were assigned during data validation following guidance specified by U.S. EPA (2002, 2008, and 2010) to the EDD when applicable QC measurement criteria were not met and qualification of the data was warranted.

Reasons for Data Qualification

The data and reasons for qualification are summarized below. A summary of the qualified data and the reasons for qualification are summarized in Table 2

Data users must note that results may be qualified for more than one reason.

Metals, VOC, and 1,4-Dioxane Analyses

A total of 33 results reported as detected at a concentration above the method detection limit (MDL), but less than the method reporting limit (MRL) were qualified as estimated (*J*). These qualified results may exhibit a greater degree of uncertainty than a concentration that is reported above the MRL.

Metals Analyses

- One result reported as detected for chromium was qualified as estimated (*J*) because the concentration in the sample may be biased high due to method blank contamination. The concentration in the samples was >2x, but <5x the concentration found in the method blank.
- A total of nine (9) metals results reported as detected for chromium, nickel, or zinc were restated as undetected (*U*) because the concentrations were either less than 5x the concentration found in the associated field or method blank.
- One result reported as detected for chromium was qualified as estimated (*J*) because the relative percent difference (RPD) of 69 for the laboratory replicate was greater than the control limit of 20 percent. In addition, the absolute difference between the concentrations was greater than the MRL of 0.00010 mg/L.

VOC Analyses

- All results reported acetonitrile and isobutyl alcohol were qualified as estimated (*J*) because the method-specific minimum relative response factor (RRF) requirement of ≥0.01 was not met in the associated initial calibration standards and CCVs. A total of 38 results were qualified or this reason.
- All results reported for 1,1,2,2-Tetrachloroethane were qualified as estimated (*J*) because the method-specific minimum RRF requirement of ≥0.300 was not met in the associated initial calibration standards and CCVs. A total of 19 results were qualified or this reason.
- All 50 VOC results reported as undetected or detected for Sample CTMW-8-0617 were qualified as estimated (*J*) because the recovery of one of the three surrogate compounds was below the lower laboratory-established control limit.
- Two results reported as detected in Sample CTMW-18-0617 were qualified as estimated (*J*) because the recovery of one of the three surrogate compounds was above the upper laboratory-established control limit.
- The VOC results reported as undetected or detected for seven samples analyzed by GC/MS SIM were qualified as estimated (*J*) because the analyses were completed 6 days past 14-day method holding time constraint.

General Comments:

- During data validation, it was determined that selected data-validation-specific and/or method-specific QA/QC measurement criteria were not met. Qualification of the sample results was not required because the overall quality of the data reported was not affected and, therefore, are not summarized herein.
- The data were reported 50 and 53 days late by ALS.
- During data validation, several incorrect statements, omission, and/or reporting errors were identified. The ALS project manager was contacted to correct these errors in August and September 2018. On September 6, 2018, ALS stated the errors identified would be corrected. As of April 4, 2019, no follow-up from ALS has occurred. Corrections and qualification of affected data was completed during data validation; however, the errors identified are still present in the hardcopy data packages because ALS did not issue revisions.
- In both service requests, the laboratory omitted any comments regarding the analysis of gasoline-range organics.
- In both service request, the laboratory incorrectly reported results for five (5) VOCs from analyses completed by GC/MS operated in the full scan mode and GC/MS operated in the SIM mode. The affected VOCs included 1,1,2,2-Tetrachloroethane, 1,2-Dichloroethene, carbon ttrachloride, vinyl chloride, and 1,1-Dichloroethene.

  ***Note to Data Users: The VOC results for these five compounds were reported both in hardcopy and in the EDD. Only the results reported byte GC/MS SIM should be used for interpretative purposes.**

- The laboratory omitted any comments regarding the analysis of 1,4-Dioxane in both service requests.

- In some instances, selected samples required dilution prior to analysis (as is required by the analytical methods) to obtain concentrations that were within the linear range of the instrument or to minimize the effects of matrix interferences to obtain reportable results.

