Annual Groundwater Report

PCC - Validation

RACER Trust

November 23, 2021

→ The Power of Commitment

Contents

1.	**Introduction**	**1**
2.	**Groundwater Sampling and Analysis**	**1**
3.	**Analytical Results**	**1**
4.	**Updated Well Survey Results**	**2**
5.	**Discussion**	**2**
6.	**Schedule**	**3**

Figure index

Figure 1	Site Location Map
Figure 2	Site Plan with Current and Proposed Monitoring Well Locations
Figure 3	Site Map with Metals Exceedances and Select VOC Results
Figure 4	Site Map with June 2021 Groundwater Elevation Contours
Figure 5	Cross Section Locations Plan
Figure 6	Cross Section AA-AA'
Figure 7	Cross Section BB-BB'
Figure 8	Cross Section CC-CC'

Table index

Table 1	Groundwater Monitoring Plan
Table 2	Sample Analysis Summary
Table 3	Groundwater Analytical Results – September 2020 through June 2021
Table 4	Groundwater Elevation Summary

Appendices

Appendix A	Low-Flow Groundwater Sampling Field Forms
Appendix B	Laboratory Analytical Reports
Appendix C	Historical Groundwater Analytical Results – 2018 through 2021
Appendix D	Water Well Survey Documentation

1. Introduction

GHD is providing this report on behalf of Revitalizing Auto Communities Environmental Response (RACER) Trust for the former PCC-Validation property in Pontiac, Michigan (Site). A Site location map is presented on Figure 1. The purpose of this report is to provide the results from the September 2020, December 2020, March 2021, and June 2021 groundwater monitoring events and the results of the updated well survey.

A revised groundwater monitoring plan for the Site was submitted to USEPA on May 15, 2020 and was partially approved on June 4, 2020. In accordance with the approved revised groundwater monitoring plan, monitoring wells MW-79I-19 and MW-79D-19 are sampled quarterly and the remaining wells are sampled annually in the second quarter. The six wells to be installed in the south portion of the Site will be sampled for at least four quarters following installation. The current and proposed groundwater monitoring plan is summarized on Table 1.

In December 2020, USEPA requested an updated private well search be performed in the area surrounding the Site. GHD committed on behalf of RACER to providing an updated review of water wells located within approximately 0.5 miles of the Site. The results of the updated well survey are presented in this report.

2. Groundwater Sampling and Analysis

During the September 2020, December 2020, and March 2021 quarterly sampling events two monitoring wells were sampled (MW-79I-19 and MW-79D-19). During the June 2021 monitoring event, 14 monitoring wells were sampled (MW-02-07, MW-10-07, MW-33-07, MW-64-08, MW-68-08, MW-79I-19, MW-79D-19, MW-80-12, MW-81-12, MW-85-12, MW-87-12, MW-92S-13, MW-92I-13, and MW-93I-13). Monitoring wells MW-21-07 and MW-38-07 were dry during the June 2021 sampling event; therefore, could not be sampled. A Site plan with the groundwater monitoring well locations is presented on Figure 2.

Prior to groundwater sample collection, static groundwater elevations were measured and recorded. Groundwater samples were collected from the monitoring wells using low-flow sampling techniques with a peristaltic pump and dedicated tubing. Field parameters collected during purging included pH, temperature, conductivity, oxidation/reduction potential (ORP), dissolved oxygen (DO), and turbidity. Groundwater samples were collected after the field parameters stabilized. Groundwater field parameters collected from each monitoring well are presented on Monitoring Well Record for Low Flow Purging Forms included in Appendix A.

Groundwater samples were analyzed using USEPA Method 8260 for VOCs and/or Method 6020 for total and dissolved Aluminum, Lead, and Vanadium. Samples were analyzed for dissolved parameters to allow for consideration of the impact of suspended solids on the results. Groundwater samples were shipped under chain-of-custody protocol via courier to Eurofins-TestAmerica Laboratories in North Canton, Ohio for analysis. Table 2 presents the sample analysis summary.

3. Analytical Results

Select groundwater results are shown on Figure 3. The results for all four quarters of monitoring compared against the criteria and screening levels outlined below are provided on Table 3. Laboratory Analytical Reports are presented in Appendix B. Groundwater results from 2018 through 2021 are provided in Appendix C.

Groundwater analytical results were compared to all Michigan Environment, Great Lakes & Energy (EGLE) Cleanup Criteria Requirements for Response Activity (RRA), updated December 21, 2020 (Formerly the Part 201 Generic

Cleanup Criteria and Screening Levels). The following is a summary of the results for the last four quarters of groundwater monitoring:

– Total aluminum exceeded the EGLE Cleanup Criteria RRA Nonresidential/Residential Aesthetic Drinking Water Criteria (DWC) and EGLE Residential Health-Based Values during the June 2021 monitoring event in one well, MW-10-07, but the dissolved aluminum concentration in this well did not exceed the DWC.
– All other analyzed constituents were not detected or detected at concentrations below EGLE Cleanup Criteria RRA.

Additionally, the results were compared to the September 2020 EGLE Volatilization to Indoor Air (VIAP) Screening Levels (SLs) and the March 2021 EGLE Media Specific Volatilization to Indoor Air Interim Action Screening Levels (MSSLs). These screening levels are not promulgated rules and are only utilized to evaluate risk, not compliance. No parameters were detected above MSSL or VIAP screening levels during the last year of monitoring.

4. Updated Well Survey Results

EGLE's Water Well Viewer was used to complete the updated survey of wells located within the 0.5-mile radius of the Site boundary. Based on the information provided from Water Well Viewer, there is one household water well located approximately 0.45 miles southeast of the Site. The well record reports the well is screened between 122.0 and 130.0 feet below ground surface (bgs) and the geology consists primarily of clay to 42 feet bgs before transitioning to sand. No other household or public water wells are located within the 0.5-mile radius of the Site boundary. A brief review of the well records for the household wells located just outside the 0.5-mile radius was also completed; those nearby household wells are screened at least 100 feet bgs and also show the presence of thick clay above the screened unit. A map from Water Well Viewer and a copy of the Wellogic Water Well and Pump Record for the household well located within the 0.5-mile radius is provided in Appendix D.

5. Discussion

Groundwater levels were collected from 14 monitoring wells during the June 2021 sampling event; a groundwater elevation contour map is provided on Figure 4 and a summary table of groundwater levels is provided on Table 4. While individual wells groundwater elevations varied compared to the June 2020 site-wide event, groundwater flow direction was generally the same as prior events, west in the mid-portion of the Site transitioning to the northwest in the northern portion of the Site. It is noted that the contours are based on a limited well distribution and saturated units that are generally limited in connectivity. The most recent cross sections developed for the Site are included with this report for reference. The cross-section location map is presented on Figure 5, and the cross-sections are presented on Figures 6 through 8.

During the September 2020, December 2020, and March 2021 quarterly events at MW-79I-19 and MW-79D-19, VOCs were not detected above EGLE Cleanup Criteria or screening levels. During the Site-wide annual event, VOCs were not detected above EGLE Cleanup Criteria or screening levels at the 12 wells where it was analyzed, including MW-79I-19 and MW-79D-19.

During the June 2021 sampling event, groundwater results for MW-10-07 exhibited total aluminum exceeding EGLE Cleanup Criteria RRA Residential/Nonresidential Aesthetic DWC and EGLE Residential Health-Based Drinking Water Value, which is consistent with previous groundwater data. Dissolved aluminum in MW-10-07 was not detected above EGLE Cleanup Criteria RRA or the recommended health-based values, indicating that turbidity appears to significantly affect the concentration of total aluminum. The EGLE (formerly MDEQ) Part 201 Drinking Water Criteria for aluminum is based on the aesthetic drinking water value, as required by Section 20120a(5) of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). The applicable health-based drinking water

values are provided as an alternate criterion as identified in Footnote E of EGLE Cleanup Criteria RRA. Per the March 3, 2016 U.S. EPA approved CA750, the health-based drinking water values were determined to be more appropriate than the aesthetic drinking water values.

Historically, impacted groundwater at the Site has been limited to the upper geologic unit that typically consists of fill and sand. The upper unit is underlain with a regional clay that limits vertical migration. Lateral groundwater migration at the Site is discontinuous due to presence of intermittent sand seams. Therefore, is not expected that groundwater from the Site has a pathway to migrate laterally or vertically to the saturated geologic unit that supplies the household well located approximately 0.45 miles to the southeast.

GHD proposes reducing sampling frequency at MW-79I-19 and MW-79D-19 from quarterly to annually. The last exceedance occurred at MW-79I-19 in June 2019, where trichloroethene was detected at 8.2 ug/L. Eight quarterly events have occurred at wells MW-79I-19 and MW-79D-19 since that exceedance, and all results have been below applicable criteria and screening levels.

6. Schedule

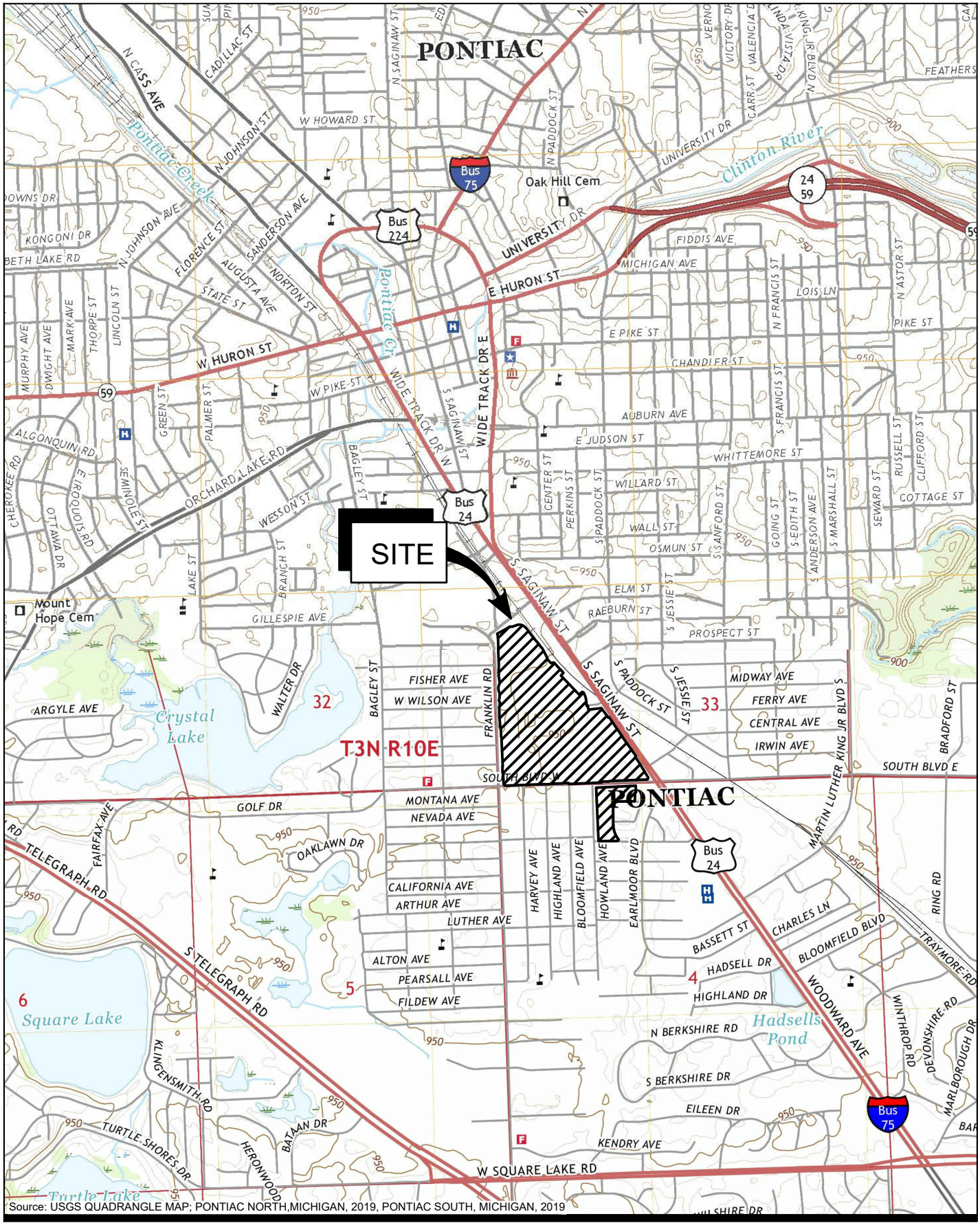
It is anticipated the final round of groundwater monitoring well installation will be conducted in 2021; however, the schedule is dependent upon access to the property and subcontractor availability. Proposed monitoring well locations are included on Figure 2, but final placement of wells may vary depending on Site structures and utilities. The tentative schedule for upcoming groundwater monitoring tasks are summarized below:

Task:	Approximate Timeline
Limited Quarterly Groundwater Monitoring (1)	September 2020 - *Completed*
Limited Quarterly Groundwater Monitoring (1)	December 2020 - *Completed*
Limited Quarterly Groundwater Monitoring (1)	March 2021 - *Completed*
Annual Sitewide Groundwater Monitoring (1)	June 2021 - *Completed*
Limited Quarterly & Annual Groundwater Monitoring Results	August 2021 – *Completed October 2021*
Limited Quarterly Groundwater Monitoring (1)	September 2021 - *Completed*
Third Phase of Monitoring Well Installation	Tentatively Fourth Quarter of 2021
Limited Quarterly Groundwater Monitoring (2)	December 2021
Well Installation & Quarterly Groundwater Monitoring Results	February 2022
Limited Quarterly Groundwater Monitoring (2)	March 2022
Annual Sitewide Groundwater Monitoring (2)	June 2022
Limited Quarterly & Annual Groundwater Monitoring Results	August 2022
Limited Quarterly Groundwater Monitoring (2)	September 2022
Limited Quarterly Groundwater Monitoring Results	December 2022

(1) Indicates monitoring event was performed in accordance with the current approved groundwater monitoring plan presented on Table 1.

(2) Indicates monitoring event will be performed in accordance with proposed monitoring plan presented on Table 1.

Figures



Source: USGS QUADRANGLE MAP; PONTIAC NORTH,MICHIGAN, 2019, PONTIAC SOUTH, MICHIGAN, 2019

0 1000 2000 ft

1" = 2000 ft

N

GHD

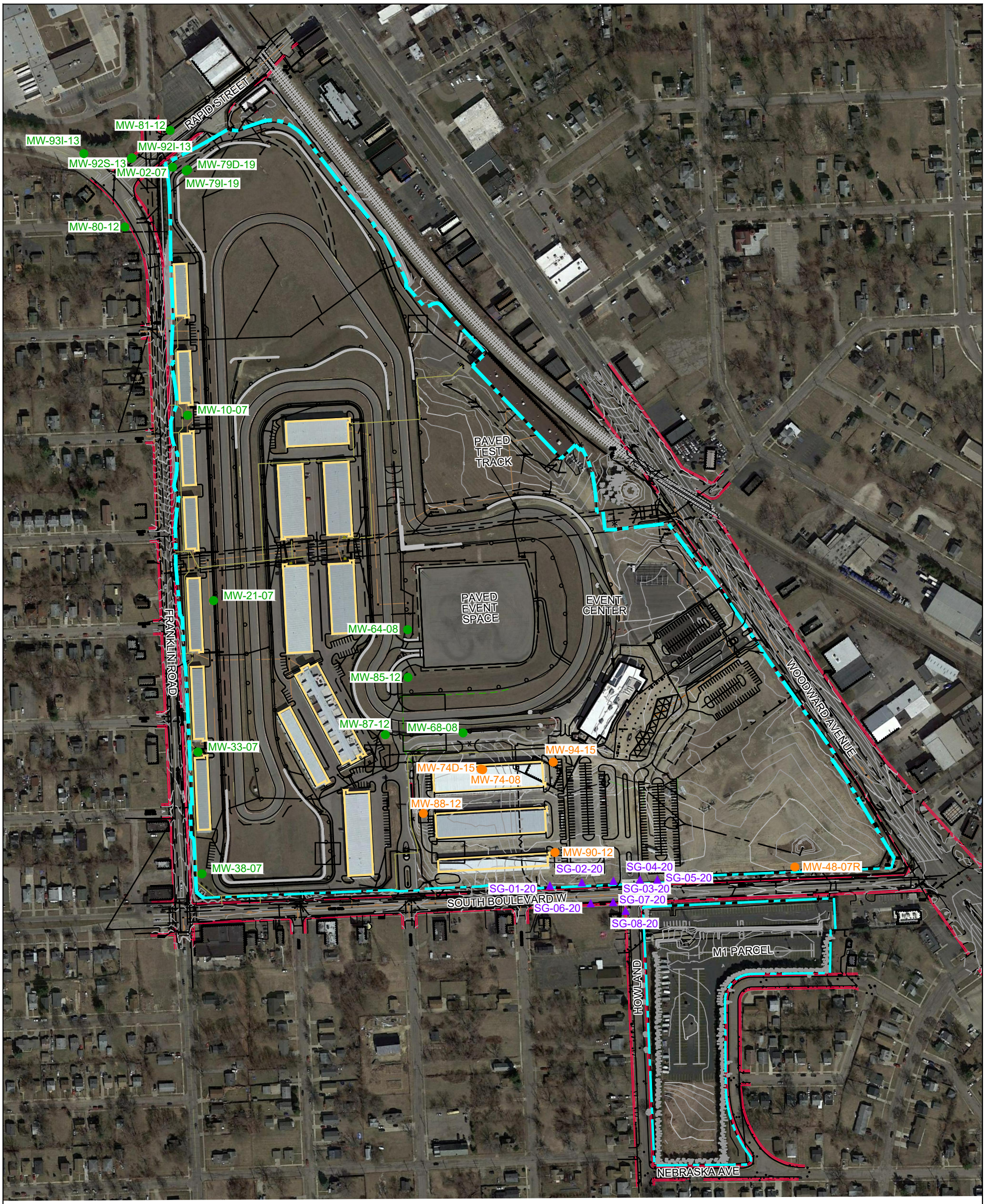
RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN

Project No. **11223416**
Date **September 2021**

SITE LOCATION MAP

FIGURE 1

Filename: N:\US\Detroit\Projects\563\11223416\Digital_Design\ACAD\Figures\RPT-001\11223416-GHD-0000-RPT-EN-0104_DE-001.dwg
Plot Date: 02 September 2021 4:42 PM



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MW-80-12 ACTIVE MONITORING WELL LOCATION
- MW-90-12 PROPOSED MONITORING WELL LOCATION
- SG-01-20 SOIL GAS PROBE LOCATION
- PRIVATE NON-RESIDENTIAL GARAGES

0 150 300 ft

N

GHD

RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN

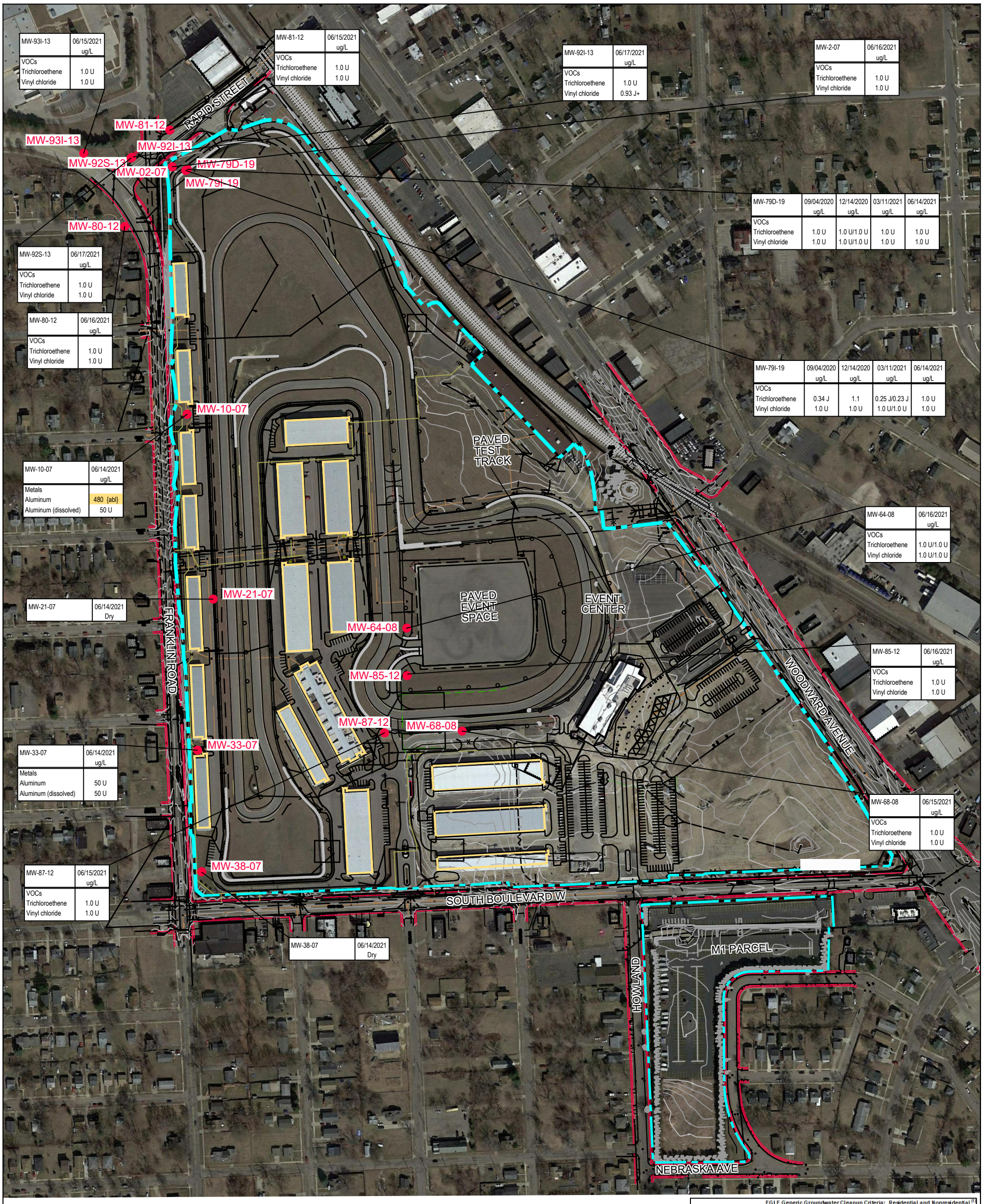
SITE PLAN WITH CURRENT AND PROPOSED MONITORING LOCATIONS

Project No. **11223416**
Date **September 2021**

FIGURE 2

Filename: N:\US\Detroit\Projects\563\11223416\Digital_Design\ACAD\Figures\RPT-001\11223416-GHD-0000-RPT-EN-0101_DE-001.dwg
Plot Date: 14 September 2021 1:17 PM

Source: Image ©2021 Google (Imagery Date 3/9/2021)



MW-93I-13	06/15/2021 ug/L
VOCs	
Trichloroethene	1.0 U
Vinyl chloride	1.0 U

MW-81-12	06/15/2021 ug/L
VOCs	
Trichloroethene	1.0 U
Vinyl chloride	1.0 U

MW-92I-13	06/17/2021 ug/L
VOCs	
Trichloroethene	1.0 U
Vinyl chloride	0.93 J+

MW-2-07	06/16/2021 ug/L
VOCs	
Trichloroethene	1.0 U
Vinyl chloride	1.0 U

MW-79D-19	09/04/2020 ug/L	12/14/2020 ug/L	03/11/2021 ug/L	06/14/2021 ug/L
VOCs				
Trichloroethene	1.0 U	1.0 U/1.0 U	1.0 U	1.0 U
Vinyl chloride	1.0 U	1.0 U/1.0 U	1.0 U	1.0 U

MW-92S-13	06/17/2021 ug/L
VOCs	
Trichloroethene	1.0 U
Vinyl chloride	1.0 U

MW-80-12	06/16/2021 ug/L
VOCs	
Trichloroethene	1.0 U
Vinyl chloride	1.0 U

MW-79I-19	09/04/2020 ug/L	12/14/2020 ug/L	03/11/2021 ug/L	06/14/2021 ug/L
VOCs				
Trichloroethene	0.34 J	1.1	0.25 J/0.23 J	1.0 U
Vinyl chloride	1.0 U	1.0 U	1.0 U/1.0 U	1.0 U

MW-10-07	06/14/2021 ug/L
Metals	
Aluminum	480 {abl}
Aluminum (dissolved)	50 U

MW-64-08	06/16/2021 ug/L
VOCs	
Trichloroethene	1.0 U/1.0 U
Vinyl chloride	1.0 U/1.0 U

MW-21-07	06/14/2021 Dry

MW-85-12	06/16/2021 ug/L
VOCs	
Trichloroethene	1.0 U
Vinyl chloride	1.0 U

MW-33-07	06/14/2021 ug/L
Metals	
Aluminum	50 U
Aluminum (dissolved)	50 U

MW-68-08	06/15/2021 ug/L
VOCs	
Trichloroethene	1.0 U
Vinyl chloride	1.0 U

MW-87-12	06/15/2021 ug/L
VOCs	
Trichloroethene	1.0 U
Vinyl chloride	1.0 U

MW-38-07	06/14/2021 Dry

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MW-80-12 ACTIVE MONITORING WELL LOCATION
- PRIVATE NON-RESIDENTIAL GARAGES

	EGLE Generic Groundwater Cleanup Criteria: Residential and Nonresidential [1]			
	Residential Drinking Water	Non-Residential Drinking Water	Residential Health-Based Drinking Water	Nonresidential Health-Based Drinking Water
	a	b	l	m
Volatile Organic Compounds (VOCs) (ug/L)				
Trichloroethene	5	5		
Vinyl chloride	2	2		
Metals (ug/L)				
Aluminum	50	50	300	4100
Aluminum (dissolved)	50	50	300	4100

Notes:

(1) EGLE - Michigan Department of Environment, Great Lakes and Energy (EGLE) Generic cleanup criteria for residential and nonresidential category, administrative rule R 299.44 effective December 30, 2013, pursuant to Part 201 of 1994 PA 451 as amended. Criteria table dated January 10, 2018; GSI Criteria updated June 25, 2018.

U - Not detected at the associated reporting limit.

J - Estimated concentration.

UJ - Not detected; associated reporting limit is estimated.

J+ - Estimated concentration, result may be biased high.

0 150 300 ft

N

GHD

RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN

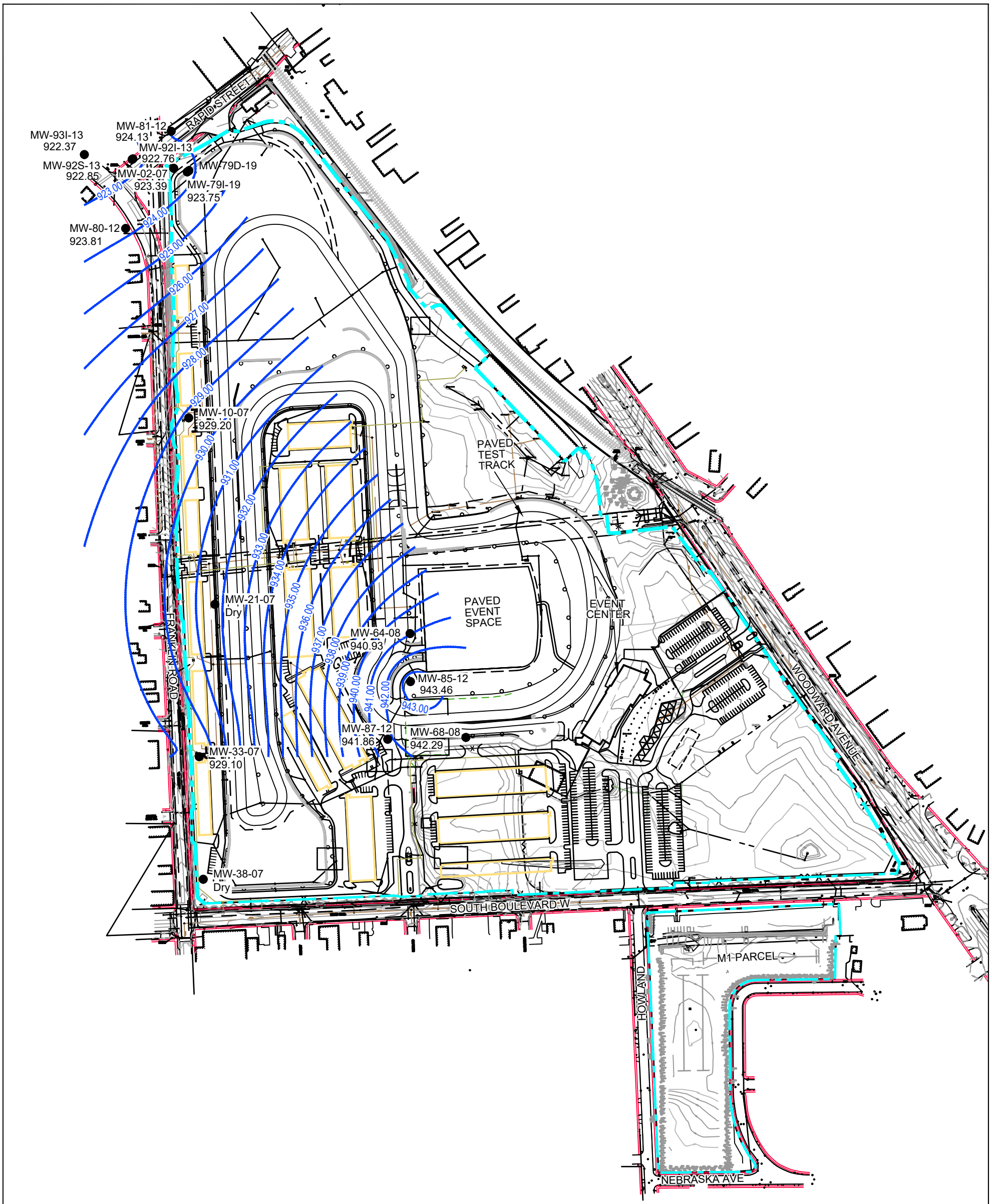
SITE PLAN WITH METALS EXCEEDANCES AND SELECTED VOC RESULTS

Project No. **11223416**
Date **September 2021**

FIGURE 3

Filename: N:\US\Detroit\Projects\563\11223416\Digital_Design\ACAD\Figures\RPT-001\11223416-GHD-0000-RPT-EN-0102_DE-001.dwg
Plot Date: 29 September 2021 11:13 AM

Source: Image ©2021 Google (Imagery Date 3/9/2021)



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MW-80-12 ACTIVE MONITORING WELL LOCATION
- 933.00 GROUNDWATER CONTOUR
- 923.81 GROUNDWATER ELEVATION
- PRIVATE NON-RESIDENTIAL GARAGES

0 150 300 ft

N

GHD

RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN

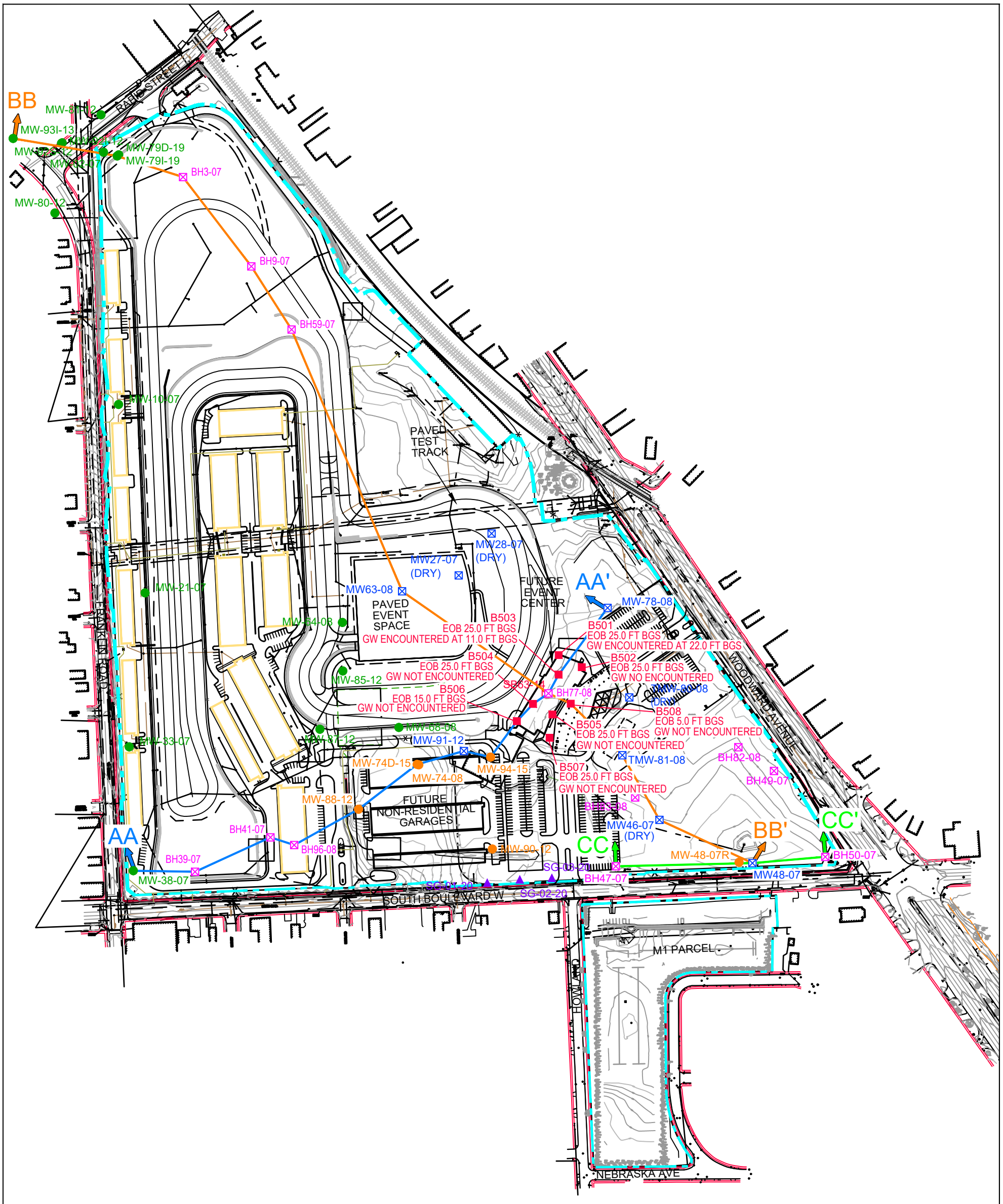
SITE PLAN WITH SHALLOW GROUNDWATER CONTOURS - JUNE 2021

Project No. **11223416**
Date **September 2021**

FIGURE 4

Filename: N:\US\Detroit\Projects\563\11223416\Digital_Design\ACAD\Figures\RPT-001\11223416-GHD-0000-RPT-EN-0103_DE-001.dwg
Plot Date: 14 September 2021 1:27 PM

Source: Image ©2021 Google (Imagery Date 3/9/2021)



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MW-80-12 ACTIVE MONITORING WELL LOCATION
- MW-90-12 PROPOSED MONITORING WELL LOCATION
- SG-01-20 SOIL GAS PROBE LOCATION
- TMW-81-08 FORMER PERMANENT OR TEMPORARY MONITORING WELL LOCATION
- SB3-14 SME GROUNDWATER SAMPLING LOCATION
- B501 SME APPROXIMATE 2020 GEOTECHNICAL BORING LOCATION
- PRIVATE NON-RESIDENTIAL GARAGES
- BH83-08 SOIL BORING WITH INSUFFICIENT WATER TO COLLECT GROUNDWATER SAMPLES

AA — AA' CROSS-SECTION LOCATION

NOTES:

EOB	END OF BORING
BGS	BELOW GROUND SURFACE
GW	GROUNDWATER

0 150 300 ft

1" = 300 ft

Coordinate System: MICHIGAN STATE PLANE SOUTH FEET

N

GHD

RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN

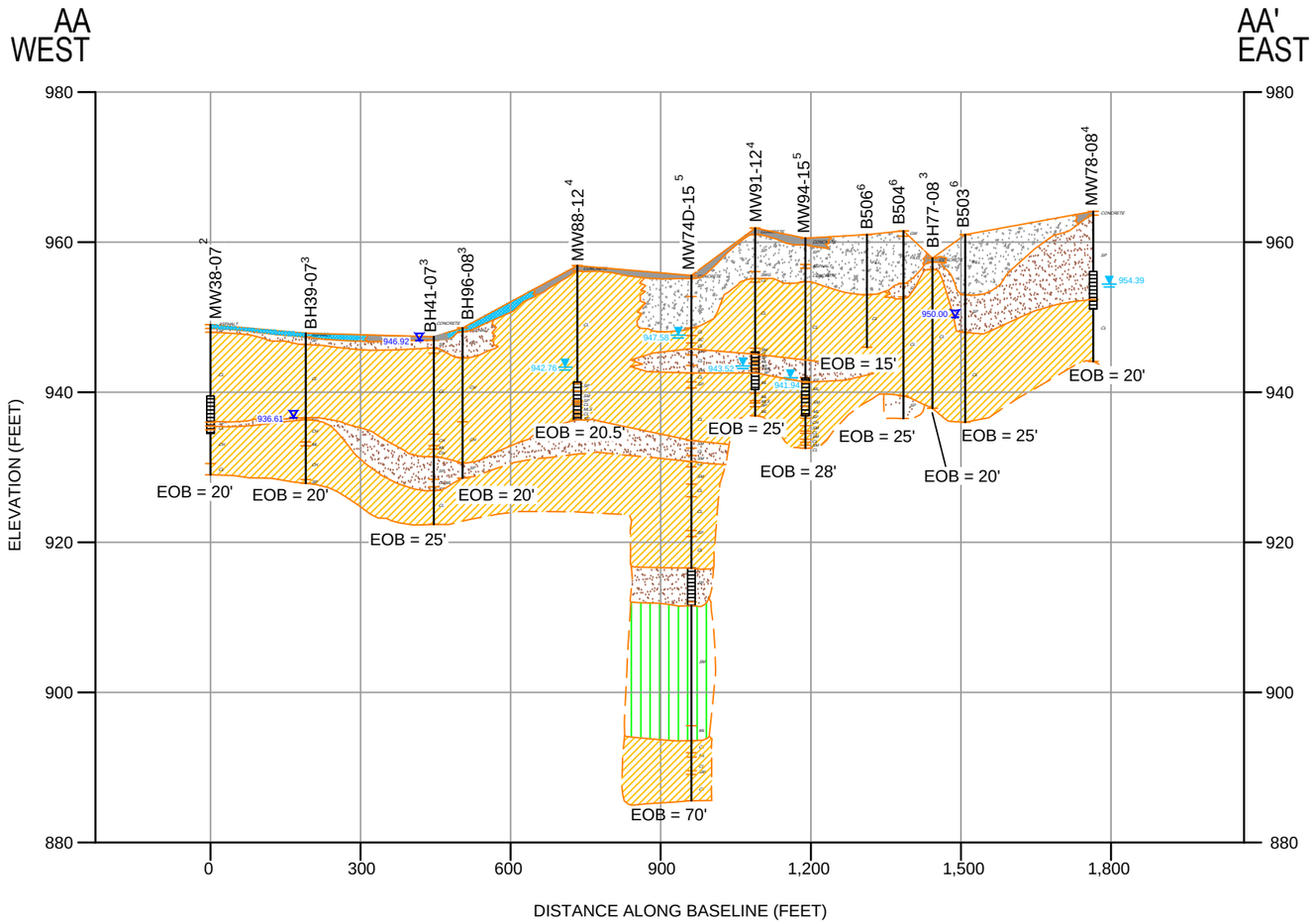
CROSS-SECTION LOCATION

Project No. **11223416**
Date **August 2021**

FIGURE 5

Filename: N:\US\Detroit\Projects\563\11223416\Digital_Design\ACAD\Figures\PRE002\11223416-GHD-0000-PRE-EN-0104_WA-002.DWG
Plot Date: 20 August 2021 8:19 AM

Date Source:GOOGLE EARTH (DIGITAL GLOBE 4/23/2019)



LEGEND

- CONCRETE
- ASPHALT
- SAND
- CLAY
- FILL
- SILT

MW38-07 — WELL ID
GROUND WELL
SCREEN INTERVAL
EOB = END OF BORING

- GROUNDWATER LEVELS ON MONITORING WELLS
- FIRST ENCOUNTERED WATER FOR SOIL BORINGS

NOTES:

1. IF NO WATER LEVEL IS INDICATED ON SOIL BORING, GROUNDWATER WAS NOT ENCOUNTERED DURING COMPLETION.
2. WELL WAS DRY DURING JUNE 2021 MONITORING EVENT.
3. SOIL BORING COMPLETED IN 2007 OR 2008.
4. WATER LEVEL RECORDED DURING MAY 2015 MONITORING EVENT.
5. WATER LEVEL RECORDED DURING MARCH 2015 MONITORING EVENT.
6. SOIL BORING COMPLETED IN 2020.

