

**SUBJECT**

Fiero Temporary Monitoring Plan  
Second Quarter Results

**TO**

Peter Ramanauskas, USEPA

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This memorandum summarizes the results of second quarter (2Q) monitoring event completed as part of the Fiero Temporary Monitoring Plan (FTMP) at the Fiero properties of the Revitalizing Auto Communities Environmental Response Trust (RACER) Pontiac North Campus Site (Site) located in Pontiac, Michigan. The event consisted of gauging and sampling select monitoring wells and sampling soil vapor monitoring points (SVMPs) at the former Fiero property. The monitoring locations included in the 2Q event are shown on **Figure 1**.

On May 31<sup>st</sup>, 2022, Arcadis began monitoring activities by gauging Site monitoring wells. Following the gauging event, soil vapor monitoring points (SVMP) and monitoring wells were sampled for site-specific volatile organic compounds (VOCs) over a 3-day period. In addition, samples from twelve monitoring well locations were analyzed for geochemical parameters (Iron, sulfate, TOC) and dissolved gases (ethene, ethane, methane) to establish aquifer geochemical conditions. All groundwater samples were submitted to Merit Laboratories and analyzed for VOCs via United State Environmental Protection Agency (USEPA) Method 8260 and all soil vapor samples were submitted to Eurofins Air Toxics and analyzed for VOCs via USEPA Method TO-15. The analytical reports from Merit and Eurofins are provided as **Attachment 1**. The results of the gauging and sampling are provided in the attached tables:

- Table 1 – Summary of Groundwater Elevations
- Table 2 – Summary of Monitoring Well Analytical Results
- Table 3 – Summary of Soil Vapor Monitoring Point Results

## Groundwater Gauging

Monitoring wells were gauged for depth to water and total depth using an electronic water level meter and were measured to the nearest 0.01-foot. Utilizing the gauging data collected a groundwater elevation contour figure was created and is included as **Figure 2**. As shown on **Figure 2**, groundwater generally migrates to the west in the eastern portion of the Fiero properties and then turns to the southwest to the south consistent with previous submittals.

## Groundwater Analytical Summary

As part of the event samples from 20 monitoring wells were analyzed for VOCs. A summary of the monitoring wells sampled and exceedances of the residential Site-Specific Volatilization to Indoor Air Criteria (SSVIAC) is shown on **Figure 3**. The following is based on the analytical results from the groundwater sampling:

- None of the monitoring well samples exceeded the non-residential SSVIAC.
- One of the off-site monitoring well samples, collected from MWOS-10, exceeded the residential SSVIAC. A scope of work to define the extent of TCE in groundwater above the SSVIAC will be submitted under separate cover.

- Elevated VOC detections remain upgradient near the identified source areas in the central portion of the Site and decrease steadily as they approach the southwest property boundary.

In addition to collecting VOC data, select monitoring wells (MWF16-05, MWF16-06, MW-09-22, MWF16-18, MWF16-16, TW-12-22, MWF16-22, MW-13-22, MW-14-22, MWF16-23, MW-08-21, and MWOS-10) along the axis of the groundwater plume were sampled for geochemical parameters including iron, dissolved iron, sulfate, total organic carbon (TOC), ethane, ethene, and methane. The data was collected with the objective of evaluating if Site conditions were conducive to the natural biodegradation (i.e., reductive dichlorination) of the Site's chlorinated VOC impacts. The conclusions from the data analysis include:

- Geochemical conditions are not strongly reducing, as evidenced by generally elevated dissolved oxygen concentrations, oxidation reduction potential values greater 0 mV, the presence of oxidized forms of iron (i.e., total iron concentrations greater than dissolved iron concentrations), and methane concentrations generally below the laboratory detection limit.
- Low TOC concentrations indicate that there isn't sufficient carbon source within the impacted area to drive the redox reactions that could cause a shift in geochemical conditions from oxidizing to reducing.
- The generally absent detections of daughter products (i.e., cis-1,2-DCE and vinyl chloride) at locations with significant PCE and/or TCE concentrations suggest that anaerobic biodegradation via the step-wise reductive dechlorination pathway is not the predominant attenuation mechanism in Site groundwater.

### Soil Vapor Analytical Summary

Soil vapor samples were collected from all six SVMP locations on-site and off-site. An analytical summary of the SVMPs sampled is shown on **Figure 3**. The following is based on the analytical results from the soil vapor sampling:

- Analytical results for all SVMP locations, both on-site and off-site, were below the residential SSVIAC.

### Closing

No modifications to the approved FTMP are recommended at this time. However, based on the results from this event future results from the furthest downgradient monitoring wells will be evaluated to assess whether or not additional off-site monitoring wells are needed. The next monitoring event as part of the FTMP is currently scheduled to take place from September 19<sup>th</sup> through 23<sup>rd</sup>, 2022. For any questions or concerns related to the 2Q FTMP results please do not hesitate to contact Tiffany Linder by phone at 810-225-1928 or by email at [Tiffany.Linder@arcadis.com](mailto:Tiffany.Linder@arcadis.com).