This concludes the data validation review. Should you have any questions regarding the information presented herein, please contact me by telephone at 503.763.6948 or by e-mail at jjmcateer@msn.com.

Cordially,

QA/QC Solutions, LLC
James J. Mc Ateer, Jr., Managing Member

cc: Natasya Gray, L.G., Dalton, Olmsted & Fuglevand, Inc.

Attachments

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Table 1. Summary of Samples Collected and Analyses Completed for Tacoma Second Quarter 2018 Groundwater Sampling Event

Sample Number	Laboratory Sample Number	Sample Date	Sample Time	Sample Depth	Total Metals by 6020A	Total Mercury by 7470A	NWTPH-Gx by WDOE Method	NWTPH-Dx by WDOE Method	VOCs by 8260C	VOCS by 8260C SIM	1,4-Dioxane by 8270D SIM
Trip Blank #1-0618	K1805355-001	6/5/18	08:10	0					✓	✓	
CTMW-14-0618	K1805355-002	6/5/18	09:30	9.7	✓	✓		✓	✓	✓	
CTMW-24-0618	K1805355-003	6/5/18	13:40	10.9	✓	✓		✓	✓	✓	✓
CTMW-24D-0618	K1805355-004	6/5/18	14:20	24	✓	✓		✓	✓	✓	✓
Trip Blank #2-0618	K1805355-005	6/7/18	07:40	0							
CTMW-15-0618	K1805355-006	6/7/18	09:21	9.6	✓	✓		✓	✓	✓	✓
CTMW-25D-0618	K1805355-007	6/7/18	10:19	19.7	✓	✓		✓	✓	✓	✓
CTMW-17-0618	K1805355-008	6/7/18	10:57	13.7	✓	✓		✓	✓	✓	
CTMW-17D-0618	K1805355-009	6/7/18	11:32	28	✓	✓		✓	✓	✓	
CTMW-9-0618	K1805355-010	6/7/18	13:11	24	✓	✓		✓	✓	✓	✓
CTMW-8-0618	K1805355-011	6/7/18	13:53	9	✓	✓		✓	✓	✓	✓
Field Blank #1-0618	K1805355-012	6/7/18	14:30	0	✓	✓		✓	✓	✓	✓
Trip Blank #3-0618	K1805524-001	6/11/18	07:55	0			✓		✓	✓	
CTMW-12-0618	K1805524-002	6/11/18	08:50	26	✓	✓		✓	✓	✓	
CTMW-20-0618	K1805524-003	6/11/18	09:39	6.6	✓	✓	✓	✓	✓	✓	
CTMW-5-0618	K1805524-004	6/11/18	10:16	9.95	✓	✓		✓	✓	✓	✓
CTMW-7-0618	K1805524-005	6/11/18	10:57	25	✓	✓		✓	✓	✓	✓
CTMW-9-7-0618	K1805524-006	6/11/18	10:57	25	✓	✓		✓	✓	✓	✓
CTMW-18-0618	K1805524-007	6/11/18	12:11	12.4	✓	✓	✓	✓	✓	✓	✓
		Total Number of Samples:			16	16	3	16	18	18	11

Notes

Dx - diesel-range and oil-range hydrocarbons
Gx - gasoline-range hydrocarbons
NWTPH - Northwest Total Petroleum Hydrocarbons
SIM - selected ion monitoring
VOC - volatile organic compound
WDOE - Washington Department of Ecology

Table 2. Summary of Qualified Data for Tacoma Second Quarter 2018 Groundwater Sampling Event[a]