HORIZONTAL
1" = 300 ft
0 150 300Ft
0 10 20Ft
1" = 20 ft
VERTICAL

GHD

RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN

CROSS-SECTION AA-AA'

Project No. **11223416**
Date **September 2021**

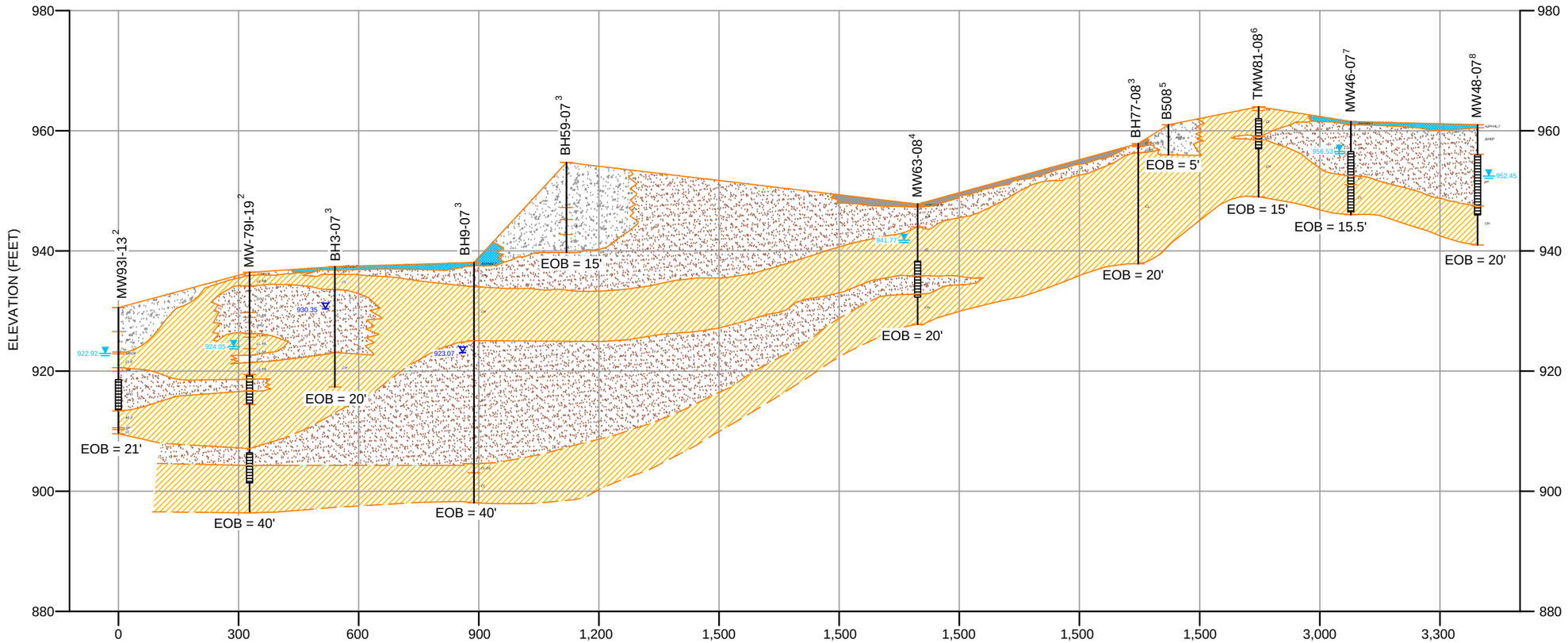
FIGURE 6

Filename: N:\US\Detroit\Projects\563\11223416\Digital_Design\ACAD\Figures\PRE002\11223416-GHD-0000-PRE-EN-0104_WA-002.DWG
Plot Date: 09 September 2021 12:14 PM

Date Source:GOOGLE EARTH (DIGITAL GLOBE 4/23/2019)

BB
NORTH

BB'
SOUTH



LEGEND

- CONCRETE
- ASPHALT
- SAND
- CLAY
- FILL
- SILT

MW38-07 — WELL ID
GROUND WELL
SCREEN INTERVAL
EOB = END OF BORING

GROUNDWATER LEVELS ON MONITORING WELLS

FIRST ENCOUNTERED WATER FOR SOIL BORINGS

NOTES:

1. IF NO WATER LEVEL IS INDICATED ON SOIL BORING, GROUNDWATER WAS NOT ENCOUNTERED DURING COMPLETION.
2. WELL WAS DRY DURING JUNE 2021 MONITORING EVENT.
3. SOIL BORING COMPLETED IN 2007 OR 2008.
4. WATER LEVEL RECORDED DURING MAY 2015 MONITORING EVENT.
5. SOIL BORING COMPLETED IN 2020.
6. TEMPORARY WELL INSTALLED IN 2008, REPORTED AS DRY DURING SAMPLING EVENT.
7. WATER LEVEL RECORDED DURING OCTOBER 2007 INSTALLATION.
8. WATER LEVEL RECORDED DURING MARCH 2013 MONITORING EVENT.

HORIZONTAL
1" = 300 ft
0 150 300Ft

0 15 30Ft
1" = 30 ft
VERTICAL

GHD

RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN

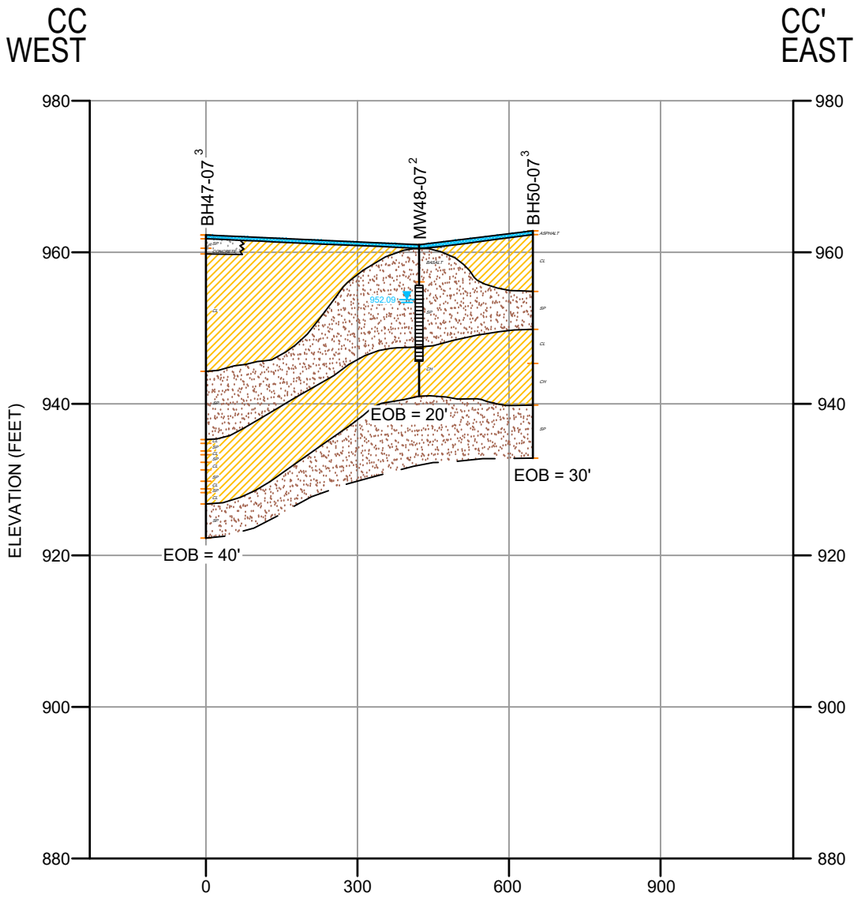
CROSS-SECTION BB-BB'

Project No. **11223416**
Date **September 2021**

FIGURE 7

Filename: N:\US\Detroit\Projects\563\11223416\Digital_Design\ACAD\Figures\PRE002\11223416-GHD-0000-PRE-EN-0104_WA-002.DWG
Plot Date: 21 September 2021 12:43 PM

Date Source:GOOGLE EARTH (DIGITAL GLOBE 4/23/2019)



LEGEND

- CONCRETE
- ASPHALT
- SAND
- CLAY
- FILL
- SILT

MW38-07 — WELL ID
GROUND WELL
SCREEN INTERVAL
EOB = END OF BORING

GROUNDWATER LEVELS ON MONITORING WELLS

NOTES:

1. IF NO WATER LEVEL IS INDICATED ON SOIL BORING, GROUNDWATER WAS NOT ENCOUNTERED DURING COMPLETION.
2. WATER LEVEL RECORDED DURING MARCH 2013 MONITORING EVENT.
3. SOIL BORING COMPLETED IN 2007.

HORIZONTAL
1" = 300 ft
0 150 300Ft
0 15 30Ft
1" = 30 ft
VERTICAL

GHD

RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN P

CROSS-SECTION CC-CC'

Project No. **11223416**
Date **August 2021**

FIGURE 8

Filename: N:\US\Detroit\Projects\563\11223416\Digital_Design\ACAD\Figures\PRE002\11223416-GHD-0000-PRE-EN-0104_WA-002.DWG
Plot Date: 20 August 2021 8:23 AM

Date Source:GOOGLE EARTH (DIGITAL GLOBE 4/23/2019)

Tables

Table 1

Current Groundwater Monitoring Plan Summary
RACER PCC - Validation
Pontiac, Michigan

Well ID	Most Recent Install Date	Sampling Parameters	Current Monitoring Frequency	Proposed Monitoring Frequency
MW-02-07	6/4/2018	TCL VOCs	Annually (1)	Annually (1)
MW-10-07	6/1/2018	Al, Pb, V (Total+Dissolved)	Annually (1)	Annually (1)
MW-21-07	5/22/2019	Al, Pb, V (Total+Dissolved)	Annually (1)	Annually (1)
MW-33-07	5/31/2018	Al, Pb, V (Total+Dissolved)	Annually (1)	Annually (1)
MW-38-07	5/30/2018	Al, Pb, V (Total+Dissolved)	Annually (1)	Annually (1)
MW-64-08	5/29/2018	TCL VOCs	Annually (1)	Annually (1)
MW-68-08	5/24/2019	TCL VOCs	Annually (1)	Annually (1)
MW-79D-19	5/21/2019	TCL VOCs	Quarterly	Annually (1)
MW-79I-19	5/21/2019	TCL VOCs	Quarterly	Annually (1)
MW-80-12	8/28/2012	TCL VOCs	Annually (1)	Annually (1)
MW-81-12	8/28/2012	TCL VOCs	Annually (1)	Annually (1)
MW-85-12	5/28/2018	TCL VOCs	Annually (1)	Annually (1)
MW-87-12	5/22/2019	TCL VOCs	Annually (1)	Annually (1)
MW-92I-13	1/23/2013	TCL VOCs	Annually (1)	Annually (1)
MW-92S-13	1/24/2013	TCL VOCs	Annually (1)	Annually (1)
MW-93I-13	7/26/2013	TCL VOCs	Annually (1)	Annually (1)
MW-74-08	Tentatively Fourth Quarter of 2021	TCL VOCs & 1,4-Dioxane (initial event only unless detected)	To be sampled quarterly for four events following install	To be sampled quarterly for four events following install
MW-74D-15	Tentatively Fourth Quarter of 2021	TCL VOCs	To be sampled quarterly for four events following install	To be sampled quarterly for four events following install
MW-88-12	Tentatively Fourth Quarter of 2021	TCL VOCs	To be sampled quarterly for four events following install	To be sampled quarterly for four events following install
MW-90-12	Tentatively Fourth Quarter of 2021	TCL VOCs	To be sampled quarterly for four events following install	To be sampled quarterly for four events following install
MW-48-07R (2)	Tentatively Fourth Quarter of 2021	TCL VOCs	To be sampled quarterly for four events following install	To be sampled quarterly for four events following install
MW-94-15	Tentatively Fourth Quarter of 2021	TCL VOCs	To be sampled quarterly for four events following install	To be sampled quarterly for four events following install

Notes:
(1) Annual sampling event will occur in June, the quarter with the most recent VOC exceedance of Michigan EGLE Generic Groundwater Cleanup Criteria (Part 201).
(2) Proposed well MW-48-07R has replaced previously proposed MW-91-12.

Table 2

Sample Analysis Summary
RACER PCC- Validation
Pontiac, Michigan

Matrix	Sample ID	Sample Location	Date	QA/QC	Analysis
September 2020 Groundwater Sampling Event					
Groundwater	GW-17322-090420-SK-001	MW-79I-19	9/4/2020	NA	TCL VOCs
Groundwater	GW-17322-090420-SK-002	MW-79D-19	9/4/2020	NA	TCL VOCs
December 2020 Groundwater Sampling Event					
Groundwater	GW-17322-121420-SK-001	MW-79I-19	12/14/2020	NA	TCL VOCs
Groundwater	GW-17322-121420-SK-002	MW-79D-19	12/14/2020	NA	TCL VOCs
Groundwater	GW-17322-121420-SK-003	MW-79D-19	12/14/2020	Duplicate	TCL VOCs
March 2021 Groundwater Sampling Event					
Groundwater	GW-11223416-031121-SK-001	MW-79I-19	3/11/2021	NA	TCL VOCs
Groundwater	GW-11223416-031121-SK-002	MW-79I-19	3/11/2021	Duplicate	TCL VOCs
Groundwater	GW-11223416-031121-SK-003	MW-79D-19	3/11/2021	NA	TCL VOCs
June 2021 Groundwater Sampling Event					
Groundwater	GW-11223416-061421-SK-001	MW-79I-19	6/14/2021	NA	TCL VOCs
Groundwater	GW-11223416-061421-SK-002	MW-79D-19	6/14/2021	NA	TCL VOCs
Groundwater	GW-11223416-061421-SK-003	MW-10-07	6/14/2021	NA	Al, Pb, V (Total+Dissolved)
Groundwater	GW-11223416-061421-SK-004	MW-33-07	6/14/2021	NA	Al, Pb, V (Total+Dissolved)
Groundwater	GW-11223416-061521-SK-005	MW-87-12	6/15/2021	NA	TCL VOCs
Groundwater	GW-11223416-061521-SK-006	MW-68-08	6/15/2021	NA	TCL VOCs
Groundwater	GW-11223416-061521-SK-007	MW-93I-13	6/15/2021	NA	TCL VOCs
Groundwater	GW-11223416-061521-SK-008	MW-81-12	6/15/2021	NA	TCL VOCs
Groundwater	GW-11223416-061621-SK-009	MW-64-08	6/16/2021	NA	TCL VOCs
Groundwater	GW-11223416-061621-SK-010	MW-64-08	6/16/2021	Duplicate	TCL VOCs
Groundwater	GW-11223416-061621-SK-011	MW-85-12	6/16/2021	NA	TCL VOCs
Groundwater	GW-11223416-061621-SK-012	MW-02-07	6/16/2021	NA	TCL VOCs
Groundwater	GW-11223416-061621-SK-013	MW-80-12	6/16/2021	NA	TCL VOCs
Groundwater	GW-11223416-061721-SK-014	MW-92S-13	6/17/2021	NA	TCL VOCs
Groundwater	GW-11223416-061721-SK-015	MW-92-13	6/17/2012	NA	TCL VOCs

Notes:
ft bgs - Feet below ground surface
MW - Monitoring well
NA - Not applicable
TCL VOCS - Target Compound List Volatile Organic Compounds
AL, PB, V - Aluminum, lead, and vanadium

Table 3

Groundwater Analytical Results – September 2020 through June 2021
RACER PCC- Validation
Pontiac, Michigan

Sample Location		EGLE RRD (1)	EGLE Generic Groundwater Cleanup Criteria: Residential and Nonresidential [2]							EGLE VIAP SL 2020 [3]				EGLE [4]		EGLE MSSL [5]				
Sample Identification							Non-Residential									Shallow				
Sample Date		Target Detection Limit	Residential Drinking Water	Non-Residential Drinking Water	Groundwater Surface Water Interface [6]	Residential Groundwater Volatilization to Indoor Air Inhalation	Groundwater Volatilization to Indoor Air Inhalation	Water Solubility	Flammability and Explosivity Screening Levels	Residential Groundwater Not In Contact	Nonresidential Groundwater Not In Contact	Residential Shallow Groundwater	Nonresidential Shallow Groundwater	Residential Health-Based Drinking Water	Nonresidential Health-Based Drinking Water	Groundwater Residential MSSL	Groundwater NonResidential MSSL	Groundwater Residential MSSL	Groundwater Residential TS MSSL	Groundwater NonResidential MSSL
Sample Type																				
Depth to Water (ft bgs)			a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r
	Units									>10 FT	>5 ft	<10 FT	<5 FT			<10 FT	<10 FT	>10 FT	>10 FT	>10 FT
Volatile Organic Compounds (VOCs)																				
1,1,1-Trichloroethane	ug/L	1	200	200	89	660000	1300000	1330000	ID	14000	19000	180	5900			180	500	8600	8600	24000
1,1,2,2-Tetrachloroethane	ug/L	1	8.5	35	78	12000	77000	2970000	ID	71	170	2.4	6.7							
1,1,2-Trichloroethane	ug/L	1	5	5	330	17000	110000	4420000		14	20	0.47	0.95							
1,1-Dichloroethane	ug/L	1	880	2500	740	1000000	2300000	5060000	380000	130	300	4.7	40			4.7	12	67	670	320
1,1-Dichloroethene	ug/L	1	7	7	130	200	1300	2250000	97000	330	480	18	250			18	36	170	510	500
1,2,4-Trichlorobenzene	ug/L	5	70	70	99	300000	300000	300000		110	160	3.8	8.5			3.8	5.7	95	290	280
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2	0.2	0.2		220	1200	1230		0.00045	0.021	0.00045	0.021							
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05	0.05	0.05	5.7	2400	15000	4200000	ID	3.8	8.9	0.13	0.39							
1,2-Dichlorobenzene	ug/L	1	600	600	13	160000	160000	156000		11000	16000	370	950							
1,2-Dichloroethane	ug/L	1	5	5	360	9600	59000	8520000	2500000	41	97	1.4	5.1							
1,2-Dichloropropane	ug/L	1	5	5	230	16000	36000	2800000	550000	74	110	2.6	8.9			2.6	4	42	130	120
1,3-Dichlorobenzene	ug/L	1	6.6	19	28	18000	41000	111000	ID	75	110	2.6	7.9			2.6	4	52	150	150
1,4-Dichlorobenzene	ug/L	1	75	75	17	16000	74000	73800		170	400	5.9	28			5.9	15	120	1200	560
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	25	13000	38000	2200	240000000	240000000	240000000	ID	4300000	4300000	2600	12000			2600	3000	1500000	4600000	3100000
2-Hexanone	ug/L	50	1000	2900	ID	4200000	8700000	16000000		20000	29000	660	1100							
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	50	1800	5200	ID	20000000	20000000	20000000	ID	330000	330000	200	1400			200	250	160000	160000	310000
Acetone	ug/L	50	730	2100	1700	1000000000	1000000000	1000000000	15000000	40000000	40000000	50000	200000			50000	56000	12000000	12000000	25000000
Benzene	ug/L	1	5	5	200	5600	35000	1750000	68000	28	66	1.0	8.4			1	2.7	14	82	66
Bromodichloromethane	ug/L	1	80	80	ID	4800	37000	6740000	ID	34	73	1.2	4.9							
Bromoform	ug/L	1	80	80	ID	470000	3100000	3100000	ID	2700	6200	89	260							
Bromomethane (Methyl bromide)	ug/L	5	10	29	5	4000	9000	14500000	ID	55	80	2.1	13							
Carbon disulfide	ug/L	5	800	2300	ID	250000	550000	1190000	13000	2100	3100	92	840							
Carbon tetrachloride	ug/L	1	5	5	38	370	2400	793000	ID	7.7	18	0.41	9.5			0.41	1.3	5.3	53	25
Chlorobenzene	ug/L	1	100	100	25	210000	470000	472000	160000	940	1400	33	110			33	51	540	1600	1600
Chloroethane	ug/L	5	430	1700	1100	5700000	5700000	5740000	110000	15000	22000	620	5200			620	1100	6700	20000	20000
Chloroform (Trichloromethane)	ug/L	1	80	80	350	28000	180000	7920000	ID	14	32	0.49	3.1			0.49	1.2	7.6	76	36
Chloromethane (Methyl chloride)	ug/L	5	260	1100	ID	8600	45000	6340000	36000	380	560	15	110			15	26	160	470	460
cis-1,2-Dichloroethene	ug/L	1	70	70	620	93000	210000	3500000	530000	95	140	3.4	14			3.4	5.4	48	140	140
cis-1,3-Dichloropropene	ug/L																			
Cyclohexane	ug/L	10								2000	8100	290	8100							
Dibromochloromethane	ug/L	5	80	80	ID	14000	110000	2600000	ID	23	130	0.78	6.7							
Dichlorodifluoromethane (CFC-12)	ug/L	5	1700	4800	ID	220000	300000	300000	ID	49	410	13	410							
Ethylbenzene	ug/L	1	74	74	18	110000	170000	169000	43000	74	170	2.8	28	700	700	2.8	7.6	45	450	210
Isopropyl benzene	ug/L	5	800	2300	28	56000	56000	56000	29000	15	36	0.60	6.7							
Methyl acetate	ug/L																			
Methyl cyclohexane	ug/L																			
Methyl tert butyl ether (MTBE)	ug/L	5	40	40	7100	47000000	47000000	46800000	ID	7400	17000	250	810	240	690	250	600	4000	40000	19000
Methylene chloride	ug/L	5	5	5	1500	220000	1400000	17000000	ID	8400	12000	79	1100			79	460	3900	6200	11000
Styrene	ug/L	1	100	100	80	170000	310000	310000	140000	960	2300	33	170							
Tetrachloroethene	ug/L	1	5	5	60	25000	170000	200000	ID	130	130	1.5	35			1.5	3	96	96	190
Toluene	ug/L	1	790	790	270	530000	530000	526000	61000	41000	59000	300	6600	1000	1000	300	570	23000	33000	66000
trans-1,2-Dichloroethene	ug/L	1	100	100	1500	85000	200000	6300000	230000	390	580	16	110			16	27	200	600	590
trans-1,3-Dichloropropene	ug/L																			
Trichloroethene	ug/L	1	5	5	200	2200	4900	1100000	ID	10	10	0.073	1.6			0.073	0.14	6.1	18	12
Trichlorofluoromethane (CFC-11)	ug/L	1	2600	7300		1100000	1100000	1100000	ID	190	560	22	560							
Trifluorotrichloroethane (CFC-113)	ug/L	1	170000	170000	32	170000	170000	170000	ID	2700	26000	840	26000							
Vinyl chloride	ug/L	1	2	2	13	1100	13000	2760000	33000	2.1	18	0.12	10			0.12	1.4	0.96	9.6	16
Xylenes (total)	ug/L	3	280	280	49	190000	190000	186000	70000	2000	3000	75	410	10000	10000	75	120	1200	3600	3500
Metals																				
Aluminum	ug/L	50	50	50		NLV	NLV		ID					300	4100					
Aluminum (dissolved)	ug/L		50	50		NLV	NLV		ID					300	4100					
Lead	ug/L	3	4	4	58	NLV	NLV		ID					15	15					
Lead (dissolved)	ug/L		4	4	58	NLV	NLV		ID					15	15					

Notes:
(1) In accordance with Sec. 20120a(10) of MI Act 451 of 1994, when the target detection limit (TDL) for a hazardous substance is greater than the developed VI screening level, the TDL is used to evaluate the risk posed from the pathway.

(2) EGLE - Michigan Department of Environment, Great Lakes and Energy (EGLE) Generic cleanup criteria for residential and nonresidential category, administrative rule R 299.44 effective December 30, 2013, pursuant to Part 201 of 1994 PA 451 as amended. Criteria table dated January 10, 2018; GSI Criteria updated June 25, 2018.
(3) EGLE VIAP SL: Michigan Department of Environment, Great Lakes and Energy (EGLE) Volatilization to Indoor Air (VIAP) Screening Levels (SL),September 2020
(4) EGLE R 299.49 Footnote for Generic Cleanup Criteria Tables, Footnote E
(5) EGLE Media-Specific Volatilization to Indoor Air Interim Action Screening Levels (MSSL), March 2021

(6) A hardness of 300 mg/L and pH of 7.4 was assumed, where required, to calculate Site-specific Groundwater Surface Water Interface (GSI) Criteria . Hardness and pH were approximated using EGLE's Water Chemistry Monitoring Program Report, dated November 2019. Calculated utilizing EGLE's "Footnote (G) GSI/GSIPC Calculation" spreadsheet, dated June 25, 2018.
U - Not detected at the associated reporting limit.
J - Estimated concentration.
UJ - Not detected; associated reporting limit is estimated.
J+ - Estimated concentration, result may be biased high.
NLV - means hazardous substance is not likely to volatilize under most conditions.
ID - means insufficient data to develop criterion.
TS MSSL - Time Sensitive MSSL
$MSSL_{12}$ - MSSL for 12-hour workday

- Indicates concentration exceeded criteria

Table 3

Groundwater Analytical Results – September 2020 through June 2021
RACER PCC- Validation
Pontiac, Michigan

Sample Location		EGLE MSSL [5]		MW-2-07	MW-10-07	MW-33-07	MW-64-08	MW-64-08	MW-68-08	MW-79D-19	MW-79D-19	MW-79D-19	MW-79D-19
Sample Identification				GW-11223416-061621-SK-	GW-11223416-061421-SK-	GW-11223416-061421-SK-	GW-11223416-061621-SK-	GW-11223416-061621-SK-	GW-11223416-061521-SK-	GW-17322-090420-SK-	GW-017322-121420-SK-	GW-017322-121420-SK-	GW-11223416-031121-SK-
Sample Date		Groundwater NonResidential MSSL [12]	Groundwater NonResidential TS MSSL [12]	012	003	004	009	010	006	002	002	003	003
Sample Type				06/16/2021	06/14/2021	06/14/2021	06/16/2021	06/16/2021 Duplicate	06/15/2021	09/04/2020	12/14/2020	12/14/2020 Duplicate	03/11/2021
Depth to Water (ft bgs)		s	t	12.24	13.89	18.4	6.1	6.1	13.76	10.37	12.89	12.89	13.17
	Units	>10 FT	>10 FT										
Volatile Organic Compounds (VOCs)													
1,1,1-Trichloroethane	ug/L	24000	130000	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	630	35000	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1000	16000	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	560	9100	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	250	4100	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	300	4900	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1100	61000	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	6100000	100000000	10 U	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	ug/L			10 U	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	310000	1700000	10 U	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	ug/L	25000000	140000000	10 U	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	ug/L	130	2600	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L			5.0 U	--	--	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	50	2700	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	3200	52000	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	40000	660000	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	71	3900	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	910	15000	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	280	4600	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	420	23000	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl acetate	ug/L			10 U	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl cyclohexane	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	38000	2100000	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	23000	200000	5.0 U	--	--	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	380	2100	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	66000	360000	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1200	19000	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	24	400	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L			1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	32	1800	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	7100	110000	2.0 U	--	--	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Metals													
Aluminum	ug/L			--	480 [abl]	50 U	--	--	--	--	--	--	--
Aluminum (dissolved)	ug/L			--	50 U	50 U	--	--	--	--	--	--	--
Lead	ug/L			--	1.0 U	1.0 U	--	--	--	--	--	--	--
Lead (dissolved)	ug/L			--	1.0 U	1.0 U	--	--	--	--	--	--	--

Notes:
(1) In accordance with Sec. 20120a(10) of MI Act 451 of 1994, when the target detection limit (TDL) for a hazardous substance is greater than the developed VI screening level, the TDL is used to evaluate the risk posed from the pathway.

(2) EGLE - Michigan Department of Environment, Great Lakes and Energy (EGLE) Generic cleanup criteria for residential and nonresidential category, administrative rule R 299.44 effective December 30, 2013, pursuant to Part 201 of 1994 PA 451 as amended. Criteria table dated January 10, 2018; GSI Criteria updated June 25, 2018.
(3) EGLE VIAP SL: Michigan Department of Environment, Great Lakes and Energy (EGLE) Volatilization to Indoor Air (VIAP) Screening Levels (SL),September 2020
(4) EGLE R 299.49 Footnote for Generic Cleanup Criteria Tables, Footnote E
(5) EGLE Media-Specific Volatilization to Indoor Air Interim Action Screening Levels (MSSL), March 2021

(6) A hardness of 300 mg/L and pH of 7.4 was assumed, where required, to calculate Site-specific Groundwater Surface Water Interface (GSI) Criteria . Hardness and pH were approximated using EGLE's Water Chemistry Monitoring Program Report, dated November 2019. Calculated utilizing EGLE's "Footnote (G) GSI/GSIPC Calculation" spreadsheet, dated June 25, 2018.
U - Not detected at the associated reporting limit.
J - Estimated concentration.
UJ - Not detected; associated reporting limit is estimated.
J+ - Estimated concentration, result may be biased high.
NLV - means hazardous substance is not likely to volatilize under most conditions.
ID - means insufficient data to develop criterion.
TS MSSL - Time Sensitive MSSL
MSSL [12] - MSSL for 12-hour workday

- Indicates concentration exceeded criteria

Table 3

Groundwater Analytical Results – September 2020 through June 2021
RACER PCC- Validation
Pontiac, Michigan

Sample Location		MW-79D-19	MW-79I-19	MW-79I-19	MW-79I-19	MW-79I-19	MW-79I-19	MW-80-12	MW-81-12	MW-85-12	MW-87-12	MW-92I-13	MW-92S-13	MW-93I-13
Sample Identification		GW-11223416-061421-SK-002	GW-17322-090420-SK-001	GW-017322-121420-SK-001	GW-11223416-031121-SK-001	GW-11223416-031121-SK-002	GW-11223416-061421-SK-001	GW-11223416-061621-SK-013	GW-11223416-061521-SK-008	GW-11223416-061621-SK-011	GW-11223416-061521-SK-005	GW-11223416-061721-SK-015	GW-11223416-061721-SK-014	GW-11223416-061521-SK-007
Sample Date		06/14/2021	09/04/2020	12/14/2020	03/11/2021	03/11/2021	06/14/2021	06/16/2021	06/15/2021	06/16/2021	06/15/2021	06/17/2021	06/17/2021	06/15/2021
Sample Type						Duplicate								
Depth to Water (ft bgs)		11.15	12.94	10.73	14.64	14.64	12.38	5.91	7.41	4.26	9.13	6.46	6.63	7.63
	Units													
Volatile Organic Compounds (VOCs)														
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	7.9 J+	10 U	10 U	10 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	0.30 J	1.2	0.18 J	0.21 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl acetate	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	0.34 J	1.1	0.25 J	0.23 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.93 J+	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Metals														
Aluminum	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
(1) In accordance with Sec. 20120a(10) of MI Act 451 of 1994, when the target detection limit (TDL) for a hazardous substance is greater than the developed VI screening level, the TDL is used to evaluate the risk posed from the pathway.

(2) EGLE - Michigan Department of Environment, Great Lakes and Energy (EGLE) Generic cleanup criteria for residential and nonresidential category, administrative rule R 299.44 effective December 30, 2013, pursuant to Part 201 of 1994 PA 451 as amended. Criteria table dated January 10, 2018; GSI Criteria updated June 25, 2018.
(3) EGLE VIAP SL: Michigan Department of Environment, Great Lakes and Energy (EGLE) Volatilization to Indoor Air (VIAP) Screening Levels (SL),September 2020
(4) EGLE R 299.49 Footnote for Generic Cleanup Criteria Tables, Footnote E
(5) EGLE Media-Specific Volatilization to Indoor Air Interim Action Screening Levels (MSSL), March 2021

(6) A hardness of 300 mg/L and pH of 7.4 was assumed, where required, to calculate Site-specific Groundwater Surface Water Interface (GSI) Criteria . Hardness and pH were approximated using EGLE's Water Chemistry Monitoring Program Report, dated November 2019. Calculated utilizing EGLE's "Footnote (G) GSI/GSIPC Calculation" spreadsheet, dated June 25, 2018.
U - Not detected at the associated reporting limit.
J - Estimated concentration.
UJ - Not detected; associated reporting limit is estimated.
J+ - Estimated concentration, result may be biased high.
NLV - means hazardous substance is not likely to volatilize under most conditions.
ID - means insufficient data to develop criterion.
TS MSSL - Time Sensitive MSSL
$MSSL_{12}$ - MSSL for 12-hour workday
- Indicates concentration exceeded criteria

Table 4

Groundwater Elevation Summary
RACER PCC- Validation
Pontiac, Michigan

Sample Location	Date Installed	Current Ground Elevation (FT AMSL)	Current TOC	Current Screen Interval (FT BGS)			June 2021 Depth To Groundwater (FT BGS)	June 2020 Depth To Groundwater (FT BGS)	June 2021 Groundwater Elevation (FT AMSL)	June 2020 Groundwater Elevation (FT AMSL)	Change in Groundwater Elevation: June 2020 vs. June 2021 (FT)
MW-02-07	6/4/2018	936.15	935.63	11.40	-	16.40	12.24	13.98	923.39	921.65	1.74
MW-10-07	6/1/2018	943.34	943.09	12.55	-	17.55	13.89	12.95	929.20	930.14	-0.94
MW-21-07	5/22/2019	950.67	950.37	11.00	-	16.00	Dry	Dry	Dry	Dry	Dry
MW-33-07	5/31/2018	947.89	947.50	17.24	-	22.24	18.4	16.09	929.10	931.41	-2.31
MW-38-07	5/30/2018	948.99	948.50	12.20	-	17.20	Dry	14.98	Dry	933.52	Dry
MW-64-08	5/29/2018	947.31	947.03	10.25	-	15.25	6.10	9.05	940.93	937.98	2.95
MW-68-08	5/24/2019	956.34	956.05	10.00	-	15.00	13.76	11.91	942.29	944.14	-1.85
MW-79I-19	5/21/2019	936.43	936.13	17.00	-	22.00	12.38	14.05	923.75	922.08	1.67
MW-79D-19	5/21/2019	936.45	936.21	30.00	-	35.00	11.15	13.02	925.06	923.19	1.87
MW-80-12	8/28/2012	930.14	929.72	7.00	-	12.00	5.91	6.05	923.81	923.67	0.14
MW-81-12	8/28/2012	932.16	931.54	14.00	-	19.00	7.41	7.62	924.13	923.92	0.21
MW-85-12	5/29/2018	948.00	947.72	3.20	-	8.20	4.26	6.71	943.46	941.01	2.45
MW-87-12	5/22/2019	951.29	950.99	10.00	-	15.00	9.13	8.65	941.86	942.34	-0.48
MW-92S-13	1/24/2013	929.85	929.48	4.80	-	9.80	6.63	6.75	922.85	922.73	0.12
MW-92I-13	1/24/2013	929.80	929.22	12.00	-	17.00	6.46	6.64	922.76	922.58	0.18
MW-93I-13	7/26/2013	930.55	930.00	12.00	-	17.00	7.63	7.80	922.37	922.20	0.17

Notes:
FT AMSL - Feet above mean sea level
FT BGS - Feet below ground surface
NA - No data available
Dry - No groundwater encountered

Appendices

Appendix A

Low-Flow Groundwater Sampling Field Forms

Monitoring Well Record for Low Flow Purging
(Form SP-09)

Project Data:

Project Name: PCC Validation
Ref. No.: 017322A
Date: 9/4/2020
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-79i-19
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 22.17
Depth of Sediment (m/ft):
Purge Time (start): 9:22
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC - Flush Mt
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 12.94



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
			Precision Required[5]:	±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
10:00	150 mL/min			15.93	1.59	2.62	0.03	7.05	44.5		
10:05	↓			16.01	1.59	2.60	0.03	7.05	40.9		
10:10	↓	↓	↓	16.02	1.57	2.13	0.03	7.06	43.0		
10:15	↓	13.10	0.16	16.14	1.55	2.14	0.02	7.07	43.8		
10:20	- Sample Time (-001)										

Sample ID: GW-17322-090420-SK-001
Sample Time: 10:20 am

Notes: [redacted] TCL-VOC's Approx 2.0 gallons purged.