Peter Ramanauskas  
USEPA  
September 7, 2022

Enclosures:

**Tables:**

Table 1 – Summary of Groundwater Elevations

Table 2 – Summary of Monitoring Well Analytical Results

Table 3 – Summary of Soil Vapor Analytical Results

**Figures:**

Figure 1 – 2022 Fiero Temporary Monitoring Plan 2Q Monitoring Locations

Figure 2 – Fiero Groundwater Contour Map May 31, 2022

Figure 3 – Summary of Groundwater and Soil Gas Results June 2022

**Attachments:**

Attachment 1 – Analytical Reports

# Tables

**Table 1**  
**Summary Groundwater Elevation**  
**Fiero Site Investigation**  
**RACER Trust Pontiac North Campus**



Well ID	Ground Elevation	Well Elevation <sup>1</sup>	Total Depth (ft)	Date	Depth to Water (ft) <sup>2</sup>	Groundwater Elevation
<b>Former Fiero Powerhouse</b>						
MW-02-17	973.53	972.52	29.71	5/31/2022	25.39	947.13
MW-05-18	976.03	975.21	33.60	5/31/2022	26.70	948.51
MW-06-20	975.54	974.97	29.25	5/31/2022	25.52	949.45
MW-07-20	975.48	975.06	30.18	5/31/2022	26.12	948.94
MW-08-21	976.04	975.50	30.30	5/31/2022	26.28	949.22
MW-13-22	973.17	972.62	26.72	5/31/2022	21.63	950.99
MW-14-22	973.21	972.71	34.65	5/31/2022	21.95	950.76
MWF7-02	NA	970.58	22.95	5/31/2022	18.99	951.59
MWF7-03	973.63	973.31	32.52	5/31/2022	20.95	952.36
MWF12-01R	964.97	967.99	23.32	5/31/2022	19.92	948.07
MWF12-02R	962.38	961.91	22.50	5/31/2022	13.06	948.85
MWF15-01	NA	969.35	28.76	5/31/2022	18.25	951.10
MWF16-07	973.36	972.65	17.46	5/31/2022	4.61	968.04
MWF16-15	973.30	972.71	35.45	5/31/2022	21.45	951.26
MWF16-23	973.82	973.39	30.48	5/31/2022	23.47	949.92
Unknown-01	969.51	969.16	24.08	5/31/2022	18.08	951.08
<b>Former Fiero Assembly</b>						
MW-09-22	973.83	973.46	32.86	5/31/2022	20.49	952.97
MW-11-22	977.42	976.75	34.70	5/31/2022	27.00	949.75
MWF16-01	973.66	973.22	22.98	5/31/2022	15.05	958.17
MWF16-05	973.95	973.68	22.73	5/31/2022	19.83	953.85
MWF16-06	974.02	973.77	28.65	5/31/2022	14.18	959.59
MWF16-09	973.50	973.16	Damaged	NA	Damaged	NA
MWF16-12	973.60	973.20	18.95	5/31/2022	13.58	959.62
MWF16-16	973.50	973.22	31.25	5/31/2022	21.99	951.23
MWF16-17	973.70	973.32	31.81	5/31/2022	19.41	953.91
MWF16-18	973.60	973.22	31.97	5/31/2022	20.35	952.87
MWF16-19	973.60	973.19	Buried	NA	Buried	NA
MWF16-20	973.55	973.32	Buried	NA	Buried	NA
MWF16-22	973.50	973.18	33.91	5/31/2022	22.79	950.39
MWF16-24	973.64	973.38	29.90	5/31/2022	22.52	950.86
MWF16-25	NA	975.24	37.20	5/31/2022	25.51	949.73
MWF16-26	NA	974.14	36.75	5/31/2022	23.92	950.22
TW-12-22	973.52	973.39	32.69	5/31/2022	22.31	951.08
<b>Offsite</b>						
MWOS-08	975.55	975.09	28.82	5/31/2022	25.50	949.59
MWOS-09R	976.68	976.18	32.21	5/31/2022	27.78	948.40
MWOS-10	977.01	976.55	32.79	5/31/2022	27.95	948.60
<b>Former Fiero Parking Lot</b>						
PZF17-02	977.70	977.43	35.51	5/31/2022	23.12	954.31
PZF17-04	972.90	972.47	28.90	5/31/2022	19.25	953.22
PZF17-05	976.43	975.97	34.01	5/31/2022	25.25	950.72

**Abbreviations:**

ft - feet  
 NA - Not Applicable

**Footnotes:**

- <sup>1</sup> Top of Temporary Well Casing/Stickup Elevation is in feet National Vertical Geodetic Datum (1988).
- <sup>2</sup> Depth to water measurements collected from top of temporary well casing/stickup.

Table 2  
 Summary of Groundwater Analytical Results  
 RACER Trust Pontiac North Campus  
 Pontiac, Michigan