Sample Number	Laboratory Sample Number	Chemical	Concentration	Units	MRL	MDL	Laboratory Data Flag	Data Validation Qualifier	Quality Control Reason	Quality Control Result	Possible Bias[b,c,d]
Metals											
CTMW-14-0618	K1805355-002	Chromium	0.00022	mg/L	0.00020	0.00003		J	Detected in method blank; concentration in sample >2x, but <5x concentration found in method blank	Detected at 0.00006 mg/L in method blank	High
CTMW-24-0618	K1805355-003	Chromium	0.00027	mg/L	0.00020	0.00003		U	Detected in method blank	Detected at 0.00006 mg/L in method blank	False positive
CTMW-24D-0618	K1805355-004	Zinc	0.0003	mg/L	0.0020	0.0002	J	U	Detected in field blank	Detected at 0.0004 mg/L in method blank	False positive
CTMW-15-0618	K1805355-006	Nickel	0.00100	mg/L	0.00020	0.00004		U	Detected in field blank	Detected at 0.00025 mg/L in method blank	False positive
		Zinc	0.0011	mg/L	0.0020	0.0002	J	U	Detected in field blank	Detected at 0.0004 mg/L in method blank	False positive
CTMW-25D-0618	K1805355-007	Cadmium	0.000017	mg/L	0.000020	0.000006	J	J	Concentration >MDL, <MRL	NA	Low or high
		Zinc	0.0014	mg/L	0.0020	0.0002	J	U	Detected in field blank	Detected at 0.0004 mg/L in method blank	False positive
CTMW-17D-0618	K1805355-009	Arsenic	0.00042	mg/L	0.00050	0.00009	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-9-0618	K1805355-010	Arsenic	0.00010	mg/L	0.00050	0.00006	J	J	Concentration >MDL, <MRL	NA	Low or high
		Cadmium	0.000007	mg/L	0.000020	0.000003	J	J	Concentration >MDL, <MRL	NA	Low or high
		Zinc	0.00021	mg/L	0.00050	0.00020	J	J	Concentration >MDL, <MRL	NA	Low or high
		Nickel	0.00034	mg/L	0.00020	0.00003		U	Detected in field blank	Detected at 0.00025 mg/L in method blank	False positive
CTMW-8-0618	K1805355-011	Chromium	0.00006	mg/L	0.00020	0.00003	J	U	Detected in method blank	Detected at 0.00006 mg/L in method blank	False positive
		Nickel	0.00119	mg/L	0.00020	0.00004		U	Detected in field blank	Detected at 0.00025 mg/L in method blank	False positive
		Zinc	0.0009	mg/L	0.0020	0.0002	J	U	Detected in field blank	Detected at 0.0004 mg/L in method blank	False positive
Field Blank #1-0618	K1805355-012	Zinc	0.0004	mg/L	0.0020	0.0002	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-12-0618	K1805524-002	Arsenic	0.00032	mg/L	0.00050	0.00009	J	J	Concentration >MDL, <MRL	NA	Low or high
		Cadmium	0.000011	mg/L	0.000020	0.000006	J	J	Concentration >MDL, <MRL	NA	Low or high
		Zinc	0.0005	mg/L	0.0020	0.0002	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-20-0618	K1805524-003	Cadmium	0.000009	mg/L	0.000020	0.000006	J	J	Concentration >MDL, <MRL	NA	Low or high
		Zinc	0.0007	mg/L	0.0020	0.0002	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-7-0618	K1805524-005	Arsenic	0.00036	mg/L	0.00050	0.00009	J	J	Concentration >MDL, <MRL	NA	Low or high
		Cadmium	0.000006	mg/L	0.000020	0.000006	J	J	Concentration >MDL, <MRL	NA	Low or high
		Copper	0.00037	mg/L	0.00010	0.00004		J	RPD laboratory replicate >20 percent and >MRL	RPD - 69 percent and difference between concentrations = 0.00019 (> than MRL of 0.00010)	
		Lead	0.000018	mg/L	0.000020	0.000004	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-9-7-0618	K1805524-006	Arsenic	0.00035	mg/L	0.00050	0.00009	J	J	Concentration >MDL, <MRL	NA	Low or high
		Cadmium	0.000008	mg/L	0.000020	0.000006	J	J	Concentration >MDL, <MRL	NA	Low or high
		Lead	0.000009	mg/L	0.000020	0.000004	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-18-0618	K1805524-007	Zinc	0.0006	mg/L	0.0020	0.0002	J	J	Concentration >MDL, <MRL	NA	Low or high
VOCs by GC/MS operated in full scan mode											
Trip Blank #1-0618	K1805355-001	Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Methylene Chloride	0.22	ug/L	2.0	0.10	J	J	Concentration >MDL, <MRL	NA	Low or high
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
CTMW-14-0618	K1805355-002	Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
CTMW-24-0618	K1805355-003	Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
CTMW-24D-0618	K1805355-004	Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
Trip Blank #2-0618	K1805355-005	Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
CTMW-15-0618	K1805355-006	Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high