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

Monitoring Well Record for Low Flow Purging
(Form SP-09)

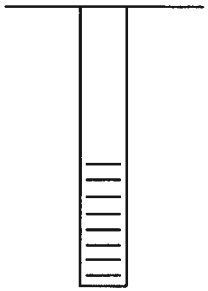
Project Data:

Project Name: PCC Validation
Ref. No.: 017322A
Date: 9/4/2020
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-79d-19
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 34.59
Depth of Sediment (m/ft):

Purge Time (start): 10:17
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC - Flush Mt.
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 10.38



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
			Precision Required[5]:	±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
10:50	150 mL/min			16.20	2.97	10.3	0.02	7.12	-79.2		
10:55	↓			16.23	3.01	9.27	0.07	7.13	-78.9		
11:00	↓			16.10	3.05	8.31	0.06	7.13	-78.8		
11:05	↓	↓	↓	16.02	3.09	6.55	0.05	7.13	-78.4		
11:10	↓	10.51	0.13	15.97	3.13	4.67	0.04	7.13	-78.4		
11:15	- Sample Time (-002 MS/MSD)										

Sample ID: GW-17322-090420-SK-002
Sample Time: 11:15

Notes: [redacted] Approx 2.5 gals purged (MS/MSD) TCL-VOCs

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

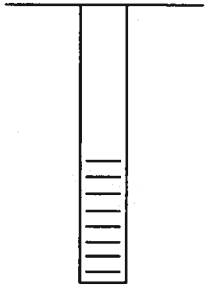
Project Name: PCC Validation
Ref. No.: 017322A

Date: 12-14-2020
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-79i-19
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 22.18
Depth of Sediment (m/ft):

Purge (start): 10:05
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC - Flush M.T.
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 12.89



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
10:45	150 mL/min			11.32	1.51	1.91	0.13	7.06	22.3		
10:50	↓			11.25	1.48	–	0.10	7.08	18.4		
10:55	↓			10.97	1.45	–	0.09	7.09	15.8		
11:00	↓			11.06	1.40	–	0.07	7.11	13.5		
11:05	↓			11.11	1.36	–	0.07	7.12	9.9		
11:10	↓	↓	↓	11.01	1.36	–	0.07	7.13	10.7		
11:15	↓	13.08	0.19	10.83	1.38	1.73	0.06	7.14	4.4		
11:20	- Sample Time (-001)										

Sample ID: GW-17322-121420-SK-001
Sample Time: 11:20

Notes: TCL-VOC's

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

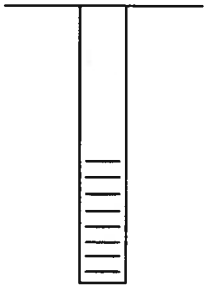
Project Name: PCC Validation
Ref. No.: 017322A

Date: 12-14-2020
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-79d-19
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 34.60
Depth of Sediment (m/ft):

Purge (start): 12:08
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC - Flush M.T.
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 10.73



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
12:45	150 mL/min			10.80	3.17	3.00	0.00	7.13	-71.9		
12:50	↓			10.74	3.19	2.65	0.00	7.13	-71.2		
12:55	↓			11.15	3.25	1.64	0.00	7.13	-71.3		
13:00	↓	↓	↓	11.52	3.22	-	0.00	7.13	-70.5		
13:05	↓	10.93	0.20	11.33	3.26	1.29	0.00	7.13	-71.2		
13:10	- Sample Time (-002)										
13:15	- Sample Time (-003 dup)										

Sample ID: GW-017322-121420-SK-002 / -003
Sample Time: 13:10 / 13:15 dup

Notes: TCL-VOC's

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

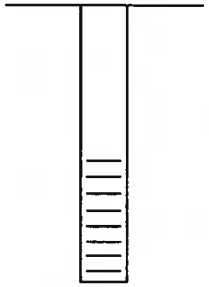
Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: PCC Validation
Ref. No.: 017322A
Date: 3-11-2021
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-79-19
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 22.15
Depth of Sediment (m/ft):
Purge (start): 13:14
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC - Flush Mt.
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 14.64



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
13:50	150 mL/min			12.77	3.20	4.13	0.61	9.79	181.7		
13:55	↓			13.16	3.20	4.67	0.66	9.82	174.0		
14:00	↓			13.31	3.19	3.00	0.69	9.85	163.0		
14:05	↓	↓	↓	13.47	3.18	2.40	0.63	9.89	157.1		
14:10	↓	14.91	0.27	13.04	3.17	2.12	0.65	9.89	154.9		
14:15	- Sample Time (-001)										
14:20	- "	"	(-002 dup)								

Sample ID: GW-1122346-031121-SK-001 / -002 dup
Sample Time: 14:15 / 14:20

Notes: VOC's

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

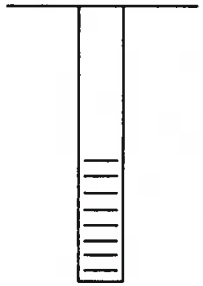
Project Data:

Project Name: PCC Validation
Ref. No.: 11223416
Date: 3-11-21
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-79d-19
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 34.61
Depth of Sediment (m/ft):

start purge: 13:45
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC - Flush Mt.
Well Screen Volume, V_s (L)[1,2]:
Initial Depth to Water (m/ft): 13.17



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
14:25	150 mL			13.64	6.10	11.7	1.07	9.97	11.9		
14:30	↓			13.45	6.15	13.4	0.63	9.95	2.9		
14:35	↓			13.47	6.19	9.18	0.32	9.95	-19.1		
14:40	↓			13.90	6.20	12.0	0.31	9.97	-26.0		
14:45	↓	↓	↓	13.95	6.13	8.28	0.21	9.95	-21.8		
14:50	↓	13.30	0.13	13.98	6.16	8.34	0.12	9.96	-28.2		
14:55	- Sample Time (-003)										

Sample ID: GW-11223416-031121-SK-003 **Sample Time:** 14:55

Notes: VOC's

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

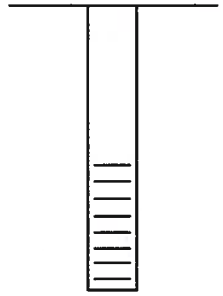
Monitoring Well Record for Low Flow Purging
(Form SP-09)

Project Data:

Project Name: Racer PCC Validation
Ref. No.: 11223416
Date: 6-14-2021
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-79:19
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 22.15
Depth of Sediment (m/ft):
Purge Time (start): 8:46am
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC, flush Mt.
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 12.38



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
9:25	150 mL/min			15.12	1.63	1.72	0.03	7.07	65.3		
9:30	↓	↓	↓	15.57	1.59	–	0.03	7.08	61.2		
9:35	↓	↓	↓	15.96	1.57	–	0.03	7.09	62.4		
9:40	↓	↓	↓	16.01	1.55	–	0.03	7.09	61.9		
9:45	↓	↓	↓	15.85	1.54	–	0.04	7.10	67.7		
9:50	↓	12.55	0.17	15.34	1.53	1.09	0.03	7.11	71.5		

Sample ID: GW-11223416-061421-SK-001
Sample Time: 9:55

Notes: VOC's

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be

Monitoring Well Record for Low Flow Purging
(Form SP-09)

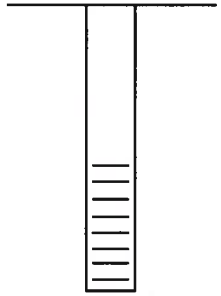
Project Data:

Project Name: Racer - PCC Validation
Ref. No.: 11223416
Date: 6-14-2021
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-79d-19
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 34.763
Depth of Sediment (m/ft):

Purge Time (start): 9.33 am
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC - Flush Mt.
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 11.15



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
			Precision Required[5]:	±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
10:10	150 mL/min			15.44	1.10	6.37	0.10	7.39	57.8		
10:15				15.17	1.61	3.19	0.05	7.32	47.8		
10:20				15.60	2.12	2.48	0.02	7.26	39.1		
10:25				15.17	2.45	6.21	0.00	7.22	32.1		
10:30				15.28	2.64	1.91	0.00	7.20	27.4		
10:35				15.51	2.69	-	0.00	7.20	24.0		
10:40		↓	↓	15.54	2.74	-	0.00	7.20	20.9		
10:45	↓	11.34		15.33	2.78	1.48	0.00	7.20	19.8		
10:55	- Sample Time (-002)										

Sample ID: GW-11223416-061421-SK-002
Sample Time: 10:55

Notes: VOC's

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be

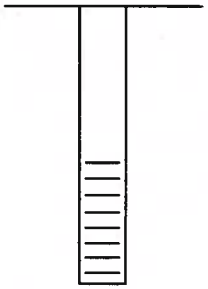
Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: Racer - PCC Validation
Ref. No.: 11223416
Date: 6-14-2021
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-10-07
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 17.54
Depth of Sediment (m/ft):
Purge Time (start): 11:06
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC - FlushMt
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 13.87



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
			Precision Required[5]:	±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
11:40	150 mL/min	↓	↓	18.26	1.52	12.9	5.25	7.92	77.2		
11:45	↓	↓	↓	17.88	1.53	13.3	5.13	7.92	76.8		
11:50	↓	↓	↓	17.73	1.50	13.2	5.06	7.92	76.6		
11:55	↓	16.09	2.22	18.12	1.56	12.7	4.66	7.90	75.9		
12:00	- Sample Time (-003)										

Sample ID: GW-11223416-061421-SK-003
Sample Time: 12:00

Notes: [redacted] Al, Pb – F: Filtered

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

Monitoring Well Record for Low Flow Purging
(Form SP-09)

Project Data:

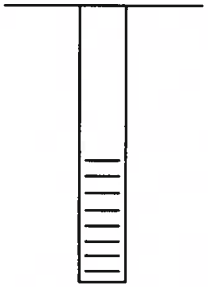
Project Name: Racer PCC Validation
Ref. No.: 11223416

Date: 6-14-2021
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-33-07
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 21.88
Depth of Sediment (m/ft):

Purge Time (start): 13:21
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC - Flush Mt.
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 18.40



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
13:50	100 mL/min			18.67	2.52	2.71	0.05	6.95	42.6		
13:55	↓	↓	↓	18.84	2.55	2.21	0.05	6.94	45.3		
14:00	↓	↓	↓	18.47	2.58	2.28	0.04	6.93	46.2		
14:05	↓	↓	↓	17.87	2.56	2.29	0.03	6.95	42.0		
14:10	↓	↓	↓	17.41	2.60	1.87	0.02	6.95	37.1		
14:15	↓	↓	↓	16.74	2.64	-	0.02	6.95	37.0		
14:20	↓	18.51	0.11	16.56	2.67	1.45	0.02	6.95	35.8		
14:25	- Sample Time - (-004)										

Sample ID: GW-11223416-061421-SK-004
Sample Time: 14:25

Notes: Al, Pb — field filtered

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

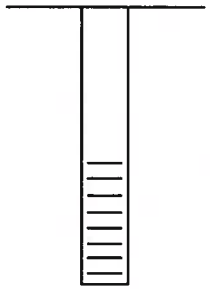
Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: Racer - PCC Validation
Ref. No.: 11223416 -
Date: 6.15.2021
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW.87.12
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 14.92
Depth of Sediment (m/ft):
Purge Time (start): 9:17
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC - Flush Mt.
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 9.13



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
			Precision Required[5]:	±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
9:50	100 mL/min	↓	↓	16.10	0.55	23.4	0.05	7.51	-119.4		
9:55	↓	↓	↓	15.66	0.54	21.4	0.02	7.50	-107.8		
10:00	↓	↓	↓	14.85	0.54	20.8	0.03	7.51	-108.2		
10:05	↓	9.93	0.80	14.90	0.56	19.4	0.01	7.50	-107.5		
10:10 - Sample Time - VOCs (005)											

Sample ID: GW.11223416-061521-SK-005
Sample Time: 10:10

Notes: ≡ VOC's Amber Colored Groundwater.

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

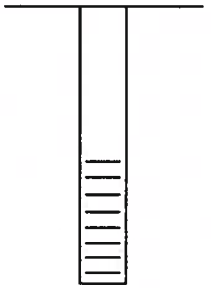
Monitoring Well Record for Low Flow Purging
(Form SP-09)

Project Data:

Project Name: Racer - PCC Validation
Ref. No.: 11223416
Date: 6.15.2021
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-68-08
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 15.21
Depth of Sediment (m/ft):
Purge Time (start): 10:23
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC - Flush Mt.
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 13.76



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
			Precision Required[5]:	±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
10:50	100 mL/min			15.21	0.80	2.25	4.00	7.06	15.5		
10:55	↓			15.05	0.80	0.88	2.62	7.06	-1.8		
11:00	↓			15.05	0.80	-	2.01	7.07	-12.4		
11:05	↓	↓	↓	15.44	0.80	-	1.83	7.07	-14.1		
11:10	↓	14.34	0.58	15.42	0.80	1.42	1.63	7.07	-17.7		
11:15	Sample Time (-006)										

Sample ID: GW-11223416-051521-SK-006
Sample Time: 11:15

Notes: VOC's

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

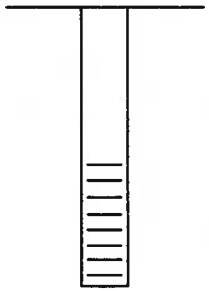
Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: Racer – PCC- Validation
Ref. No.: 11223416
Date: 6-15-2021
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-93i-13
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 17.14
Depth of Sediment (m/ft):
Purge Time (start): 12:09
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC – Flush Mt.
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 7.63



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
12:40	100 mL/min			14.89	2.06	3.73	0.01	6.73	37.0		
12:45	↓			15.03	2.06	2.62	0.00	6.73	29.2		
12:50	↓			15.56	2.04	2.35	0.00	6.73	33.2		
12:55	↓	↓	↓	15.28	2.04	1.71	0.00	6.73	32.2		
13:00	↓	7.82	0.19	16.06	2.03	1.56	0.00	6.73	32.8		
13:05	– Sample Time (-007)										

Sample ID: GW-11223416-061521-SK-007
Sample Time: 13:05

Notes: VOC's

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

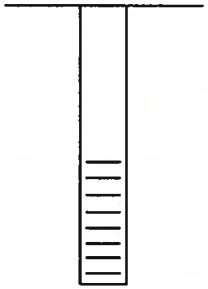
Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: Racer - PCC Validation
Ref. No.: 112234116
Date: 6-15-2021
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-81-12
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 18.72
Depth of Sediment (m/ft):
Purge Time (start): 13:18
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC - Flush Mt.
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 7.41



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
13:50	150 mL/min			19.42	2.75	10.7	0.00	6.92	-59.4		
13:55	↓			19.42	2.79	8.76	0.00	6.94	-62.1		
14:00	↓			19.56	2.81	10.7	0.00	6.95	-64.1		
14:05	↓	↓	↓	19.87	2.82	5.95	0.00	6.95	-67.2		
14:10	↓	8.86	1.45	19.44	2.85	7.17	0.00	6.96	-69.2		
14:15	- Sample Time (-008)										

Sample ID: GW-112234116-061521-SK-008
Sample Time: 14:15

Notes: VOC's

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

Monitoring Well Record for Low Flow Purging
(Form SP-09)

Project Data:

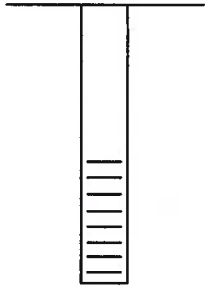
Project Name: Racer - PCC Validation
Ref. No.: 11223416

Date: 6-16-2021
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-64-08
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 15.10
Depth of Sediment (m/ft):

Purge Time (start): 8:26
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC - Flush Mt.
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 6.10



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
			Precision Required[5]:	±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
9:00	150 mL/min	↓	↓	13.68	0.85	4.98	0.10	7.02	-36.7		
9:05	↓	↓	↓	13.69	0.83	5.70	0.16	7.02	-35.5		
9:10	↓	↓	↓	13.71	0.82	4.80	0.23	7.02	-31.8		
9:15	↓	9.72	3.62	13.95	0.81	4.21	0.31	7.02	-30.0		
9:20 -	Sample Time	(-009)									
9:25 -	Sample Time	(-010 dup)									

Sample ID: GW-11223416-061621-SK-009 / -010 dup
Sample Time: 9:20 / 9:25 dup.

Notes: VOC's

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

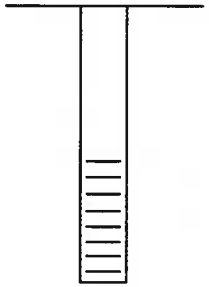
Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: Racer - PCC Validation
Ref. No.: 11223416
Date: 6-16-2021
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW 85-12
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 8.18
Depth of Sediment (m/ft):
Purge Time (start): 9:18
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC - Flush Mt.
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 4.26



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
9:50	100 mL/min	↓	↓	16.74	0.66	10.6	0.89	9.24	11.2		
9:55	↓	↓	↓	16.34	0.67	10.9	0.64	9.26	13.5		
10:00	↓	↓	↓	16.56	0.66	10.6	0.50	9.25	15.0		
10:05	↓	5.64	1.38	16.29	0.68	10.5	0.37	9.27	15.7		
10:10	- Sample Time. (-011)										

Sample ID: GW-1122 3416-061621-SK-011
Sample Time: 10:10

Notes: VOC's

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

Monitoring Well Record for Low Flow Purging
(Form SP-09)

Project Data:

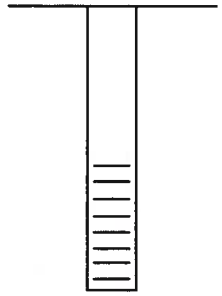
Project Name: Racer - PCC Validation
Ref. No.: 11223416

Date: 6-16-2021
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-02-07
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 15.88
Depth of Sediment (m/ft):

Purge Time (start): 10:26
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC - Flush Mt.
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 12.24



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
			Precision Required[5]:	±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
11:00	100 mL/min			14.84	1.98	1.30	0.04	6.94	73.4		
11:05	↓			14.95	1.96	–	0.03	6.95	66.4		
11:10				14.77	1.95	–	0.00	6.95	55.1		
11:15				14.59	1.92	–	0.00	6.97	29.9		
11:20				14.64	1.89	–	0.00	6.97	19.1		
11:25	↓	↓	↓	14.89	1.90	–	0.00	6.97	12.4		
11:30	↓	14.56	2.32	15.18	1.88	1.25	0.00	6.97	13.7		
11:35 - Sample Time (-012)											

Sample ID: GW-11223416-061621-SK-012
Sample Time: 11:35

Notes: VOC's

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be

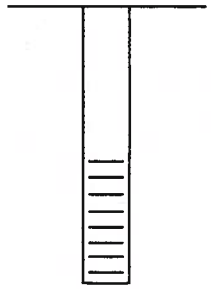
Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: Racer - PCC Validation
Ref. No.: 11223416
Date: 6-16-2021
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-80-12
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 11.81
Depth of Sediment (m/ft):
Purge Time (start): 12:20
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC. Flush Mt.
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 5.91



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
			Precision Required[5]:	±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
12:50	150 mL/min	↓	↓	17.14	2.45	2.54	0.03	7.11	72.4		
12:55	↓	↓	↓	17.10	2.44	2.08	0.03	7.11	70.7		
13:00	↓	↓	↓	17.01	2.43	2.04	0.02	7.11	67.4		
13:05	↓	7.25	1.34	17.22	2.43	2.19	0.02	7.11	63.8		
13:10	- Sample Time (- 013)										

Sample ID: GW-11223416-061621-SK-013
Sample Time: 13:10

Notes: VOC's

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

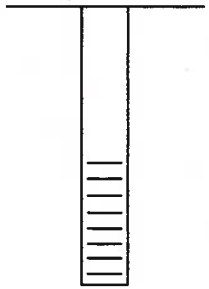
Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: Racer PCC Validation
Ref. No.: 11223416
Date: 6-17-2021
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-92S-12
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 9.68
Depth of Sediment (m/ft):
Purge Time (start): 8:42
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC - Flush Mt.
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 6.63



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
9:15	100 mL/min			15.53	3.41	20.2	0.00	6.59	8.8		
9:20	↓			15.33	3.40	13.1	0.00	6.60	11.2		
9:25	↓			15.30	3.42	12.3	0.00	6.60	14.1		
9:30	↓	↓	↓	15.39	3.41	9.01	0.00	6.60	16.4		
9:35	↓	7.42	0.79	15.29	3.43	6.68	0.00	6.60	19.6		
9:40	- Sample Time (-014)										

Sample ID: GW-11223416-061721-SK-014
Sample Time: 9:40

Notes: VOC's

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

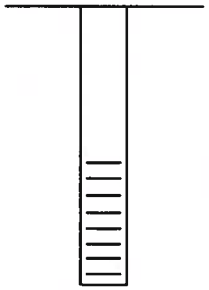
Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: Racer PCC Validation
Ref. No.: 11223416
Date: 6-17-2021
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW.92i-12
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 16.27
Depth of Sediment (m/ft):
Purge Time (start): 9:35
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC - flush Mt.
Well Screen Volume, V_s (L)[4]:
Initial Depth to Water (m/ft): 6.46



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
			Precision Required[5]:	±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
10:10	150 mL/min			14.31	2.56	9.07	0.00	7.07	-93.3		
10:15	↓			14.23	2.50	11.8	0.00	7.08	-92.4		
10:20				14.13	2.44	7.89	0.00	7.09	-92.0		
10:25				14.25	2.39	6.65	0.00	7.10	-92.3		
10:30				14.16	2.33	6.76	0.00	7.11	-91.7		
10:35				14.25	2.28	6.26	0.00	7.11	-91.4		
10:40		↓	↓	14.26	2.25	5.91	0.01	7.12	-91.1		
10:45	↓	6.83	0.37	14.23	2.20	5.71	0.01	7.12	-90.4		
10:50	- Sample	Time	(- 015)								

Sample ID: GW-11223416-061721-SK-015
Sample Time: 10:50

Notes: VOC's

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

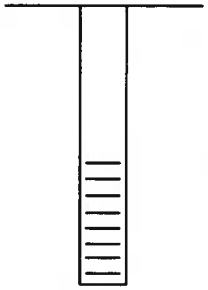
Project Name: Racer - PCC Validation
Ref. No.: 11223416

Date: 6-14-2021
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-21-07
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 16.08
Depth of Sediment (m/ft):

Purge Time (start): N/A
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC - Flush Mt
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): Dry



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
	N/A mL/min										

Sample ID: — No Sample —
Sample Time: — Well dry —

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

Monitoring Well Record for Low Flow Purging
(Form SP-09)

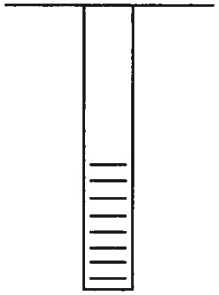
Project Data:

Project Name: Racer - PCC Validation
Ref. No.: 1122346
Date: 6-15-21
Personnel: S. Kippen

Monitoring Well Data:

Well No.: MW-38-07
Vapour PID (ppm):
Measurement Point: T.O.C.
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 16.80
Depth of Sediment (m/ft):

Purge Time (start): N/A
Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC flush Mt.
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): dry



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
	N/A mL/min										

Sample ID: — No Sample — Sample Time: — well dry —

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be

Appendix B

Laboratory Analytical Reports

eurofins | Environment Testing America



ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-136174-1
Client Project/Site: 17322A-014, PCC Validation

For:
GHD Services Inc.
26850 Haggerty Rd.
Farmington Hills, Michigan 48331

Attn: Mr. James Abston

Denise D Heckler

Authorized for release by:
9/20/2020 11:32:29 AM

Denise Heckler, Project Manager II
(330)966-9477
Denise.Heckler@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

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

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

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Definitions/Glossary 4
Sample Summary 5
Detection Summary 6
Method Summary 7
Client Sample Results 8
QC Association Summary 14
QC Sample Results 15
Surrogate Summary 20
Lab Chronicle 21
Certification Summary 22
Chain of Custody 23

Case Narrative

Client: GHD Services Inc.
Project/Site: 17322A-014, PCC Validation

Job ID: 240-136174-1

Job ID: 240-136174-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-136174-1

Comments
No additional comments.

Receipt
The samples were received on 9/5/2020 9:50 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.3º C.

GC/MS VOA
Method 8260B: The laboratory control sample (LCS) for analytical batch 240-451576 exceeded control criteria for multiple compounds. The samples associated with this LCS were non-detects for the affected analytes. In accordance with the laboratory SOP, a low level CCV at the reporting limit (labeled as an MRL) was analyzed and the affected compounds were detected; therefore the data has been reported. No further corrective action was required.

Method 8260B: The laboratory control sample (LCS) for analytical batch 240-451576 recovered outside control limits for the following analyte(s): cis-1,3-Dichloropropene. This has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed.

Method 8260B: The laboratory control sample (LCS) for analytical batch 240-451576 recovered outside control limits for multiple analytes: These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

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

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 17322A-014, PCC Validation

Job ID: 240-136174-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Sample Summary

Client: GHD Services Inc.
Project/Site: 17322A-014, PCC Validation

Job ID: 240-136174-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-136174-1	GW-17322-090420-SK-001	Water	09/04/20 10:20	09/05/20 09:50	
240-136174-2	GW-17322-090420-SK-002	Water	09/04/20 10:20	09/05/20 09:50	
240-136174-3	TB-17322-090420-SK	Water	09/04/20 00:00	09/05/20 09:50	

Detection Summary

Client: GHD Services Inc.
Project/Site: 17322A-014, PCC Validation

Job ID: 240-136174-1

Client Sample ID: GW-17322-090420-SK-001 — Lab Sample ID: 240-136174-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	0.34	J	1.0	0.10	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	0.30	J	1.0	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: GW-17322-090420-SK-002 — Lab Sample ID: 240-136174-2

No Detections.

Client Sample ID: TB-17322-090420-SK — Lab Sample ID: 240-136174-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	6.8	J	10	5.4	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: GHD Services Inc.
Project/Site: 17322A-014, PCC Validation

Job ID: 240-136174-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL CAN

Protocol References:

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

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Client: GHD Services Inc.
Project/Site: 17322A-014, PCC Validation

Job ID: 240-136174-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-17322-090420-SK-001
Date Collected: 09/04/20 10:20
Date Received: 09/05/20 09:50

Lab Sample ID: 240-136174-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			09/16/20 21:27	1
Benzene	1.0	U	1.0	0.13	ug/L			09/16/20 21:27	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			09/16/20 21:27	1
Bromoform	1.0	U	1.0	0.76	ug/L			09/16/20 21:27	1
Bromomethane	1.0	U	1.0	0.42	ug/L			09/16/20 21:27	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			09/16/20 21:27	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			09/16/20 21:27	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			09/16/20 21:27	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			09/16/20 21:27	1
Chloroethane	1.0	U	1.0	0.83	ug/L			09/16/20 21:27	1
Chloroform	1.0	U	1.0	0.13	ug/L			09/16/20 21:27	1
Chloromethane	1.0	U	1.0	0.20	ug/L			09/16/20 21:27	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			09/16/20 21:27	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			09/16/20 21:27	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/16/20 21:27	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			09/16/20 21:27	1
cis-1,3-Dichloropropene	1.0	U *	1.0	0.61	ug/L			09/16/20 21:27	1
trans-1,3-Dichloropropene	1.0	U *	1.0	0.67	ug/L			09/16/20 21:27	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			09/16/20 21:27	1
2-Hexanone	10	U	10	0.54	ug/L			09/16/20 21:27	1
Methylene Chloride	5.0	U *	5.0	2.6	ug/L			09/16/20 21:27	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			09/16/20 21:27	1
Styrene	1.0	U	1.0	0.10	ug/L			09/16/20 21:27	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			09/16/20 21:27	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			09/16/20 21:27	1
Toluene	1.0	U	1.0	0.14	ug/L			09/16/20 21:27	1
Trichloroethene	**0.34**	**J**	1.0	0.10	ug/L			09/16/20 21:27	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			09/16/20 21:27	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			09/16/20 21:27	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			09/16/20 21:27	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			09/16/20 21:27	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			09/16/20 21:27	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			09/16/20 21:27	1
1,2-Dibromoethane	1.0	U *	1.0	0.12	ug/L			09/16/20 21:27	1
Dichlorodifluoromethane	1.0	U *	1.0	0.35	ug/L			09/16/20 21:27	1
cis-1,2-Dichloroethene	**0.30**	**J**	1.0	0.16	ug/L			09/16/20 21:27	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/16/20 21:27	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			09/16/20 21:27	1
Methyl acetate	10	U	10	1.7	ug/L			09/16/20 21:27	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			09/16/20 21:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			09/16/20 21:27	1
1,2,4-Trichlorobenzene	1.0	U *	1.0	0.26	ug/L			09/16/20 21:27	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			09/16/20 21:27	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			09/16/20 21:27	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			09/16/20 21:27	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			09/16/20 21:27	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			09/16/20 21:27	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			09/16/20 21:27	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		75 - 130		09/16/20 21:27	1
4-Bromofluorobenzene (Surr)	90		47 - 134		09/16/20 21:27	1
Toluene-d8 (Surr)	94		69 - 122		09/16/20 21:27	1
Dibromofluoromethane (Surr)	90		78 - 129		09/16/20 21:27	1

Client: GHD Services Inc.
Project/Site: 17322A-014, PCC Validation

Job ID: 240-136174-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-17322-090420-SK-002
Date Collected: 09/04/20 10:20
Date Received: 09/05/20 09:50

Lab Sample ID: 240-136174-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			09/16/20 21:52	1
Benzene	1.0	U	1.0	0.13	ug/L			09/16/20 21:52	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			09/16/20 21:52	1
Bromoform	1.0	U	1.0	0.76	ug/L			09/16/20 21:52	1
Bromomethane	1.0	U	1.0	0.42	ug/L			09/16/20 21:52	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			09/16/20 21:52	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			09/16/20 21:52	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			09/16/20 21:52	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			09/16/20 21:52	1
Chloroethane	1.0	U	1.0	0.83	ug/L			09/16/20 21:52	1
Chloroform	1.0	U	1.0	0.13	ug/L			09/16/20 21:52	1
Chloromethane	1.0	U	1.0	0.20	ug/L			09/16/20 21:52	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			09/16/20 21:52	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			09/16/20 21:52	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/16/20 21:52	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			09/16/20 21:52	1
cis-1,3-Dichloropropene	1.0	U *	1.0	0.61	ug/L			09/16/20 21:52	1
trans-1,3-Dichloropropene	1.0	U *	1.0	0.67	ug/L			09/16/20 21:52	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			09/16/20 21:52	1
2-Hexanone	10	U	10	0.54	ug/L			09/16/20 21:52	1
Methylene Chloride	5.0	U F1 *	5.0	2.6	ug/L			09/16/20 21:52	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			09/16/20 21:52	1
Styrene	1.0	U	1.0	0.10	ug/L			09/16/20 21:52	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			09/16/20 21:52	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			09/16/20 21:52	1
Toluene	1.0	U	1.0	0.14	ug/L			09/16/20 21:52	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			09/16/20 21:52	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			09/16/20 21:52	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			09/16/20 21:52	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			09/16/20 21:52	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			09/16/20 21:52	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			09/16/20 21:52	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			09/16/20 21:52	1
1,2-Dibromoethane	1.0	U F1 *	1.0	0.12	ug/L			09/16/20 21:52	1
Dichlorodifluoromethane	1.0	U F1 *	1.0	0.35	ug/L			09/16/20 21:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			09/16/20 21:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/16/20 21:52	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			09/16/20 21:52	1
Methyl acetate	10	U	10	1.7	ug/L			09/16/20 21:52	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			09/16/20 21:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			09/16/20 21:52	1
1,2,4-Trichlorobenzene	1.0	U F1 *	1.0	0.26	ug/L			09/16/20 21:52	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			09/16/20 21:52	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			09/16/20 21:52	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			09/16/20 21:52	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			09/16/20 21:52	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			09/16/20 21:52	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			09/16/20 21:52	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 130		09/16/20 21:52	1
4-Bromofluorobenzene (Surr)	94		47 - 134		09/16/20 21:52	1
Toluene-d8 (Surr)	93		69 - 122		09/16/20 21:52	1
Dibromofluoromethane (Surr)	91		78 - 129		09/16/20 21:52	1

Client: GHD Services Inc.
Project/Site: 17322A-014, PCC Validation

Job ID: 240-136174-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: TB-17322-090420-SK
Date Collected: 09/04/20 00:00
Date Received: 09/05/20 09:50

Lab Sample ID: 240-136174-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**6.8**	**J**	10	5.4	ug/L			09/16/20 23:07	1
Benzene	1.0	U	1.0	0.13	ug/L			09/16/20 23:07	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			09/16/20 23:07	1
Bromoform	1.0	U	1.0	0.76	ug/L			09/16/20 23:07	1
Bromomethane	1.0	U	1.0	0.42	ug/L			09/16/20 23:07	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			09/16/20 23:07	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			09/16/20 23:07	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			09/16/20 23:07	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			09/16/20 23:07	1
Chloroethane	1.0	U	1.0	0.83	ug/L			09/16/20 23:07	1
Chloroform	1.0	U	1.0	0.13	ug/L			09/16/20 23:07	1
Chloromethane	1.0	U	1.0	0.20	ug/L			09/16/20 23:07	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			09/16/20 23:07	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			09/16/20 23:07	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/16/20 23:07	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			09/16/20 23:07	1
cis-1,3-Dichloropropene	1.0	U *	1.0	0.61	ug/L			09/16/20 23:07	1
trans-1,3-Dichloropropene	1.0	U *	1.0	0.67	ug/L			09/16/20 23:07	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			09/16/20 23:07	1
2-Hexanone	10	U	10	0.54	ug/L			09/16/20 23:07	1
Methylene Chloride	5.0	U *	5.0	2.6	ug/L			09/16/20 23:07	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			09/16/20 23:07	1
Styrene	1.0	U	1.0	0.10	ug/L			09/16/20 23:07	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			09/16/20 23:07	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			09/16/20 23:07	1
Toluene	1.0	U	1.0	0.14	ug/L			09/16/20 23:07	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			09/16/20 23:07	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			09/16/20 23:07	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			09/16/20 23:07	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			09/16/20 23:07	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			09/16/20 23:07	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			09/16/20 23:07	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			09/16/20 23:07	1
1,2-Dibromoethane	1.0	U *	1.0	0.12	ug/L			09/16/20 23:07	1
Dichlorodifluoromethane	1.0	U *	1.0	0.35	ug/L			09/16/20 23:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			09/16/20 23:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/16/20 23:07	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			09/16/20 23:07	1
Methyl acetate	10	U	10	1.7	ug/L			09/16/20 23:07	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			09/16/20 23:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			09/16/20 23:07	1
1,2,4-Trichlorobenzene	1.0	U *	1.0	0.26	ug/L			09/16/20 23:07	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			09/16/20 23:07	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			09/16/20 23:07	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			09/16/20 23:07	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			09/16/20 23:07	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			09/16/20 23:07	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			09/16/20 23:07	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		75 - 130		09/16/20 23:07	1
4-Bromofluorobenzene (Surr)	93		47 - 134		09/16/20 23:07	1
Toluene-d8 (Surr)	91		69 - 122		09/16/20 23:07	1
Dibromofluoromethane (Surr)	91		78 - 129		09/16/20 23:07	1

QC Association Summary

Client: GHD Services Inc.
Project/Site: 17322A-014, PCC Validation

Job ID: 240-136174-1

GC/MS VOA

Analysis Batch: 451576

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-136174-1	GW-17322-090420-SK-001	Total/NA	Water	8260B	
240-136174-2	GW-17322-090420-SK-002	Total/NA	Water	8260B	
240-136174-3	TB-17322-090420-SK	Total/NA	Water	8260B	
MB 240-451576/7	Method Blank	Total/NA	Water	8260B	
LCS 240-451576/4	Lab Control Sample	Total/NA	Water	8260B	
240-136174-2 MS	GW-17322-090420-SK-002	Total/NA	Water	8260B	
240-136174-2 MSD	GW-17322-090420-SK-002	Total/NA	Water	8260B	

Client: GHD Services Inc.
Project/Site: 17322A-014, PCC Validation

Job ID: 240-136174-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-451576/7
Matrix: Water
Analysis Batch: 451576

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			09/16/20 15:16	1
Benzene	1.0	U	1.0	0.13	ug/L			09/16/20 15:16	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			09/16/20 15:16	1
Bromoform	1.0	U	1.0	0.76	ug/L			09/16/20 15:16	1
Bromomethane	1.0	U	1.0	0.42	ug/L			09/16/20 15:16	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			09/16/20 15:16	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			09/16/20 15:16	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			09/16/20 15:16	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			09/16/20 15:16	1
Chloroethane	1.0	U	1.0	0.83	ug/L			09/16/20 15:16	1
Chloroform	1.0	U	1.0	0.13	ug/L			09/16/20 15:16	1
Chloromethane	1.0	U	1.0	0.20	ug/L			09/16/20 15:16	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			09/16/20 15:16	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			09/16/20 15:16	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/16/20 15:16	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			09/16/20 15:16	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			09/16/20 15:16	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			09/16/20 15:16	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			09/16/20 15:16	1
2-Hexanone	10	U	10	0.54	ug/L			09/16/20 15:16	1
Methylene Chloride	3.26	J	5.0	2.6	ug/L			09/16/20 15:16	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			09/16/20 15:16	1
Styrene	1.0	U	1.0	0.10	ug/L			09/16/20 15:16	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			09/16/20 15:16	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			09/16/20 15:16	1
Toluene	1.0	U	1.0	0.14	ug/L			09/16/20 15:16	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			09/16/20 15:16	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			09/16/20 15:16	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			09/16/20 15:16	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			09/16/20 15:16	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			09/16/20 15:16	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			09/16/20 15:16	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			09/16/20 15:16	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			09/16/20 15:16	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			09/16/20 15:16	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			09/16/20 15:16	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/16/20 15:16	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			09/16/20 15:16	1
Methyl acetate	10	U	10	1.7	ug/L			09/16/20 15:16	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			09/16/20 15:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			09/16/20 15:16	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			09/16/20 15:16	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			09/16/20 15:16	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			09/16/20 15:16	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			09/16/20 15:16	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			09/16/20 15:16	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			09/16/20 15:16	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			09/16/20 15:16	1

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

Lab Sample ID: MB 240-451576/7
Matrix: Water
Analysis Batch: 451576

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 130		09/16/20 15:16	1
4-Bromofluorobenzene (Surr)	93		47 - 134		09/16/20 15:16	1
Toluene-d8 (Surr)	92		69 - 122		09/16/20 15:16	1
Dibromofluoromethane (Surr)	91		78 - 129		09/16/20 15:16	1

Lab Sample ID: LCS 240-451576/4
Matrix: Water
Analysis Batch: 451576

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	29.6		ug/L		148	33 - 155
Benzene	10.0	8.74		ug/L		87	77 - 123
Bromodichloromethane	10.0	9.07		ug/L		91	73 - 122
Bromoform	10.0	11.1		ug/L		111	47 - 133
Bromomethane	10.0	12.8		ug/L		128	48 - 144
2-Butanone (MEK)	20.0	20.9		ug/L		105	41 - 151
Carbon disulfide	10.0	10.6		ug/L		106	67 - 127
Carbon tetrachloride	10.0	8.63		ug/L		86	61 - 142
Chlorobenzene	10.0	9.44		ug/L		94	80 - 120
Chloroethane	10.0	12.9		ug/L		129	41 - 147
Chloroform	10.0	9.65		ug/L		97	74 - 127
Chloromethane	10.0	10.6		ug/L		106	46 - 148
1,1-Dichloroethane	10.0	9.79		ug/L		98	74 - 126
1,2-Dichloroethane	10.0	10.5		ug/L		105	66 - 129
1,1-Dichloroethene	10.0	11.4		ug/L		114	73 - 129
1,2-Dichloropropane	10.0	9.38		ug/L		94	79 - 127
cis-1,3-Dichloropropene	10.0	6.46	*	ug/L		65	68 - 128
trans-1,3-Dichloropropene	10.0	5.98	*	ug/L		60	64 - 120
Ethylbenzene	10.0	8.98		ug/L		90	80 - 120
2-Hexanone	20.0	21.3		ug/L		107	43 - 142
Methylene Chloride	10.0	15.5	*	ug/L		155	63 - 134
4-Methyl-2-pentanone (MIBK)	20.0	20.6		ug/L		103	43 - 145
Styrene	10.0	8.38		ug/L		84	75 - 121
1,1,2,2-Tetrachloroethane	10.0	11.8		ug/L		118	45 - 151
Tetrachloroethene	10.0	9.57		ug/L		96	70 - 125
Toluene	10.0	9.08		ug/L		91	79 - 122
Trichloroethene	10.0	9.21		ug/L		92	71 - 121
Vinyl chloride	10.0	12.3		ug/L		123	61 - 134
Xylenes, Total	20.0	17.3		ug/L		86	78 - 122
1,1,1-Trichloroethane	10.0	9.40		ug/L		94	65 - 141
1,1,2-Trichloroethane	10.0	10.5		ug/L		105	79 - 121
Cyclohexane	10.0	10.3		ug/L		103	69 - 133
1,2-Dibromo-3-Chloropropane	10.0	11.0		ug/L		110	34 - 136
1,2-Dibromoethane	10.0	5.75	*	ug/L		57	73 - 120
Dichlorodifluoromethane	10.0	14.9	*	ug/L		149	35 - 137
cis-1,2-Dichloroethene	10.0	9.86		ug/L		99	75 - 124
trans-1,2-Dichloroethene	10.0	9.39		ug/L		94	74 - 130
Isopropylbenzene	10.0	8.87		ug/L		89	73 - 123

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

Lab Sample ID: LCS 240-451576/4
Matrix: Water
Analysis Batch: 451576

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl acetate	20.0	24.4		ug/L		122	47 - 140
Methyl tert-butyl ether	10.0	9.52		ug/L		95	57 - 127
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.3		ug/L		113	54 - 148
1,2,4-Trichlorobenzene	10.0	13.2	*	ug/L		132	47 - 120
1,2-Dichlorobenzene	10.0	10.1		ug/L		101	74 - 120
1,3-Dichlorobenzene	10.0	9.56		ug/L		96	74 - 120
1,4-Dichlorobenzene	10.0	9.47		ug/L		95	75 - 120
Trichlorofluoromethane	10.0	12.6		ug/L		126	52 - 148
Dibromochloromethane	10.0	9.22		ug/L		92	75 - 120
Methylcyclohexane	10.0	10.2		ug/L		102	64 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 130*
4-Bromofluorobenzene (Surr)	*103*		*47 - 134*
Toluene-d8 (Surr)	*91*		*69 - 122*
Dibromofluoromethane (Surr)	*93*		*78 - 129*

Lab Sample ID: 240-136174-2 MS
Matrix: Water
Analysis Batch: 451576

Client Sample ID: GW-17322-090420-SK-002
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	10	U	20.0	24.0		ug/L		120	32 - 157
Benzene	1.0	U	10.0	8.86		ug/L		89	70 - 121
Bromodichloromethane	1.0	U	10.0	8.90		ug/L		89	69 - 120
Bromoform	1.0	U	10.0	9.82		ug/L		98	41 - 128
Bromomethane	1.0	U	10.0	11.7		ug/L		117	41 - 136
2-Butanone (MEK)	10	U	20.0	20.6		ug/L		103	40 - 147
Carbon disulfide	5.0	U	10.0	10.1		ug/L		101	54 - 131
Carbon tetrachloride	1.0	U	10.0	7.90		ug/L		79	53 - 142
Chlorobenzene	1.0	U	10.0	8.98		ug/L		90	73 - 120
Chloroethane	1.0	U	10.0	12.6		ug/L		126	37 - 142
Chloroform	1.0	U	10.0	9.88		ug/L		99	66 - 126
Chloromethane	1.0	U	10.0	9.60		ug/L		96	33 - 146
1,1-Dichloroethane	1.0	U	10.0	10.1		ug/L		101	71 - 121
1,2-Dichloroethane	1.0	U	10.0	10.9		ug/L		109	65 - 127
1,1-Dichloroethene	1.0	U	10.0	11.4		ug/L		114	64 - 132
1,2-Dichloropropane	1.0	U	10.0	9.32		ug/L		93	73 - 125
cis-1,3-Dichloropropene	1.0	U *	10.0	6.38		ug/L		64	56 - 121
trans-1,3-Dichloropropene	1.0	U *	10.0	5.94		ug/L		59	53 - 120
Ethylbenzene	1.0	U	10.0	8.70		ug/L		87	66 - 122
2-Hexanone	10	U	20.0	22.9		ug/L		114	44 - 142
Methylene Chloride	5.0	U F1 *	10.0	12.8	F1	ug/L		128	59 - 127
4-Methyl-2-pentanone (MIBK)	10	U	20.0	21.3		ug/L		107	40 - 147
Styrene	1.0	U	10.0	8.08		ug/L		81	57 - 126
1,1,2,2-Tetrachloroethane	1.0	U	10.0	12.3		ug/L		123	37 - 149
Tetrachloroethene	1.0	U	10.0	9.29		ug/L		93	52 - 129
Toluene	1.0	U	10.0	8.60		ug/L		86	68 - 124