Location ID: Date Collected: Sample Name:	Res Fiero SSVIAC SOG	Res Fiero SSVIAC BASE	NR Fiero SSVIAC <50k SOG	Units	MW-02-17 03/22/22 MW-02-17_GW-032222	MW-02-17 05/31/22 MW-02-17-GW_053122	MW-05-18 03/22/22 MW-05-18_GW-032222	MW-05-18 05/31/22 MW-05-18-GW_053122	MW-06-20 03/24/22 MW-06-20_GW-032422	MW-06-20 05/31/22 MW-06-20_GW-053122	MW-07-20 03/22/22 MW-07-20_GW-032222	MW-07-20 05/31/22 MW-07-20_GW-053122
<b>Volatile Organics</b>												
Acetone	32,000,000	18,000,000	240,000,000	ug/L	< 50 U [ $\leq$ 50 U]	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Benzene	34	18	1,100	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromodichloromethane	60	31	1,700	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromoform	6,400	3,200	200,000	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromomethane	59	33	1,200	ug/L	< 5 U [ $\leq$ 5 U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
2-Butanone	4,000,000	2,200,000	59,000,000	ug/L	< 25 U [ $\leq$ 25 U]	< 25 U	< 25 U	< 25 U	< 25 U	< 25 U	< 25 U	< 25 U
Carbon Disulfide	2,200	1,200	46,000	ug/L	< 5 U [ $\leq$ 5 U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Carbon Tetrachloride	14	7.2	440	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
CFC-11	300	160	6,000	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
CFC-12	71	38	1,400	ug/L	< 5 U [ $\leq$ 5 U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Chlorobenzene	1,300	720	27,000	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Chlorodibromomethane	58	29	4,400	ug/L	< 5 U [ $\leq$ 5 U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Chloroethane	15,000	8,600	320,000	ug/L	< 5 U [ $\leq$ 5 U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Chloroform	19	10	610	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Chloromethane	340	200	7,400	ug/L	< 5 U [ $\leq$ 5 U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Cyclohexane	2,600	1,400	53,000	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dibromo-3-chloropropane	0.00045	0.00045	0.042	ug/L	< 5 U [ $\leq$ 5 U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,2-Dibromoethane	8	4	250	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dichlorobenzene	19,000	9,900	160,000	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,3-Dichlorobenzene	130	70	2,700	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,4-Dichlorobenzene	310	160	9,800	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1-Dichloroethane	160	88	5,300	ug/L	2 [2]	2	4	5	5	7	7	8
1,2-Dichloroethane	50	27	1,600	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1-Dichloroethene	410	220	8,300	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
cis-1,2-Dichloroethene	110	62	2,300	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	7	8	6	7	10	15
trans-1,2-Dichloroethene	480	260	9,800	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Dichloromethane	9,100	5,000	190,000	ug/L	< 5 U [ $\leq$ 5 U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,2-Dichloropropane	100	56	2,100	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
cis-1,3-Dichloropropene	--	--	--	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
trans-1,3-Dichloropropene	--	--	--	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Ethylbenzene	110	60	3,600	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Isopropylbenzene	26	13	810	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Methyl acetate	--	--	--	ug/L	< 10 U [ $\leq$ 10 U]	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Methyl N-Butyl Ketone	24,000	12,000	490,000	ug/L	< 50 U [ $\leq$ 50 U]	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Methylcyclohexane	--	--	--	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
4-Methyl-2-pentanone	1,600,000	810,000	19,000,000	ug/L	< 50 U [ $\leq$ 50 U]	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Methyl tert-butyl ether	10,000	5,300	320,000	ug/L	< 5 U [ $\leq$ 5 U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Styrene	1,400	740	45,000	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1,2,2-Tetrachloroethane	130	66	4,100	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Tetrachloroethene	250	130	3,400	ug/L	3 [4]	3	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Toluene	56,000	30,000	530,000	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2,4-Trichlorobenzene	270	130	5,100	ug/L	< 5 U [ $\leq$ 5 U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,1,1-Trichloroethane	22,000	11,000	210,000	ug/L	2 [2]	< 1 U	5	< 1 U	3	3	5	5
1,1,2-Trichloroethane	21	11	410	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Trichloroethene	15	8.1	210	ug/L	5 [5]	5	< 1 U	< 1 U	8	9	2	3
1,1,2-trichloro-1,2,2-trifluoroethane	7,100	3,600	140,000	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Vinyl Chloride	2.2	1.2	260	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
m&p-Xylene	--	--	--	ug/L	< 2 U [ $\leq$ 2 U]	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
o-Xylene	--	--	--	ug/L	< 1 U [ $\leq$ 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Total Xylenes	3,000	1,600	60,000	ug/L	< 2 U [ $\leq$ 2 U]	< 10 U	< 2 U	< 10 U	< 2 U	< 10 U	< 2 U	< 10 U
<b>Volatile Organics-SIM</b>												
<b>Metals</b>												
Iron	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA
Iron (dissolved)	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA
<b>Anions</b>												
Sulfate	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA
<b>TOC</b>												
Total organic carbon (TOC)	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA
<b>Dissolved Gases</b>												
Ethane	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA
Ethene	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA
Methane	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA

Table 2  
 Summary of Groundwater Analytical Results  
 RACER Trust Pontiac North Campus  
 Pontiac, Michigan