Table 2, continued

Sample Number	Laboratory Sample Number	Chemical	Concentration	Units	MRL	MDL	Laboratory Data Flag	Data Validation Qualifier	Quality Control Reason	Quality Control Result	Possible Bias[b,c,d]
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
CTMW-25D-0618	K1805355-007	Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
CTMW-17-0618	K1805355-008	Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		cis-1,2-Dichloroethene	0.46	ug/L	0.50	0.067	J	J	Concentration >MDL, <MRL	NA	Low or high
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Trichloroethene	0.26	ug/L	0.50	0.10	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-17D-0618	K1805355-009	Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
CTMW-9-0618	K1805355-010	Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
CTMW-8-0618	K1805355-011	o-Xylene		ug/L	0.50	0.074	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Bromoform		ug/L	0.50	0.16	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		1,1,2,2-Tetrachloroethane		ug/L	0.50	0.16	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		trans-1,4-Dichloro-2-butene		ug/L	10	0.35	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		1,2,3-Trichloropropane		ug/L	0.50	0.20	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Dichlorodifluoromethane		ug/L	0.50	0.13	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Chloromethane		ug/L	0.50	0.068	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Vinyl Chloride		ug/L	0.50	0.075	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Bromomethane		ug/L	0.50	0.16	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Chloroethane		ug/L	0.50	0.16	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Trichlorofluoromethane		ug/L	0.50	0.12	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Acrolein		ug/L	20	1.2	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		1,1-Dichloroethene		ug/L	0.50	0.080	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Acetone	39	ug/L	20	3.3		J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Iodomethane		ug/L	5.0	0.12	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Carbon Disulfide	0.070	ug/L	0.50	0.069	J	J	Concentration >MDL, <MRL and Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	NA and Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low or high
		3-Chloro-1-propene		ug/L	5.0	0.094	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.01 and recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	RRF <0.01 and Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low or high
		Methylene Chloride		ug/L	2.0	0.10	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Acrylonitrile		ug/L	5.0	0.53	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		trans-1,2-Dichloroethene		ug/L	0.50	0.072	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low