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

Lab Sample ID: 240-136174-2 MS
Matrix: Water
Analysis Batch: 451576

Client Sample ID: GW-17322-090420-SK-002
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichloroethene	1.0	U	10.0	9.36		ug/L		94	56 - 124
Vinyl chloride	1.0	U	10.0	12.3		ug/L		123	49 - 136
Xylenes, Total	2.0	U	20.0	16.5		ug/L		83	64 - 124
1,1,1-Trichloroethane	1.0	U	10.0	9.20		ug/L		92	62 - 135
1,1,2-Trichloroethane	1.0	U	10.0	10.9		ug/L		109	73 - 122
Cyclohexane	1.0	U	10.0	9.50		ug/L		95	48 - 136
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	11.6		ug/L		116	31 - 130
1,2-Dibromoethane	1.0	U F1 *	10.0	6.68		ug/L		67	66 - 120
Dichlorodifluoromethane	1.0	U F1 *	10.0	15.1	F1	ug/L		151	27 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	9.71		ug/L		97	68 - 121
trans-1,2-Dichloroethene	1.0	U	10.0	9.48		ug/L		95	69 - 126
Isopropylbenzene	1.0	U	10.0	8.45		ug/L		85	56 - 122
Methyl acetate	10	U	20.0	24.1		ug/L		121	41 - 137
Methyl tert-butyl ether	1.0	U	10.0	10.1		ug/L		101	50 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	10.9		ug/L		109	41 - 145
1,2,4-Trichlorobenzene	1.0	U F1 *	10.0	12.1	F1	ug/L		121	37 - 120
1,2-Dichlorobenzene	1.0	U	10.0	9.47		ug/L		95	65 - 120
1,3-Dichlorobenzene	1.0	U	10.0	9.08		ug/L		91	64 - 120
1,4-Dichlorobenzene	1.0	U	10.0	9.09		ug/L		91	65 - 120
Trichlorofluoromethane	1.0	U	10.0	12.2		ug/L		122	45 - 152
Dibromochloromethane	1.0	U	10.0	8.92		ug/L		89	66 - 120
Methylcyclohexane	1.0	U	10.0	8.84		ug/L		88	40 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 130*
4-Bromofluorobenzene (Surr)	*97*		*47 - 134*
Toluene-d8 (Surr)	*91*		*69 - 122*
Dibromofluoromethane (Surr)	*96*		*78 - 129*

Lab Sample ID: 240-136174-2 MSD
Matrix: Water
Analysis Batch: 451576

Client Sample ID: GW-17322-090420-SK-002
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	10	U	20.0	24.9		ug/L		124	32 - 157	4	35
Benzene	1.0	U	10.0	9.08		ug/L		91	70 - 121	2	35
Bromodichloromethane	1.0	U	10.0	9.35		ug/L		94	69 - 120	5	35
Bromoform	1.0	U	10.0	10.1		ug/L		101	41 - 128	3	35
Bromomethane	1.0	U	10.0	12.5		ug/L		125	41 - 136	7	35
2-Butanone (MEK)	10	U	20.0	20.9		ug/L		105	40 - 147	2	35
Carbon disulfide	5.0	U	10.0	10.8		ug/L		108	54 - 131	6	35
Carbon tetrachloride	1.0	U	10.0	8.36		ug/L		84	53 - 142	6	35
Chlorobenzene	1.0	U	10.0	9.12		ug/L		91	73 - 120	2	35
Chloroethane	1.0	U	10.0	12.8		ug/L		128	37 - 142	2	35
Chloroform	1.0	U	10.0	10.2		ug/L		102	66 - 126	3	35
Chloromethane	1.0	U	10.0	10.0		ug/L		100	33 - 146	4	35
1,1-Dichloroethane	1.0	U	10.0	10.1		ug/L		101	71 - 121	1	35
1,2-Dichloroethane	1.0	U	10.0	11.2		ug/L		112	65 - 127	3	35

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

Lab Sample ID: 240-136174-2 MSD
Matrix: Water
Analysis Batch: 451576

Client Sample ID: GW-17322-090420-SK-002
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	1.0	U	10.0	11.3		ug/L		113	64 - 132	0	35
1,2-Dichloropropane	1.0	U	10.0	9.57		ug/L		96	73 - 125	3	35
cis-1,3-Dichloropropene	1.0	U *	10.0	6.15		ug/L		61	56 - 121	4	35
trans-1,3-Dichloropropene	1.0	U *	10.0	5.87		ug/L		59	53 - 120	1	35
Ethylbenzene	1.0	U	10.0	8.89		ug/L		89	66 - 122	2	35
2-Hexanone	10	U	20.0	23.1		ug/L		116	44 - 142	1	35
Methylene Chloride	5.0	U F1 *	10.0	13.0	F1	ug/L		130	59 - 127	2	32
4-Methyl-2-pentanone (MIBK)	10	U	20.0	21.3		ug/L		107	40 - 147	0	35
Styrene	1.0	U	10.0	8.35		ug/L		84	57 - 126	3	35
1,1,2,2-Tetrachloroethane	1.0	U	10.0	11.7		ug/L		117	37 - 149	5	35
Tetrachloroethene	1.0	U	10.0	8.97		ug/L		90	52 - 129	4	35
Toluene	1.0	U	10.0	9.05		ug/L		90	68 - 124	5	35
Trichloroethene	1.0	U	10.0	9.69		ug/L		97	56 - 124	3	35
Vinyl chloride	1.0	U	10.0	11.8		ug/L		118	49 - 136	4	35
Xylenes, Total	2.0	U	20.0	17.8		ug/L		89	64 - 124	7	35
1,1,1-Trichloroethane	1.0	U	10.0	9.71		ug/L		97	62 - 135	5	35
1,1,2-Trichloroethane	1.0	U	10.0	11.1		ug/L		111	73 - 122	2	35
Cyclohexane	1.0	U	10.0	10.1		ug/L		101	48 - 136	6	35
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	11.2		ug/L		112	31 - 130	3	35
1,2-Dibromoethane	1.0	U F1 *	10.0	6.38	F1	ug/L		64	66 - 120	5	35
Dichlorodifluoromethane	1.0	U F1 *	10.0	14.1	F1	ug/L		141	27 - 132	7	35
cis-1,2-Dichloroethene	1.0	U	10.0	10.4		ug/L		104	68 - 121	7	35
trans-1,2-Dichloroethene	1.0	U	10.0	10.3		ug/L		103	69 - 126	8	35
Isopropylbenzene	1.0	U	10.0	8.84		ug/L		88	56 - 122	4	20
Methyl acetate	10	U	20.0	23.4		ug/L		117	41 - 137	3	16
Methyl tert-butyl ether	1.0	U	10.0	10.2		ug/L		102	50 - 126	1	17
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	10.5		ug/L		105	41 - 145	4	35
1,2,4-Trichlorobenzene	1.0	U F1 *	10.0	12.7	F1	ug/L		127	37 - 120	4	25
1,2-Dichlorobenzene	1.0	U	10.0	9.82		ug/L		98	65 - 120	4	35
1,3-Dichlorobenzene	1.0	U	10.0	9.13		ug/L		91	64 - 120	1	35
1,4-Dichlorobenzene	1.0	U	10.0	9.43		ug/L		94	65 - 120	4	35
Trichlorofluoromethane	1.0	U	10.0	12.0		ug/L		120	45 - 152	2	35
Dibromochloromethane	1.0	U	10.0	8.82		ug/L		88	66 - 120	1	35
Methylcyclohexane	1.0	U	10.0	9.77		ug/L		98	40 - 125	10	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 130*
4-Bromofluorobenzene (Surr)	*102*		*47 - 134*
Toluene-d8 (Surr)	*92*		*69 - 122*
Dibromofluoromethane (Surr)	*94*		*78 - 129*

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 17322A-014, PCC Validation

Job ID: 240-136174-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(75-130)	(47-134)	(69-122)	(78-129)
240-136174-1	GW-17322-090420-SK-001	105	90	94	90
240-136174-2	GW-17322-090420-SK-002	102	94	93	91
240-136174-2 MS	GW-17322-090420-SK-002	102	97	91	96
240-136174-2 MSD	GW-17322-090420-SK-002	98	102	92	94
240-136174-3	TB-17322-090420-SK	96	93	91	91
LCS 240-451576/4	Lab Control Sample	100	103	91	93
MB 240-451576/7	Method Blank	97	93	92	91

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Lab Chronicle

Client: GHD Services Inc.
Job ID: 240-136174-1
Project/Site: 17322A-014, PCC Validation

Client Sample ID: GW-17322-090420-SK-001
Lab Sample ID: 240-136174-1
Date Collected: 09/04/20 10:20
Matrix: Water
Date Received: 09/05/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	451576	09/16/20 21:27	LRW	TAL CAN

Client Sample ID: GW-17322-090420-SK-002
Lab Sample ID: 240-136174-2
Date Collected: 09/04/20 10:20
Matrix: Water
Date Received: 09/05/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	451576	09/16/20 21:52	LRW	TAL CAN

Client Sample ID: TB-17322-090420-SK
Lab Sample ID: 240-136174-3
Date Collected: 09/04/20 00:00
Matrix: Water
Date Received: 09/05/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	451576	09/16/20 23:07	LRW	TAL CAN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

Client: GHD Services Inc.
Job ID: 240-136174-1
Project/Site: 17322A-014, PCC Validation

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-21
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21
Illinois	NELAP	004498	07-31-20 *
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-24-21
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

MICHIGAN 190

Chain of Custody Record 460293

eurofins | Environment Testing TestAmerica

T.A.# 24020174 0.4/1.3

Address:

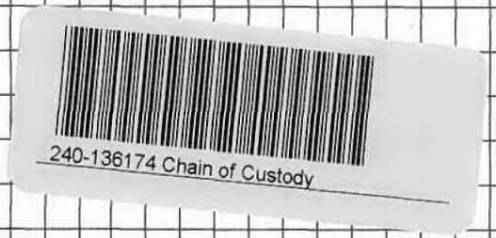
Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

Client Contact	Project Manager: S. Belisle	Site Contact: S. Kippen	Date: 9-4-2020	COC No:
Company Name: GHD	Tel/Email: 248 893-3400	Lab Contact: J. Abston	Carrier: Fed Ex	1 of 1 COCs
Address: 26850 Haggerty Rd.	Analysis Turnaround Time			Sampler: Scott Kippen
City/State/Zip: Farmington Hills, M.I 48331	☐ CALENDAR DAYS ☒ WORKING DAYS			For Lab Use Only:
Phone: (248) 893-3400	TAT if different from Below			Walk-in Client:
Fax: chem.det@ghd.com	☒ (2 weeks) ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
Project Name: PCC Validation				Job / SDG No.:
Site: Pontiac, M.I.				
PO# 550W: 017322A-014				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TCL - VOCs	Sample Specific Notes:
GW-17322-090420-SK-001	9-4-20	10:20	G	GW	3			X	
↓ ↓ ↓ ↓ -002	↓		↓	↓	9		X	X	
TB-17322-090420-SK	↓	—	—	TB	1			X	

SK



Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
R. Kurt K	GHD	9/4/2020 13:15		ETA	9-5-20 950
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # : 136174**
Canton Facility

Client GHD Site Name

Cooler Received on 9-5-20 Opened on 9-5-20

Cooler unpacked by: MatSmith

FedEx: 1st Grd (Exp) UPS FAS Clipper Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

TestAmerica Cooler # TA Foam Box Client Cooler Box Other

Packing material used: (Bubble Wrap) Foam Plastic Bag None Other

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-10 (CF +0.7 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
   IR GUN #IR-11 (CF +0.9°C) Observed Cooler Temp. 0.4 °C Corrected Cooler Temp. 1.3 °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 (Yes) No
   -Were the seals on the outside of the cooler(s) signed & dated? (Yes) No NA
   -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes (No)
   -Were tamper/custody seals intact and uncompromised? (Yes) No NA
3. Shippers' packing slip attached to the cooler(s)? (Yes) No
4. Did custody papers accompany the sample(s)? (Yes) No
5. Were the custody papers relinquished & signed in the appropriate place? (Yes) No
6. Was/were the person(s) who collected the samples clearly identified on the COC? (Yes) No
7. Did all bottles arrive in good condition (Unbroken)? (Yes) No
8. Could all bottle labels be reconciled with the COC? (Yes) No
9. Were correct bottle(s) used for the test(s) indicated? (Yes) No
10. Sufficient quantity received to perform indicated analyses? (Yes) No
11. Are these work share samples? Yes (No)
    If yes, Questions 12-16 have been checked at the originating laboratory.
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No (NA) pH Strip Lot# HC911298
13. Were VOAs on the COC? (Yes) No
14. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this. Yes (No) NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # (Yes) No
16. Was a LL Hg or Me Hg trip blank present? Yes (No)

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

18. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.
Time preserved: Preservative(s) added/Lot number(s):

VOA Sample Preservation - Date/Time VOAs Frozen:

WI-NC-099

eurofins | Environment Testing America



ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-141928-1
Client Project/Site: 17322, PCC Validation

For:
GHD Services Inc.
26850 Haggerty Rd.
Farmington Hills, Michigan 48331

Attn: Mr. James Abston

Denise D Heckler

Authorized for release by:
12/23/2020 3:56:52 PM

Denise Heckler, Project Manager II
(330)966-9477
Denise.Heckler@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

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

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

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Definitions/Glossary 4
Sample Summary 5
Detection Summary 6
Method Summary 7
Client Sample Results 8
QC Association Summary 16
QC Sample Results 17
Surrogate Summary 20
Lab Chronicle 21
Certification Summary 22
Chain of Custody 23

Case Narrative

Client: GHD Services Inc.
Project/Site: 17322, PCC Validation

Job ID: 240-141928-1

Job ID: 240-141928-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-141928-1

Comments
No additional comments.

Receipt
The samples were received on 12/15/2020 11:30 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.5º C.

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

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 17322, PCC Validation

Job ID: 240-141928-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Sample Summary

Client: GHD Services Inc.
Project/Site: 17322, PCC Validation

Job ID: 240-141928-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-141928-1	GW-017322-121420-SK-001	Water	12/14/20 11:20	12/15/20 11:30	
240-141928-2	GW-017322-121420-SK-002	Water	12/14/20 13:10	12/15/20 11:30	
240-141928-3	GW-017322-121420-SK-003	Water	12/14/20 13:15	12/15/20 11:30	
240-141928-4	TB-017322-121420-SK	Water	12/14/20 00:00	12/15/20 11:30	

Detection Summary

Client: GHD Services Inc.
Project/Site: 17322, PCC Validation

Job ID: 240-141928-1

Client Sample ID: GW-017322-121420-SK-001 — Lab Sample ID: 240-141928-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	1.1		1.0	0.10	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.2		1.0	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: GW-017322-121420-SK-002 — Lab Sample ID: 240-141928-2

No Detections.

Client Sample ID: GW-017322-121420-SK-003 — Lab Sample ID: 240-141928-3

No Detections.

Client Sample ID: TB-017322-121420-SK — Lab Sample ID: 240-141928-4

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: GHD Services Inc.
Project/Site: 17322, PCC Validation

Job ID: 240-141928-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL CAN

Protocol References:

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

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Client: GHD Services Inc.
Project/Site: 17322, PCC Validation

Job ID: 240-141928-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-017322-121420-SK-001
Date Collected: 12/14/20 11:20
Date Received: 12/15/20 11:30

Lab Sample ID: 240-141928-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			12/22/20 17:12	1
Benzene	1.0	U	1.0	0.13	ug/L			12/22/20 17:12	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			12/22/20 17:12	1
Bromoform	1.0	U	1.0	0.76	ug/L			12/22/20 17:12	1
Bromomethane	1.0	U	1.0	0.42	ug/L			12/22/20 17:12	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			12/22/20 17:12	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			12/22/20 17:12	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			12/22/20 17:12	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			12/22/20 17:12	1
Chloroethane	1.0	U	1.0	0.83	ug/L			12/22/20 17:12	1
Chloroform	1.0	U	1.0	0.13	ug/L			12/22/20 17:12	1
Chloromethane	1.0	U	1.0	0.20	ug/L			12/22/20 17:12	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			12/22/20 17:12	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			12/22/20 17:12	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/22/20 17:12	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			12/22/20 17:12	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			12/22/20 17:12	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			12/22/20 17:12	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			12/22/20 17:12	1
2-Hexanone	10	U	10	0.54	ug/L			12/22/20 17:12	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			12/22/20 17:12	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			12/22/20 17:12	1
Styrene	1.0	U	1.0	0.10	ug/L			12/22/20 17:12	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			12/22/20 17:12	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			12/22/20 17:12	1
Toluene	1.0	U	1.0	0.14	ug/L			12/22/20 17:12	1
Trichloroethene	**1.1**		1.0	0.10	ug/L			12/22/20 17:12	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			12/22/20 17:12	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			12/22/20 17:12	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			12/22/20 17:12	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			12/22/20 17:12	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			12/22/20 17:12	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			12/22/20 17:12	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			12/22/20 17:12	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			12/22/20 17:12	1
cis-1,2-Dichloroethene	**1.2**		1.0	0.16	ug/L			12/22/20 17:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/22/20 17:12	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			12/22/20 17:12	1
Methyl acetate	10	U	10	1.7	ug/L			12/22/20 17:12	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			12/22/20 17:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			12/22/20 17:12	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			12/22/20 17:12	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			12/22/20 17:12	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			12/22/20 17:12	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			12/22/20 17:12	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			12/22/20 17:12	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			12/22/20 17:12	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			12/22/20 17:12	1

Client: GHD Services Inc.
Project/Site: 17322, PCC Validation

Job ID: 240-141928-1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		75 - 130		12/22/20 17:12	1
4-Bromofluorobenzene (Surr)	69		47 - 134		12/22/20 17:12	1
Toluene-d8 (Surr)	86		69 - 122		12/22/20 17:12	1
Dibromofluoromethane (Surr)	94		78 - 129		12/22/20 17:12	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-017322-121420-SK-002
Date Collected: 12/14/20 13:10
Date Received: 12/15/20 11:30

Lab Sample ID: 240-141928-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			12/22/20 17:36	1
Benzene	1.0	U	1.0	0.13	ug/L			12/22/20 17:36	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			12/22/20 17:36	1
Bromoform	1.0	U	1.0	0.76	ug/L			12/22/20 17:36	1
Bromomethane	1.0	U	1.0	0.42	ug/L			12/22/20 17:36	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			12/22/20 17:36	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			12/22/20 17:36	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			12/22/20 17:36	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			12/22/20 17:36	1
Chloroethane	1.0	U	1.0	0.83	ug/L			12/22/20 17:36	1
Chloroform	1.0	U	1.0	0.13	ug/L			12/22/20 17:36	1
Chloromethane	1.0	U	1.0	0.20	ug/L			12/22/20 17:36	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			12/22/20 17:36	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			12/22/20 17:36	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/22/20 17:36	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			12/22/20 17:36	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			12/22/20 17:36	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			12/22/20 17:36	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			12/22/20 17:36	1
2-Hexanone	10	U	10	0.54	ug/L			12/22/20 17:36	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			12/22/20 17:36	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			12/22/20 17:36	1
Styrene	1.0	U	1.0	0.10	ug/L			12/22/20 17:36	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			12/22/20 17:36	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			12/22/20 17:36	1
Toluene	1.0	U	1.0	0.14	ug/L			12/22/20 17:36	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			12/22/20 17:36	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			12/22/20 17:36	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			12/22/20 17:36	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			12/22/20 17:36	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			12/22/20 17:36	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			12/22/20 17:36	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			12/22/20 17:36	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			12/22/20 17:36	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			12/22/20 17:36	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			12/22/20 17:36	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/22/20 17:36	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			12/22/20 17:36	1
Methyl acetate	10	U	10	1.7	ug/L			12/22/20 17:36	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			12/22/20 17:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			12/22/20 17:36	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			12/22/20 17:36	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			12/22/20 17:36	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			12/22/20 17:36	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			12/22/20 17:36	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			12/22/20 17:36	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			12/22/20 17:36	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			12/22/20 17:36	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		75 - 130		12/22/20 17:36	1
4-Bromofluorobenzene (Surr)	67		47 - 134		12/22/20 17:36	1
Toluene-d8 (Surr)	84		69 - 122		12/22/20 17:36	1
Dibromofluoromethane (Surr)	98		78 - 129		12/22/20 17:36	1

Client: GHD Services Inc.
Project/Site: 17322, PCC Validation

Job ID: 240-141928-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-017322-121420-SK-003
Date Collected: 12/14/20 13:15
Date Received: 12/15/20 11:30

Lab Sample ID: 240-141928-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			12/22/20 17:59	1
Benzene	1.0	U	1.0	0.13	ug/L			12/22/20 17:59	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			12/22/20 17:59	1
Bromoform	1.0	U	1.0	0.76	ug/L			12/22/20 17:59	1
Bromomethane	1.0	U	1.0	0.42	ug/L			12/22/20 17:59	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			12/22/20 17:59	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			12/22/20 17:59	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			12/22/20 17:59	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			12/22/20 17:59	1
Chloroethane	1.0	U	1.0	0.83	ug/L			12/22/20 17:59	1
Chloroform	1.0	U	1.0	0.13	ug/L			12/22/20 17:59	1
Chloromethane	1.0	U	1.0	0.20	ug/L			12/22/20 17:59	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			12/22/20 17:59	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			12/22/20 17:59	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/22/20 17:59	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			12/22/20 17:59	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			12/22/20 17:59	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			12/22/20 17:59	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			12/22/20 17:59	1
2-Hexanone	10	U	10	0.54	ug/L			12/22/20 17:59	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			12/22/20 17:59	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			12/22/20 17:59	1
Styrene	1.0	U	1.0	0.10	ug/L			12/22/20 17:59	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			12/22/20 17:59	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			12/22/20 17:59	1
Toluene	1.0	U	1.0	0.14	ug/L			12/22/20 17:59	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			12/22/20 17:59	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			12/22/20 17:59	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			12/22/20 17:59	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			12/22/20 17:59	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			12/22/20 17:59	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			12/22/20 17:59	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			12/22/20 17:59	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			12/22/20 17:59	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			12/22/20 17:59	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			12/22/20 17:59	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/22/20 17:59	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			12/22/20 17:59	1
Methyl acetate	10	U	10	1.7	ug/L			12/22/20 17:59	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			12/22/20 17:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			12/22/20 17:59	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			12/22/20 17:59	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			12/22/20 17:59	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			12/22/20 17:59	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			12/22/20 17:59	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			12/22/20 17:59	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			12/22/20 17:59	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			12/22/20 17:59	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		75 - 130		12/22/20 17:59	1
4-Bromofluorobenzene (Surr)	67		47 - 134		12/22/20 17:59	1
Toluene-d8 (Surr)	86		69 - 122		12/22/20 17:59	1
Dibromofluoromethane (Surr)	99		78 - 129		12/22/20 17:59	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: TB-017322-121420-SK
Date Collected: 12/14/20 00:00
Date Received: 12/15/20 11:30

Lab Sample ID: 240-141928-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			12/22/20 18:23	1
Benzene	1.0	U	1.0	0.13	ug/L			12/22/20 18:23	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			12/22/20 18:23	1
Bromoform	1.0	U	1.0	0.76	ug/L			12/22/20 18:23	1
Bromomethane	1.0	U	1.0	0.42	ug/L			12/22/20 18:23	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			12/22/20 18:23	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			12/22/20 18:23	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			12/22/20 18:23	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			12/22/20 18:23	1
Chloroethane	1.0	U	1.0	0.83	ug/L			12/22/20 18:23	1
Chloroform	1.0	U	1.0	0.13	ug/L			12/22/20 18:23	1
Chloromethane	1.0	U	1.0	0.20	ug/L			12/22/20 18:23	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			12/22/20 18:23	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			12/22/20 18:23	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/22/20 18:23	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			12/22/20 18:23	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			12/22/20 18:23	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			12/22/20 18:23	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			12/22/20 18:23	1
2-Hexanone	10	U	10	0.54	ug/L			12/22/20 18:23	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			12/22/20 18:23	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			12/22/20 18:23	1
Styrene	1.0	U	1.0	0.10	ug/L			12/22/20 18:23	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			12/22/20 18:23	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			12/22/20 18:23	1
Toluene	1.0	U	1.0	0.14	ug/L			12/22/20 18:23	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			12/22/20 18:23	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			12/22/20 18:23	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			12/22/20 18:23	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			12/22/20 18:23	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			12/22/20 18:23	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			12/22/20 18:23	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			12/22/20 18:23	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			12/22/20 18:23	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			12/22/20 18:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			12/22/20 18:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/22/20 18:23	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			12/22/20 18:23	1
Methyl acetate	10	U	10	1.7	ug/L			12/22/20 18:23	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			12/22/20 18:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			12/22/20 18:23	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			12/22/20 18:23	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			12/22/20 18:23	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			12/22/20 18:23	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			12/22/20 18:23	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			12/22/20 18:23	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			12/22/20 18:23	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			12/22/20 18:23	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		75 - 130		12/22/20 18:23	1
4-Bromofluorobenzene (Surr)	69		47 - 134		12/22/20 18:23	1
Toluene-d8 (Surr)	84		69 - 122		12/22/20 18:23	1
Dibromofluoromethane (Surr)	103		78 - 129		12/22/20 18:23	1

QC Association Summary

Client: GHD Services Inc.
Project/Site: 17322, PCC Validation

Job ID: 240-141928-1

GC/MS VOA

Analysis Batch: 466584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-141928-1	GW-017322-121420-SK-001	Total/NA	Water	8260B	
240-141928-2	GW-017322-121420-SK-002	Total/NA	Water	8260B	
240-141928-3	GW-017322-121420-SK-003	Total/NA	Water	8260B	
240-141928-4	TB-017322-121420-SK	Total/NA	Water	8260B	
MB 240-466584/7	Method Blank	Total/NA	Water	8260B	
LCS 240-466584/4	Lab Control Sample	Total/NA	Water	8260B	

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-466584/7
Matrix: Water
Analysis Batch: 466584

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			12/22/20 14:25	1
Benzene	1.0	U	1.0	0.13	ug/L			12/22/20 14:25	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			12/22/20 14:25	1
Bromoform	1.0	U	1.0	0.76	ug/L			12/22/20 14:25	1
Bromomethane	1.0	U	1.0	0.42	ug/L			12/22/20 14:25	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			12/22/20 14:25	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			12/22/20 14:25	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			12/22/20 14:25	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			12/22/20 14:25	1
Chloroethane	1.0	U	1.0	0.83	ug/L			12/22/20 14:25	1
Chloroform	1.0	U	1.0	0.13	ug/L			12/22/20 14:25	1
Chloromethane	1.0	U	1.0	0.20	ug/L			12/22/20 14:25	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			12/22/20 14:25	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			12/22/20 14:25	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/22/20 14:25	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			12/22/20 14:25	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			12/22/20 14:25	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			12/22/20 14:25	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			12/22/20 14:25	1
2-Hexanone	10	U	10	0.54	ug/L			12/22/20 14:25	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			12/22/20 14:25	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			12/22/20 14:25	1
Styrene	1.0	U	1.0	0.10	ug/L			12/22/20 14:25	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			12/22/20 14:25	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			12/22/20 14:25	1
Toluene	1.0	U	1.0	0.14	ug/L			12/22/20 14:25	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			12/22/20 14:25	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			12/22/20 14:25	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			12/22/20 14:25	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			12/22/20 14:25	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			12/22/20 14:25	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			12/22/20 14:25	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			12/22/20 14:25	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			12/22/20 14:25	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			12/22/20 14:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			12/22/20 14:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/22/20 14:25	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			12/22/20 14:25	1
Methyl acetate	10	U	10	1.7	ug/L			12/22/20 14:25	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			12/22/20 14:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			12/22/20 14:25	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			12/22/20 14:25	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			12/22/20 14:25	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			12/22/20 14:25	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			12/22/20 14:25	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			12/22/20 14:25	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			12/22/20 14:25	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			12/22/20 14:25	1

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

Lab Sample ID: MB 240-466584/7
Matrix: Water
Analysis Batch: 466584

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		75 - 130		12/22/20 14:25	1
4-Bromofluorobenzene (Surr)	69		47 - 134		12/22/20 14:25	1
Toluene-d8 (Surr)	86		69 - 122		12/22/20 14:25	1
Dibromofluoromethane (Surr)	96		78 - 129		12/22/20 14:25	1

Lab Sample ID: LCS 240-466584/4
Matrix: Water
Analysis Batch: 466584

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	21.7		ug/L		108	33 - 155
Benzene	10.0	9.72		ug/L		97	77 - 123
Bromodichloromethane	10.0	8.83		ug/L		88	73 - 122
Bromoform	10.0	9.49		ug/L		95	47 - 133
Bromomethane	10.0	7.57		ug/L		76	48 - 144
2-Butanone (MEK)	20.0	18.9		ug/L		95	41 - 151
Carbon disulfide	10.0	7.67		ug/L		77	67 - 127
Carbon tetrachloride	10.0	8.92		ug/L		89	61 - 142
Chlorobenzene	10.0	10.7		ug/L		107	80 - 120
Chloroethane	10.0	7.29		ug/L		73	41 - 147
Chloroform	10.0	9.48		ug/L		95	74 - 127
Chloromethane	10.0	7.69		ug/L		77	46 - 148
1,1-Dichloroethane	10.0	9.16		ug/L		92	74 - 126
1,2-Dichloroethane	10.0	8.97		ug/L		90	66 - 129
1,1-Dichloroethene	10.0	9.74		ug/L		97	73 - 129
1,2-Dichloropropane	10.0	9.12		ug/L		91	79 - 127
cis-1,3-Dichloropropene	10.0	7.73		ug/L		77	68 - 128
trans-1,3-Dichloropropene	10.0	7.22		ug/L		72	64 - 120
Ethylbenzene	10.0	9.99		ug/L		100	80 - 120
2-Hexanone	20.0	15.7		ug/L		79	43 - 142
Methylene Chloride	10.0	9.76		ug/L		98	63 - 134
4-Methyl-2-pentanone (MIBK)	20.0	14.2		ug/L		71	43 - 145
Styrene	10.0	9.87		ug/L		99	75 - 121
1,1,2,2-Tetrachloroethane	10.0	10.2		ug/L		102	45 - 151
Tetrachloroethene	10.0	10.9		ug/L		109	70 - 125
Toluene	10.0	10.3		ug/L		103	79 - 122
Trichloroethene	10.0	9.28		ug/L		93	71 - 121
Vinyl chloride	10.0	7.71		ug/L		77	61 - 134
Xylenes, Total	20.0	19.7		ug/L		98	78 - 122
1,1,1-Trichloroethane	10.0	8.48		ug/L		85	65 - 141
1,1,2-Trichloroethane	10.0	10.8		ug/L		108	79 - 121
Cyclohexane	10.0	8.51		ug/L		85	69 - 133
1,2-Dibromo-3-Chloropropane	10.0	7.43		ug/L		74	34 - 136
1,2-Dibromoethane	10.0	10.6		ug/L		106	73 - 120
Dichlorodifluoromethane	10.0	7.71		ug/L		77	35 - 137
cis-1,2-Dichloroethene	10.0	9.46		ug/L		95	75 - 124
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	74 - 130
Isopropylbenzene	10.0	9.38		ug/L		94	73 - 123

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

Lab Sample ID: LCS 240-466584/4
Matrix: Water
Analysis Batch: 466584

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl acetate	20.0	19.8		ug/L		99	47 - 140
Methyl tert-butyl ether	10.0	7.50		ug/L		75	57 - 127
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.80		ug/L		98	54 - 148
1,2,4-Trichlorobenzene	10.0	7.38		ug/L		74	47 - 120
1,2-Dichlorobenzene	10.0	9.99		ug/L		100	74 - 120
1,3-Dichlorobenzene	10.0	9.77		ug/L		98	74 - 120
1,4-Dichlorobenzene	10.0	10.2		ug/L		102	75 - 120
Trichlorofluoromethane	10.0	8.82		ug/L		88	52 - 148
Dibromochloromethane	10.0	10.5		ug/L		105	75 - 120
Methylcyclohexane	10.0	8.81		ug/L		88	64 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*81*		*75 - 130*
4-Bromofluorobenzene (Surr)	*88*		*47 - 134*
Toluene-d8 (Surr)	*94*		*69 - 122*
Dibromofluoromethane (Surr)	*88*		*78 - 129*

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 17322, PCC Validation

Job ID: 240-141928-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(75-130)	(47-134)	(69-122)	(78-129)
240-141928-1	GW-017322-121420-SK-001	90	69	86	94
240-141928-2	GW-017322-121420-SK-002	96	67	84	98
240-141928-3	GW-017322-121420-SK-003	94	67	86	99
240-141928-4	TB-017322-121420-SK	100	69	84	103
LCS 240-466584/4	Lab Control Sample	81	88	94	88
MB 240-466584/7	Method Blank	95	69	86	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 17322, PCC Validation

Job ID: 240-141928-1

Client Sample ID: GW-017322-121420-SK-001
Lab Sample ID: 240-141928-1
Date Collected: 12/14/20 11:20
Matrix: Water
Date Received: 12/15/20 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	466584	12/22/20 17:12	LRW	TAL CAN

Client Sample ID: GW-017322-121420-SK-002
Lab Sample ID: 240-141928-2
Date Collected: 12/14/20 13:10
Matrix: Water
Date Received: 12/15/20 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	466584	12/22/20 17:36	LRW	TAL CAN

Client Sample ID: GW-017322-121420-SK-003
Lab Sample ID: 240-141928-3
Date Collected: 12/14/20 13:15
Matrix: Water
Date Received: 12/15/20 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	466584	12/22/20 17:59	LRW	TAL CAN

Client Sample ID: TB-017322-121420-SK
Lab Sample ID: 240-141928-4
Date Collected: 12/14/20 00:00
Matrix: Water
Date Received: 12/15/20 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	466584	12/22/20 18:23	LRW	TAL CAN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

Client: GHD Services Inc.
Job ID: 240-141928-1
Project/Site: 17322, PCC Validation

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-21
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-24-21
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

2.613.5 T.A.# 24020174

Chain of Custody Record 492884

eurofins | Environment Testing TestAmerica

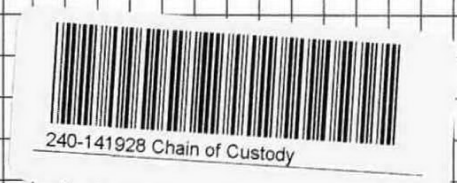
Address: _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

Client Contact	Project Manager: Tom Kinney	Site Contact: S. Kippen	Date: 12-14-2020	COC No:
Company Name: GHD	Tel/Email: (248) 893-3410	Lab Contact: D. Heckler	Carrier: Fed Ex	1 of 1 COCs
Address: 26850 Haggerty Rd	Analysis Turnaround Time			Sampler: S. Kippen
City/State/Zip: Farmington Hills, M.I. 48331	☐ CALENDAR DAYS ☒ WORKING DAYS			For Lab Use Only:
Phone: (248) 893-3400	TAT if different from Below _____			Walk-in Client:
Fax: chem.det@ghd.com	☒ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
Project Name: PCC Validation				Job / SDG No.:
Site: Pontiac, M.I.				
PO# SSOW: 017322A-2020-015				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	VOCs 8260B	Sample Specific Notes:
GW-017322-121420-SK-001	12.14.20	11:20	G	GW	3			X	
-002		13:10			3			X	
-003		13:15			3			X	
TB-017322-121420-SK-		—	—	TB	1			X	
					SK				



Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
R. Lantz Kinney	GHD	12.14.20 15:15	Young Roger	ETA	12-15-20 1130
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # : 141928**
Canton Facility

Client GHA Site Name

Cooler Received on 12-15-20 Opened on 12-15-20

Cooler unpacked by: Tammy Hoge

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

TestAmerica Cooler # TA Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-11 (CF +0.9 °C) Observed Cooler Temp. 2.6 °C Corrected Cooler Temp. 3.5 °C
   IR GUN #IR-12 (CF +0.5°C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	Yes	No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
-Were tamper/custody seals intact and uncompromised?	Yes	No NA
3. Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5. Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7. Did all bottles arrive in good condition (Unbroken)?	Yes	No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes	No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?	Yes	No
10. Were correct bottle(s) used for the test(s) indicated?	Yes	No
11. Sufficient quantity received to perform indicated analyses?	Yes	No
12. Are these work share samples and all listed on the COC?	Yes	No
If yes, Questions 13-17 have been checked at the originating laboratory.		
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# HC907861
14. Were VOAs on the COC?	Yes	No
15. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes	No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 59072	Yes	No
17. Was a LL Hg or Me Hg trip blank present?	Yes	No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.
Time preserved: Preservative(s) added/Lot number(s):

VOA Sample Preservation - Date/Time VOAs Frozen:

WI-NC-099

eurofins | Environment Testing America



ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-145826-1
Client Project/Site: 11223416, PCC Validation

For:
GHD Services Inc.
26850 Haggerty Rd.
Farmington Hills, Michigan 48331

Attn: Mr. James Abston

Denise D Heckler

Authorized for release by:
3/26/2021 2:30:51 PM

Denise Heckler, Project Manager II
(330)966-9477
Denise.Heckler@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

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

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

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Definitions/Glossary 4
Sample Summary 5
Detection Summary 6
Method Summary 7
Client Sample Results 8
QC Association Summary 16
QC Sample Results 17
Surrogate Summary 22
Lab Chronicle 23
Certification Summary 24
Chain of Custody 25

Job ID: 240-145826-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-145826-1

Comments
No additional comments.

Receipt
The samples were received on 3/12/2021 10:20 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.5º C.

GC/MS VOA
Method 8260B: The MS/MSD for batch 240-477324 was analyzed outside of the tune time, due to an instrument fault. This is a batch QC sample; therefore, the data have been reported.

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

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-145826-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Sample Summary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-145826-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-145826-1	GW-111223416-031121-SK-001	Water	03/11/21 14:15	03/12/21 10:20	
240-145826-2	GW-111223416-031121-SK-002	Water	03/11/21 14:20	03/12/21 10:20	
240-145826-3	GW-111223416-031121-SK-003	Water	03/11/21 14:55	03/12/21 10:20	
240-145826-4	TB-111223416-031121-SK	Water	03/11/21 00:00	03/12/21 10:20	

Detection Summary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-145826-1

Client Sample ID: GW-111223416-031121-SK-001 — Lab Sample ID: 240-145826-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	0.25	J	1.0	0.10	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	0.18	J	1.0	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: GW-111223416-031121-SK-002 — Lab Sample ID: 240-145826-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	0.23	J	1.0	0.10	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	0.21	J	1.0	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: GW-111223416-031121-SK-003 — Lab Sample ID: 240-145826-3

No Detections.