Location ID: Date Collected: Sample Name:	Res Fiero SSVIAC SOG	Res Fiero SSVIAC BASE	NR Fiero SSVIAC <50k SOG	Units	MW-08-21 03/22/22 MW-08-21_GW-032222	MW-08-21 06/01/22 MW-08-21_GW_060122	MW-09-22 03/24/22 MW-09-22_GW-032422	MW-09-22 06/02/22 MW-09-22_GW-060222	MW-13-22 03/23/22 MW-13-22_GW-032322	MW-13-22 06/01/22 MW-13-22-GW_060122	MW-14-22 03/23/22 MW-14-22_GW-032322	MW-14-22 06/01/22 MW-14-22-GW_060122
<b>Volatile Organics</b>												
Acetone	32,000,000	18,000,000	240,000,000	ug/L	< 50 U	< 50 U	< 50 U	< 500 UY	< 50 U	< 50 U	< 50 U	< 50 U
Benzene	34	18	1,100	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
Bromodichloromethane	60	31	1,700	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
Bromoform	6,400	3,200	200,000	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
Bromomethane	59	33	1,200	ug/L	< 5 U	< 5 U	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 5 U
2-Butanone	4,000,000	2,200,000	59,000,000	ug/L	< 25 U	< 25 U	< 25 U	< 250 UY	< 25 U	< 25 U	< 25 U	< 25 U
Carbon Disulfide	2,200	1,200	46,000	ug/L	< 5 U	< 5 U	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 5 U
Carbon Tetrachloride	14	7.2	440	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	1	2
CFC-11	300	160	6,000	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
CFC-12	71	38	1,400	ug/L	< 5 U	< 5 U	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 5 U
Chlorobenzene	1,300	720	27,000	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
Chlorodibromomethane	58	29	4,400	ug/L	< 5 U	< 5 U	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 5 U
Chloroethane	15,000	8,600	320,000	ug/L	< 5 U	< 5 U	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 5 U
Chloroform	19	10	610	ug/L	< 1 U	< 1 U	1	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
Chloromethane	340	200	7,400	ug/L	< 5 U	< 5 U	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 5 U
Cyclohexane	2,600	1,400	53,000	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dibromo-3-chloropropane	0.00045	0.00045	0.042	ug/L	< 5 U	< 5 U	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 5 U
1,2-Dibromoethane	8	4	250	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dichlorobenzene	19,000	9,900	160,000	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
1,3-Dichlorobenzene	130	70	2,700	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
1,4-Dichlorobenzene	310	160	9,800	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
1,1-Dichloroethane	160	88	5,300	ug/L	2	3	< 1 U	< 10 UY	< 1 U	< 1 U	5	6
1,2-Dichloroethane	50	27	1,600	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
1,1-Dichloroethene	410	220	8,300	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
cis-1,2-Dichloroethene	110	62	2,300	ug/L	< 1 U	3	1	< 10 UY	< 1 U	< 1 U	10	13
trans-1,2-Dichloroethene	480	260	9,800	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	2	2
Dichloromethane	9,100	5,000	190,000	ug/L	< 5 U	< 5 U	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 5 U
1,2-Dichloropropane	100	56	2,100	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
cis-1,3-Dichloropropene	--	--	--	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
trans-1,3-Dichloropropene	--	--	--	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
Ethylbenzene	110	60	3,600	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
Isopropylbenzene	26	13	810	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
Methyl acetate	--	--	--	ug/L	< 10 U	< 10 U	< 10 U	< 100 UY	< 10 U	< 10 U	< 10 U	< 10 U
Methyl N-Butyl Ketone	24,000	12,000	490,000	ug/L	< 50 U	< 50 U	< 50 U	< 500 UY	< 50 U	< 50 U	< 50 U	< 50 U
Methylcyclohexane	--	--	--	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
4-Methyl-2-pentanone	1,600,000	810,000	19,000,000	ug/L	< 50 U	< 50 U	< 50 U	< 500 UY	< 50 U	< 50 U	< 50 U	< 50 U
Methyl tert-butyl ether	10,000	5,300	320,000	ug/L	< 5 U	< 5 U	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 5 U
Styrene	1,400	740	45,000	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
1,1,2,2-Tetrachloroethane	130	66	4,100	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
Tetrachloroethene	250	130	3,400	ug/L	< 1 U	< 1 U	95	150 Y	< 1 U	< 1 U	52	67
Toluene	56,000	30,000	530,000	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
1,2,4-Trichlorobenzene	270	130	5,100	ug/L	< 5 U	< 5 U	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 5 U
1,1,1-Trichloroethane	22,000	11,000	210,000	ug/L	3	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	10	< 1 U
1,1,2-Trichloroethane	21	11	410	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
Trichloroethene	15	8.1	210	ug/L	9	9	3	< 10 UY	< 1 U	< 1 U	12	16
1,1,2-trichloro-1,2,2-trifluoroethane	7,100	3,600	140,000	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
Vinyl Chloride	2.2	1.2	260	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
m&p-Xylene	--	--	--	ug/L	< 2 U	< 2 U	< 2 U	< 20 UY	< 2 U	< 2 U	< 2 U	< 2 U
o-Xylene	--	--	--	ug/L	< 1 U	< 1 U	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 1 U
Total Xylenes	3,000	1,600	60,000	ug/L	< 2 U	< 10 U	< 2 U	< 100 UY	< 2 U	< 10 U	< 2 U	< 10 U
<b>Volatile Organics-SIM</b>												
<b>Metals</b>												
Iron	--	--	--	mg/L	NA	0.03	NA	0.22	NA	22.4	NA	0.12
Iron (dissolved)	--	--	--	mg/L	NA	< 0.02 U	NA	0.02	NA	22.5	NA	0.04
<b>Anions</b>												
Sulfate	--	--	--	mg/L	NA	153	NA	39	NA	45	NA	57
<b>TOC</b>												
Total organic carbon (TOC)	--	--	--	mg/L	NA	4.4	NA	3.6	NA	27.6	NA	3.5
<b>Dissolved Gases</b>												
Ethane	--	--	--	ug/L	NA	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U
Ethene	--	--	--	ug/L	NA	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U
Methane	--	--	--	ug/L	NA	< 1.0 U	NA	1.7	NA	540	NA	< 1.0 U

Table 2  
 Summary of Groundwater Analytical Results  
 RACER Trust Pontiac North Campus  
 Pontiac, Michigan