Table 2, continued

Sample Number	Laboratory Sample Number	Chemical	Concentration	Units	MRL	MDL	Laboratory Data Flag	Data Validation Qualifier	Quality Control Reason	Quality Control Result	Possible Bias[b,c,d]
		1,1-Dichloroethane		ug/L	0.50	0.077	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Vinyl Acetate		ug/L	5.0	0.43	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		cis-1,2-Dichloroethene		ug/L	0.50	0.067	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		2-Butanone		ug/L	20	1.9	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Methacrylonitrile		ug/L	5.0	0.35	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Chloroform		ug/L	0.50	0.072	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		1,1,1-Trichloroethane		ug/L	0.50	0.075	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Carbon Tetrachloride		ug/L	0.50	0.096	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.01 and recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	RRF <0.01 and Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	
		Benzene	0.10	ug/L	0.50	0.062	J	J	Concentration >MDL, <MRL and Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	NA and Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low or high
		1,2-Dichloroethane		ug/L	0.50	0.080	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Trichloroethene		ug/L	0.50	0.10	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		1,2-Dichloropropane		ug/L	0.50	0.095	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Dibromomethane		ug/L	0.50	0.15	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Bromodichloromethane		ug/L	0.50	0.091	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		2-Chloroethyl Vinyl Ether		ug/L	5.0	0.16	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		cis-1,3-Dichloropropene		ug/L	0.50	0.18	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		4-Methyl-2-pentanone		ug/L	20	2.6	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Toluene	0.86	ug/L	0.50	0.054		J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		trans-1,3-Dichloropropene		ug/L	0.50	0.068	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Ethyl Methacrylate		ug/L	5.0	0.15	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		1,1,2-Trichloroethane		ug/L	0.50	0.14	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Tetrachloroethene		ug/L	0.50	0.099	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		2-Hexanone		ug/L	20	2.7	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Dibromochloromethane		ug/L	0.50	0.14	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Chlorobenzene		ug/L	0.50	0.11	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		Ethylbenzene		ug/L	0.50	0.050	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
		1,1,1,2-Tetrachloroethane		ug/L	0.50	0.11	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low

Table 2, continued

Sample Number	Laboratory Sample Number	Chemical	Concentration	Units	MRL	MDL	Laboratory Data Flag	Data Validation Qualifier	Quality Control Reason	Quality Control Result	Possible Bias[b,c,d]
		m,p-Xylene		ug/L	0.50	0.11	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 56 percent and below lower control limit of 73 percent	Low
Field Blank #1-0618	K1805355-012	Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Methylene Chloride	0.15	ug/L	2.0	0.10	J	J	Concentration >MDL, <MRL	NA	Low or high
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
Trip Blank #3-0618	K1805524-001	Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Methylene Chloride	0.16	ug/L	2.0	0.10	J	J	Concentration >MDL, <MRL	NA	Low or high
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
CTMW-12-0618	K1805524-002	Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
CTMW-20-0618	K1805524-003	Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Toluene	0.070	ug/L	0.50	0.054	J	J	Concentration >MDL, <MRL	NA	Low or high
		Chlorobenzene	0.26	ug/L	0.50	0.11	J	J	Concentration >MDL, <MRL	NA	Low or high
		m,p-Xylene	0.12	ug/L	0.50	0.11	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-5-0618	K1805524-004	Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
CTMW-7-0618	K1805524-005	Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
CTMW-9-7-0618	K1805524-006	Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
CTMW-18-0618	K1805524-007	Acetonitrile		ug/L	50	13	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Isobutyl Alcohol		ug/L	100	6.9	U	J	RRF in calibration standards <0.010	RRF <0.010	Low or high
		Benzene	0.070	ug/L	0.50	0.062	J	J	Recovery of 1 of 3 surrogate compounds above upper laboratory-established control limit	4-BFB at 120 percent and above upper control limit of 117 percent	Low
		Toluene	0.070	ug/L	0.50	0.054	J	J	Recovery of 1 of 3 surrogate compounds above upper laboratory-established control limit	4-BFB at 120 percent and above upper control limit of 117 percent	Low
VOCs by GC/MS operated in SIM mode											
Trip Blank #1-0618	K1805355-001	1,1,2,2-Tetrachloroethane		ug/L	0.20	0.0087	U	J	RRF in calibration standards <0.300	RRF <0.300	Low or high
CTMW-14-0618	K1805355-002	1,1,2,2-Tetrachloroethane		ug/L	0.20	0.0087	U	J	RRF in calibration standards <0.300	RRF <0.300	Low or high
CTMW-24-0618	K1805355-003	1,1,2,2-Tetrachloroethane	0.011	ug/L	0.20	0.0087	J	J	Concentration >MDL, <MRL and RRF in calibration standards <0.300	NA and RRF in calibration standards <0.300	Low or high
CTMW-24D-0618	K1805355-004	1,1,2,2-Tetrachloroethane		ug/L	0.20	0.0087	U	J	RRF in calibration standards <0.300	RRF <0.300	Low or high
Trip Blank #2-0618	K1805355-005	1,1,2,2-Tetrachloroethane		ug/L	0.20	0.0087	U	J	RRF in calibration standards <0.300	RRF <0.300	Low or high
CTMW-15-0618	K1805355-006	1,1,2,2-Tetrachloroethane		ug/L	0.20	0.0087	U	J	RRF in calibration standards <0.300	RRF <0.300	Low or high
CTMW-25D-0618	K1805355-007	1,1,2,2-Tetrachloroethane		ug/L	0.20	0.0087	U	J	RRF in calibration standards <0.300	RRF <0.300	Low or high
CTMW-17-0618	K1805355-008	1,1,2,2-Tetrachloroethane		ug/L	0.20	0.0087	U	J	RRF in calibration standards <0.300	RRF <0.300	Low or high
CTMW-17D-0618	K1805355-009	1,1,2,2-Tetrachloroethane		ug/L	0.20	0.0087	U	J	RRF in calibration standards <0.300	RRF <0.300	Low or high
CTMW-9-0618	K1805355-010	1,1,2,2-Tetrachloroethane		ug/L	0.20	0.0087	U	J	RRF in calibration standards <0.300	RRF <0.300	Low or high
CTMW-8-0618	K1805355-011	1,1,2,2-Tetrachloroethane		ug/L	0.20	0.0087	U	J	RRF in calibration standards <0.300	RRF <0.300	Low or high
Field Blank #1-0618	K1805355-012	1,1,2,2-Tetrachloroethane	0.016	ug/L	0.20	0.0087	J	J	Concentration >MDL, <MRL and RRF in calibration standards <0.300	NA and RRF in calibration standards <0.300	Low or high
Trip Blank #3-0618	K1805524-001	Carbon Tetrachloride		ug/L	0.20	0.0072	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high