Client Sample ID: TB-111223416-031121-SK — Lab Sample ID: 240-145826-4

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-145826-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL CAN

Protocol References:

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

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-145826-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-111223416-031121-SK-001
Date Collected: 03/11/21 14:15
Date Received: 03/12/21 10:20

Lab Sample ID: 240-145826-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			03/18/21 15:48	1
Benzene	1.0	U	1.0	0.13	ug/L			03/18/21 15:48	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			03/18/21 15:48	1
Bromoform	1.0	U	1.0	0.76	ug/L			03/18/21 15:48	1
Bromomethane	1.0	U	1.0	0.42	ug/L			03/18/21 15:48	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			03/18/21 15:48	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			03/18/21 15:48	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			03/18/21 15:48	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			03/18/21 15:48	1
Chloroethane	1.0	U	1.0	0.83	ug/L			03/18/21 15:48	1
Chloroform	1.0	U	1.0	0.13	ug/L			03/18/21 15:48	1
Chloromethane	1.0	U	1.0	0.20	ug/L			03/18/21 15:48	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			03/18/21 15:48	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			03/18/21 15:48	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/18/21 15:48	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			03/18/21 15:48	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			03/18/21 15:48	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			03/18/21 15:48	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			03/18/21 15:48	1
2-Hexanone	10	U	10	0.54	ug/L			03/18/21 15:48	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			03/18/21 15:48	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			03/18/21 15:48	1
Styrene	1.0	U	1.0	0.10	ug/L			03/18/21 15:48	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			03/18/21 15:48	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/18/21 15:48	1
Toluene	1.0	U	1.0	0.14	ug/L			03/18/21 15:48	1
Trichloroethene	**0.25**	**J**	1.0	0.10	ug/L			03/18/21 15:48	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/18/21 15:48	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			03/18/21 15:48	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			03/18/21 15:48	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			03/18/21 15:48	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			03/18/21 15:48	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			03/18/21 15:48	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			03/18/21 15:48	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			03/18/21 15:48	1
cis-1,2-Dichloroethene	**0.18**	**J**	1.0	0.16	ug/L			03/18/21 15:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/18/21 15:48	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			03/18/21 15:48	1
Methyl acetate	10	U	10	1.7	ug/L			03/18/21 15:48	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			03/18/21 15:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			03/18/21 15:48	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			03/18/21 15:48	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/18/21 15:48	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/18/21 15:48	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			03/18/21 15:48	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			03/18/21 15:48	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			03/18/21 15:48	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			03/18/21 15:48	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 130		03/18/21 15:48	1
4-Bromofluorobenzene (Surr)	67		47 - 134		03/18/21 15:48	1
Toluene-d8 (Surr)	79		69 - 122		03/18/21 15:48	1
Dibromofluoromethane (Surr)	110		78 - 129		03/18/21 15:48	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-145826-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-111223416-031121-SK-002
Date Collected: 03/11/21 14:20
Date Received: 03/12/21 10:20

Lab Sample ID: 240-145826-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			03/18/21 16:12	1
Benzene	1.0	U	1.0	0.13	ug/L			03/18/21 16:12	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			03/18/21 16:12	1
Bromoform	1.0	U	1.0	0.76	ug/L			03/18/21 16:12	1
Bromomethane	1.0	U	1.0	0.42	ug/L			03/18/21 16:12	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			03/18/21 16:12	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			03/18/21 16:12	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			03/18/21 16:12	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			03/18/21 16:12	1
Chloroethane	1.0	U	1.0	0.83	ug/L			03/18/21 16:12	1
Chloroform	1.0	U	1.0	0.13	ug/L			03/18/21 16:12	1
Chloromethane	1.0	U	1.0	0.20	ug/L			03/18/21 16:12	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			03/18/21 16:12	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			03/18/21 16:12	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/18/21 16:12	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			03/18/21 16:12	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			03/18/21 16:12	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			03/18/21 16:12	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			03/18/21 16:12	1
2-Hexanone	10	U	10	0.54	ug/L			03/18/21 16:12	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			03/18/21 16:12	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			03/18/21 16:12	1
Styrene	1.0	U	1.0	0.10	ug/L			03/18/21 16:12	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			03/18/21 16:12	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/18/21 16:12	1
Toluene	1.0	U	1.0	0.14	ug/L			03/18/21 16:12	1
Trichloroethene	**0.23**	**J**	1.0	0.10	ug/L			03/18/21 16:12	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/18/21 16:12	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			03/18/21 16:12	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			03/18/21 16:12	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			03/18/21 16:12	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			03/18/21 16:12	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			03/18/21 16:12	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			03/18/21 16:12	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			03/18/21 16:12	1
cis-1,2-Dichloroethene	**0.21**	**J**	1.0	0.16	ug/L			03/18/21 16:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/18/21 16:12	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			03/18/21 16:12	1
Methyl acetate	10	U	10	1.7	ug/L			03/18/21 16:12	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			03/18/21 16:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			03/18/21 16:12	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			03/18/21 16:12	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/18/21 16:12	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/18/21 16:12	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			03/18/21 16:12	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			03/18/21 16:12	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			03/18/21 16:12	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			03/18/21 16:12	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		75 - 130		03/18/21 16:12	1
4-Bromofluorobenzene (Surr)	67		47 - 134		03/18/21 16:12	1
Toluene-d8 (Surr)	80		69 - 122		03/18/21 16:12	1
Dibromofluoromethane (Surr)	111		78 - 129		03/18/21 16:12	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-145826-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-111223416-031121-SK-003
Date Collected: 03/11/21 14:55
Date Received: 03/12/21 10:20

Lab Sample ID: 240-145826-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			03/18/21 17:15	1
Benzene	1.0	U	1.0	0.13	ug/L			03/18/21 17:15	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			03/18/21 17:15	1
Bromoform	1.0	U	1.0	0.76	ug/L			03/18/21 17:15	1
Bromomethane	1.0	U	1.0	0.42	ug/L			03/18/21 17:15	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			03/18/21 17:15	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			03/18/21 17:15	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			03/18/21 17:15	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			03/18/21 17:15	1
Chloroethane	1.0	U	1.0	0.83	ug/L			03/18/21 17:15	1
Chloroform	1.0	U	1.0	0.13	ug/L			03/18/21 17:15	1
Chloromethane	1.0	U	1.0	0.20	ug/L			03/18/21 17:15	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			03/18/21 17:15	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			03/18/21 17:15	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/18/21 17:15	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			03/18/21 17:15	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			03/18/21 17:15	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			03/18/21 17:15	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			03/18/21 17:15	1
2-Hexanone	10	U	10	0.54	ug/L			03/18/21 17:15	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			03/18/21 17:15	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			03/18/21 17:15	1
Styrene	1.0	U	1.0	0.10	ug/L			03/18/21 17:15	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			03/18/21 17:15	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/18/21 17:15	1
Toluene	1.0	U	1.0	0.14	ug/L			03/18/21 17:15	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/18/21 17:15	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/18/21 17:15	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			03/18/21 17:15	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			03/18/21 17:15	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			03/18/21 17:15	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			03/18/21 17:15	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			03/18/21 17:15	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			03/18/21 17:15	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			03/18/21 17:15	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/18/21 17:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/18/21 17:15	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			03/18/21 17:15	1
Methyl acetate	10	U	10	1.7	ug/L			03/18/21 17:15	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			03/18/21 17:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			03/18/21 17:15	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			03/18/21 17:15	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/18/21 17:15	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/18/21 17:15	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			03/18/21 17:15	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			03/18/21 17:15	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			03/18/21 17:15	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			03/18/21 17:15	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 130		03/18/21 17:15	1
4-Bromofluorobenzene (Surr)	64		47 - 134		03/18/21 17:15	1
Toluene-d8 (Surr)	78		69 - 122		03/18/21 17:15	1
Dibromofluoromethane (Surr)	110		78 - 129		03/18/21 17:15	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-145826-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: TB-111223416-031121-SK
Date Collected: 03/11/21 00:00
Date Received: 03/12/21 10:20

Lab Sample ID: 240-145826-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			03/18/21 17:39	1
Benzene	1.0	U	1.0	0.13	ug/L			03/18/21 17:39	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			03/18/21 17:39	1
Bromoform	1.0	U	1.0	0.76	ug/L			03/18/21 17:39	1
Bromomethane	1.0	U	1.0	0.42	ug/L			03/18/21 17:39	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			03/18/21 17:39	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			03/18/21 17:39	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			03/18/21 17:39	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			03/18/21 17:39	1
Chloroethane	1.0	U	1.0	0.83	ug/L			03/18/21 17:39	1
Chloroform	1.0	U	1.0	0.13	ug/L			03/18/21 17:39	1
Chloromethane	1.0	U	1.0	0.20	ug/L			03/18/21 17:39	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			03/18/21 17:39	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			03/18/21 17:39	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/18/21 17:39	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			03/18/21 17:39	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			03/18/21 17:39	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			03/18/21 17:39	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			03/18/21 17:39	1
2-Hexanone	10	U	10	0.54	ug/L			03/18/21 17:39	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			03/18/21 17:39	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			03/18/21 17:39	1
Styrene	1.0	U	1.0	0.10	ug/L			03/18/21 17:39	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			03/18/21 17:39	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/18/21 17:39	1
Toluene	1.0	U	1.0	0.14	ug/L			03/18/21 17:39	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/18/21 17:39	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/18/21 17:39	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			03/18/21 17:39	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			03/18/21 17:39	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			03/18/21 17:39	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			03/18/21 17:39	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			03/18/21 17:39	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			03/18/21 17:39	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			03/18/21 17:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/18/21 17:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/18/21 17:39	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			03/18/21 17:39	1
Methyl acetate	10	U	10	1.7	ug/L			03/18/21 17:39	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			03/18/21 17:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			03/18/21 17:39	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			03/18/21 17:39	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/18/21 17:39	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/18/21 17:39	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			03/18/21 17:39	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			03/18/21 17:39	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			03/18/21 17:39	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			03/18/21 17:39	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		75 - 130		03/18/21 17:39	1
4-Bromofluorobenzene (Surr)	65		47 - 134		03/18/21 17:39	1
Toluene-d8 (Surr)	78		69 - 122		03/18/21 17:39	1
Dibromofluoromethane (Surr)	111		78 - 129		03/18/21 17:39	1

QC Association Summary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-145826-1

GC/MS VOA

Analysis Batch: 477324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145826-1	GW-111223416-031121-SK-001	Total/NA	Water	8260B	
240-145826-2	GW-111223416-031121-SK-002	Total/NA	Water	8260B	
240-145826-3	GW-111223416-031121-SK-003	Total/NA	Water	8260B	
240-145826-4	TB-111223416-031121-SK	Total/NA	Water	8260B	
MB 240-477324/7	Method Blank	Total/NA	Water	8260B	
LCS 240-477324/4	Lab Control Sample	Total/NA	Water	8260B	
240-145826-1 MS	GW-111223416-031121-SK-001	Total/NA	Water	8260B	
240-145826-1 MSD	GW-111223416-031121-SK-001	Total/NA	Water	8260B	

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-145826-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-477324/7
Matrix: Water
Analysis Batch: 477324

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			03/18/21 15:13	1
Benzene	1.0	U	1.0	0.13	ug/L			03/18/21 15:13	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			03/18/21 15:13	1
Bromoform	1.0	U	1.0	0.76	ug/L			03/18/21 15:13	1
Bromomethane	1.0	U	1.0	0.42	ug/L			03/18/21 15:13	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			03/18/21 15:13	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			03/18/21 15:13	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			03/18/21 15:13	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			03/18/21 15:13	1
Chloroethane	1.0	U	1.0	0.83	ug/L			03/18/21 15:13	1
Chloroform	1.0	U	1.0	0.13	ug/L			03/18/21 15:13	1
Chloromethane	1.0	U	1.0	0.20	ug/L			03/18/21 15:13	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			03/18/21 15:13	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			03/18/21 15:13	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/18/21 15:13	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			03/18/21 15:13	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			03/18/21 15:13	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			03/18/21 15:13	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			03/18/21 15:13	1
2-Hexanone	10	U	10	0.54	ug/L			03/18/21 15:13	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			03/18/21 15:13	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			03/18/21 15:13	1
Styrene	1.0	U	1.0	0.10	ug/L			03/18/21 15:13	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			03/18/21 15:13	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/18/21 15:13	1
Toluene	1.0	U	1.0	0.14	ug/L			03/18/21 15:13	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/18/21 15:13	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/18/21 15:13	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			03/18/21 15:13	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			03/18/21 15:13	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			03/18/21 15:13	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			03/18/21 15:13	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			03/18/21 15:13	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			03/18/21 15:13	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			03/18/21 15:13	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/18/21 15:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/18/21 15:13	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			03/18/21 15:13	1
Methyl acetate	10	U	10	1.7	ug/L			03/18/21 15:13	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			03/18/21 15:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			03/18/21 15:13	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			03/18/21 15:13	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/18/21 15:13	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/18/21 15:13	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			03/18/21 15:13	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			03/18/21 15:13	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			03/18/21 15:13	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			03/18/21 15:13	1

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

Lab Sample ID: MB 240-477324/7
Matrix: Water
Analysis Batch: 477324

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 130		03/18/21 15:13	1
4-Bromofluorobenzene (Surr)	70		47 - 134		03/18/21 15:13	1
Toluene-d8 (Surr)	83		69 - 122		03/18/21 15:13	1
Dibromofluoromethane (Surr)	105		78 - 129		03/18/21 15:13	1

Lab Sample ID: LCS 240-477324/4
Matrix: Water
Analysis Batch: 477324

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	19.9		ug/L		99	33 - 155
Benzene	10.0	9.89		ug/L		99	77 - 123
Bromodichloromethane	10.0	9.50		ug/L		95	73 - 122
Bromoform	10.0	9.00		ug/L		90	47 - 133
Bromomethane	10.0	9.61		ug/L		96	48 - 144
2-Butanone (MEK)	20.0	18.4		ug/L		92	41 - 151
Carbon disulfide	10.0	7.61		ug/L		76	67 - 127
Carbon tetrachloride	10.0	9.68		ug/L		97	61 - 142
Chlorobenzene	10.0	10.4		ug/L		104	80 - 120
Chloroethane	10.0	8.37		ug/L		84	41 - 147
Chloroform	10.0	10.5		ug/L		105	74 - 127
Chloromethane	10.0	8.63		ug/L		86	46 - 148
1,1-Dichloroethane	10.0	9.22		ug/L		92	74 - 126
1,2-Dichloroethane	10.0	9.91		ug/L		99	66 - 129
1,1-Dichloroethene	10.0	9.87		ug/L		99	73 - 129
1,2-Dichloropropane	10.0	8.88		ug/L		89	79 - 127
cis-1,3-Dichloropropene	10.0	7.53		ug/L		75	68 - 128
trans-1,3-Dichloropropene	10.0	6.74		ug/L		67	64 - 120
Ethylbenzene	10.0	9.54		ug/L		95	80 - 120
2-Hexanone	20.0	15.0		ug/L		75	43 - 142
Methylene Chloride	10.0	10.1		ug/L		101	63 - 134
4-Methyl-2-pentanone (MIBK)	20.0	13.9		ug/L		70	43 - 145
Styrene	10.0	8.44		ug/L		84	75 - 121
1,1,2,2-Tetrachloroethane	10.0	8.82		ug/L		88	45 - 151
Tetrachloroethene	10.0	11.3		ug/L		113	70 - 125
Toluene	10.0	9.87		ug/L		99	79 - 122
Trichloroethene	10.0	10.3		ug/L		103	71 - 121
Vinyl chloride	10.0	8.77		ug/L		88	61 - 134
Xylenes, Total	20.0	18.9		ug/L		95	78 - 122
1,1,1-Trichloroethane	10.0	9.17		ug/L		92	65 - 141
1,1,2-Trichloroethane	10.0	10.7		ug/L		107	79 - 121
Cyclohexane	10.0	8.16		ug/L		82	69 - 133
1,2-Dibromo-3-Chloropropane	10.0	6.51		ug/L		65	34 - 136
1,2-Dibromoethane	10.0	10.1		ug/L		101	73 - 120
Dichlorodifluoromethane	10.0	9.60		ug/L		96	35 - 137
cis-1,2-Dichloroethene	10.0	10.0		ug/L		100	75 - 124
trans-1,2-Dichloroethene	10.0	10.7		ug/L		107	74 - 130
Isopropylbenzene	10.0	9.09		ug/L		91	73 - 123

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

Lab Sample ID: LCS 240-477324/4
Matrix: Water
Analysis Batch: 477324

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl acetate	20.0	18.3		ug/L		91	47 - 140
Methyl tert-butyl ether	10.0	7.70		ug/L		77	57 - 127
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	10.8		ug/L		108	54 - 148
1,2,4-Trichlorobenzene	10.0	6.97		ug/L		70	47 - 120
1,2-Dichlorobenzene	10.0	9.58		ug/L		96	74 - 120
1,3-Dichlorobenzene	10.0	9.54		ug/L		95	74 - 120
1,4-Dichlorobenzene	10.0	9.69		ug/L		97	75 - 120
Trichlorofluoromethane	10.0	9.95		ug/L		99	52 - 148
Dibromochloromethane	10.0	10.0		ug/L		100	75 - 120
Methylcyclohexane	10.0	8.75		ug/L		87	64 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*87*		*75 - 130*
4-Bromofluorobenzene (Surr)	*92*		*47 - 134*
Toluene-d8 (Surr)	*88*		*69 - 122*
Dibromofluoromethane (Surr)	*92*		*78 - 129*

Lab Sample ID: 240-145826-1 MS
Matrix: Water
Analysis Batch: 477324

Client Sample ID: GW-111223416-031121-SK-001
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	10	U	20.0	13.5		ug/L		68	32 - 157
Benzene	1.0	U	10.0	9.90		ug/L		99	70 - 121
Bromodichloromethane	1.0	U	10.0	9.53		ug/L		95	69 - 120
Bromoform	1.0	U	10.0	8.66		ug/L		87	41 - 128
Bromomethane	1.0	U	10.0	9.35		ug/L		94	41 - 136
2-Butanone (MEK)	10	U	20.0	14.0		ug/L		70	40 - 147
Carbon disulfide	5.0	U	10.0	7.66		ug/L		77	54 - 131
Carbon tetrachloride	1.0	U	10.0	9.65		ug/L		97	53 - 142
Chlorobenzene	1.0	U	10.0	10.7		ug/L		107	73 - 120
Chloroethane	1.0	U	10.0	8.01		ug/L		80	37 - 142
Chloroform	1.0	U	10.0	10.3		ug/L		103	66 - 126
Chloromethane	1.0	U	10.0	7.99		ug/L		80	33 - 146
1,1-Dichloroethane	1.0	U	10.0	9.18		ug/L		92	71 - 121
1,2-Dichloroethane	1.0	U	10.0	9.72		ug/L		97	65 - 127
1,1-Dichloroethene	1.0	U	10.0	9.67		ug/L		97	64 - 132
1,2-Dichloropropane	1.0	U	10.0	8.79		ug/L		88	73 - 125
cis-1,3-Dichloropropene	1.0	U	10.0	6.33		ug/L		63	56 - 121
trans-1,3-Dichloropropene	1.0	U	10.0	6.47		ug/L		65	53 - 120
Ethylbenzene	1.0	U	10.0	9.63		ug/L		96	66 - 122
2-Hexanone	10	U	20.0	12.2		ug/L		61	44 - 142
Methylene Chloride	5.0	U	10.0	10.4		ug/L		104	59 - 127
4-Methyl-2-pentanone (MIBK)	10	U	20.0	11.1		ug/L		56	40 - 147
Styrene	1.0	U	10.0	8.57		ug/L		86	57 - 126
1,1,2,2-Tetrachloroethane	1.0	U	10.0	8.02		ug/L		80	37 - 149
Tetrachloroethene	1.0	U	10.0	11.3		ug/L		113	52 - 129
Toluene	1.0	U	10.0	10.3		ug/L		103	68 - 124

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

Lab Sample ID: 240-145826-1 MS
Matrix: Water
Analysis Batch: 477324

Client Sample ID: GW-111223416-031121-SK-001
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichloroethene	0.25	J	10.0	10.0		ug/L		98	56 - 124
Vinyl chloride	1.0	U	10.0	8.24		ug/L		82	49 - 136
Xylenes, Total	2.0	U	20.0	19.3		ug/L		96	64 - 124
1,1,1-Trichloroethane	1.0	U	10.0	9.10		ug/L		91	62 - 135
1,1,2-Trichloroethane	1.0	U	10.0	10.9		ug/L		109	73 - 122
Cyclohexane	1.0	U	10.0	6.97		ug/L		70	48 - 136
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	5.92		ug/L		59	31 - 130
1,2-Dibromoethane	1.0	U	10.0	9.66		ug/L		97	66 - 120
Dichlorodifluoromethane	1.0	U	10.0	8.86		ug/L		89	27 - 132
cis-1,2-Dichloroethene	0.18	J	10.0	9.61		ug/L		94	68 - 121
trans-1,2-Dichloroethene	1.0	U	10.0	10.5		ug/L		105	69 - 126
Isopropylbenzene	1.0	U	10.0	8.86		ug/L		89	56 - 122
Methyl acetate	10	U	20.0	15.0		ug/L		75	41 - 137
Methyl tert-butyl ether	1.0	U	10.0	6.46		ug/L		65	50 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	10.0		ug/L		100	41 - 145
1,2,4-Trichlorobenzene	1.0	U	10.0	5.91		ug/L		59	37 - 120
1,2-Dichlorobenzene	1.0	U	10.0	9.20		ug/L		92	65 - 120
1,3-Dichlorobenzene	1.0	U	10.0	9.35		ug/L		93	64 - 120
1,4-Dichlorobenzene	1.0	U	10.0	9.62		ug/L		96	65 - 120
Trichlorofluoromethane	1.0	U	10.0	9.89		ug/L		99	45 - 152
Dibromochloromethane	1.0	U	10.0	10.7		ug/L		107	66 - 120
Methylcyclohexane	1.0	U	10.0	7.10		ug/L		71	40 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*84*		*75 - 130*
4-Bromofluorobenzene (Surr)	*90*		*47 - 134*
Toluene-d8 (Surr)	*90*		*69 - 122*
Dibromofluoromethane (Surr)	*89*		*78 - 129*

Lab Sample ID: 240-145826-1 MSD
Matrix: Water
Analysis Batch: 477324

Client Sample ID: GW-111223416-031121-SK-001
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	10	U	20.0	14.7		ug/L		73	32 - 157	8	35
Benzene	1.0	U	10.0	9.75		ug/L		97	70 - 121	2	35
Bromodichloromethane	1.0	U	10.0	9.14		ug/L		91	69 - 120	4	35
Bromoform	1.0	U	10.0	8.83		ug/L		88	41 - 128	2	35
Bromomethane	1.0	U	10.0	9.47		ug/L		95	41 - 136	1	35
2-Butanone (MEK)	10	U	20.0	15.7		ug/L		78	40 - 147	11	35
Carbon disulfide	5.0	U	10.0	7.42		ug/L		74	54 - 131	3	35
Carbon tetrachloride	1.0	U	10.0	9.21		ug/L		92	53 - 142	5	35
Chlorobenzene	1.0	U	10.0	9.94		ug/L		99	73 - 120	7	35
Chloroethane	1.0	U	10.0	8.15		ug/L		82	37 - 142	2	35
Chloroform	1.0	U	10.0	10.0		ug/L		100	66 - 126	2	35
Chloromethane	1.0	U	10.0	8.38		ug/L		84	33 - 146	5	35
1,1-Dichloroethane	1.0	U	10.0	9.14		ug/L		91	71 - 121	1	35
1,2-Dichloroethane	1.0	U	10.0	9.88		ug/L		99	65 - 127	2	35

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

Lab Sample ID: 240-145826-1 MSD
Matrix: Water
Analysis Batch: 477324

Client Sample ID: GW-111223416-031121-SK-001
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	1.0	U	10.0	9.67		ug/L		97	64 - 132	0	35
1,2-Dichloropropane	1.0	U	10.0	8.88		ug/L		89	73 - 125	1	35
cis-1,3-Dichloropropene	1.0	U	10.0	6.67		ug/L		67	56 - 121	5	35
trans-1,3-Dichloropropene	1.0	U	10.0	6.77		ug/L		68	53 - 120	4	35
Ethylbenzene	1.0	U	10.0	9.14		ug/L		91	66 - 122	5	35
2-Hexanone	10	U	20.0	14.1		ug/L		70	44 - 142	15	35
Methylene Chloride	5.0	U	10.0	10.2		ug/L		102	59 - 127	2	32
4-Methyl-2-pentanone (MIBK)	10	U	20.0	13.0		ug/L		65	40 - 147	15	35
Styrene	1.0	U	10.0	7.99		ug/L		80	57 - 126	7	35
1,1,2,2-Tetrachloroethane	1.0	U	10.0	8.53		ug/L		85	37 - 149	6	35
Tetrachloroethene	1.0	U	10.0	10.6		ug/L		106	52 - 129	6	35
Toluene	1.0	U	10.0	9.86		ug/L		99	68 - 124	5	35
Trichloroethene	0.25	J	10.0	10.0		ug/L		98	56 - 124	0	35
Vinyl chloride	1.0	U	10.0	8.53		ug/L		85	49 - 136	3	35
Xylenes, Total	2.0	U	20.0	18.5		ug/L		92	64 - 124	4	35
1,1,1-Trichloroethane	1.0	U	10.0	9.08		ug/L		91	62 - 135	0	35
1,1,2-Trichloroethane	1.0	U	10.0	10.3		ug/L		103	73 - 122	5	35
Cyclohexane	1.0	U	10.0	7.13		ug/L		71	48 - 136	2	35
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	6.31		ug/L		63	31 - 130	6	35
1,2-Dibromoethane	1.0	U	10.0	9.87		ug/L		99	66 - 120	2	35
Dichlorodifluoromethane	1.0	U	10.0	8.66		ug/L		87	27 - 132	2	35
cis-1,2-Dichloroethene	0.18	J	10.0	9.90		ug/L		97	68 - 121	3	35
trans-1,2-Dichloroethene	1.0	U	10.0	10.5		ug/L		105	69 - 126	0	35
Isopropylbenzene	1.0	U	10.0	8.53		ug/L		85	56 - 122	4	20
Methyl acetate	10	U	20.0	16.0		ug/L		80	41 - 137	6	16
Methyl tert-butyl ether	1.0	U	10.0	6.68		ug/L		67	50 - 126	3	17
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	9.01		ug/L		90	41 - 145	10	35
1,2,4-Trichlorobenzene	1.0	U	10.0	6.20		ug/L		62	37 - 120	5	25
1,2-Dichlorobenzene	1.0	U	10.0	9.32		ug/L		93	65 - 120	1	35
1,3-Dichlorobenzene	1.0	U	10.0	9.36		ug/L		94	64 - 120	0	35
1,4-Dichlorobenzene	1.0	U	10.0	9.57		ug/L		96	65 - 120	0	35
Trichlorofluoromethane	1.0	U	10.0	9.54		ug/L		95	45 - 152	4	35
Dibromochloromethane	1.0	U	10.0	10.0		ug/L		100	66 - 120	7	35
Methylcyclohexane	1.0	U	10.0	7.19		ug/L		72	40 - 125	1	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*83*		*75 - 130*
4-Bromofluorobenzene (Surr)	*91*		*47 - 134*
Toluene-d8 (Surr)	*88*		*69 - 122*
Dibromofluoromethane (Surr)	*93*		*78 - 129*

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-145826-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(75-130)	(47-134)	(69-122)	(78-129)
240-145826-1	GW-111223416-031121-SK-001	101	67	79	110
240-145826-1 MS	GW-111223416-031121-SK-001	84	90	90	89
240-145826-1 MSD	GW-111223416-031121-SK-001	83	91	88	93
240-145826-2	GW-111223416-031121-SK-002	104	67	80	111
240-145826-3	GW-111223416-031121-SK-003	101	64	78	110
240-145826-4	TB-111223416-031121-SK	104	65	78	111
LCS 240-477324/4	Lab Control Sample	87	92	88	92
MB 240-477324/7	Method Blank	102	70	83	105

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-145826-1

Client Sample ID: GW-111223416-031121-SK-001
Lab Sample ID: 240-145826-1
Date Collected: 03/11/21 14:15
Matrix: Water
Date Received: 03/12/21 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	477324	03/18/21 15:48	LRW	TAL CAN

Client Sample ID: GW-111223416-031121-SK-002
Lab Sample ID: 240-145826-2
Date Collected: 03/11/21 14:20
Matrix: Water
Date Received: 03/12/21 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	477324	03/18/21 16:12	LRW	TAL CAN

Client Sample ID: GW-111223416-031121-SK-003
Lab Sample ID: 240-145826-3
Date Collected: 03/11/21 14:55
Matrix: Water
Date Received: 03/12/21 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	477324	03/18/21 17:15	LRW	TAL CAN

Client Sample ID: TB-111223416-031121-SK
Lab Sample ID: 240-145826-4
Date Collected: 03/11/21 00:00
Matrix: Water
Date Received: 03/12/21 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	477324	03/18/21 17:39	LRW	TAL CAN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

Client: GHD Services Inc.
Job ID: 240-145826-1
Project/Site: 11223416, PCC Validation

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21 *
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21 *
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

MICHIGAN 190

4/4/45

Chain of Custody Record 460078

eurofins | Environment Testing TestAmerica

T.A.# 24020174

Address: _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

Client Contact	Project Manager: Tom Kinney	Site Contact: S. Kippen	Date: 3-11-21	COC No:
Company Name: GHD	Tel/Email: 248 893-3410	Lab Contact: D. Heckler	Carrier: Fed Ex	1 of 1 COCs
Address: 26850 Haggerty Rd	Analysis Turnaround Time			Sampler: S. Kippen
City/State/Zip: Farmington Hills, MI 48331	☐ CALENDAR DAYS ☒ WORKING DAYS			For Lab Use Only:
Phone: (248) 893-3400	TAT if different from Below _____			Walk-in Client:
Fax: chem.det@ghd.com	☒ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
Project Name: PCC Validation				Job / SDG No.:
Site: Pontiac, Michigan				
PO # 550W: 111223416-2021-TO3				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	VOCs 8260B	Sample Specific Notes:
GW-111223416-031121-SK-001	3-11-21	14:15	G	GW	3			X	
-002	3-11-21	14:20			3			X	
-003		14:55			3			X	
TB-111223416-031121-SK		—	TB	TB	1			X	

SK

240-145826 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
K. Heckler	GHD 3-11-21	16:30		TA	3-12-21 1020
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # :** 145826
Canton Facility

Client GHD Site Name _____ Cooler unpacked by:

Cooler Received on 3-12-21 Opened on 3-12-21

FedEx: 1st Grd (Exp) UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # TA Foam Box Client Cooler Box Other _____

Packing material used: (Bubble Wrap) Foam Plastic Bag None Other _____

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN# IR-11 (CF +0.1 °C) Observed Cooler Temp. 4.4 °C Corrected Cooler Temp. 4.3 °C

IR GUN #IR-12 (CF +0.2°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity_____	Yes	(No)
-Were the seals on the outside of the cooler(s) signed & dated?	Yes No	(NA)
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	(No)
-Were tamper/custody seals intact and uncompromised?	Yes No	(NA)
3. Shippers' packing slip attached to the cooler(s)?	(Yes)	No
4. Did custody papers accompany the sample(s)?	(Yes)	No
5. Were the custody papers relinquished & signed in the appropriate place?	(Yes)	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	(Yes)	No
7. Did all bottles arrive in good condition (Unbroken)?	(Yes)	No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes)	No
9. For each sample, does the COC specify preservatives (Y/(N)), # of containers ((Y)/N), and sample type of grab/comp((Y)/N)?		
10. Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
11. Sufficient quantity received to perform indicated analyses?	(Yes)	No
12. Are these work share samples and all listed on the COC?	Yes	(No)
If yes, Questions 13-17 have been checked at the originating laboratory.		
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes No	(NA) pH Strip Lot# HC022887
14. Were VOAs on the COC?	(Yes)	No
15. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes	(No) NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____	(Yes)	No
17. Was a LL Hg or Me Hg trip blank present? _____	Yes	(No)

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

_____

_____

_____

_____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

eurofins | Environment Testing America



ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-151825-1
Client Project/Site: 11223416, PCC Validation

For:
GHD Services Inc.
26850 Haggerty Rd.
Farmington Hills, Michigan 48331

Attn: Mr. James Abston

Denise D Heckler

Authorized for release by:
7/6/2021 1:15:24 PM

Denise Heckler, Project Manager II
(330)966-9477
Denise.Heckler@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

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

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

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Definitions/Glossary 4
Sample Summary 5
Detection Summary 6
Method Summary 8
Client Sample Results 9
QC Association Summary 41
QC Sample Results 42
Surrogate Summary 46
Lab Chronicle 47
Certification Summary 50
Chain of Custody 51

Case Narrative

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Job ID: 240-151825-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-151825-1

Comments
No additional comments.

Receipt
Due to a Fedex delay in shipment, the samples were received on 6/24/2021 2:30 PM. The temperature of the cooler at receipt was 22.4º C. The Fedex delay in shipment has caused the high cooler temperature.

GC/MS VOA
Method 8260B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for 492639 recovered outside control limits for multiple analytes. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260B: Surrogate recovery for the following samples were outside the upper control limit: GW-11223416-061521-SK-005 (240-151825-5), GW-11223416-061521-SK-006 (240-151825-6), GW-11223416-061521-SK-008 (240-151825-8), GW-11223416-061621-SK-009 (240-151825-9), GW-11223416-061621-SK-010 (240-151825-10), GW-11223416-061621-SK-011 (240-151825-11), GW-11223416-061621-SK-012 (240-151825-12), GW-11223416-061621-SK-013 (240-151825-13), GW-11223416-061721-SK-015 (240-151825-15) and TB-11223416-061721-SK (240-151825-16). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

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

Metals
Method 6020: Some requested practical quantitation limits (PQLs) fall below the laboratory's verified standard quantitation limit. The continuing calibration blanks and method blanks may not support the lower PQL.

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

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Sample Summary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-151825-1	GW-11223416-061421-SK-001	Water	06/14/21 09:55	06/24/21 14:30	
240-151825-2	GW-11223416-061421-SK-002	Water	06/14/21 10:55	06/24/21 14:30	
240-151825-3	GW-11223416-061421-SK-003	Water	06/14/21 12:00	06/24/21 14:30	
240-151825-4	GW-11223416-061421-SK-004	Water	06/14/21 14:25	06/24/21 14:30	
240-151825-5	GW-11223416-061521-SK-005	Water	06/15/21 10:10	06/24/21 14:30	
240-151825-6	GW-11223416-061521-SK-006	Water	06/15/21 11:15	06/24/21 14:30	
240-151825-7	GW-11223416-061521-SK-007	Water	06/15/21 13:05	06/24/21 14:30	
240-151825-8	GW-11223416-061521-SK-008	Water	06/15/21 14:15	06/24/21 14:30	
240-151825-9	GW-11223416-061621-SK-009	Water	06/16/21 09:20	06/24/21 14:30	
240-151825-10	GW-11223416-061621-SK-010	Water	06/16/21 09:25	06/24/21 14:30	
240-151825-11	GW-11223416-061621-SK-011	Water	06/16/21 10:10	06/24/21 14:30	
240-151825-12	GW-11223416-061621-SK-012	Water	06/16/21 11:35	06/24/21 14:30	
240-151825-13	GW-11223416-061621-SK-013	Water	06/16/21 13:10	06/24/21 14:30	
240-151825-14	GW-11223416-061721-SK-014	Water	06/17/21 09:40	06/24/21 14:30	
240-151825-15	GW-11223416-061721-SK-015	Water	06/17/21 10:50	06/24/21 14:30	
240-151825-16	TB-11223416-061721-SK	Water	06/17/21 00:00	06/24/21 14:30	

Detection Summary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Client Sample ID: GW-11223416-061421-SK-001 — Lab Sample ID: 240-151825-1

No Detections.

Client Sample ID: GW-11223416-061421-SK-002 — Lab Sample ID: 240-151825-2

No Detections.

Client Sample ID: GW-11223416-061421-SK-003 — Lab Sample ID: 240-151825-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	480		50	34	ug/L	1		6020	Total Recoverable

Client Sample ID: GW-11223416-061421-SK-004 — Lab Sample ID: 240-151825-4

No Detections.

Client Sample ID: GW-11223416-061521-SK-005 — Lab Sample ID: 240-151825-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	7.9	J	10	5.4	ug/L	1		8260B	Total/NA

Client Sample ID: GW-11223416-061521-SK-006 — Lab Sample ID: 240-151825-6

No Detections.

Client Sample ID: GW-11223416-061521-SK-007 — Lab Sample ID: 240-151825-7

No Detections.

Client Sample ID: GW-11223416-061521-SK-008 — Lab Sample ID: 240-151825-8

No Detections.

Client Sample ID: GW-11223416-061621-SK-009 — Lab Sample ID: 240-151825-9

No Detections.

Client Sample ID: GW-11223416-061621-SK-010 — Lab Sample ID: 240-151825-10

No Detections.

Client Sample ID: GW-11223416-061621-SK-011 — Lab Sample ID: 240-151825-11

No Detections.

Client Sample ID: GW-11223416-061621-SK-012 — Lab Sample ID: 240-151825-12

No Detections.

Client Sample ID: GW-11223416-061621-SK-013 — Lab Sample ID: 240-151825-13

No Detections.

Client Sample ID: GW-11223416-061721-SK-014 — Lab Sample ID: 240-151825-14

No Detections.

Client Sample ID: GW-11223416-061721-SK-015 — Lab Sample ID: 240-151825-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.93	J	1.0	0.45	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Client Sample ID: TB-11223416-061721-SK

Lab Sample ID: 240-151825-16

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
6020	Metals (ICP/MS)	SW846	TAL CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL CAN

Protocol References:

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

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-11223416-061421-SK-001
Date Collected: 06/14/21 09:55
Date Received: 06/24/21 14:30

Lab Sample ID: 240-151825-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/28/21 13:36	1
Benzene	1.0	U	1.0	0.42	ug/L			06/28/21 13:36	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/28/21 13:36	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/28/21 13:36	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/28/21 13:36	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/28/21 13:36	1
Carbon disulfide	5.0	U	5.0	0.59	ug/L			06/28/21 13:36	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/28/21 13:36	1
Chlorobenzene	1.0	U	1.0	0.38	ug/L			06/28/21 13:36	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/28/21 13:36	1
Chloroform	1.0	U	1.0	0.47	ug/L			06/28/21 13:36	1
Chloromethane	1.0	U	1.0	0.63	ug/L			06/28/21 13:36	1
1,1-Dichloroethane	1.0	U	1.0	0.47	ug/L			06/28/21 13:36	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/28/21 13:36	1
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/28/21 13:36	1
1,2-Dichloropropane	1.0	U	1.0	0.47	ug/L			06/28/21 13:36	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/28/21 13:36	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/28/21 13:36	1
Ethylbenzene	1.0	U	1.0	0.42	ug/L			06/28/21 13:36	1
2-Hexanone	10	U	10	1.1	ug/L			06/28/21 13:36	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/28/21 13:36	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.99	ug/L			06/28/21 13:36	1
Styrene	1.0	U	1.0	0.45	ug/L			06/28/21 13:36	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.60	ug/L			06/28/21 13:36	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 13:36	1
Toluene	1.0	U	1.0	0.44	ug/L			06/28/21 13:36	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 13:36	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/28/21 13:36	1
Xylenes, Total	2.0	U	2.0	0.42	ug/L			06/28/21 13:36	1
1,1,1-Trichloroethane	1.0	U	1.0	0.48	ug/L			06/28/21 13:36	1
1,1,2-Trichloroethane	1.0	U *+	1.0	0.48	ug/L			06/28/21 13:36	1
Cyclohexane	1.0	U	1.0	0.48	ug/L			06/28/21 13:36	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/28/21 13:36	1
1,2-Dibromoethane	1.0	U *+	1.0	0.41	ug/L			06/28/21 13:36	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/28/21 13:36	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/28/21 13:36	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/28/21 13:36	1
Isopropylbenzene	1.0	U	1.0	0.49	ug/L			06/28/21 13:36	1
Methyl acetate	10	U *+	10	1.7	ug/L			06/28/21 13:36	1
Methyl tert-butyl ether	1.0	U	1.0	0.47	ug/L			06/28/21 13:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/28/21 13:36	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.77	ug/L			06/28/21 13:36	1
1,2-Dichlorobenzene	1.0	U	1.0	0.48	ug/L			06/28/21 13:36	1
1,3-Dichlorobenzene	1.0	U	1.0	0.45	ug/L			06/28/21 13:36	1
1,4-Dichlorobenzene	1.0	U	1.0	0.41	ug/L			06/28/21 13:36	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/28/21 13:36	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/28/21 13:36	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/28/21 13:36	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	128		75 - 130		06/28/21 13:36	1
4-Bromofluorobenzene (Surr)	74		47 - 134		06/28/21 13:36	1
Toluene-d8 (Surr)	85		69 - 122		06/28/21 13:36	1
Dibromofluoromethane (Surr)	103		78 - 129		06/28/21 13:36	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-11223416-061421-SK-002
Date Collected: 06/14/21 10:55
Date Received: 06/24/21 14:30

Lab Sample ID: 240-151825-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/28/21 13:57	1
Benzene	1.0	U	1.0	0.42	ug/L			06/28/21 13:57	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/28/21 13:57	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/28/21 13:57	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/28/21 13:57	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/28/21 13:57	1
Carbon disulfide	5.0	U	5.0	0.59	ug/L			06/28/21 13:57	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/28/21 13:57	1
Chlorobenzene	1.0	U	1.0	0.38	ug/L			06/28/21 13:57	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/28/21 13:57	1
Chloroform	1.0	U	1.0	0.47	ug/L			06/28/21 13:57	1
Chloromethane	1.0	U	1.0	0.63	ug/L			06/28/21 13:57	1
1,1-Dichloroethane	1.0	U	1.0	0.47	ug/L			06/28/21 13:57	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/28/21 13:57	1
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/28/21 13:57	1
1,2-Dichloropropane	1.0	U	1.0	0.47	ug/L			06/28/21 13:57	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/28/21 13:57	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/28/21 13:57	1
Ethylbenzene	1.0	U	1.0	0.42	ug/L			06/28/21 13:57	1
2-Hexanone	10	U	10	1.1	ug/L			06/28/21 13:57	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/28/21 13:57	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.99	ug/L			06/28/21 13:57	1
Styrene	1.0	U	1.0	0.45	ug/L			06/28/21 13:57	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.60	ug/L			06/28/21 13:57	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 13:57	1
Toluene	1.0	U	1.0	0.44	ug/L			06/28/21 13:57	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 13:57	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/28/21 13:57	1
Xylenes, Total	2.0	U	2.0	0.42	ug/L			06/28/21 13:57	1
1,1,1-Trichloroethane	1.0	U	1.0	0.48	ug/L			06/28/21 13:57	1
1,1,2-Trichloroethane	1.0	U *+	1.0	0.48	ug/L			06/28/21 13:57	1
Cyclohexane	1.0	U	1.0	0.48	ug/L			06/28/21 13:57	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/28/21 13:57	1
1,2-Dibromoethane	1.0	U *+	1.0	0.41	ug/L			06/28/21 13:57	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/28/21 13:57	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/28/21 13:57	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/28/21 13:57	1
Isopropylbenzene	1.0	U	1.0	0.49	ug/L			06/28/21 13:57	1
Methyl acetate	10	U *+	10	1.7	ug/L			06/28/21 13:57	1
Methyl tert-butyl ether	1.0	U	1.0	0.47	ug/L			06/28/21 13:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/28/21 13:57	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.77	ug/L			06/28/21 13:57	1
1,2-Dichlorobenzene	1.0	U	1.0	0.48	ug/L			06/28/21 13:57	1
1,3-Dichlorobenzene	1.0	U	1.0	0.45	ug/L			06/28/21 13:57	1
1,4-Dichlorobenzene	1.0	U	1.0	0.41	ug/L			06/28/21 13:57	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/28/21 13:57	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/28/21 13:57	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/28/21 13:57	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	127		75 - 130		06/28/21 13:57	1
4-Bromofluorobenzene (Surr)	73		47 - 134		06/28/21 13:57	1
Toluene-d8 (Surr)	85		69 - 122		06/28/21 13:57	1
Dibromofluoromethane (Surr)	105		78 - 129		06/28/21 13:57	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-11223416-061521-SK-005
Date Collected: 06/15/21 10:10
Date Received: 06/24/21 14:30