Location ID: Date Collected: Sample Name:	Res Fiero SSVIAC SOG	Res Fiero SSVIAC BASE	NR Fiero SSVIAC <50k SOG	Units	MWF16-05 03/24/22 MWF16-05_GW-032422	MWF16-05 06/02/22 MWF16-05-GW_060222	MWF16-06 03/23/22 MWF16-06_GW-032322	MWF16-06 06/02/22 MWF16-06_GW-060222	MWF16-16 03/23/22 MWF16-16_GW-032322	MWF16-16 06/02/22 MWF16-16-GW_060222	MWF16-18 03/24/22 MWF16-18_GW-032422	MWF16-18 06/02/22 MWF16-18_GW-060222
<b>Volatile Organics</b>												
Acetone	32,000,000	18,000,000	240,000,000	ug/L	< 500 UY	< 1000 UY	< 50 U	< 50 U	< 500 UY [ $< 500$ UY]	< 1000 UY [ $< 1000$ UY]	< 500 UY [ $< 500$ UY]	< 500 UY [ $< 500$ UY]
Benzene	34	18	1,100	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
Bromodichloromethane	60	31	1,700	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
Bromoform	6,400	3,200	200,000	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
Bromomethane	59	33	1,200	ug/L	< 50 UY	< 100 UY	< 5 U	< 5 U	< 50 UY [ $< 50$ UY]	< 100 UY [ $< 100$ UY]	< 50 UY [ $< 50$ UY]	< 50 UY [ $< 50$ UY]
2-Butanone	4,000,000	2,200,000	59,000,000	ug/L	< 250 UY	< 500 UY	< 25 U	< 25 U	< 250 UY [ $< 250$ UY]	< 500 UY [ $< 500$ UY]	< 250 UY [ $< 250$ UY]	< 250 UY [ $< 250$ UY]
Carbon Disulfide	2,200	1,200	46,000	ug/L	< 50 UY	< 100 UY	< 5 U	< 5 U	< 50 UY [ $< 50$ UY]	< 100 UY [ $< 100$ UY]	< 50 UY [ $< 50$ UY]	< 50 UY [ $< 50$ UY]
Carbon Tetrachloride	14	7.2	440	ug/L	< 10 UY	< 20 UY	7	9	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
CFC-11	300	160	6,000	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
CFC-12	71	38	1,400	ug/L	< 50 UY	< 100 UY	< 5 U	< 5 U	< 50 UY [ $< 50$ UY]	< 100 UY [ $< 100$ UY]	< 50 UY [ $< 50$ UY]	< 50 UY [ $< 50$ UY]
Chlorobenzene	1,300	720	27,000	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
Chlorodibromomethane	58	29	4,400	ug/L	< 50 UY	< 100 UY	< 5 U	< 5 U	< 50 UY [ $< 50$ UY]	< 100 UY [ $< 100$ UY]	< 50 UY [ $< 50$ UY]	< 50 UY [ $< 50$ UY]
Chloroethane	15,000	8,600	320,000	ug/L	< 50 UY	< 100 UY	< 5 U	< 5 U	< 50 UY [ $< 50$ UY]	< 100 UY [ $< 100$ UY]	< 50 UY [ $< 50$ UY]	< 50 UY [ $< 50$ UY]
Chloroform	19	10	610	ug/L	< 10 UY	< 20 UY	15	17	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
Chloromethane	340	200	7,400	ug/L	< 50 UY	< 100 UY	< 5 U	< 5 U	< 50 UY [ $< 50$ UY]	< 100 UY [ $< 100$ UY]	< 50 UY [ $< 50$ UY]	< 50 UY [ $< 50$ UY]
Cyclohexane	2,600	1,400	53,000	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
1,2-Dibromo-3-chloropropane	0.00045	0.00045	0.042	ug/L	< 50 UY	< 100 UY	< 5 U	< 5 U	< 50 UY [ $< 50$ UY]	< 100 UY [ $< 100$ UY]	< 50 UY [ $< 50$ UY]	< 50 UY [ $< 50$ UY]
1,2-Dibromoethane	8	4	250	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
1,2-Dichlorobenzene	19,000	9,900	160,000	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
1,3-Dichlorobenzene	130	70	2,700	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
1,4-Dichlorobenzene	310	160	9,800	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
1,1-Dichloroethane	160	88	5,300	ug/L	< 10 UY	< 20 UY	72	133	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
1,2-Dichloroethane	50	27	1,600	ug/L	< 10 UY	< 20 UY	1	2	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
1,1-Dichloroethene	410	220	8,300	ug/L	< 10 UY	< 20 UY	8	12	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
cis-1,2-Dichloroethene	110	62	2,300	ug/L	< 10 UY	< 20 UY	21	53	10 Y [10 Y]	20 Y [20 Y]	70 Y [70 Y]	70 Y [80 Y]
trans-1,2-Dichloroethene	480	260	9,800	ug/L	< 10 UY	< 20 UY	< 1 U	1	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
Dichloromethane	9,100	5,000	190,000	ug/L	< 50 UY	< 100 UY	< 5 U	< 5 U	< 50 UY [ $< 50$ UY]	< 100 UY [ $< 100$ UY]	< 50 UY [ $< 50$ UY]	< 50 UY [ $< 50$ UY]