Table 2, continued

Sample Number	Laboratory Sample Number	Chemical	Concentration	Units	MRL	MDL	Laboratory Data Flag	Data Validation Qualifier	Quality Control Reason	Quality Control Result	Possible Bias[b,c,d]
		1,1,2,2-Tetrachloroethane		ug/L	0.20	0.0087	U	J	Sample analyzed past 14-day method holding time constraint and RRF in calibration standards <0.300	Sample analyzed 6 days past 14-day method holding time constraint and RRF <0.300	Low or high
		1,2-Dichloroethane		ug/L	0.20	0.0058	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		Vinyl Chloride		ug/L	0.020	0.0046	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		1,1-Dichloroethene		ug/L	0.020	0.0090	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
CTMW-12-0618	K1805524-002	Carbon Tetrachloride		ug/L	0.20	0.0072	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		1,1,2,2-Tetrachloroethane		ug/L	0.20	0.0087	U	J	Sample analyzed past 14-day method holding time constraint and RRF in calibration standards <0.300	Sample analyzed 6 days past 14-day method holding time constraint and RRF <0.300	Low or high
		1,2-Dichloroethane		ug/L	0.20	0.0058	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		Vinyl Chloride		ug/L	0.020	0.0046	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		1,1-Dichloroethene		ug/L	0.020	0.0090	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
CTMW-20-0618	K1805524-003	1,1,2,2-Tetrachloroethane		ug/L	0.20	0.0087	U	J	Sample analyzed past 14-day method holding time constraint and RRF in calibration standards <0.300	Sample analyzed 6 days past 14-day method holding time constraint and RRF <0.300	Low or high
		Carbon Tetrachloride		ug/L	0.20	0.0072	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		1,2-Dichloroethane	0.017	ug/L	0.20	0.0058	J	J	Concentration >MDL, <MRL and sample analyzed past 14-day method holding time constraint	NA and Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		Vinyl Chloride		ug/L	0.020	0.0046	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		1,1-Dichloroethene		ug/L	0.020	0.0090	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
CTMW-5-0618	K1805524-004	1,1,2,2-Tetrachloroethane		ug/L	0.20	0.0087	U	J	Sample analyzed past 14-day method holding time constraint and RRF in calibration standards <0.300	Sample analyzed 6 days past 14-day method holding time constraint and RRF <0.300	Low or high
		Carbon Tetrachloride		ug/L	0.20	0.0072	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		1,2-Dichloroethane		ug/L	0.20	0.0058	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		Vinyl Chloride		ug/L	0.020	0.0046	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		1,1-Dichloroethene		ug/L	0.020	0.0090	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
CTMW-7-0618	K1805524-005	1,1,2,2-Tetrachloroethane		ug/L	0.20	0.0087	U	J	Sample analyzed past 14-day method holding time constraint and RRF in calibration standards <0.300	Sample analyzed 6 days past 14-day method holding time constraint and RRF <0.300	Low or high
		Carbon Tetrachloride		ug/L	0.20	0.0072	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		1,2-Dichloroethane		ug/L	0.20	0.0058	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		Vinyl Chloride		ug/L	0.020	0.0046	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		1,1-Dichloroethene		ug/L	0.020	0.0090	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
CTMW-9-7-0618	K1805524-006	1,1,2,2-Tetrachloroethane		ug/L	0.20	0.0087	U	J	Sample analyzed past 14-day method holding time constraint and RRF in calibration standards <0.300	Sample analyzed 6 days past 14-day method holding time constraint and RRF <0.300	Low or high
		Carbon Tetrachloride		ug/L	0.20	0.0072	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		1,2-Dichloroethane		ug/L	0.20	0.0058	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		Vinyl Chloride		ug/L	0.020	0.0046	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		1,1-Dichloroethene		ug/L	0.020	0.0090	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high