Lab Sample ID: 240-151825-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**7.9**	**J**	10	5.4	ug/L			06/28/21 14:19	1
Benzene	1.0	U	1.0	0.42	ug/L			06/28/21 14:19	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/28/21 14:19	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/28/21 14:19	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/28/21 14:19	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/28/21 14:19	1
Carbon disulfide	5.0	U	5.0	0.59	ug/L			06/28/21 14:19	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/28/21 14:19	1
Chlorobenzene	1.0	U	1.0	0.38	ug/L			06/28/21 14:19	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/28/21 14:19	1
Chloroform	1.0	U	1.0	0.47	ug/L			06/28/21 14:19	1
Chloromethane	1.0	U	1.0	0.63	ug/L			06/28/21 14:19	1
1,1-Dichloroethane	1.0	U	1.0	0.47	ug/L			06/28/21 14:19	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/28/21 14:19	1
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/28/21 14:19	1
1,2-Dichloropropane	1.0	U	1.0	0.47	ug/L			06/28/21 14:19	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/28/21 14:19	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/28/21 14:19	1
Ethylbenzene	1.0	U	1.0	0.42	ug/L			06/28/21 14:19	1
2-Hexanone	10	U	10	1.1	ug/L			06/28/21 14:19	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/28/21 14:19	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.99	ug/L			06/28/21 14:19	1
Styrene	1.0	U	1.0	0.45	ug/L			06/28/21 14:19	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.60	ug/L			06/28/21 14:19	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 14:19	1
Toluene	1.0	U	1.0	0.44	ug/L			06/28/21 14:19	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 14:19	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/28/21 14:19	1
Xylenes, Total	2.0	U	2.0	0.42	ug/L			06/28/21 14:19	1
1,1,1-Trichloroethane	1.0	U	1.0	0.48	ug/L			06/28/21 14:19	1
1,1,2-Trichloroethane	1.0	U *+	1.0	0.48	ug/L			06/28/21 14:19	1
Cyclohexane	1.0	U	1.0	0.48	ug/L			06/28/21 14:19	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/28/21 14:19	1
1,2-Dibromoethane	1.0	U *+	1.0	0.41	ug/L			06/28/21 14:19	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/28/21 14:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/28/21 14:19	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/28/21 14:19	1
Isopropylbenzene	1.0	U	1.0	0.49	ug/L			06/28/21 14:19	1
Methyl acetate	10	U *+	10	1.7	ug/L			06/28/21 14:19	1
Methyl tert-butyl ether	1.0	U	1.0	0.47	ug/L			06/28/21 14:19	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/28/21 14:19	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.77	ug/L			06/28/21 14:19	1
1,2-Dichlorobenzene	1.0	U	1.0	0.48	ug/L			06/28/21 14:19	1
1,3-Dichlorobenzene	1.0	U	1.0	0.45	ug/L			06/28/21 14:19	1
1,4-Dichlorobenzene	1.0	U	1.0	0.41	ug/L			06/28/21 14:19	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/28/21 14:19	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/28/21 14:19	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/28/21 14:19	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	132	S1+	75 - 130		06/28/21 14:19	1
4-Bromofluorobenzene (Surr)	74		47 - 134		06/28/21 14:19	1
Toluene-d8 (Surr)	90		69 - 122		06/28/21 14:19	1
Dibromofluoromethane (Surr)	110		78 - 129		06/28/21 14:19	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-11223416-061521-SK-006
Date Collected: 06/15/21 11:15
Date Received: 06/24/21 14:30

Lab Sample ID: 240-151825-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/28/21 14:41	1
Benzene	1.0	U	1.0	0.42	ug/L			06/28/21 14:41	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/28/21 14:41	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/28/21 14:41	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/28/21 14:41	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/28/21 14:41	1
Carbon disulfide	5.0	U	5.0	0.59	ug/L			06/28/21 14:41	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/28/21 14:41	1
Chlorobenzene	1.0	U	1.0	0.38	ug/L			06/28/21 14:41	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/28/21 14:41	1
Chloroform	1.0	U	1.0	0.47	ug/L			06/28/21 14:41	1
Chloromethane	1.0	U	1.0	0.63	ug/L			06/28/21 14:41	1
1,1-Dichloroethane	1.0	U	1.0	0.47	ug/L			06/28/21 14:41	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/28/21 14:41	1
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/28/21 14:41	1
1,2-Dichloropropane	1.0	U	1.0	0.47	ug/L			06/28/21 14:41	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/28/21 14:41	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/28/21 14:41	1
Ethylbenzene	1.0	U	1.0	0.42	ug/L			06/28/21 14:41	1
2-Hexanone	10	U	10	1.1	ug/L			06/28/21 14:41	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/28/21 14:41	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.99	ug/L			06/28/21 14:41	1
Styrene	1.0	U	1.0	0.45	ug/L			06/28/21 14:41	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.60	ug/L			06/28/21 14:41	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 14:41	1
Toluene	1.0	U	1.0	0.44	ug/L			06/28/21 14:41	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 14:41	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/28/21 14:41	1
Xylenes, Total	2.0	U	2.0	0.42	ug/L			06/28/21 14:41	1
1,1,1-Trichloroethane	1.0	U	1.0	0.48	ug/L			06/28/21 14:41	1
1,1,2-Trichloroethane	1.0	U *+	1.0	0.48	ug/L			06/28/21 14:41	1
Cyclohexane	1.0	U	1.0	0.48	ug/L			06/28/21 14:41	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/28/21 14:41	1
1,2-Dibromoethane	1.0	U *+	1.0	0.41	ug/L			06/28/21 14:41	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/28/21 14:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/28/21 14:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/28/21 14:41	1
Isopropylbenzene	1.0	U	1.0	0.49	ug/L			06/28/21 14:41	1
Methyl acetate	10	U *+	10	1.7	ug/L			06/28/21 14:41	1
Methyl tert-butyl ether	1.0	U	1.0	0.47	ug/L			06/28/21 14:41	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/28/21 14:41	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.77	ug/L			06/28/21 14:41	1
1,2-Dichlorobenzene	1.0	U	1.0	0.48	ug/L			06/28/21 14:41	1
1,3-Dichlorobenzene	1.0	U	1.0	0.45	ug/L			06/28/21 14:41	1
1,4-Dichlorobenzene	1.0	U	1.0	0.41	ug/L			06/28/21 14:41	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/28/21 14:41	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/28/21 14:41	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/28/21 14:41	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	134	S1+	75 - 130		06/28/21 14:41	1
4-Bromofluorobenzene (Surr)	73		47 - 134		06/28/21 14:41	1
Toluene-d8 (Surr)	85		69 - 122		06/28/21 14:41	1
Dibromofluoromethane (Surr)	108		78 - 129		06/28/21 14:41	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-11223416-061521-SK-007
Date Collected: 06/15/21 13:05
Date Received: 06/24/21 14:30

Lab Sample ID: 240-151825-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/28/21 15:03	1
Benzene	1.0	U	1.0	0.42	ug/L			06/28/21 15:03	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/28/21 15:03	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/28/21 15:03	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/28/21 15:03	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/28/21 15:03	1
Carbon disulfide	5.0	U	5.0	0.59	ug/L			06/28/21 15:03	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/28/21 15:03	1
Chlorobenzene	1.0	U	1.0	0.38	ug/L			06/28/21 15:03	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/28/21 15:03	1
Chloroform	1.0	U	1.0	0.47	ug/L			06/28/21 15:03	1
Chloromethane	1.0	U	1.0	0.63	ug/L			06/28/21 15:03	1
1,1-Dichloroethane	1.0	U	1.0	0.47	ug/L			06/28/21 15:03	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/28/21 15:03	1
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/28/21 15:03	1
1,2-Dichloropropane	1.0	U	1.0	0.47	ug/L			06/28/21 15:03	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/28/21 15:03	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/28/21 15:03	1
Ethylbenzene	1.0	U	1.0	0.42	ug/L			06/28/21 15:03	1
2-Hexanone	10	U	10	1.1	ug/L			06/28/21 15:03	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/28/21 15:03	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.99	ug/L			06/28/21 15:03	1
Styrene	1.0	U	1.0	0.45	ug/L			06/28/21 15:03	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.60	ug/L			06/28/21 15:03	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 15:03	1
Toluene	1.0	U	1.0	0.44	ug/L			06/28/21 15:03	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 15:03	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/28/21 15:03	1
Xylenes, Total	2.0	U	2.0	0.42	ug/L			06/28/21 15:03	1
1,1,1-Trichloroethane	1.0	U	1.0	0.48	ug/L			06/28/21 15:03	1
1,1,2-Trichloroethane	1.0	U *+	1.0	0.48	ug/L			06/28/21 15:03	1
Cyclohexane	1.0	U	1.0	0.48	ug/L			06/28/21 15:03	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/28/21 15:03	1
1,2-Dibromoethane	1.0	U *+	1.0	0.41	ug/L			06/28/21 15:03	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/28/21 15:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/28/21 15:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/28/21 15:03	1
Isopropylbenzene	1.0	U	1.0	0.49	ug/L			06/28/21 15:03	1
Methyl acetate	10	U *+	10	1.7	ug/L			06/28/21 15:03	1
Methyl tert-butyl ether	1.0	U	1.0	0.47	ug/L			06/28/21 15:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/28/21 15:03	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.77	ug/L			06/28/21 15:03	1
1,2-Dichlorobenzene	1.0	U	1.0	0.48	ug/L			06/28/21 15:03	1
1,3-Dichlorobenzene	1.0	U	1.0	0.45	ug/L			06/28/21 15:03	1
1,4-Dichlorobenzene	1.0	U	1.0	0.41	ug/L			06/28/21 15:03	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/28/21 15:03	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/28/21 15:03	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/28/21 15:03	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	129		75 - 130		06/28/21 15:03	1
4-Bromofluorobenzene (Surr)	73		47 - 134		06/28/21 15:03	1
Toluene-d8 (Surr)	84		69 - 122		06/28/21 15:03	1
Dibromofluoromethane (Surr)	109		78 - 129		06/28/21 15:03	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-11223416-061521-SK-008
Date Collected: 06/15/21 14:15
Date Received: 06/24/21 14:30

Lab Sample ID: 240-151825-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/28/21 15:25	1
Benzene	1.0	U	1.0	0.42	ug/L			06/28/21 15:25	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/28/21 15:25	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/28/21 15:25	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/28/21 15:25	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/28/21 15:25	1
Carbon disulfide	5.0	U	5.0	0.59	ug/L			06/28/21 15:25	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/28/21 15:25	1
Chlorobenzene	1.0	U	1.0	0.38	ug/L			06/28/21 15:25	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/28/21 15:25	1
Chloroform	1.0	U	1.0	0.47	ug/L			06/28/21 15:25	1
Chloromethane	1.0	U	1.0	0.63	ug/L			06/28/21 15:25	1
1,1-Dichloroethane	1.0	U	1.0	0.47	ug/L			06/28/21 15:25	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/28/21 15:25	1
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/28/21 15:25	1
1,2-Dichloropropane	1.0	U	1.0	0.47	ug/L			06/28/21 15:25	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/28/21 15:25	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/28/21 15:25	1
Ethylbenzene	1.0	U	1.0	0.42	ug/L			06/28/21 15:25	1
2-Hexanone	10	U	10	1.1	ug/L			06/28/21 15:25	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/28/21 15:25	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.99	ug/L			06/28/21 15:25	1
Styrene	1.0	U	1.0	0.45	ug/L			06/28/21 15:25	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.60	ug/L			06/28/21 15:25	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 15:25	1
Toluene	1.0	U	1.0	0.44	ug/L			06/28/21 15:25	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 15:25	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/28/21 15:25	1
Xylenes, Total	2.0	U	2.0	0.42	ug/L			06/28/21 15:25	1
1,1,1-Trichloroethane	1.0	U	1.0	0.48	ug/L			06/28/21 15:25	1
1,1,2-Trichloroethane	1.0	U *+	1.0	0.48	ug/L			06/28/21 15:25	1
Cyclohexane	1.0	U	1.0	0.48	ug/L			06/28/21 15:25	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/28/21 15:25	1
1,2-Dibromoethane	1.0	U *+	1.0	0.41	ug/L			06/28/21 15:25	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/28/21 15:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/28/21 15:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/28/21 15:25	1
Isopropylbenzene	1.0	U	1.0	0.49	ug/L			06/28/21 15:25	1
Methyl acetate	10	U *+	10	1.7	ug/L			06/28/21 15:25	1
Methyl tert-butyl ether	1.0	U	1.0	0.47	ug/L			06/28/21 15:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/28/21 15:25	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.77	ug/L			06/28/21 15:25	1
1,2-Dichlorobenzene	1.0	U	1.0	0.48	ug/L			06/28/21 15:25	1
1,3-Dichlorobenzene	1.0	U	1.0	0.45	ug/L			06/28/21 15:25	1
1,4-Dichlorobenzene	1.0	U	1.0	0.41	ug/L			06/28/21 15:25	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/28/21 15:25	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/28/21 15:25	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/28/21 15:25	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	134	S1+	75 - 130		06/28/21 15:25	1
4-Bromofluorobenzene (Surr)	71		47 - 134		06/28/21 15:25	1
Toluene-d8 (Surr)	83		69 - 122		06/28/21 15:25	1
Dibromofluoromethane (Surr)	110		78 - 129		06/28/21 15:25	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-11223416-061621-SK-009
Date Collected: 06/16/21 09:20
Date Received: 06/24/21 14:30

Lab Sample ID: 240-151825-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/28/21 15:47	1
Benzene	1.0	U	1.0	0.42	ug/L			06/28/21 15:47	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/28/21 15:47	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/28/21 15:47	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/28/21 15:47	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/28/21 15:47	1
Carbon disulfide	5.0	U	5.0	0.59	ug/L			06/28/21 15:47	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/28/21 15:47	1
Chlorobenzene	1.0	U	1.0	0.38	ug/L			06/28/21 15:47	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/28/21 15:47	1
Chloroform	1.0	U	1.0	0.47	ug/L			06/28/21 15:47	1
Chloromethane	1.0	U	1.0	0.63	ug/L			06/28/21 15:47	1
1,1-Dichloroethane	1.0	U	1.0	0.47	ug/L			06/28/21 15:47	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/28/21 15:47	1
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/28/21 15:47	1
1,2-Dichloropropane	1.0	U	1.0	0.47	ug/L			06/28/21 15:47	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/28/21 15:47	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/28/21 15:47	1
Ethylbenzene	1.0	U	1.0	0.42	ug/L			06/28/21 15:47	1
2-Hexanone	10	U	10	1.1	ug/L			06/28/21 15:47	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/28/21 15:47	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.99	ug/L			06/28/21 15:47	1
Styrene	1.0	U	1.0	0.45	ug/L			06/28/21 15:47	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.60	ug/L			06/28/21 15:47	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 15:47	1
Toluene	1.0	U	1.0	0.44	ug/L			06/28/21 15:47	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 15:47	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/28/21 15:47	1
Xylenes, Total	2.0	U	2.0	0.42	ug/L			06/28/21 15:47	1
1,1,1-Trichloroethane	1.0	U	1.0	0.48	ug/L			06/28/21 15:47	1
1,1,2-Trichloroethane	1.0	U *+	1.0	0.48	ug/L			06/28/21 15:47	1
Cyclohexane	1.0	U	1.0	0.48	ug/L			06/28/21 15:47	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/28/21 15:47	1
1,2-Dibromoethane	1.0	U *+	1.0	0.41	ug/L			06/28/21 15:47	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/28/21 15:47	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/28/21 15:47	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/28/21 15:47	1
Isopropylbenzene	1.0	U	1.0	0.49	ug/L			06/28/21 15:47	1
Methyl acetate	10	U *+	10	1.7	ug/L			06/28/21 15:47	1
Methyl tert-butyl ether	1.0	U	1.0	0.47	ug/L			06/28/21 15:47	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/28/21 15:47	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.77	ug/L			06/28/21 15:47	1
1,2-Dichlorobenzene	1.0	U	1.0	0.48	ug/L			06/28/21 15:47	1
1,3-Dichlorobenzene	1.0	U	1.0	0.45	ug/L			06/28/21 15:47	1
1,4-Dichlorobenzene	1.0	U	1.0	0.41	ug/L			06/28/21 15:47	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/28/21 15:47	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/28/21 15:47	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/28/21 15:47	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	134	S1+	75 - 130		06/28/21 15:47	1
4-Bromofluorobenzene (Surr)	71		47 - 134		06/28/21 15:47	1
Toluene-d8 (Surr)	85		69 - 122		06/28/21 15:47	1
Dibromofluoromethane (Surr)	110		78 - 129		06/28/21 15:47	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-11223416-061621-SK-010
Date Collected: 06/16/21 09:25
Date Received: 06/24/21 14:30

Lab Sample ID: 240-151825-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/28/21 16:09	1
Benzene	1.0	U	1.0	0.42	ug/L			06/28/21 16:09	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/28/21 16:09	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/28/21 16:09	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/28/21 16:09	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/28/21 16:09	1
Carbon disulfide	5.0	U	5.0	0.59	ug/L			06/28/21 16:09	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/28/21 16:09	1
Chlorobenzene	1.0	U	1.0	0.38	ug/L			06/28/21 16:09	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/28/21 16:09	1
Chloroform	1.0	U	1.0	0.47	ug/L			06/28/21 16:09	1
Chloromethane	1.0	U	1.0	0.63	ug/L			06/28/21 16:09	1
1,1-Dichloroethane	1.0	U	1.0	0.47	ug/L			06/28/21 16:09	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/28/21 16:09	1
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/28/21 16:09	1
1,2-Dichloropropane	1.0	U	1.0	0.47	ug/L			06/28/21 16:09	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/28/21 16:09	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/28/21 16:09	1
Ethylbenzene	1.0	U	1.0	0.42	ug/L			06/28/21 16:09	1
2-Hexanone	10	U	10	1.1	ug/L			06/28/21 16:09	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/28/21 16:09	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.99	ug/L			06/28/21 16:09	1
Styrene	1.0	U	1.0	0.45	ug/L			06/28/21 16:09	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.60	ug/L			06/28/21 16:09	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 16:09	1
Toluene	1.0	U	1.0	0.44	ug/L			06/28/21 16:09	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 16:09	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/28/21 16:09	1
Xylenes, Total	2.0	U	2.0	0.42	ug/L			06/28/21 16:09	1
1,1,1-Trichloroethane	1.0	U	1.0	0.48	ug/L			06/28/21 16:09	1
1,1,2-Trichloroethane	1.0	U *+	1.0	0.48	ug/L			06/28/21 16:09	1
Cyclohexane	1.0	U	1.0	0.48	ug/L			06/28/21 16:09	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/28/21 16:09	1
1,2-Dibromoethane	1.0	U *+	1.0	0.41	ug/L			06/28/21 16:09	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/28/21 16:09	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/28/21 16:09	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/28/21 16:09	1
Isopropylbenzene	1.0	U	1.0	0.49	ug/L			06/28/21 16:09	1
Methyl acetate	10	U *+	10	1.7	ug/L			06/28/21 16:09	1
Methyl tert-butyl ether	1.0	U	1.0	0.47	ug/L			06/28/21 16:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/28/21 16:09	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.77	ug/L			06/28/21 16:09	1
1,2-Dichlorobenzene	1.0	U	1.0	0.48	ug/L			06/28/21 16:09	1
1,3-Dichlorobenzene	1.0	U	1.0	0.45	ug/L			06/28/21 16:09	1
1,4-Dichlorobenzene	1.0	U	1.0	0.41	ug/L			06/28/21 16:09	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/28/21 16:09	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/28/21 16:09	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/28/21 16:09	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	133	S1+	75 - 130		06/28/21 16:09	1
4-Bromofluorobenzene (Surr)	71		47 - 134		06/28/21 16:09	1
Toluene-d8 (Surr)	86		69 - 122		06/28/21 16:09	1
Dibromofluoromethane (Surr)	110		78 - 129		06/28/21 16:09	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-11223416-061621-SK-011
Date Collected: 06/16/21 10:10
Date Received: 06/24/21 14:30

Lab Sample ID: 240-151825-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/28/21 16:30	1
Benzene	1.0	U	1.0	0.42	ug/L			06/28/21 16:30	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/28/21 16:30	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/28/21 16:30	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/28/21 16:30	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/28/21 16:30	1
Carbon disulfide	5.0	U	5.0	0.59	ug/L			06/28/21 16:30	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/28/21 16:30	1
Chlorobenzene	1.0	U	1.0	0.38	ug/L			06/28/21 16:30	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/28/21 16:30	1
Chloroform	1.0	U	1.0	0.47	ug/L			06/28/21 16:30	1
Chloromethane	1.0	U	1.0	0.63	ug/L			06/28/21 16:30	1
1,1-Dichloroethane	1.0	U	1.0	0.47	ug/L			06/28/21 16:30	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/28/21 16:30	1
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/28/21 16:30	1
1,2-Dichloropropane	1.0	U	1.0	0.47	ug/L			06/28/21 16:30	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/28/21 16:30	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/28/21 16:30	1
Ethylbenzene	1.0	U	1.0	0.42	ug/L			06/28/21 16:30	1
2-Hexanone	10	U	10	1.1	ug/L			06/28/21 16:30	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/28/21 16:30	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.99	ug/L			06/28/21 16:30	1
Styrene	1.0	U	1.0	0.45	ug/L			06/28/21 16:30	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.60	ug/L			06/28/21 16:30	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 16:30	1
Toluene	1.0	U	1.0	0.44	ug/L			06/28/21 16:30	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 16:30	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/28/21 16:30	1
Xylenes, Total	2.0	U	2.0	0.42	ug/L			06/28/21 16:30	1
1,1,1-Trichloroethane	1.0	U	1.0	0.48	ug/L			06/28/21 16:30	1
1,1,2-Trichloroethane	1.0	U *+	1.0	0.48	ug/L			06/28/21 16:30	1
Cyclohexane	1.0	U	1.0	0.48	ug/L			06/28/21 16:30	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/28/21 16:30	1
1,2-Dibromoethane	1.0	U *+	1.0	0.41	ug/L			06/28/21 16:30	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/28/21 16:30	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/28/21 16:30	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/28/21 16:30	1
Isopropylbenzene	1.0	U	1.0	0.49	ug/L			06/28/21 16:30	1
Methyl acetate	10	U *+	10	1.7	ug/L			06/28/21 16:30	1
Methyl tert-butyl ether	1.0	U	1.0	0.47	ug/L			06/28/21 16:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/28/21 16:30	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.77	ug/L			06/28/21 16:30	1
1,2-Dichlorobenzene	1.0	U	1.0	0.48	ug/L			06/28/21 16:30	1
1,3-Dichlorobenzene	1.0	U	1.0	0.45	ug/L			06/28/21 16:30	1
1,4-Dichlorobenzene	1.0	U	1.0	0.41	ug/L			06/28/21 16:30	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/28/21 16:30	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/28/21 16:30	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/28/21 16:30	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	132	S1+	75 - 130		06/28/21 16:30	1
4-Bromofluorobenzene (Surr)	71		47 - 134		06/28/21 16:30	1
Toluene-d8 (Surr)	86		69 - 122		06/28/21 16:30	1
Dibromofluoromethane (Surr)	110		78 - 129		06/28/21 16:30	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-11223416-061621-SK-012
Date Collected: 06/16/21 11:35
Date Received: 06/24/21 14:30

Lab Sample ID: 240-151825-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/28/21 16:52	1
Benzene	1.0	U	1.0	0.42	ug/L			06/28/21 16:52	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/28/21 16:52	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/28/21 16:52	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/28/21 16:52	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/28/21 16:52	1
Carbon disulfide	5.0	U	5.0	0.59	ug/L			06/28/21 16:52	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/28/21 16:52	1
Chlorobenzene	1.0	U	1.0	0.38	ug/L			06/28/21 16:52	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/28/21 16:52	1
Chloroform	1.0	U	1.0	0.47	ug/L			06/28/21 16:52	1
Chloromethane	1.0	U	1.0	0.63	ug/L			06/28/21 16:52	1
1,1-Dichloroethane	1.0	U	1.0	0.47	ug/L			06/28/21 16:52	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/28/21 16:52	1
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/28/21 16:52	1
1,2-Dichloropropane	1.0	U	1.0	0.47	ug/L			06/28/21 16:52	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/28/21 16:52	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/28/21 16:52	1
Ethylbenzene	1.0	U	1.0	0.42	ug/L			06/28/21 16:52	1
2-Hexanone	10	U	10	1.1	ug/L			06/28/21 16:52	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/28/21 16:52	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.99	ug/L			06/28/21 16:52	1
Styrene	1.0	U	1.0	0.45	ug/L			06/28/21 16:52	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.60	ug/L			06/28/21 16:52	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 16:52	1
Toluene	1.0	U	1.0	0.44	ug/L			06/28/21 16:52	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 16:52	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/28/21 16:52	1
Xylenes, Total	2.0	U	2.0	0.42	ug/L			06/28/21 16:52	1
1,1,1-Trichloroethane	1.0	U	1.0	0.48	ug/L			06/28/21 16:52	1
1,1,2-Trichloroethane	1.0	U *+	1.0	0.48	ug/L			06/28/21 16:52	1
Cyclohexane	1.0	U	1.0	0.48	ug/L			06/28/21 16:52	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/28/21 16:52	1
1,2-Dibromoethane	1.0	U *+	1.0	0.41	ug/L			06/28/21 16:52	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/28/21 16:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/28/21 16:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/28/21 16:52	1
Isopropylbenzene	1.0	U	1.0	0.49	ug/L			06/28/21 16:52	1
Methyl acetate	10	U *+	10	1.7	ug/L			06/28/21 16:52	1
Methyl tert-butyl ether	1.0	U	1.0	0.47	ug/L			06/28/21 16:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/28/21 16:52	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.77	ug/L			06/28/21 16:52	1
1,2-Dichlorobenzene	1.0	U	1.0	0.48	ug/L			06/28/21 16:52	1
1,3-Dichlorobenzene	1.0	U	1.0	0.45	ug/L			06/28/21 16:52	1
1,4-Dichlorobenzene	1.0	U	1.0	0.41	ug/L			06/28/21 16:52	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/28/21 16:52	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/28/21 16:52	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/28/21 16:52	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	135	S1+	75 - 130		06/28/21 16:52	1
4-Bromofluorobenzene (Surr)	71		47 - 134		06/28/21 16:52	1
Toluene-d8 (Surr)	85		69 - 122		06/28/21 16:52	1
Dibromofluoromethane (Surr)	110		78 - 129		06/28/21 16:52	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-11223416-061621-SK-013
Date Collected: 06/16/21 13:10
Date Received: 06/24/21 14:30

Lab Sample ID: 240-151825-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/28/21 17:14	1
Benzene	1.0	U	1.0	0.42	ug/L			06/28/21 17:14	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/28/21 17:14	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/28/21 17:14	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/28/21 17:14	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/28/21 17:14	1
Carbon disulfide	5.0	U	5.0	0.59	ug/L			06/28/21 17:14	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/28/21 17:14	1
Chlorobenzene	1.0	U	1.0	0.38	ug/L			06/28/21 17:14	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/28/21 17:14	1
Chloroform	1.0	U	1.0	0.47	ug/L			06/28/21 17:14	1
Chloromethane	1.0	U	1.0	0.63	ug/L			06/28/21 17:14	1
1,1-Dichloroethane	1.0	U	1.0	0.47	ug/L			06/28/21 17:14	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/28/21 17:14	1
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/28/21 17:14	1
1,2-Dichloropropane	1.0	U	1.0	0.47	ug/L			06/28/21 17:14	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/28/21 17:14	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/28/21 17:14	1
Ethylbenzene	1.0	U	1.0	0.42	ug/L			06/28/21 17:14	1
2-Hexanone	10	U	10	1.1	ug/L			06/28/21 17:14	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/28/21 17:14	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.99	ug/L			06/28/21 17:14	1
Styrene	1.0	U	1.0	0.45	ug/L			06/28/21 17:14	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.60	ug/L			06/28/21 17:14	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 17:14	1
Toluene	1.0	U	1.0	0.44	ug/L			06/28/21 17:14	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 17:14	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/28/21 17:14	1
Xylenes, Total	2.0	U	2.0	0.42	ug/L			06/28/21 17:14	1
1,1,1-Trichloroethane	1.0	U	1.0	0.48	ug/L			06/28/21 17:14	1
1,1,2-Trichloroethane	1.0	U *+	1.0	0.48	ug/L			06/28/21 17:14	1
Cyclohexane	1.0	U	1.0	0.48	ug/L			06/28/21 17:14	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/28/21 17:14	1
1,2-Dibromoethane	1.0	U *+	1.0	0.41	ug/L			06/28/21 17:14	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/28/21 17:14	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/28/21 17:14	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/28/21 17:14	1
Isopropylbenzene	1.0	U	1.0	0.49	ug/L			06/28/21 17:14	1
Methyl acetate	10	U *+	10	1.7	ug/L			06/28/21 17:14	1
Methyl tert-butyl ether	1.0	U	1.0	0.47	ug/L			06/28/21 17:14	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/28/21 17:14	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.77	ug/L			06/28/21 17:14	1
1,2-Dichlorobenzene	1.0	U	1.0	0.48	ug/L			06/28/21 17:14	1
1,3-Dichlorobenzene	1.0	U	1.0	0.45	ug/L			06/28/21 17:14	1
1,4-Dichlorobenzene	1.0	U	1.0	0.41	ug/L			06/28/21 17:14	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/28/21 17:14	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/28/21 17:14	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/28/21 17:14	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	133	S1+	75 - 130		06/28/21 17:14	1
4-Bromofluorobenzene (Surr)	70		47 - 134		06/28/21 17:14	1
Toluene-d8 (Surr)	83		69 - 122		06/28/21 17:14	1
Dibromofluoromethane (Surr)	112		78 - 129		06/28/21 17:14	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-11223416-061721-SK-014
Date Collected: 06/17/21 09:40
Date Received: 06/24/21 14:30

Lab Sample ID: 240-151825-14
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/28/21 17:34	1
Benzene	1.0	U	1.0	0.42	ug/L			06/28/21 17:34	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/28/21 17:34	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/28/21 17:34	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/28/21 17:34	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/28/21 17:34	1
Carbon disulfide	5.0	U	5.0	0.59	ug/L			06/28/21 17:34	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/28/21 17:34	1
Chlorobenzene	1.0	U	1.0	0.38	ug/L			06/28/21 17:34	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/28/21 17:34	1
Chloroform	1.0	U	1.0	0.47	ug/L			06/28/21 17:34	1
Chloromethane	1.0	U	1.0	0.63	ug/L			06/28/21 17:34	1
1,1-Dichloroethane	1.0	U	1.0	0.47	ug/L			06/28/21 17:34	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/28/21 17:34	1
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/28/21 17:34	1
1,2-Dichloropropane	1.0	U	1.0	0.47	ug/L			06/28/21 17:34	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/28/21 17:34	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/28/21 17:34	1
Ethylbenzene	1.0	U	1.0	0.42	ug/L			06/28/21 17:34	1
2-Hexanone	10	U	10	1.1	ug/L			06/28/21 17:34	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/28/21 17:34	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.99	ug/L			06/28/21 17:34	1
Styrene	1.0	U	1.0	0.45	ug/L			06/28/21 17:34	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.60	ug/L			06/28/21 17:34	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 17:34	1
Toluene	1.0	U	1.0	0.44	ug/L			06/28/21 17:34	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 17:34	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/28/21 17:34	1
Xylenes, Total	2.0	U	2.0	0.42	ug/L			06/28/21 17:34	1
1,1,1-Trichloroethane	1.0	U	1.0	0.48	ug/L			06/28/21 17:34	1
1,1,2-Trichloroethane	1.0	U *+	1.0	0.48	ug/L			06/28/21 17:34	1
Cyclohexane	1.0	U	1.0	0.48	ug/L			06/28/21 17:34	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/28/21 17:34	1
1,2-Dibromoethane	1.0	U *+	1.0	0.41	ug/L			06/28/21 17:34	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/28/21 17:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/28/21 17:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/28/21 17:34	1
Isopropylbenzene	1.0	U	1.0	0.49	ug/L			06/28/21 17:34	1
Methyl acetate	10	U *+	10	1.7	ug/L			06/28/21 17:34	1
Methyl tert-butyl ether	1.0	U	1.0	0.47	ug/L			06/28/21 17:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/28/21 17:34	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.77	ug/L			06/28/21 17:34	1
1,2-Dichlorobenzene	1.0	U	1.0	0.48	ug/L			06/28/21 17:34	1
1,3-Dichlorobenzene	1.0	U	1.0	0.45	ug/L			06/28/21 17:34	1
1,4-Dichlorobenzene	1.0	U	1.0	0.41	ug/L			06/28/21 17:34	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/28/21 17:34	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/28/21 17:34	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/28/21 17:34	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		75 - 130		06/28/21 17:34	1
4-Bromofluorobenzene (Surr)	73		47 - 134		06/28/21 17:34	1
Toluene-d8 (Surr)	81		69 - 122		06/28/21 17:34	1
Dibromofluoromethane (Surr)	108		78 - 129		06/28/21 17:34	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-11223416-061721-SK-015
Date Collected: 06/17/21 10:50
Date Received: 06/24/21 14:30

Lab Sample ID: 240-151825-15
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/28/21 17:56	1
Benzene	1.0	U	1.0	0.42	ug/L			06/28/21 17:56	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/28/21 17:56	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/28/21 17:56	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/28/21 17:56	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/28/21 17:56	1
Carbon disulfide	5.0	U	5.0	0.59	ug/L			06/28/21 17:56	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/28/21 17:56	1
Chlorobenzene	1.0	U	1.0	0.38	ug/L			06/28/21 17:56	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/28/21 17:56	1
Chloroform	1.0	U	1.0	0.47	ug/L			06/28/21 17:56	1
Chloromethane	1.0	U	1.0	0.63	ug/L			06/28/21 17:56	1
1,1-Dichloroethane	1.0	U	1.0	0.47	ug/L			06/28/21 17:56	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/28/21 17:56	1
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/28/21 17:56	1
1,2-Dichloropropane	1.0	U	1.0	0.47	ug/L			06/28/21 17:56	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/28/21 17:56	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/28/21 17:56	1
Ethylbenzene	1.0	U	1.0	0.42	ug/L			06/28/21 17:56	1
2-Hexanone	10	U	10	1.1	ug/L			06/28/21 17:56	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/28/21 17:56	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.99	ug/L			06/28/21 17:56	1
Styrene	1.0	U	1.0	0.45	ug/L			06/28/21 17:56	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.60	ug/L			06/28/21 17:56	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 17:56	1
Toluene	1.0	U	1.0	0.44	ug/L			06/28/21 17:56	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 17:56	1
Vinyl chloride	**0.93**	**J**	1.0	0.45	ug/L			06/28/21 17:56	1
Xylenes, Total	2.0	U	2.0	0.42	ug/L			06/28/21 17:56	1
1,1,1-Trichloroethane	1.0	U	1.0	0.48	ug/L			06/28/21 17:56	1
1,1,2-Trichloroethane	1.0	U *+	1.0	0.48	ug/L			06/28/21 17:56	1
Cyclohexane	1.0	U	1.0	0.48	ug/L			06/28/21 17:56	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/28/21 17:56	1
1,2-Dibromoethane	1.0	U *+	1.0	0.41	ug/L			06/28/21 17:56	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/28/21 17:56	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/28/21 17:56	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/28/21 17:56	1
Isopropylbenzene	1.0	U	1.0	0.49	ug/L			06/28/21 17:56	1
Methyl acetate	10	U *+	10	1.7	ug/L			06/28/21 17:56	1
Methyl tert-butyl ether	1.0	U	1.0	0.47	ug/L			06/28/21 17:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/28/21 17:56	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.77	ug/L			06/28/21 17:56	1
1,2-Dichlorobenzene	1.0	U	1.0	0.48	ug/L			06/28/21 17:56	1
1,3-Dichlorobenzene	1.0	U	1.0	0.45	ug/L			06/28/21 17:56	1
1,4-Dichlorobenzene	1.0	U	1.0	0.41	ug/L			06/28/21 17:56	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/28/21 17:56	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/28/21 17:56	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/28/21 17:56	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	135	S1+	75 - 130		06/28/21 17:56	1
4-Bromofluorobenzene (Surr)	69		47 - 134		06/28/21 17:56	1
Toluene-d8 (Surr)	85		69 - 122		06/28/21 17:56	1
Dibromofluoromethane (Surr)	111		78 - 129		06/28/21 17:56	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: TB-11223416-061721-SK
Date Collected: 06/17/21 00:00
Date Received: 06/24/21 14:30

Lab Sample ID: 240-151825-16
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/28/21 18:18	1
Benzene	1.0	U	1.0	0.42	ug/L			06/28/21 18:18	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/28/21 18:18	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/28/21 18:18	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/28/21 18:18	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/28/21 18:18	1
Carbon disulfide	5.0	U	5.0	0.59	ug/L			06/28/21 18:18	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/28/21 18:18	1
Chlorobenzene	1.0	U	1.0	0.38	ug/L			06/28/21 18:18	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/28/21 18:18	1
Chloroform	1.0	U	1.0	0.47	ug/L			06/28/21 18:18	1
Chloromethane	1.0	U	1.0	0.63	ug/L			06/28/21 18:18	1
1,1-Dichloroethane	1.0	U	1.0	0.47	ug/L			06/28/21 18:18	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/28/21 18:18	1
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/28/21 18:18	1
1,2-Dichloropropane	1.0	U	1.0	0.47	ug/L			06/28/21 18:18	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/28/21 18:18	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/28/21 18:18	1
Ethylbenzene	1.0	U	1.0	0.42	ug/L			06/28/21 18:18	1
2-Hexanone	10	U	10	1.1	ug/L			06/28/21 18:18	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/28/21 18:18	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.99	ug/L			06/28/21 18:18	1
Styrene	1.0	U	1.0	0.45	ug/L			06/28/21 18:18	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.60	ug/L			06/28/21 18:18	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 18:18	1
Toluene	1.0	U	1.0	0.44	ug/L			06/28/21 18:18	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 18:18	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/28/21 18:18	1
Xylenes, Total	2.0	U	2.0	0.42	ug/L			06/28/21 18:18	1
1,1,1-Trichloroethane	1.0	U	1.0	0.48	ug/L			06/28/21 18:18	1
1,1,2-Trichloroethane	1.0	U *+	1.0	0.48	ug/L			06/28/21 18:18	1
Cyclohexane	1.0	U	1.0	0.48	ug/L			06/28/21 18:18	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/28/21 18:18	1
1,2-Dibromoethane	1.0	U *+	1.0	0.41	ug/L			06/28/21 18:18	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/28/21 18:18	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/28/21 18:18	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/28/21 18:18	1
Isopropylbenzene	1.0	U	1.0	0.49	ug/L			06/28/21 18:18	1
Methyl acetate	10	U *+	10	1.7	ug/L			06/28/21 18:18	1
Methyl tert-butyl ether	1.0	U	1.0	0.47	ug/L			06/28/21 18:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/28/21 18:18	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.77	ug/L			06/28/21 18:18	1
1,2-Dichlorobenzene	1.0	U	1.0	0.48	ug/L			06/28/21 18:18	1
1,3-Dichlorobenzene	1.0	U	1.0	0.45	ug/L			06/28/21 18:18	1
1,4-Dichlorobenzene	1.0	U	1.0	0.41	ug/L			06/28/21 18:18	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/28/21 18:18	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/28/21 18:18	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/28/21 18:18	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	134	S1+	75 - 130		06/28/21 18:18	1
4-Bromofluorobenzene (Surr)	69		47 - 134		06/28/21 18:18	1
Toluene-d8 (Surr)	83		69 - 122		06/28/21 18:18	1
Dibromofluoromethane (Surr)	111		78 - 129		06/28/21 18:18	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

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

Client Sample ID: GW-11223416-061421-SK-003
Date Collected: 06/14/21 12:00
Date Received: 06/24/21 14:30

Lab Sample ID: 240-151825-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**480**		50	34	ug/L		06/28/21 14:00	06/29/21 12:52	1
Lead	1.0	U	1.0	0.45	ug/L		06/28/21 14:00	06/29/21 12:52	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

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

Client Sample ID: GW-11223416-061421-SK-004
Date Collected: 06/14/21 14:25
Date Received: 06/24/21 14:30

Lab Sample ID: 240-151825-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	50	U	50	34	ug/L		06/28/21 14:00	06/29/21 12:57	1
Lead	1.0	U	1.0	0.45	ug/L		06/28/21 14:00	06/29/21 12:57	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Method: 6020 - Metals (ICP/MS) - Dissolved