1,2-Dichloropropane	100	56	2,100	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
cis-1,3-Dichloropropene	--	--	--	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
trans-1,3-Dichloropropene	--	--	--	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
Ethylbenzene	110	60	3,600	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
Isopropylbenzene	26	13	810	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
Methyl acetate	--	--	--	ug/L	< 100 UY	< 200 UY	< 10 U	< 10 U	< 100 UY [ $< 100$ UY]	< 200 UY [ $< 200$ UY]	< 100 UY [ $< 100$ UY]	< 100 UY [ $< 100$ UY]
Methyl N-Butyl Ketone	24,000	12,000	490,000	ug/L	< 500 UY	< 1000 UY	< 50 U	< 50 U	< 500 UY [ $< 500$ UY]	< 1000 UY [ $< 1000$ UY]	< 500 UY [ $< 500$ UY]	< 500 UY [ $< 500$ UY]
Methylcyclohexane	--	--	--	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
4-Methyl-2-pentanone	1,600,000	810,000	19,000,000	ug/L	< 500 UY	< 1000 UY	< 50 U	< 50 U	< 500 UY [ $< 500$ UY]	< 1000 UY [ $< 1000$ UY]	< 500 UY [ $< 500$ UY]	< 500 UY [ $< 500$ UY]
Methyl tert-butyl ether	10,000	5,300	320,000	ug/L	< 50 UY	< 100 UY	< 5 U	< 5 U	< 50 UY [ $< 50$ UY]	< 100 UY [ $< 100$ UY]	< 50 UY [ $< 50$ UY]	< 50 UY [ $< 50$ UY]
Styrene	1,400	740	45,000	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
1,1,2,2-Tetrachloroethane	130	66	4,100	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
Tetrachloroethene	250	130	3,400	ug/L	480 Y	420 Y	53	66	470 Y [490 Y]	340 Y [330 Y]	1150 Y [1180 Y]	930 Y [1090 Y]
Toluene	56,000	30,000	530,000	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
1,2,4-Trichlorobenzene	270	130	5,100	ug/L	< 50 UY	< 100 UY	< 5 U	< 5 U	< 50 UY [ $< 50$ UY]	< 100 UY [ $< 100$ UY]	< 50 UY [ $< 50$ UY]	< 50 UY [ $< 50$ UY]
1,1,1-Trichloroethane	22,000	11,000	210,000	ug/L	< 10 UY	< 20 UY	111	134	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
1,1,2-Trichloroethane	21	11	410	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
Trichloroethene	15	8.1	210	ug/L	20 Y	< 20 UY	7	10	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	20 Y [20 Y]	20 Y [20 Y]
1,1,2-trichloro-1,2,2-trifluoroethane	7,100	3,600	140,000	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
Vinyl Chloride	2.2	1.2	260	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
m&p-Xylene	--	--	--	ug/L	< 20 UY	< 40 UY	< 2 U	< 2 U	< 20 UY [ $< 20$ UY]	< 40 UY [ $< 40$ UY]	< 20 UY [ $< 20$ UY]	< 20 UY [ $< 20$ UY]
o-Xylene	--	--	--	ug/L	< 10 UY	< 20 UY	< 1 U	< 1 U	< 10 UY [ $< 10$ UY]	< 20 UY [ $< 20$ UY]	< 10 UY [ $< 10$ UY]	< 10 UY [ $< 10$ UY]
Total Xylenes	3,000	1,600	60,000	ug/L	< 20 UY	< 200 UY	< 2 U	< 10 U	< 20 UY [ $< 20$ UY]	< 200 UY [ $< 40$ UY]	< 20 UY [ $< 20$ UY]	< 100 UY [ $< 20$ UY]
<b>Volatile Organics-SIM</b>												
<b>Metals</b>												
Iron	--	--	--	mg/L	NA	0.11	NA	0.15	NA	0.19 [ $< 0.02$ U]	NA	< 0.02 U [ $< 0.02$ U]
Iron (dissolved)	--	--	--	mg/L	NA	< 0.02 U	NA	< 0.02 U	NA	0.02 [ $< 0.02$ U]	NA	< 0.02 U [ $< 0.02$ U]
<b>Anions</b>												
Sulfate	--	--	--	mg/L	NA	25	NA	56	NA	42 [41]	NA	79 [79]
<b>TOC</b>												
Total organic carbon (TOC)	--	--	--	mg/L	NA	3.4	NA	3.7	NA	3.5 [3.6]	NA	9.4 [9.3]
<b>Dissolved Gases</b>												
Ethane	--	--	--	ug/L	NA	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U [ $< 1.0$ U]	NA	< 1.0 U [ $< 1.0$ U]
Ethene	--	--	--	ug/L	NA	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U [ $< 1.0$ U]	NA	< 1.0 U [ $< 1.0$ U]
Methane	--	--	--	ug/L	NA	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U [ $< 1.0$ U]	NA	< 1.0 U [ $< 1.0$ U]