Table 2, continued

Sample Number	Laboratory Sample Number	Chemical	Concentration	Units	MRL	MDL	Laboratory Data Flag	Data Validation Qualifier	Quality Control Reason	Quality Control Result	Possible Bias[b,c,d]
CTMW-18-0618	K1805524-007	Carbon Tetrachloride		ug/L	0.20	0.0072	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		1,1,2,2-Tetrachloroethane		ug/L	0.20	0.0087	U	J	Sample analyzed past 14-day method holding time constraint and RRF in calibration standards <0.300	Sample analyzed 6 days past 14-day method holding time constraint and RRF <0.300	Low or high
		1,2-Dichloroethane	0.019	ug/L	0.20	0.0058	J	J	Concentration >MDL, <MRL and sample analyzed past 14-day method holding time constraint	NA and Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		Vinyl Chloride		ug/L	0.020	0.0046	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
		1,1-Dichloroethene		ug/L	0.020	0.0090	U	J	Sample analyzed past 14-day method holding time constraint	Sample analyzed 6 days past 14-day method holding time constraint	Low or high
1,4-Dioxane by GC/MS operated in SIM mode											
CTMW-18-0618	K1805524-007	1,4-Dioxane	0.33	ug/L	0.40	0.16	J	J	Concentration >MDL, <MRL	NA	Low or high

Total results qualified "J" =	164
Total results qualified "U" =	9
Total results qualified "UJ" =	0
Total results qualified "R" =	0

Notes:

GC/MS - gas chromatography/mass spectrometry
J - estimated
MDL - method detection limit
MRL - method reporting limit
NA - not applicable
ND - not detected
RPD - relative percent difference
RRF - relative response factor
SIM - selected ion monitoring
U - undetected at detection limit shown
VOC - volatile organic compound

[a] Summary of qualified data is for natural and field quality control samples only
[b] Low bias - concentration reported is exhibits low bias and the actual reporting limit or concentration may be greater than reported
[c] High bias - result reported exhibits high bias and the actual reporting limit or concentration may be lower than reported
[d] False positive - compound is likely not present