Client Sample ID: GW-11223416-061421-SK-003
Date Collected: 06/14/21 12:00
Date Received: 06/24/21 14:30

Lab Sample ID: 240-151825-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	50	U	50	34	ug/L		06/28/21 14:00	06/29/21 12:55	1
Lead	1.0	U	1.0	0.45	ug/L		06/28/21 14:00	06/29/21 12:55	1

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Method: 6020 - Metals (ICP/MS) - Dissolved

Client Sample ID: GW-11223416-061421-SK-004
Date Collected: 06/14/21 14:25
Date Received: 06/24/21 14:30

Lab Sample ID: 240-151825-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	50	U	50	34	ug/L		06/28/21 14:00	06/29/21 13:00	1
Lead	1.0	U	1.0	0.45	ug/L		06/28/21 14:00	06/29/21 13:00	1

QC Association Summary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

GC/MS VOA

Analysis Batch: 492639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-151825-1	GW-11223416-061421-SK-001	Total/NA	Water	8260B	
240-151825-2	GW-11223416-061421-SK-002	Total/NA	Water	8260B	
240-151825-5	GW-11223416-061521-SK-005	Total/NA	Water	8260B	
240-151825-6	GW-11223416-061521-SK-006	Total/NA	Water	8260B	
240-151825-7	GW-11223416-061521-SK-007	Total/NA	Water	8260B	
240-151825-8	GW-11223416-061521-SK-008	Total/NA	Water	8260B	
240-151825-9	GW-11223416-061621-SK-009	Total/NA	Water	8260B	
240-151825-10	GW-11223416-061621-SK-010	Total/NA	Water	8260B	
240-151825-11	GW-11223416-061621-SK-011	Total/NA	Water	8260B	
240-151825-12	GW-11223416-061621-SK-012	Total/NA	Water	8260B	
240-151825-13	GW-11223416-061621-SK-013	Total/NA	Water	8260B	
240-151825-14	GW-11223416-061721-SK-014	Total/NA	Water	8260B	
240-151825-15	GW-11223416-061721-SK-015	Total/NA	Water	8260B	
240-151825-16	TB-11223416-061721-SK	Total/NA	Water	8260B	
MB 240-492639/7	Method Blank	Total/NA	Water	8260B	
LCS 240-492639/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 240-492639/59	Lab Control Sample Dup	Total/NA	Water	8260B	

Metals

Prep Batch: 492666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-151825-3	GW-11223416-061421-SK-003	Dissolved	Water	3005A	
240-151825-3	GW-11223416-061421-SK-003	Total Recoverable	Water	3005A	
240-151825-4	GW-11223416-061421-SK-004	Dissolved	Water	3005A	
240-151825-4	GW-11223416-061421-SK-004	Total Recoverable	Water	3005A	
MB 240-492666/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-492666/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 492982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-151825-3	GW-11223416-061421-SK-003	Dissolved	Water	6020	492666
240-151825-3	GW-11223416-061421-SK-003	Total Recoverable	Water	6020	492666
240-151825-4	GW-11223416-061421-SK-004	Dissolved	Water	6020	492666
240-151825-4	GW-11223416-061421-SK-004	Total Recoverable	Water	6020	492666
MB 240-492666/1-A	Method Blank	Total Recoverable	Water	6020	492666
LCS 240-492666/2-A	Lab Control Sample	Total Recoverable	Water	6020	492666

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-492639/7
Matrix: Water
Analysis Batch: 492639

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/28/21 12:52	1
Benzene	1.0	U	1.0	0.42	ug/L			06/28/21 12:52	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/28/21 12:52	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/28/21 12:52	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/28/21 12:52	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/28/21 12:52	1
Carbon disulfide	5.0	U	5.0	0.59	ug/L			06/28/21 12:52	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/28/21 12:52	1
Chlorobenzene	1.0	U	1.0	0.38	ug/L			06/28/21 12:52	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/28/21 12:52	1
Chloroform	1.0	U	1.0	0.47	ug/L			06/28/21 12:52	1
Chloromethane	1.0	U	1.0	0.63	ug/L			06/28/21 12:52	1
1,1-Dichloroethane	1.0	U	1.0	0.47	ug/L			06/28/21 12:52	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/28/21 12:52	1
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/28/21 12:52	1
1,2-Dichloropropane	1.0	U	1.0	0.47	ug/L			06/28/21 12:52	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/28/21 12:52	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/28/21 12:52	1
Ethylbenzene	1.0	U	1.0	0.42	ug/L			06/28/21 12:52	1
2-Hexanone	10	U	10	1.1	ug/L			06/28/21 12:52	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/28/21 12:52	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.99	ug/L			06/28/21 12:52	1
Styrene	1.0	U	1.0	0.45	ug/L			06/28/21 12:52	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.60	ug/L			06/28/21 12:52	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 12:52	1
Toluene	1.0	U	1.0	0.44	ug/L			06/28/21 12:52	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/28/21 12:52	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/28/21 12:52	1
Xylenes, Total	2.0	U	2.0	0.42	ug/L			06/28/21 12:52	1
1,1,1-Trichloroethane	1.0	U	1.0	0.48	ug/L			06/28/21 12:52	1
1,1,2-Trichloroethane	1.0	U	1.0	0.48	ug/L			06/28/21 12:52	1
Cyclohexane	1.0	U	1.0	0.48	ug/L			06/28/21 12:52	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/28/21 12:52	1
1,2-Dibromoethane	1.0	U	1.0	0.41	ug/L			06/28/21 12:52	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/28/21 12:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/28/21 12:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/28/21 12:52	1
Isopropylbenzene	1.0	U	1.0	0.49	ug/L			06/28/21 12:52	1
Methyl acetate	10	U	10	1.7	ug/L			06/28/21 12:52	1
Methyl tert-butyl ether	1.0	U	1.0	0.47	ug/L			06/28/21 12:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/28/21 12:52	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.77	ug/L			06/28/21 12:52	1
1,2-Dichlorobenzene	1.0	U	1.0	0.48	ug/L			06/28/21 12:52	1
1,3-Dichlorobenzene	1.0	U	1.0	0.45	ug/L			06/28/21 12:52	1
1,4-Dichlorobenzene	1.0	U	1.0	0.41	ug/L			06/28/21 12:52	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/28/21 12:52	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/28/21 12:52	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/28/21 12:52	1

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

Lab Sample ID: MB 240-492639/7
Matrix: Water
Analysis Batch: 492639

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*128*		*75 - 130*		*06/28/21 12:52*	*1*
4-Bromofluorobenzene (Surr)	*77*		*47 - 134*		*06/28/21 12:52*	*1*
Toluene-d8 (Surr)	*86*		*69 - 122*		*06/28/21 12:52*	*1*
Dibromofluoromethane (Surr)	*102*		*78 - 129*		*06/28/21 12:52*	*1*

Lab Sample ID: LCS 240-492639/4
Matrix: Water
Analysis Batch: 492639

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	26.7		ug/L		133	33 - 155
Benzene	10.0	10.7		ug/L		107	77 - 123
Bromodichloromethane	10.0	10.4		ug/L		104	73 - 122
Bromoform	10.0	9.88		ug/L		99	47 - 133
Bromomethane	10.0	9.75		ug/L		97	48 - 144
2-Butanone (MEK)	20.0	28.5		ug/L		142	41 - 151
Carbon disulfide	10.0	7.37		ug/L		74	67 - 127
Carbon tetrachloride	10.0	9.65		ug/L		97	61 - 142
Chlorobenzene	10.0	11.5		ug/L		115	80 - 120
Chloroethane	10.0	10.2		ug/L		102	41 - 147
Chloroform	10.0	10.9		ug/L		109	74 - 127
Chloromethane	10.0	9.29		ug/L		93	46 - 148
1,1-Dichloroethane	10.0	10.4		ug/L		104	74 - 126
1,2-Dichloroethane	10.0	12.7		ug/L		127	66 - 129
1,1-Dichloroethene	10.0	9.82		ug/L		98	73 - 129
1,2-Dichloropropane	10.0	11.3		ug/L		113	79 - 127
cis-1,3-Dichloropropene	10.0	10.5		ug/L		105	68 - 128
trans-1,3-Dichloropropene	10.0	9.68		ug/L		97	64 - 120
Ethylbenzene	10.0	10.4		ug/L		104	80 - 120
2-Hexanone	20.0	23.6		ug/L		118	43 - 142
Methylene Chloride	10.0	11.0		ug/L		110	63 - 134
4-Methyl-2-pentanone (MIBK)	20.0	24.3		ug/L		122	43 - 145
Styrene	10.0	11.2		ug/L		112	75 - 121
1,1,2,2-Tetrachloroethane	10.0	13.2		ug/L		132	45 - 151
Tetrachloroethene	10.0	10.7		ug/L		107	70 - 125
Toluene	10.0	10.7		ug/L		107	79 - 122
Trichloroethene	10.0	10.0		ug/L		100	71 - 121
Vinyl chloride	10.0	11.6		ug/L		116	61 - 134
Xylenes, Total	20.0	20.1		ug/L		101	78 - 122
1,1,1-Trichloroethane	10.0	9.61		ug/L		96	65 - 141
1,1,2-Trichloroethane	10.0	13.5	*+	ug/L		135	79 - 121
Cyclohexane	10.0	8.70		ug/L		87	69 - 133
1,2-Dibromo-3-Chloropropane	10.0	8.33		ug/L		83	34 - 136
1,2-Dibromoethane	10.0	13.4	*+	ug/L		134	73 - 120
Dichlorodifluoromethane	10.0	10.3		ug/L		103	35 - 137
cis-1,2-Dichloroethene	10.0	10.3		ug/L		103	75 - 124
trans-1,2-Dichloroethene	10.0	10.6		ug/L		106	74 - 130
Isopropylbenzene	10.0	8.74		ug/L		87	73 - 123

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

Lab Sample ID: LCS 240-492639/4
Matrix: Water
Analysis Batch: 492639

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl acetate	20.0	28.2	*+	ug/L		141	47 - 140
Methyl tert-butyl ether	10.0	9.86		ug/L		99	57 - 127
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	10.0		ug/L		100	54 - 148
1,2,4-Trichlorobenzene	10.0	5.74		ug/L		57	47 - 120
1,2-Dichlorobenzene	10.0	9.85		ug/L		98	74 - 120
1,3-Dichlorobenzene	10.0	10.1		ug/L		101	74 - 120
1,4-Dichlorobenzene	10.0	10.5		ug/L		105	75 - 120
Trichlorofluoromethane	10.0	9.77		ug/L		98	52 - 148
Dibromochloromethane	10.0	10.9		ug/L		109	75 - 120
Methylcyclohexane	10.0	8.74		ug/L		87	64 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*109*		*75 - 130*
4-Bromofluorobenzene (Surr)	*101*		*47 - 134*
Toluene-d8 (Surr)	*96*		*69 - 122*
Dibromofluoromethane (Surr)	*93*		*78 - 129*

Lab Sample ID: LCSD 240-492639/59
Matrix: Water
Analysis Batch: 492639

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	20.0	20.7		ug/L		103	33 - 155	25	35
Benzene	10.0	9.96		ug/L		100	77 - 123	7	35
Bromodichloromethane	10.0	9.81		ug/L		98	73 - 122	6	35
Bromoform	10.0	9.79		ug/L		98	47 - 133	1	35
Bromomethane	10.0	8.13		ug/L		81	48 - 144	18	35
2-Butanone (MEK)	20.0	23.1		ug/L		115	41 - 151	21	35
Carbon disulfide	10.0	6.79		ug/L		68	67 - 127	8	35
Carbon tetrachloride	10.0	8.71		ug/L		87	61 - 142	10	35
Chlorobenzene	10.0	10.7		ug/L		107	80 - 120	7	35
Chloroethane	10.0	8.94		ug/L		89	41 - 147	13	35
Chloroform	10.0	10.1		ug/L		101	74 - 127	8	35
Chloromethane	10.0	7.82		ug/L		78	46 - 148	17	35
1,1-Dichloroethane	10.0	9.66		ug/L		97	74 - 126	7	35
1,2-Dichloroethane	10.0	11.9		ug/L		119	66 - 129	6	35
1,1-Dichloroethene	10.0	9.09		ug/L		91	73 - 129	8	35
1,2-Dichloropropane	10.0	10.4		ug/L		104	79 - 127	8	35
cis-1,3-Dichloropropene	10.0	9.23		ug/L		92	68 - 128	13	35
trans-1,3-Dichloropropene	10.0	8.82		ug/L		88	64 - 120	9	35
Ethylbenzene	10.0	9.58		ug/L		96	80 - 120	8	35
2-Hexanone	20.0	22.2		ug/L		111	43 - 142	6	35
Methylene Chloride	10.0	10.5		ug/L		105	63 - 134	5	35
4-Methyl-2-pentanone (MIBK)	20.0	21.2		ug/L		106	43 - 145	14	35
Styrene	10.0	10.4		ug/L		104	75 - 121	8	35
1,1,2,2-Tetrachloroethane	10.0	12.2		ug/L		122	45 - 151	7	35
Tetrachloroethene	10.0	9.69		ug/L		97	70 - 125	10	35
Toluene	10.0	10.2		ug/L		102	79 - 122	5	35

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

Lab Sample ID: LCSD 240-492639/59
Matrix: Water
Analysis Batch: 492639

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Trichloroethene	10.0	9.81		ug/L		98	71 - 121	2	35
Vinyl chloride	10.0	9.84		ug/L		98	61 - 134	16	35
Xylenes, Total	20.0	18.4		ug/L		92	78 - 122	9	35
1,1,1-Trichloroethane	10.0	8.83		ug/L		88	65 - 141	8	35
1,1,2-Trichloroethane	10.0	13.0	*+	ug/L		130	79 - 121	4	35
Cyclohexane	10.0	7.08		ug/L		71	69 - 133	21	35
1,2-Dibromo-3-Chloropropane	10.0	8.12		ug/L		81	34 - 136	3	35
1,2-Dibromoethane	10.0	12.5	*+	ug/L		125	73 - 120	7	35
Dichlorodifluoromethane	10.0	8.22		ug/L		82	35 - 137	23	35
cis-1,2-Dichloroethene	10.0	9.63		ug/L		96	75 - 124	6	35
trans-1,2-Dichloroethene	10.0	9.86		ug/L		99	74 - 130	7	35
Isopropylbenzene	10.0	7.84		ug/L		78	73 - 123	11	35
Methyl acetate	20.0	25.5		ug/L		128	47 - 140	10	35
Methyl tert-butyl ether	10.0	8.87		ug/L		89	57 - 127	11	35
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	8.58		ug/L		86	54 - 148	15	35
1,2,4-Trichlorobenzene	10.0	5.04		ug/L		50	47 - 120	13	35
1,2-Dichlorobenzene	10.0	9.06		ug/L		91	74 - 120	8	35
1,3-Dichlorobenzene	10.0	8.97		ug/L		90	74 - 120	12	35
1,4-Dichlorobenzene	10.0	9.45		ug/L		94	75 - 120	10	35
Trichlorofluoromethane	10.0	8.13		ug/L		81	52 - 148	18	35
Dibromochloromethane	10.0	10.4		ug/L		104	75 - 120	4	35
Methylcyclohexane	10.0	7.01		ug/L		70	64 - 123	22	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 130*
4-Bromofluorobenzene (Surr)	*104*		*47 - 134*
Toluene-d8 (Surr)	*99*		*69 - 122*
Dibromofluoromethane (Surr)	*93*		*78 - 129*

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-492666/1-A
Matrix: Water
Analysis Batch: 492982

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 492666

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	50	U	50	34	ug/L		06/28/21 14:00	06/29/21 12:28	1
Lead	1.0	U	1.0	0.45	ug/L		06/28/21 14:00	06/29/21 12:28	1

Lab Sample ID: LCS 240-492666/2-A
Matrix: Water
Analysis Batch: 492982

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 492666

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	5000	4490		ug/L		90	80 - 120
Lead	500	484		ug/L		97	80 - 120

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(75-130)	(47-134)	(69-122)	(78-129)
240-151825-1	GW-11223416-061421-SK-001	128	74	85	103
240-151825-2	GW-11223416-061421-SK-002	127	73	85	105
240-151825-5	GW-11223416-061521-SK-005	132 S1+	74	90	110
240-151825-6	GW-11223416-061521-SK-006	134 S1+	73	85	108
240-151825-7	GW-11223416-061521-SK-007	129	73	84	109
240-151825-8	GW-11223416-061521-SK-008	134 S1+	71	83	110
240-151825-9	GW-11223416-061621-SK-009	134 S1+	71	85	110
240-151825-10	GW-11223416-061621-SK-010	133 S1+	71	86	110
240-151825-11	GW-11223416-061621-SK-011	132 S1+	71	86	110
240-151825-12	GW-11223416-061621-SK-012	135 S1+	71	85	110
240-151825-13	GW-11223416-061621-SK-013	133 S1+	70	83	112
240-151825-14	GW-11223416-061721-SK-014	115	73	81	108
240-151825-15	GW-11223416-061721-SK-015	135 S1+	69	85	111
240-151825-16	TB-11223416-061721-SK	134 S1+	69	83	111
LCS 240-492639/4	Lab Control Sample	109	101	96	93
LCSD 240-492639/59	Lab Control Sample Dup	107	104	99	93
MB 240-492639/7	Method Blank	128	77	86	102

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Lab Chronicle

Client: GHD Services Inc.
Job ID: 240-151825-1
Project/Site: 11223416, PCC Validation

Client Sample ID: GW-11223416-061421-SK-001
Lab Sample ID: 240-151825-1
Date Collected: 06/14/21 09:55
Matrix: Water
Date Received: 06/24/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	492639	06/28/21 13:36	LEE	TAL CAN

Client Sample ID: GW-11223416-061421-SK-002
Lab Sample ID: 240-151825-2
Date Collected: 06/14/21 10:55
Matrix: Water
Date Received: 06/24/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	492639	06/28/21 13:57	LEE	TAL CAN

Client Sample ID: GW-11223416-061421-SK-003
Lab Sample ID: 240-151825-3
Date Collected: 06/14/21 12:00
Matrix: Water
Date Received: 06/24/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			492666	06/28/21 14:00	MRL	TAL CAN
Dissolved	Analysis	6020		1	492982	06/29/21 12:55	DSH	TAL CAN
Total Recoverable	Prep	3005A			492666	06/28/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	492982	06/29/21 12:52	DSH	TAL CAN

Client Sample ID: GW-11223416-061421-SK-004
Lab Sample ID: 240-151825-4
Date Collected: 06/14/21 14:25
Matrix: Water
Date Received: 06/24/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			492666	06/28/21 14:00	MRL	TAL CAN
Dissolved	Analysis	6020		1	492982	06/29/21 13:00	DSH	TAL CAN
Total Recoverable	Prep	3005A			492666	06/28/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	492982	06/29/21 12:57	DSH	TAL CAN

Client Sample ID: GW-11223416-061521-SK-005
Lab Sample ID: 240-151825-5
Date Collected: 06/15/21 10:10
Matrix: Water
Date Received: 06/24/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	492639	06/28/21 14:19	LEE	TAL CAN

Client Sample ID: GW-11223416-061521-SK-006
Lab Sample ID: 240-151825-6
Date Collected: 06/15/21 11:15
Matrix: Water
Date Received: 06/24/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	492639	06/28/21 14:41	LEE	TAL CAN

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Client Sample ID: GW-11223416-061521-SK-007 — Lab Sample ID: 240-151825-7

Date Collected: 06/15/21 13:05 — **Matrix: Water**
Date Received: 06/24/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	492639	06/28/21 15:03	LEE	TAL CAN

Client Sample ID: GW-11223416-061521-SK-008 — Lab Sample ID: 240-151825-8

Date Collected: 06/15/21 14:15 — **Matrix: Water**
Date Received: 06/24/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	492639	06/28/21 15:25	LEE	TAL CAN

Client Sample ID: GW-11223416-061621-SK-009 — Lab Sample ID: 240-151825-9

Date Collected: 06/16/21 09:20 — **Matrix: Water**
Date Received: 06/24/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	492639	06/28/21 15:47	LEE	TAL CAN

Client Sample ID: GW-11223416-061621-SK-010 — Lab Sample ID: 240-151825-10

Date Collected: 06/16/21 09:25 — **Matrix: Water**
Date Received: 06/24/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	492639	06/28/21 16:09	LEE	TAL CAN

Client Sample ID: GW-11223416-061621-SK-011 — Lab Sample ID: 240-151825-11

Date Collected: 06/16/21 10:10 — **Matrix: Water**
Date Received: 06/24/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	492639	06/28/21 16:30	LEE	TAL CAN

Client Sample ID: GW-11223416-061621-SK-012 — Lab Sample ID: 240-151825-12

Date Collected: 06/16/21 11:35 — **Matrix: Water**
Date Received: 06/24/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	492639	06/28/21 16:52	LEE	TAL CAN

Client Sample ID: GW-11223416-061621-SK-013 — Lab Sample ID: 240-151825-13

Date Collected: 06/16/21 13:10 — **Matrix: Water**
Date Received: 06/24/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	492639	06/28/21 17:14	LEE	TAL CAN

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 240-151825-1

Client Sample ID: GW-11223416-061721-SK-014
Lab Sample ID: 240-151825-14
Date Collected: 06/17/21 09:40
Matrix: Water
Date Received: 06/24/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	492639	06/28/21 17:34	LEE	TAL CAN

Client Sample ID: GW-11223416-061721-SK-015
Lab Sample ID: 240-151825-15
Date Collected: 06/17/21 10:50
Matrix: Water
Date Received: 06/24/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	492639	06/28/21 17:56	LEE	TAL CAN

Client Sample ID: TB-11223416-061721-SK
Lab Sample ID: 240-151825-16
Date Collected: 06/17/21 00:00
Matrix: Water
Date Received: 06/24/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	492639	06/28/21 18:18	LEE	TAL CAN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

Client: GHD Services Inc.
Job ID: 240-151825-1
Project/Site: 11223416, PCC Validation

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-21
Iowa	State	421	06-01-21 *
Kansas	NELAP	E-10336	04-30-22
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton OH 44720
Phone 330-497-9396 Fax: 330-497-0772

22.3|22 4

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing America

Client Information	Sampler: Scott Kippen	Lab PM: Heckler Denise D	Carrier Tracking No(s): Fed-Ex	COC No: 240-83334-32243.2
Client Contact: Mr James Abston	Phone: 248 893 3400	E-Mail: Denise Heckler@Eurofinset.com	State of Origin: Michigan	Page: Page 1 of 2
Company: GHD Services Inc.	PWSID:			Job #: 11223416-
Address: 26850 Haggerty Rd.	Due Date Requested:			
City: Farmington Hills	TAT Requested (days): 2 week (10 bus days)			
State, Zip: MI 48331	Compliance Project: Δ Yes Δ No			
Phone: 248-893-3381(Tel)	PO #: Purchase Order Requested			
Email: james.abston@ghd.com	WO #: 11223416			
Project Name: 11223416, PCC Validation	Project #: 24020174			
Site: Pontiac, MI	SSOW#:			

Analysis Requested

Preservation Codes

A	HCL	M	Hexane
B	NaOH	N	None
C	Zn Acetate	O	AsNaO2
D	Nitric Acid	P	Na2O4S
E	NaHSO4	Q	Na2SO3
F	MeOH	R	Na2S2O3
G	Amchlor	S	H2SO4
H	Ascorbic Acid	T	TSP Dodecahydrate
I	Ice	U	Acetone
J	DI Water	V	MCAA
K	EDTA	W	pH 4-5
L	EDA	Z	other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B VOCs	6020 Al, Pb	6020 Al Pb-Diss, field filtered	Total Number of containers	Special Instructions/Note
Preservation Code:							A	D	D		
GW 11223416 061421 SK 001	6 14 21	9 55	G	Water			X				
002		10.55		Water			X				
003		12 00		Water	X			X	X		
004		14 25		Water	X			X	X		
GW- 11223416 061521 SK 005	6 15 21	10.10		Water			X				
-006		11 15		Water			X				
-007		13 05		Water			X				
-008		14.15		Water			X				
GW 11223416 061621 SK -009	6 16 21	9 20		Water			X				
-010		9 25		Water			X				
-011		10.10		water			X				

240-151825 Chain of Custody

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

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

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements.

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	R Scott K	6 17 21 1300	GHD		6-24-21 1430	EOL
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver: 11/01/2020

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Phone 330-497-9396 Fax. 330-497-0772

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing America

Client Information	Sampler	Lab PM	Carrier Tracking No(s)	COC No
Client Contact: Mr James Abston	Scott Kippen	Heckler Denise D	Fed Ex	240-83334-32243.1
Company: GHD Services Inc.	Phone: (248) 893 3400	E-Mail: Denise.Heckler@Eurofinset.com	State of Origin: Michigan	Page: 2 Page of 2
Address: 26850 Haggerty Rd	PWSID:	Due Date Requested:		Job #:
City: Farmington Hills		TAT Requested (days): 10 Bus days 2week		
State, Zip: MI 48331		Compliance Project: Δ Yes Δ No		
Phone: 248-893-3381(Tel)		PO #: Purchase Order Requested		
Email: james.abston@ghd.com		WO #: 11223416		
Project Name: 11223416, PCC Validation		Project #: 24020174		
Site: Pontiac, MI		SSOW#:		

Analysis Requested

Preservation Codes

A	HCL	M	Hexane
B	NaOH	N	None
C	Zr Acetate	O	AsNaO2
D	Nitric Acid	P	Na2O4S
E	NaHSO4	Q	Na2SO3
F	MeOH	R	Na2S2O3
G	Amchlor	S	H2SO4
H	Ascorbic Acid	T	TSP Dodecahydrate
I	Ice	U	Acetone
J	DI Water	V	MCAA
K	EDTA	W	pH 4-5
L	EDA	Z	other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B VOCs	6020 Al, Pb	6020 Al, Pb--Diss, field filtered	Total Number of containers	Special Instructions/Note
			Preservation Code:				A	D	D		
GW-11223416-061621-SK-012	6-16-21	11.35	G	Water			X				
↓ -11223416 ↓ ↓ -013	↓	13 10	↓	Water			X				
GW 11223416 061721 SK 014	6 17 21	9 40	↓	Water			X				
↓ ↓ ↓ ↓ -015	↓	10.50	↓	Water			X				
TB-11223416-061721 SK	6 17 21	—	TB	Water			X				
				Water							
				Water							
				Water							
				Water							
				Water							
			SK	Water							

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

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

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	R. Smith	6 17 21 1300	GHD		6-24-21 1430	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Cooler Temperature(s) °C and Other Remarks:

Ver 11/01 020

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # 151825**
Canton Facility

Client GHD Services Inc Site Name _____ Cooler unpacked by Trent

Cooler Received on 6-24-21 Opened on 6-25-21

FedEx. 1st Grd (Exp) UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # TA Foam Box Client Cooler Box Other _____

Packing material used Bubble Wrap Foam Plastic Bag None Other _____

COOLANT (Wet Ice) Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN# IR-11 (CF +0.1 °C) Observed Cooler Temp 22.3 °C Corrected Cooler Temp 22.4 °C

IR GUN #IR-12 (CF +0.2°C) Observed Cooler Temp _____ °C Corrected Cooler Temp _____ °C

2 Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	(Yes)	No
-Were the seals on the outside of the cooler(s) signed & dated?	(Yes)	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	(No)
-Were tamper/custody seals intact and uncompromised?	(Yes)	No NA
3 Shippers packing slip attached to the cooler(s)?	(Yes)	No
4 Did custody papers accompany the sample(s)?	(Yes)	No
5 Were the custody papers relinquished & signed in the appropriate place?	(Yes)	No
6 Was/were the person(s) who collected the samples clearly identified on the COC?	(Yes)	No
7 Did all bottles arrive in good condition (Unbroken)?	(Yes)	No
8 Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes)	No
9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?		
10 Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
11 Sufficient quantity received to perform indicated analyses?	(Yes)	No
12 Are these work share samples and all listed on the COC?	Yes	(No)
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all preserved sample(s) at the correct pH upon receipt?	(Yes)	No NA pH Strip Lot# **HC022887**
14 Were VOAs on the COC?	(Yes)	No
15 Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this	(Yes)	No NA
16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 022620IF	(Yes)	No
17 Was a LL Hg or Me Hg trip blank present? _____	Yes	(No)

Tests that are not checked for pH by Receiving

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

_____

_____

_____

_____

19 SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired

Sample(s) _____ were received in a broken container

Sample(s) GW-1122341B-060621-SK-009 were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory

Time preserved _____ Preservative(s) added/Lot number(s) _____

VOA Sample Preservation - Date/Time VOAs Frozen _____

WI-NC-099

Login Container Summary Report

Temperature readings _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
GW 11223416-061421-SK-003	240-151825-A-3	Plastic 500ml - with Nitric Acid	<2			
GW-11223416-061421-SK-003	240-151825-B-3	Plastic 500ml - w/ Nitric - Dis.	<2			
GW-11223416-061421-SK-004	240-151825-A-4	Plastic 500ml - with Nitric Acid	<2			
GW-11223416-061421-SK-004	240-151825-B-4	Plastic 500ml - w/ Nitric - Dis	<2			

Appendix C

Historical Groundwater Analytical Results – 2018 through 2021

Appendix C

Historical Groundwater Analytical Results – 2018 through 2021
RACER PCC- Validation
Pontiac, Michigan

Sample Location		EGLE RRD (1)	EGLE Generic Groundwater Cleanup Criteria: Residential and Nonresidential [2]						EGLE VIAP SL 2020 [3]				EGLE [4]		EGLE MSSL [5]				
Sample Identification		**Target**	**Residential**	**Non-Residential**	**Groundwater**	**Residential Groundwater**	**Non-Residential Groundwater**	**Water**	**Flammability and**	**Residential**	**Nonresidential**	**Residential**	**Nonresidential**	**Residential**	**Nonresidential**	**Shallow**		**Groundwater**		
Sample Date		**Detection**	**Drinking Water**	**Drinking Water**	**Surface Water**	**Volatilization to**	**Volatilization to**	**Solubility**	**Explosivity**	**Groundwater**	**Groundwater**	**Shallow**	**Shallow**	**Health-Based**	**Health-Based**	**Residential**	**NonResidential**	**Residential**	**Residential**	**NonResidential**
Sample Type		**Limit**			**Interface [6]**	**Indoor Air Inhalation**	**Indoor Air Inhalation**		**Screening Levels**	**Not In Contact**	**Not In Contact**	**Groundwater**	**Groundwater**	**Drinking Water**	**Drinking Water**	**MSSL**	**MSSL**	**MSSL**	**TS MSSL**	**MSSL**
Depth to Water (ft bgs) (7)			**a**	**b**	**c**	**d**	**e**	**f**	**g**	h	i	j	k	**l**	**m**	**n**	**o**	**p**	**q**	**r**
Parameters	**Units**									**>10 FT**	**>5 ft**	**<10 FT**	**<5 FT**			**<10 FT**	**<10 FT**	**>10 FT**	**>10 FT**	**>10 FT**
VOAs																				
1,1,1-Trichloroethane	ug/L	1	200	200	89	660000	1300000	1330000	ID	14000	19000	180	5900			180	500	8600	8600	24000
1,1,2,2-Tetrachloroethane	ug/L	1	8.5	35	78	12000	77000	2970000	ID	71	170	2.4	6.7							
1,1,2-Trichloroethane	ug/L	1	5	5	330	17000	110000	4420000		14	20	0.47	0.95							
1,1-Dichloroethane	ug/L	1	880	2500	740	1000000	2300000	5060000	380000	130	300	4.7	40			4.7	12	67	670	320
1,1-Dichloroethene	ug/L	1	7	7	130	200	1300	2250000	97000	330	480	18	250			18	36	170	510	500
1,2,4-Trichlorobenzene	ug/L	5	70	70	99	300000	300000	300000		110	160	3.8	8.5			3.8	5.7	95	290	280
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2	0.2	0.2		220	1200	1230		0.00045	0.021	0.00045	0.021							
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05	0.05	0.05	5.7	2400	15000	4200000	ID	3.8	8.9	0.13	0.39							
1,2-Dichlorobenzene	ug/L	1	600	600	13	160000	160000	156000		11000	16000	370	950							
1,2-Dichloroethane	ug/L	1	5	5	360	9600	59000	8520000	2500000	41	97	1.4	5.1							
1,2-Dichloropropane	ug/L	1	5	5	230	16000	36000	2800000	550000	74	110	2.6	8.9			2.6	4	42	130	120
1,3-Dichlorobenzene	ug/L	1	6.6	19	28	18000	41000	111000	ID	75	110	2.6	7.9			2.6	4	52	150	150
1,4-Dichlorobenzene	ug/L	1	75	75	17	16000	74000	73800		170	400	5.9	28			5.9	15	120	1200	560
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	25	13000	38000	2200	240000000	240000000	240000000	ID	4300000	4300000	2600	12000			2600	3000	1500000	4600000	3100000
2-Hexanone	ug/L	50	1000	2900	ID	4200000	8700000	16000000		20000	29000	660	1100							
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	50	1800	5200	ID	20000000	20000000	20000000	ID	330000	330000	200	1400			200	250	160000	160000	310000
Acetone	ug/L	50	730	2100	1700	1000000000	1000000000	1000000000	15000000	40000000	40000000	50000	200000			50000	56000	12000000	12000000	25000000
Benzene	ug/L	1	5	5	200	5600	35000	1750000	68000	28	66	1.0	8.4			1	2.7	14	82	66
Bromodichloromethane	ug/L	1	80	80	ID	4800	37000	6740000	ID	34	73	1.2	4.9							
Bromoform	ug/L	1	80	80	ID	470000	3100000	3100000	ID	2700	6200	89	260							
Bromomethane (Methyl bromide)	ug/L	5	10	29	5	4000	9000	14500000	ID	55	80	2.1	13							
Carbon disulfide	ug/L	5	800	2300	ID	250000	550000	1190000	13000	2100	3100	92	840							
Carbon tetrachloride	ug/L	1	5	5	38	370	2400	793000	ID	7.7	18	0.41	9.5			0.41	1.3	5.3	53	25
Chlorobenzene	ug/L	1	100	100	25	210000	470000	472000	160000	940	1400	33	110			33	51	540	1600	1600
Chloroethane	ug/L	5	430	1700	1100	5700000	5700000	5740000	110000	15000	22000	620	5200			620	1100	6700	20000	20000
Chloroform (Trichloromethane)	ug/L	1	80	80	350	28000	180000	7920000	ID	14	32	0.49	3.1			0.49	1.2	7.6	76	36
Chloromethane (Methyl chloride)	ug/L	5	260	1100	ID	8600	45000	6340000	36000	380	560	15	110			15	26	160	470	460
cis-1,2-Dichloroethene	ug/L	1	70	70	620	93000	210000	3500000	530000	95	140	3.4	14			3.4	5.4	48	140	140
cis-1,3-Dichloropropene	ug/L																			
Cyclohexane	ug/L	10								2000	8100	290	8100							
Dibromochloromethane	ug/L	5	80	80	ID	14000	110000	2600000	ID	23	130	0.78	6.7							
Dichlorodifluoromethane (CFC-12)	ug/L	5	1700	4800	ID	220000	300000	300000	ID	49	410	13	410							
Ethylbenzene	ug/L	1	74	74	18	110000	170000	169000	43000	74	170	2.8	28	700	700	2.8	7.6	45	450	210
Isopropyl benzene	ug/L	5	800	2300	28	56000	56000	56000	29000	15	36	0.60	6.7							
Methyl acetate	ug/L																			
Methyl cyclohexane	ug/L																			
Methyl tert butyl ether (MTBE)	ug/L	5	40	40	7100	47000000	47000000	46800000	ID	7400	17000	250	810	240	690	250	600	4000	40000	19000
Methylene chloride	ug/L	5	5	5	1500	220000	1400000	17000000	ID	8400	12000	79	1100			79	460	3900	6200	11000
Styrene	ug/L	1	100	100	80	170000	310000	310000	140000	960	2300	33	170							
Tetrachloroethene	ug/L	1	5	5	60	25000	170000	200000	ID	130	130	1.5	35			1.5	3	96	96	190
Toluene	ug/L	1	790	790	270	530000	530000	526000	61000	41000	59000	300	6600	1000	1000	300	570	23000	33000	66000
trans-1,2-Dichloroethene	ug/L	1	100	100	1500	85000	200000	6300000	230000	390	580	16	110			16	27	200	600	590
trans-1,3-Dichloropropene	ug/L																			
Trichloroethene	ug/L	1	5	5	200	2200	4900	1100000	ID	10	10	0.073	1.6			0.073	0.14	6.1	18	12
Trichlorofluoromethane (CFC-11)	ug/L	1	2600	7300		1100000	1100000	1100000	ID	190	560	22	560							
Trifluorotrichloroethane (CFC-113)	ug/L	1	170000	170000	32	170000	170000	170000	ID	2700	26000	840	26000							
Vinyl chloride	ug/L	1	2	2	13	1100	13000	2760000	33000	2.1	18	0.12	10			0.12	1.4	0.96	9.6	16
Xylenes (total)	ug/L	3	280	280	49	190000	190000	186000	70000	2000	3000	75	410	10000	10000	75	120	1200	3600	3500
Metals																				
Aluminum	ug/L	50	50	50		NLV	NLV		ID					300	4100					
Aluminum (dissolved)	ug/L		50	50		NLV	NLV		ID					300	4100					
Lead	ug/L	3	4	4	58	NLV	NLV		ID					15	15					
Lead (dissolved)	ug/L		4	4	58	NLV	NLV		ID					15	15					
Vanadium	ug/L	4	4.5	62	27	NLV	NLV		ID											
Vanadium (dissolved)	ug/L		4.5	62	27	NLV	NLV		ID											

Appendix C

Historical Groundwater Analytical Results – 2018 through 2021
RACER PCC- Validation
Pontiac, Michigan

Sample Location				MW-2-07	MW-2-07	MW-2-07	MW-2-07	MW-2-07	MW-2-07	MW-2-07	MW-2-07
Sample Identification				GW-17322A-060518-DS-003	GW-17322A-060518-DS-004	GW-17322A-091718-DS-003	GW-17322A-091718-DS-004	GW-17322-120318-DS-003	GW-17322A-031919-JY-003	GW-17322A-031919-JY-004	GW-17322-062519-SK-001
Sample Date		NonResidential	NonResidential	06/05/2018	06/05/2018	09/17/2018	09/17/2018	12/03/2018	03/19/2019	03/19/2019	06/25/2019
Sample Type		MSSL $_{12}$	TS MSSL $_{12}$		Duplicate		Duplicate			Duplicate	
Depth to Water (ft bgs) (7)		s	t	11.52 (Historical Depth to GW)	11.52 (Historical Depth to GW)	11.52 (Historical Depth to GW)	11.52 (Historical Depth to GW)	11.52 (Historical Depth to GW)	11.52 (Historical Depth to GW)	11.52 (Historical Depth to GW)	11.52 (Historical Depth to GW)
Parameters	**Units**	**>10 FT**	**>10 FT**								
VOAs											
1,1,1-Trichloroethane	ug/L	24000	130000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	630	35000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1000	16000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	560	9100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	250	4100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	300	4900	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1100	61000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	6100000	100000000	3.2 J	2.7 J	5.0 U	5.0 U	10 U	10 U	10 U	10 U
2-Hexanone	ug/L			10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	310000	1700000	0.61 J	0.69 J	5.0 U	5.0 U	10 U	10 U	10 U	10 U
Acetone	ug/L	25000000	140000000	11	13	5.0 U	5.0 U	10 U	10 U	10 U	10 U
Benzene	ug/L	130	2600	0.20 J	0.22 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L			5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	50	2700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	3200	52000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	40000	660000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	71	3900	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	910	15000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	280	4600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L			1.0 U	1.0 U	5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	420	23000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl acetate	ug/L			10 U	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U
Methyl cyclohexane	ug/L			1.0 U	1.0 U	5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	38000	2100000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	23000	200000	5.0 U	5.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	380	2100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	66000	360000	0.27 J	0.28 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1200	19000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.21 J	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	24	400	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.13 J	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	32	1800	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	7100	110000	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Metals											
Aluminum	ug/L			--	--	--	--	--	--	--	--
Aluminum (dissolved)	ug/L			--	--	--	--	--	--	--	--
Lead	ug/L			--	--	--	--	--	--	--	--
Lead (dissolved)	ug/L			--	--	--	--	--	--	--	--
Vanadium	ug/L			--	--	--	--	--	--	--	--
Vanadium (dissolved)	ug/L			--	--	--	--	--	--	--	--

Historical Groundwater Analytical Results – 2018 through 2021
RACER PCC- Validation
Pontiac, Michigan