Table 2  
 Summary of Groundwater Analytical Results  
 RACER Trust Pontiac North Campus  
 Pontiac, Michigan



Location ID: Date Collected: Sample Name:	Res Fiero SSVIAC SOG	Res Fiero SSVIAC BASE	NR Fiero SSVIAC <50k SOG	Units	MWF16-22 03/23/22 MWF16-22_GW-032322	MWF16-22 06/01/22 MWF16-22-GW_060122	MWF16-23 03/24/22 MWF16-23_GW-032422	MWF16-23 06/01/22 MWF16-23_GW_060122	MWF16-25 03/24/22 MWF16-25_GW-032422	MWF16-25 06/01/22 MWF16-25_GW-060122	MWF7-02 03/23/22 MWF7-02_GW-032322	MWF7-02 06/01/22 MWF7-02_GW-060122
<b>Volatile Organics</b>												
Acetone	32,000,000	18,000,000	240,000,000	ug/L	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Benzene	34	18	1,100	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromodichloromethane	60	31	1,700	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromoform	6,400	3,200	200,000	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromomethane	59	33	1,200	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
2-Butanone	4,000,000	2,200,000	59,000,000	ug/L	< 25 U	< 25 U	< 25 U	< 25 U	< 25 U	< 25 U	< 25 U	< 25 U
Carbon Disulfide	2,200	1,200	46,000	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Carbon Tetrachloride	14	7.2	440	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
CFC-11	300	160	6,000	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
CFC-12	71	38	1,400	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Chlorobenzene	1,300	720	27,000	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Chlorodibromomethane	58	29	4,400	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Chloroethane	15,000	8,600	320,000	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Chloroform	19	10	610	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	4	3	1	< 1 U
Chloromethane	340	200	7,400	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Cyclohexane	2,600	1,400	53,000	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dibromo-3-chloropropane	0.00045	0.00045	0.042	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,2-Dibromoethane	8	4	250	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dichlorobenzene	19,000	9,900	160,000	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,3-Dichlorobenzene	130	70	2,700	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,4-Dichlorobenzene	310	160	9,800	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1-Dichloroethane	160	88	5,300	ug/L	1	< 1 U	5	5	5	5	12	13
1,2-Dichloroethane	50	27	1,600	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1-Dichloroethene	410	220	8,300	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	13	11
cis-1,2-Dichloroethene	110	62	2,300	ug/L	10	6	5	5	27	35	2	2
trans-1,2-Dichloroethene	480	260	9,800	ug/L	< 1 U	< 1 U	< 1 U	2	2	2	< 1 U	< 1 U
Dichloromethane	9,100	5,000	190,000	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,2-Dichloropropane	100	56	2,100	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
cis-1,3-Dichloropropene	--	--	--	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
trans-1,3-Dichloropropene	--	--	--	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Ethylbenzene	110	60	3,600	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Isopropylbenzene	26	13	810	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Methyl acetate	--	--	--	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Methyl N-Butyl Ketone	24,000	12,000	490,000	ug/L	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Methylcyclohexane	--	--	--	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
4-Methyl-2-pentanone	1,600,000	810,000	19,000,000	ug/L	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Methyl tert-butyl ether	10,000	5,300	320,000	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Styrene	1,400	740	45,000	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1,2,2-Tetrachloroethane	130	66	4,100	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Tetrachloroethene	250	130	3,400	ug/L	76	69	< 1 U	< 1 U	< 1 U	< 1 U	95	77
Toluene	56,000	30,000	530,000	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2,4-Trichlorobenzene	270	130	5,100	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,1,1-Trichloroethane	22,000	11,000	210,000	ug/L	2	< 1 U	8	< 1 U	4	3	88	76
1,1,2-Trichloroethane	21	11	410	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Trichloroethene	15	8.1	210	ug/L	2	2	13	16	< 1 U	< 1 U	4	3
1,1,2-trichloro-1,2,2-trifluoroethane	7,100	3,600	140,000	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Vinyl Chloride	2.2	1.2	260	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
m&p-Xylene	--	--	--	ug/L	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
o-Xylene	--	--	--	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Total Xylenes	3,000	1,600	60,000	ug/L	< 2 U	< 10 U	< 2 U	< 10 U	< 2 U	< 10 U	< 2 U	< 10 U
<b>Volatile Organics-SIM</b>												
<b>Metals</b>												
Iron	--	--	--	mg/L	NA	0.24	NA	0.29	NA	NA	NA	NA
Iron (dissolved)	--	--	--	mg/L	NA	0.03	NA	< 0.02 U	NA	NA	NA	NA
<b>Anions</b>												
Sulfate	--	--	--	mg/L	NA	52	NA	45	NA	NA	NA	NA
<b>TOC</b>												
Total organic carbon (TOC)	--	--	--	mg/L	NA	3.3	NA	3.5	NA	NA	NA	NA
<b>Dissolved Gases</b>												
Ethane	--	--	--	ug/L	NA	< 1.0 U	NA	< 1.0 U	NA	NA	NA	NA
Ethene	--	--	--	ug/L	NA	< 1.0 U	NA	< 1.0 U	NA	NA	NA	NA
Methane	--	--	--	ug/L	NA	< 1.0 U	NA	< 1.0 U	NA	NA	NA	NA

Table 2  
 Summary of Groundwater Analytical Results  
 RACER Trust Pontiac North Campus  
 Pontiac, Michigan