Sample Location		MW-2-07	MW-2-07	MW-2-07	MW-2-07	MW-2-07	MW-10-07	MW-10-07	MW-10-07	MW-10-07	MW-10-07
Sample Identification		GW-17322-093019-JY-011	GW-17322-110619-JY-005	GW-17322-030420-JY-005	GW-17322-062220-DA-004	GW-11223416-061621-SK-012	GW-17322A-060518-DS-002	GW-17322A-091718-DS-002	GW-17322-120418-DS-007	GW-17322A-032019-JY-006	GW-17322-062519-SK-005
Sample Date		09/30/2019	11/06/2019	03/04/2020	06/22/2020	06/16/2021	06/05/2018	09/17/2018	12/04/2018	03/20/2019	06/25/2019
Sample Type											
Depth to Water (ft bgs) (7)		11.52 (Historical Depth to GW)	11.52	11.74	13.98	12.24	12.42 (Historical Depth to GW)	12.42 (Historical Depth to GW)	12.42 (Historical Depth to GW)	12.42 (Historical Depth to GW)	12.42 (Historical Depth to GW)
Parameters	**Units**										
VOAs											
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	--	--	--	--	--
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
1,2-Dibromoethane (Ethylene dibromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	10 U	10 U	10 U	5.0 U	10 U	--	--	--	--	--
2-Hexanone	ug/L	10 U	10 U	10 U	5.0 U	10 U	--	--	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	10 U	10 U	10 U	5.0 U	10 U	--	--	--	--	--
Acetone	ug/L	10 U	10 U	10 U	5.0 U	10 U	--	--	--	--	--
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Carbon disulfide	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	--	--	--	--	--
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	--	--	--	--	--
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Isopropyl benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Methyl acetate	ug/L	10 U	10 U	10 U	5.0 U	10 U	--	--	--	--	--
Methyl cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Methyl tert butyl ether (MTBE)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Methylene chloride	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	--	--	--	--	--
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Trifluorotrichloroethane (CFC-113)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--
Xylenes (total)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	--	--	--	--	--
Metals											
Aluminum	ug/L	--	--	--	--	--	**1800[abl]**	**1270[abl]**	**740[abl]**	**2200[abl]**	**2200[abl]**
Aluminum (dissolved)	ug/L	--	--	--	--	--	--	**116[ab]**	--	**340[abl]**	--
Lead	ug/L	--	--	--	--	--	0.87 J	50.0 U	1.0 U	1.1 U	0.98 J
Lead (dissolved)	ug/L	--	--	--	--	--	--	50.0 U	--	1.0 U	--
Vanadium	ug/L	--	--	--	--	--	3.3 J	10.0 U	1.9 J	**5.0[a]**	**5.3[a]**
Vanadium (dissolved)	ug/L	--	--	--	--	--	--	10.0 U	--	1.4 J	--

Appendix C

Historical Groundwater Analytical Results – 2018 through 2021
RACER PCC- Validation
Pontiac, Michigan

Sample Location		MW-10-07	MW-10-07	MW-10-07	MW-10-07	MW-10-07	MW-10-07	MW-33-07	MW-33-07	MW-33-07	MW-33-07
Sample Identification		GW-17322-093019-JY-008	GW-17322-110619-JY-004	GW-17322-030420-JY-006	GW-17322-030420-JY-007	GW-17322-062320-DA-009	GW-11223416-061421-SK-003	GW-17322A-060518-DS-001	GW-17322A-091718-DS-001	GW-17322-120418-DS-006	GW-17322A-031919-JY-005
Sample Date		09/30/2019	11/06/2019	03/04/2020	03/04/2020	06/23/2020	06/14/2021	06/05/2018	09/17/2018	12/04/2018	03/19/2019
Sample Type					Duplicate						
Depth to Water (ft bgs) (7)		12.42 (Historical Depth to GW)	13.11	12.78	12.78	12.95	13.89	16.09 (Historical Depth to GW)	16.09 (Historical Depth to GW)	16.09 (Historical Depth to GW)	16.09 (Historical Depth to GW)
Parameters	**Units**										
VOAs											
1,1,1-Trichloroethane	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane (Ethylene dibromide)	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	10 U	--	--	--	--	--	--	--	--	--
2-Hexanone	ug/L	10 U	--	--	--	--	--	--	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	10 U	--	--	--	--	--	--	--	--	--
Acetone	ug/L	10 U	--	--	--	--	--	--	--	--	--
Benzene	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Bromodichloromethane	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Bromoform	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Bromomethane (Methyl bromide)	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Carbon disulfide	ug/L	5.0 U	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Chlorobenzene	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Chloroethane	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Chloroform (Trichloromethane)	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Chloromethane (Methyl chloride)	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Cyclohexane	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Dibromochloromethane	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Ethylbenzene	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Isopropyl benzene	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Methyl acetate	ug/L	10 U	--	--	--	--	--	--	--	--	--
Methyl cyclohexane	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Methyl tert butyl ether (MTBE)	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Methylene chloride	ug/L	5.0 U	--	--	--	--	--	--	--	--	--
Styrene	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Tetrachloroethene	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Toluene	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Trichloroethene	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Trifluorotrichloroethane (CFC-113)	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Vinyl chloride	ug/L	1.0 U	--	--	--	--	--	--	--	--	--
Xylenes (total)	ug/L	2.0 U	--	--	--	--	--	--	--	--	--
Metals											
Aluminum	ug/L	**110**[ab]	**950**[abl]	**200**[ab]	**600**[abl]	**210**[ab]	**480**[abl]	50 U	50.0 U	50 U	50 U
Aluminum (dissolved)	ug/L	50 U	50 U	**130**[ab]	**180**[ab]	50 U	50 U	--	50.0 U	--	--
Lead	ug/L	1.0 U	1.7	1.0 U	1.0 U	1.1	1.0 U	1.0 U	50.0 U	1.0 U	1.0 U
Lead (dissolved)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	50.0 U	--	--
Vanadium	ug/L	4.0 U	2.5 J	4.0 U	1.6 J	0.92 J	--	5.0 U	10.0 U	5.0 U	4.0 U
Vanadium (dissolved)	ug/L	4.0 U	4.0 U	4.0 U	0.83 J	4.0 U	--	--	10.0 U	--	--

Appendix C

Historical Groundwater Analytical Results – 2018 through 2021
RACER PCC- Validation
Pontiac, Michigan

Sample Location		MW-33-07	MW-33-07	MW-33-07	MW-33-07	MW-33-07	MW-33-07	MW-33-07	MW-33-07	MW-38-07	MW-38-07
Sample Identification		GW-17322-062519-SK-006	GW-17322-093019-JY-006	GW-17322-093019-JY-007	GW-17322-110619-JY-002	GW-17322-110619-JY-003	GW-17322-030520-JY-011	GW-17322-062320-DA-007	GW-11223416-061421-SK-004	GW-17322-062619-SK-011	GW-17322-092719-JY-005
Sample Date		06/25/2019	09/30/2019	09/30/2019	11/06/2019	11/06/2019	03/05/2020	06/23/2020	06/14/2021	06/26/2019	09/27/2019
Sample Type				Duplicate		Duplicate					
Depth to Water (ft bgs) (7)		16.09 (Historical Depth to GW)	16.09 (Historical Depth to GW)	16.09 (Historical Depth to GW)	17.19	17.19	16.09 (Historical Depth to GW)	16.09	18.4	14.84 (Historical Depth to GW)	14.84 (Historical Depth to GW)
Parameters	**Units**										
VOAs											
1,1,1-Trichloroethane	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 UJ
1,1,2-Trichloroethane	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 UJ
1,1-Dichloroethane	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
1,1-Dichloroethene	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
1,2,4-Trichlorobenzene	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 UJ
1,2-Dichlorobenzene	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
1,2-Dichloroethane	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
1,2-Dichloropropane	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
1,3-Dichlorobenzene	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
1,4-Dichlorobenzene	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	--	10 U	10 U	--	--	--	--	--	--	10 U
2-Hexanone	ug/L	--	10 U	10 U	--	--	--	--	--	--	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	--	10 U	10 U	--	--	--	--	--	--	10 U
Acetone	ug/L	--	10 U	10 U	--	--	--	--	--	--	10 U
Benzene	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Bromodichloromethane	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 UJ
Bromoform	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Bromomethane (Methyl bromide)	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Carbon disulfide	ug/L	--	5.0 U	5.0 U	--	--	--	--	--	--	5.0 U
Carbon tetrachloride	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Chlorobenzene	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Chloroethane	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Chloroform (Trichloromethane)	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Chloromethane (Methyl chloride)	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
cis-1,2-Dichloroethene	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
cis-1,3-Dichloropropene	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Cyclohexane	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Dibromochloromethane	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Ethylbenzene	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Isopropyl benzene	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Methyl acetate	ug/L	--	10 U	10 U	--	--	--	--	--	--	10 U
Methyl cyclohexane	ug/L	--	0.63 J	1.0 U	--	--	--	--	--	--	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Methylene chloride	ug/L	--	5.0 U	5.0 U	--	--	--	--	--	--	5.0 U
Styrene	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Tetrachloroethene	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Toluene	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
trans-1,2-Dichloroethene	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
trans-1,3-Dichloropropene	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 UJ
Trichloroethene	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Vinyl chloride	ug/L	--	1.0 U	1.0 U	--	--	--	--	--	--	1.0 U
Xylenes (total)	ug/L	--	2.0 U	2.0 U	--	--	--	--	--	--	2.0 U
Metals											
Aluminum	ug/L	**170[ab]**	50 U	50 U	50 U	50 U	50 U	49 J	50 U	50 U	**160[ab]**
Aluminum (dissolved)	ug/L	--	50 U	50 U	50 U	50 U	50 U	50 U	50 U	--	50 U
Lead	ug/L	0.53 J	1.0 U	1.0 U	1.0 U	1.0 U	0.74 J	1.0 U	1.0 U	1.0 U	0.52 J
Lead (dissolved)	ug/L	--	1.0 U	1.0 U	1.0 U	1.0 U	0.53 J	1.0 U	1.0 U	--	1.0 U
Vanadium	ug/L	0.89 J	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	--	4.0 U	4.0 U
Vanadium (dissolved)	ug/L	--	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	--	--	4.0 U

Appendix C

Historical Groundwater Analytical Results – 2018 through 2021
RACER PCC- Validation
Pontiac, Michigan

Sample Location		**MW-38-07**	**MW-38-07**	**MW-38-07**	**MW-64-08**	**MW-64-08**	**MW-64-08**	**MW-64-08**	**MW-64-08**	**MW-64-08**	**MW-64-08**	**MW-64-08**
Sample Identification		**GW-17322-110619-JY-001**	**GW-17322-030520-JY-010**	**GW-17322-062320-DA-008**	**GW-17322A-060518-DS-005**	**GW-17322A-091818-DS-008**	**GW-17322-120318-DS-001**	**GW-17322A-031919-JY-001**	**GW-17322-062619-SK-008**	**GW-17322-092719-JY-001**	**GW-17322-110719-JY-007**
Sample Date		**11/06/2019**	**03/05/2020**	**06/23/2020**	**06/05/2018**	**09/18/2018**	**12/03/2018**	**03/19/2019**	**06/26/2019**	**09/27/2019**	**11/07/2019**
Sample Type												
Depth to Water (ft bgs) (7)		**15.59**	**14.84 (Historical Depth to GW)**	**14.98**	**5.96 (Historical Depth to GW)**	**5.96 (Historical Depth to GW)**	**5.96 (Historical Depth to GW)**	**5.96 (Historical Depth to GW)**	**5.96 (Historical Depth to GW)**	**5.96 (Historical Depth to GW)**	**5.96 (Historical Depth to GW)**
Parameters	**Units**											
VOAs												
1,1,1-Trichloroethane	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
1,1,2,2-Tetrachloroethane	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
1,1,2-Trichloroethane	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
1,1-Dichloroethane	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
1,1-Dichloroethene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
1,2,4-Trichlorobenzene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
1,2-Dibromoethane (Ethylene dibromide)	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
1,2-Dichlorobenzene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
1,2-Dichloroethane	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
1,2-Dichloropropane	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
1,3-Dichlorobenzene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
1,4-Dichlorobenzene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	--	--	--	10 U	5.0 U	10 U	10 U	10 U	25 U	10 U	
2-Hexanone	ug/L	--	--	--	10 U	5.0 U	10 U	10 U	10 U	25 U	10 U	
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	--	--	--	10 U	5.0 U	10 U	10 U	10 U	25 U	10 U	
Acetone	ug/L	--	--	--	10 U	5.0 U	10 U	10 U	10 U	25 U	10 U	
Benzene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Bromodichloromethane	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Bromoform	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Bromomethane (Methyl bromide)	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Carbon disulfide	ug/L	--	--	--	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	13 U	5.0 U	
Carbon tetrachloride	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Chlorobenzene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Chloroethane	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Chloroform (Trichloromethane)	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Chloromethane (Methyl chloride)	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
cis-1,2-Dichloroethene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
cis-1,3-Dichloropropene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Cyclohexane	ug/L	--	--	--	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Dibromochloromethane	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Dichlorodifluoromethane (CFC-12)	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Ethylbenzene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Isopropyl benzene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Methyl acetate	ug/L	--	--	--	10 U	5.0 U	10 U	10 U	10 U	25 U	10 U	
Methyl cyclohexane	ug/L	--	--	--	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Methyl tert butyl ether (MTBE)	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Methylene chloride	ug/L	--	--	--	5.0 U	1.0 U	5.0 U	5.0 U	5.0 U	13 U	5.0 U	
Styrene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Tetrachloroethene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Toluene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
trans-1,2-Dichloroethene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
trans-1,3-Dichloropropene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Trichloroethene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Trichlorofluoromethane (CFC-11)	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Trifluorotrichloroethane (CFC-113)	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Vinyl chloride	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	
Xylenes (total)	ug/L	--	--	--	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	5.0 U	2.0 U	
Metals												
Aluminum	ug/L	**260[ab]**	50 U	50 U	--	--	--	--	--	--	--	
Aluminum (dissolved)	ug/L	50 U	50 U	50 U	--	--	--	--	--	--	--	
Lead	ug/L	0.63 J	1.0 U	1.0 U	--	--	--	--	--	--	--	
Lead (dissolved)	ug/L	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--	--	
Vanadium	ug/L	4.0 U	4.0 U	4.0 U	--	--	--	--	--	--	--	
Vanadium (dissolved)	ug/L	4.0 U	4.0 U	4.0 U	--	--	--	--	--	--	--	

Sample Location		MW-64-08	MW-64-08	MW-64-08	MW-64-08	MW-64-08	MW-68-08	MW-68-08	MW-68-08	MW-68-08	MW-68-08
Sample Identification		GW-17322-030420-JY-001	GW-17322-062220-DA-002	GW-17322-062220-DA-003	GW-11223416-061621-SK-009	GW-11223416-061621-SK-010	GW-17322-062619-SK-010	GW-17322-092719-JY-003	GW-17322-110719-JY-009	GW-17322-030520-JY-008	GW-17322-062320-DA-011
Sample Date		03/04/2020	06/22/2020	06/22/2020	06/16/2021	06/16/2021	06/26/2019	09/27/2019	11/07/2019	03/05/2020	06/23/2020
Sample Type				Duplicate		Duplicate					
Depth to Water (ft bgs) (7)		5.96	9.05	9.05	6.1	6.1	11.91 (Historical Depth to GW)	11.91 (Historical Depth to GW)	11.91 (Historical Depth to GW)	11.91 (Historical Depth to GW)	11.91
Parameters	**Units**										
VOAs											
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U
2-Hexanone	ug/L	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U
Acetone	ug/L	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl acetate	ug/L	10 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U
Methyl cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Metals											
Aluminum	ug/L	--	--	--	--	--	--	--	--	--	--
Aluminum (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	--	--	--	--	--	--	--	--	--	--
Lead (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--

Appendix C

Historical Groundwater Analytical Results – 2018 through 2021
RACER PCC- Validation
Pontiac, Michigan

Sample Location		MW-68-08	MW-79D-19	MW-79D-19	MW-79D-19	MW-79D-19	MW-79D-19	MW-79D-19	MW-79D-19	MW-79D-19	MW-79D-19
Sample Identification		GW-11223416-061521-SK-006	GW-17322-062519-SK-004	GW-17322-093019-JY-010	GW-17322-110719-JY-011	GW-17322-030420-JY-004	GW-17322-062220-DA-005	GW-17322-090420-SK-002	GW-017322-121420-SK-002	GW-017322-121420-SK-003	GW-11223416-031121-SK-003
Sample Date		06/15/2021	06/25/2019	09/30/2019	11/07/2019	03/04/2020	06/22/2020	09/04/2020	12/14/2020	12/14/2020	03/11/2021
Sample Type										Duplicate	
Depth to Water (ft bgs) (7)		13.76	10.48 (Historical Depth to GW)	10.48 (Historical Depth to GW)	10.48 (Historical Depth to GW)	12.11	13.02	10.37	12.89	12.89	13.17
Parameters	**Units**										
VOAs											
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U
2-Hexanone	ug/L	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U
Acetone	ug/L	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl acetate	ug/L	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U
Methyl cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Metals											
Aluminum	ug/L	--	--	--	--	--	--	--	--	--	--
Aluminum (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	--	--	--	--	--	--	--	--	--	--
Lead (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--

Appendix C

Historical Groundwater Analytical Results – 2018 through 2021
RACER PCC- Validation
Pontiac, Michigan

Sample Location		MW-79D-19	MW-79I-19	MW-79I-19	MW-79I-19	MW-79I-19	MW-79I-19	MW-79I-19	MW-79I-19	MW-79I-19	MW-79I-19
Sample Identification		GW-11223416-061421-SK-002	GW-17322-062519-SK-002	GW-17322-062519-SK-003	GW-17322-093019-JY-009	GW-17322-110619-JY-006	GW-17322-030420-JY-003	GW-17322-062220-DA-006	GW-17322-090420-SK-001	GW-017322-121420-SK-001	GW-11223416-031121-SK-001
Sample Date		06/14/2021	06/25/2019	06/25/2019	09/30/2019	11/06/2019	03/04/2020	06/22/2020	09/04/2020	12/14/2020	03/11/2021
Sample Type				Duplicate							
Depth to Water (ft bgs) (7)		11.15	10.22 (Historical Depth to GW)	10.22 (Historical Depth to GW)	10.22 (Historical Depth to GW)	11.88	10.22	14.05	12.94	10.73	14.64
Parameters	**Units**										
VOAs											
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	0.30 J	0.24 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U
2-Hexanone	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U
Acetone	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	7.2	7.0	0.50 J	0.99 J	2.9	2.3	0.30 J	1.2	0.18 J
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl acetate	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U
Methyl cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	0.48 J	0.47 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	**8.0**[abp]	**8.2**[abp]	0.77 J	1.4	2.9	2.8	0.34 J	1.1	0.25 J
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Metals											
Aluminum	ug/L	--	--	--	--	--	--	--	--	--	--
Aluminum (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	--	--	--	--	--	--	--	--	--	--
Lead (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--

Appendix C

Historical Groundwater Analytical Results – 2018 through 2021
RACER PCC- Validation
Pontiac, Michigan

Sample Location		MW-79I-19	MW-79I-19	MW-80-12	MW-80-12	MW-80-12	MW-80-12	MW-80-12	MW-80-12	MW-80-12	MW-80-12
Sample Identification		GW-11223416-031121-SK-002	GW-11223416-061421-SK-001	GW-17322A-060618-DS-011	GW-17322A-091718-DS-005	GW-17322-120418-DS-011	GW-17322A-032019-JY-009	GW-17322-062719-SK-016	GW-17322-093019-JY-016	GW-17322-110719-JY-012	GW-17322-030520-JY-012
Sample Date		03/11/2021	06/14/2021	06/06/2018	09/17/2018	12/04/2018	03/20/2019	06/27/2019	09/30/2019	11/07/2019	03/05/2020
Sample Type		Duplicate									
Depth to Water (ft bgs) (7)		14.64	12.38	5.41 (Historical Depth to GW)	5.41 (Historical Depth to GW)	5.41 (Historical Depth to GW)	5.41 (Historical Depth to GW)	5.41 (Historical Depth to GW)	5.41 (Historical Depth to GW)	5.41 (Historical Depth to GW)	5.41 (Historical Depth to GW)
Parameters	**Units**										
VOAs											
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	ug/L	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	ug/L	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	0.21 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	0.55 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl acetate	ug/L	10 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	5.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	0.23 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Metals											
Aluminum	ug/L	--	--	--	--	--	--	--	--	--	--
Aluminum (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	--	--	--	--	--	--	--	--	--	--
Lead (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--

Appendix C

Historical Groundwater Analytical Results – 2018 through 2021
RACER PCC- Validation
Pontiac, Michigan

Sample Location		MW-80-12	MW-80-12	MW-81-12	MW-81-12	MW-81-12	MW-81-12	MW-81-12	MW-81-12	MW-81-12	MW-81-12
Sample Identification		**GW-17322-062420-DA-012**	**GW-11223416-061621-SK-013**	**GW-17322A-060618-DS-007**	**GW-17322A-091818-DS-011**	**GW-17322-120418-DS-008**	**GW-17322-120418-DS-009**	**GW-17322A-032019-JY-008**	**GW-17322-062719-SK-015**	**GW-17322-093019-JY-014**	**GW-17322-110819-JY-013**
Sample Date		**06/24/2020**	**06/16/2021**	**06/06/2018**	**09/18/2018**	**12/04/2018**	**12/04/2018**	**03/20/2019**	**06/27/2019**	**09/30/2019**	**11/08/2019**
Sample Type							**Duplicate**				
Depth to Water (ft bgs) (7)		**6.05**	**5.91**	**5.92 (Historical Depth to GW)**	**5.92 (Historical Depth to GW)**	**5.92 (Historical Depth to GW)**	**5.92 (Historical Depth to GW)**	**5.92 (Historical Depth to GW)**	**5.92 (Historical Depth to GW)**	**5.92 (Historical Depth to GW)**	**5.92 (Historical Depth to GW)**
Parameters	**Units**										
VOAs											
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	5.0 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	ug/L	5.0 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	5.0 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	ug/L	5.0 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl acetate	ug/L	5.0 U	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	5.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Metals											
Aluminum	ug/L	--	--	--	--	--	--	--	--	--	--
Aluminum (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	--	--	--	--	--	--	--	--	--	--
Lead (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--

Appendix C

Historical Groundwater Analytical Results – 2018 through 2021
RACER PCC- Validation
Pontiac, Michigan

Sample Location		MW-81-12	MW-81-12	MW-81-12	MW-81-12	MW-85-12	MW-85-12	MW-85-12	MW-85-12	MW-85-12	MW-85-12
Sample Identification		GW-17322-030620-JY-014	GW-17322-062420-DA-016	GW-17322-062420-DA-017	GW-11223416-061521-SK-008	GW-17322A-060518-DS-006	GW-17322A-091818-DS-007	GW-17322-120318-DS-002	GW-17322A-031919-JY-002	GW-17322-062619-SK-007	GW-17322-092719-JY-002
Sample Date		03/06/2020	06/24/2020	06/24/2020	06/15/2021	06/05/2018	09/18/2018	12/03/2018	03/19/2019	06/26/2019	09/27/2019
Sample Type				Duplicate							
Depth to Water (ft bgs) (7)		5.92 (Historical Depth to GW)	7.62	7.62	7.41	3.2 (Historical Depth to GW)	3.2 (Historical Depth to GW)	3.2 (Historical Depth to GW)	3.2 (Historical Depth to GW)	3.2 (Historical Depth to GW)	3.2 (Historical Depth to GW)
Parameters	**Units**										
VOAs											
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
1,1,2-Trichloroethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	10 U	50 U	10 U	25 U
2-Hexanone	ug/L	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	10 U	50 U	10 U	25 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	10 U	50 U	10 U	25 U
Acetone	ug/L	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	10 U	50 U	10 U	25 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Carbon disulfide	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	25 U	5.0 U	13 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.13 J	5.0 U	1.0 U	0.34 J
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Dibromochloromethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Isopropyl benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Methyl acetate	ug/L	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	10 U	50 U	10 U	25 U
Methyl cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Methyl tert butyl ether (MTBE)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Methylene chloride	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	5.0 U	25 U	5.0 U	13 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.23 J	0.69 J	5.0 U	0.61 J	2.5 U
Trifluorotrichloroethane (CFC-113)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.5 U
Xylenes (total)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	3.0 U	2.0 U	10 U	2.0 U	5.0 U
Metals											
Aluminum	ug/L	--	--	--	--	--	--	--	--	--	--
Aluminum (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	--	--	--	--	--	--	--	--	--	--
Lead (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--

Appendix C

Historical Groundwater Analytical Results – 2018 through 2021
RACER PCC- Validation
Pontiac, Michigan

Sample Location		MW-85-12	MW-85-12	MW-85-12	MW-85-12	MW-87-12	MW-87-12	MW-87-12	MW-87-12	MW-87-12	MW-87-12
Sample Identification		GW-17322-110719-JY-008	GW-17322-030420-JY-002	GW-17322-062220-DA-001	GW-11223416-061621-SK-011	GW-17322-062619-SK-009	GW-17322-092719-JY-004	GW-17322-110719-JY-010	GW-17322-030520-JY-009	GW-17322-062320-DA-010	GW-11223416-061521-SK-005
Sample Date		11/07/2019	03/04/2020	06/22/2020	06/16/2021	06/26/2019	09/27/2019	11/07/2019	03/05/2020	06/23/2020	06/15/2021
Sample Type											
Depth to Water (ft bgs) (7)		3.2 (Historical Depth to GW)	3.2	6.71	4.26	7.28 (Historical Depth to GW)	7.28 (Historical Depth to GW)	7.28 (Historical Depth to GW)	7.28 (Historical Depth to GW)	8.65	9.13
Parameters	**Units**										
VOAs											
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	10 U	10 U	5.0 U	10 U	2.6 J	10 U	10 U	10 U	5.0 U	10 U
2-Hexanone	ug/L	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	10 U	10 U	5.0 U	10 U	1.2 J	10 U	10 U	10 U	5.0 U	10 U
Acetone	ug/L	10 U	10 U	5.0 U	10 U	24	10 U	10 U	12	5.6	7.9 J+
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.16 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.8[J]	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	5.0 U	0.35 J	5.0 U	5.0 U	0.34 J	5.0 U	5.0 U	0.29 J	5.0 U	5.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	14[pc]	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.29 J	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.16 J	1.0 U	1.0 U	0.39 J	1.0 U	1.0 U
Isopropyl benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl acetate	ug/L	10 U	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Methyl cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	0.37 J	5.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.14 J	1.0 U	1.0 U	0.15 J	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.12 J	1.0 U	0.13 J	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	0.62 J	0.26 J	0.20 J	2.2	2.0 U	2.0 U
Metals											
Aluminum	ug/L	--	--	--	--	--	--	--	--	--	--
Aluminum (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	--	--	--	--	--	--	--	--	--	--
Lead (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--

Appendix C

Historical Groundwater Analytical Results – 2018 through 2021
RACER PCC- Validation
Pontiac, Michigan

Sample Location		MW-92I-13	MW-92I-13	MW-92I-13	MW-92I-13	MW-92I-13	MW-92I-13	MW-92I-13	MW-92I-13	MW-92I-13	MW-92I-13
Sample Identification		GW-17322A-060618-DS-008	GW-17322A-091818-DS-009	GW-17322-120318-DS-005	GW-17322A-032119-JY-010	GW-17322-062719-SK-013	GW-17322-093019-JY-013	GW-17322-110819-JY-014	GW-17322-030620-JY-015	GW-17322-062420-DA-015	GW-11223416-061721-SK-015
Sample Date		06/06/2018	09/18/2018	12/03/2018	03/21/2019	06/27/2019	09/30/2019	11/08/2019	03/06/2020	06/24/2020	06/17/2021
Sample Type											
Depth to Water (ft bgs) (7)		6.07 (Historical Depth to GW)	6.07 (Historical Depth to GW)	6.07 (Historical Depth to GW)	6.07 (Historical Depth to GW)	6.07 (Historical Depth to GW)	6.07 (Historical Depth to GW)	6.07 (Historical Depth to GW)	6.07 (Historical Depth to GW)	6.64	6.07 (Historical Depth to GW)
Parameters	**Units**										
VOAs											
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U
2-Hexanone	ug/L	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Acetone	ug/L	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	0.33 J	0.33 J	0.23 J	0.20 J	0.35 J	0.40 J	0.18 J	0.24 J	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl acetate	ug/L	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Methyl cyclohexane	ug/L	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	5.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	0.83 J	**1.4[jn]**	**1.4[jn]**	0.66 J	**1.1[jn]**	0.94 J	**1.2[jn]**	0.91 J	0.69 J	0.93 J+
Xylenes (total)	ug/L	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Metals											
Aluminum	ug/L	--	--	--	--	--	--	--	--	--	--
Aluminum (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	--	--	--	--	--	--	--	--	--	--
Lead (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--

Appendix C

Historical Groundwater Analytical Results – 2018 through 2021
RACER PCC- Validation
Pontiac, Michigan

Sample Location		MW-92S-13	MW-92S-13	MW-92S-13	MW-92S-13	MW-92S-13	MW-92S-13	MW-92S-13	MW-92S-13	MW-92S-13	MW-92S-13
Sample Identification		GW-17322A-060618-DS-009	GW-17322A-091818-DS-010	GW-17322-120318-DS-004	GW-17322A-032119-JY-011	GW-17322-062719-SK-014	GW-17322-093019-JY-012	GW-17322-110819-JY-015	GW-17322-030620-JY-016	GW-17322-062420-DA-014	GW-11223416-061721-SK-014
Sample Date		06/06/2018	09/18/2018	12/03/2018	03/21/2019	06/27/2019	09/30/2019	11/08/2019	03/06/2020	06/24/2020	06/17/2021
Sample Type											
Depth to Water (ft bgs) (7)		6.05 (Historical Depth to GW)	6.05 (Historical Depth to GW)	6.05 (Historical Depth to GW)	6.05 (Historical Depth to GW)	6.05 (Historical Depth to GW)	6.05 (Historical Depth to GW)	6.05 (Historical Depth to GW)	6.05 (Historical Depth to GW)	6.75	6.63
Parameters	**Units**										
VOAs											
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U
2-Hexanone	ug/L	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Acetone	ug/L	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl acetate	ug/L	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Methyl cyclohexane	ug/L	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	5.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.21 J	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Metals											
Aluminum	ug/L	--	--	--	--	--	--	--	--	--	--
Aluminum (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	--	--	--	--	--	--	--	--	--	--
Lead (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--

Appendix C

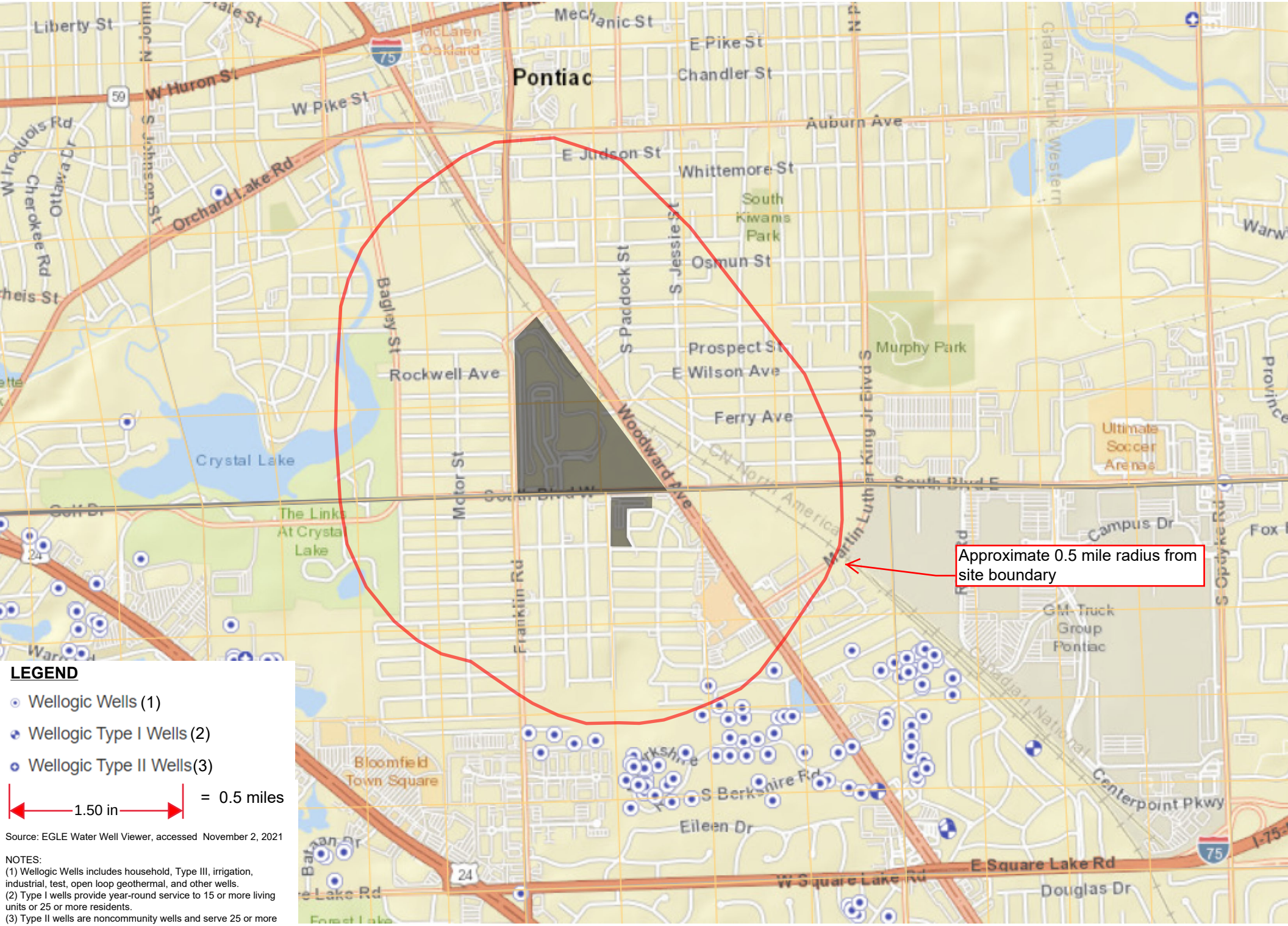
Historical Groundwater Analytical Results – 2018 through 2021
RACER PCC- Validation
Pontiac, Michigan

Sample Location		MW-93I-13	MW-93I-13	MW-93I-13	MW-93I-13	MW-93I-13	MW-93I-13	MW-93I-13	MW-93I-13	MW-93I-13	MW-93I-13
Sample Identification		GW-17322A-060618-DS-010	GW-17322A-091718-DS-006	GW-17322-120418-DS-010	GW-17322A-032019-JY-007	GW-17322-062719-SK-012	GW-17322-093019-JY-015	GW-17322-110819-JY-016	GW-17322-030520-JY-013	GW-17322-062420-DA-013	GW-11223416-061521-SK-007
Sample Date		06/06/2018	09/17/2018	12/04/2018	03/20/2019	06/27/2019	09/30/2019	11/08/2019	03/05/2020	06/24/2020	06/15/2021
Sample Type											
Depth to Water (ft bgs) (7)		7.05 (Historical Depth to GW)	7.05 (Historical Depth to GW)	7.05 (Historical Depth to GW)	7.05 (Historical Depth to GW)	7.05 (Historical Depth to GW)	7.05 (Historical Depth to GW)	7.05 (Historical Depth to GW)	7.05 (Historical Depth to GW)	7.8	7.63
Parameters	**Units**										
VOAs											
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U
2-Hexanone	ug/L	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Acetone	ug/L	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl acetate	ug/L	10 U	5.0 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	10 U
Methyl cyclohexane	ug/L	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	5.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	0.27 J	1.0 U	1.0 U	1.0 U	0.23 J	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Metals											
Aluminum	ug/L	--	--	--	--	--	--	--	--	--	--
Aluminum (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	--	--	--	--	--	--	--	--	--	--
Lead (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium	ug/L	--	--	--	--	--	--	--	--	--	--
Vanadium (dissolved)	ug/L	--	--	--	--	--	--	--	--	--	--

Notes:
(1) In accordance with Sec. 20120a(10) of MI Act 451 of 1994, when the target detection limit (TDL) for a hazardous substance is greater than the developed VI screening level, the TDL is used to evaluate the risk posed from the pathway.
(2) EGLE - Michigan Department of Environment, Great Lakes and Energy (EGLE) Generic cleanup criteria for residential and nonresidential category, administrative rule R 299.44 effective December 30, 2013, pursuant to Part 201 of 1994 PA 451 as amended. Criteria table dated January 10, 2018; GSI Criteria updated June 25, 2018.
(3) EGLE VIAP SL: Michigan Department of Environment, Great Lakes and Energy (EGLE) Volatilization to Indoor Air (VIAP) Screening Levels (SL),September 2020
(4) EGLE, R 299.49 Footnotes for Generic Cleanup Criteria Tables, Footnote E
(5) EGLE Media-Specific Volatilization to Indoor Air Interim Action Screening Levels (MSSL), March 2021
(6) A hardness of 300 mg/L and pH of 7.4 was assumed, where required, to calculate Site-specific Groundwater Surface Water Interface (GSI) Criteria . Hardness and pH were approximated using EGLE's Water Chemistry Monitoring Program Report, dated November 2019. Calculated utilizing EGLE's "Footnote (G) GSI/GSIPC Calculation" spreadsheet, dated June 25, 2018.
(7) If available, depth to groundwater recorded during event was utilized. If not available shallowest depth to water historically recorded at the well was utilized.
U - Not detected at the associated reporting limit.
J - Estimated concentration.
UJ - Not detected; associated reporting limit is estimated.
J+ - Estimated concentration, result may be biased high.
NLV - means hazardous substance is not likely to volatilize under most conditions.
ID - means insufficient data to develop criterion.
TS - Time Sensitive
12 - 12-hour workday
- Indicates concentration exceeded criteria

Appendix D

Water Well Survey Documentation



Source: EGLE Water Well Viewer, accessed November 2, 2021

NOTES:
(1) Wellogic Wells includes household, Type III, irrigation, industrial, test, open loop geothermal, and other wells.
(2) Type I wells provide year-round service to 15 or more living units or 25 or more residents.
(3) Type II wells are noncommunity wells and serve 25 or more individuals or 15 or more service connections on an average daily basis for 60 or more days per year.

WATER WELL VIEWER MAP

Water Well And Pump Record

Completion is required under authority of Part 127 Act 368 PA 1978.
Failure to comply is a misdemeanor.

Wellogic

Import ID:

Tax No:	Permit No: 11205000059	County: Oakland	Township: Bloomfield

Town/Range:	Section:	Well Status:	WSSN:	Source ID/Well No:
02N 10E	4	Active		

Well ID: 63000030235

Elevation:

Latitude: 42.611352

Longitude: -83.277277

Method of Collection: Section - Centroid

Distance and Direction from Road Intersection:

Well Owner: ANNA TUCKER

Well Address:	Owner Address:
0 NELSON WILLIAM ORTONVILLE, MI 0 0	350 TUCKER ORTONVILLE, MI 48462

Drilling Method: Rotary
Well Depth: 130.00 ft. **Well Use:** Household
Well Type: New **Date Completed:** 10/19/2005

Casing Type: PVC plastic **Height:**
Casing Joint: Unknown
Casing Fitting: Other

Diameter: 5.00 in. to 120.00 ft. depth

Borehole: 8.50 in. to 130.00 ft. depth

Pump Installed: No
Pressure Tank Installed: Yes
Pressure Tank Type: Unknown
Manufacturer: Well-Mate
Model Number: wm25 **Tank Capacity:** 80.0 Gallons
Pressure Relief Valve Installed: No

Static Water Level: 60.00 ft. Below Grade
Well Yield Test: **Yield Test Method:** Air
Pumping level 130.00 ft. after 1.00 hrs. at 35 GPM

Formation Description	Thickness	Depth to Bottom
Clay	6.00	6.00
Sand	2.00	8.00
Clay	34.00	42.00
Sand	15.00	57.00
Sand	73.00	130.00

Screen Installed: Yes **Filter Packed:** No
Screen Diameter: 4.00 in. **Blank:** 2.00 ft. Above
Screen Material Type: PVC-slotted
Screen Installation Type: Unknown

Slot	Length	Set Between
30.00	8.00 ft.	122.00 ft. and 130.00 ft.

Fittings: Other

Well Grouted: Yes **Grouting Method:** Other

Grouting Material	Bags	Additives	Depth
Bentonite dry granular	16.00	None	1.00 ft. to 115.00 ft.

Wellhead Completion: Pitless adapter

Nearest Source of Possible Contamination:

Type	Distance	Direction
Septic tank	55 ft.	West

Geology Remarks:

Drilling Machine Operator Name:
Employment: Unknown

Contractor Type: Unknown **Reg No:** 63-0357
Business Name: Fleming Well Drilling
Business Address: 445 M-15, Ortonville, MI, 48462

Water Well Contractor's Certification

This well was drilled under my supervision and this report is true to the best of my knowledge and belief.

Signature of Registered Contractor **Date**

General Remarks:

Other Remarks: Casing Fitting:OTHER, Grouting Method:OTHER, Screen Material:*U, Screen Fittings:OTHER