Location ID: Date Collected: Sample Name:	Res Fiero SSVIAC SOG	Res Fiero SSVIAC BASE	NR Fiero SSVIAC <50k SOG	Units	MWOS-08 03/25/22 MWOS-08_GW-032522	MWOS-08 06/02/22 MWOS-08-GW_060222	MWOS-09R 03/22/22 MWOS-09_GW-032222	MWOS-09R 06/01/22 MWOS-09R_GW-060122	MWOS-10 03/22/22 MWOS-10_GW-032222	MWOS-10 06/02/22 MWOS-10-GW_060222	TW-12-22 03/24/22 TW-12-22_GW-032422	TW-12-22 06/02/22 TW-12-22_GW-060222
<b>Volatile Organics</b>												
Acetone	32,000,000	18,000,000	240,000,000	ug/L	< 50 U	< 50 U	< 50 U [ $< 50$ U]	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Benzene	34	18	1,100	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromodichloromethane	60	31	1,700	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromoform	6,400	3,200	200,000	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromomethane	59	33	1,200	ug/L	< 5 U	< 5 U	< 5 U [ $< 5$ U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
2-Butanone	4,000,000	2,200,000	59,000,000	ug/L	< 25 U	< 25 U	< 25 U [ $< 25$ U]	< 25 U	< 25 U	< 25 U	< 25 U	< 25 U
Carbon Disulfide	2,200	1,200	46,000	ug/L	< 5 U	< 5 U	< 5 U [ $< 5$ U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Carbon Tetrachloride	14	7.2	440	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
CFC-11	300	160	6,000	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
CFC-12	71	38	1,400	ug/L	< 5 U	< 5 U	< 5 U [ $< 5$ U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Chlorobenzene	1,300	720	27,000	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Chlorodibromomethane	58	29	4,400	ug/L	< 5 U	< 5 U	< 5 U [ $< 5$ U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Chloroethane	15,000	8,600	320,000	ug/L	< 5 U	< 5 U	< 5 U [ $< 5$ U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Chloroform	19	10	610	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	8	7
Chloromethane	340	200	7,400	ug/L	< 5 U	< 5 U	< 5 U [ $< 5$ U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Cyclohexane	2,600	1,400	53,000	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dibromo-3-chloropropane	0.00045	0.00045	0.042	ug/L	< 5 U	< 5 U	< 5 U [ $< 5$ U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,2-Dibromoethane	8	4	250	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dichlorobenzene	19,000	9,900	160,000	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,3-Dichlorobenzene	130	70	2,700	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,4-Dichlorobenzene	310	160	9,800	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1-Dichloroethane	160	88	5,300	ug/L	< 1 U	< 1 U	4 [4]	5	7	6	9	9
1,2-Dichloroethane	50	27	1,600	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1-Dichloroethene	410	220	8,300	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
cis-1,2-Dichloroethene	110	62	2,300	ug/L	1	2	28 [26]	28	6	7	67	85
trans-1,2-Dichloroethene	480	260	9,800	ug/L	< 1 U	< 1 U	2 [2]	2	< 1 U	< 1 U	3	3
Dichloromethane	9,100	5,000	190,000	ug/L	< 5 U	< 5 U	< 5 U [ $< 5$ U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,2-Dichloropropane	100	56	2,100	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
cis-1,3-Dichloropropene	--	--	--	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
trans-1,3-Dichloropropene	--	--	--	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Ethylbenzene	110	60	3,600	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Isopropylbenzene	26	13	810	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Methyl acetate	--	--	--	ug/L	< 10 U	< 10 U	< 10 U [ $< 10$ U]	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Methyl N-Butyl Ketone	24,000	12,000	490,000	ug/L	< 50 U	< 50 U	< 50 U [ $< 50$ U]	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Methylcyclohexane	--	--	--	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
4-Methyl-2-pentanone	1,600,000	810,000	19,000,000	ug/L	< 50 U	< 50 U	< 50 U [ $< 50$ U]	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Methyl tert-butyl ether	10,000	5,300	320,000	ug/L	< 5 U	< 5 U	< 5 U [ $< 5$ U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Styrene	1,400	740	45,000	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1,2,2-Tetrachloroethane	130	66	4,100	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Tetrachloroethene	250	130	3,400	ug/L	< 1 U	< 1 U	10 [12]	13	< 1 U	< 1 U	< 1 U	< 1 U
Toluene	56,000	30,000	530,000	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2,4-Trichlorobenzene	270	130	5,100	ug/L	< 5 U	< 5 U	< 5 U [ $< 5$ U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,1,1-Trichloroethane	22,000	11,000	210,000	ug/L	4	< 1 U	3 [3]	3	4	< 1 U	5	< 1 U
1,1,2-Trichloroethane	21	11	410	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Trichloroethene	15	8.1	210	ug/L	< 1 U	< 1 U	3 [4]	4	7	9	6	7
1,1,2-trichloro-1,2,2-trifluoroethane	7,100	3,600	140,000	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Vinyl Chloride	2.2	1.2	260	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
m&p-Xylene	--	--	--	ug/L	< 2 U	< 2 U	< 2 U [ $< 2$ U]	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
o-Xylene	--	--	--	ug/L	< 1 U	< 1 U	< 1 U [ $< 1$ U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Total Xylenes	3,000	1,600	60,000	ug/L	< 2 U	< 10 U	< 2 U [ $< 2$ U]	< 10 U	< 2 U	< 10 U	< 2 U	< 10 U
<b>Volatile Organics-SIM</b>												
<b>Metals</b>												
Iron	--	--	--	mg/L	NA	NA	NA	NA	NA	0.75	NA	0.41
Iron (dissolved)	--	--	--	mg/L	NA	NA	NA	NA	NA	0.08	NA	0.40
<b>Anions</b>												
Sulfate	--	--	--	mg/L	NA	NA	NA	NA	NA	99	NA	60
<b>TOC</b>												
Total organic carbon (TOC)	--	--	--	mg/L	NA	NA	NA	NA	NA	4.0	NA	2.8
<b>Dissolved Gases</b>												
Ethane	--	--	--	ug/L	NA	NA	NA	NA	NA	< 1.0 U	NA	< 1.0 U
Ethene	--	--	--	ug/L	NA	NA	NA	NA	NA	< 1.0 U	NA	< 1.0 U
Methane	--	--	--	ug/L	NA	NA	NA	NA	NA	< 1.0 U	NA	< 1.0 U

**Table 2**  
**Summary of Groundwater Analytical Results**  
**RACER Trust Pontiac North Campus**  
**Pontiac, Michigan**

**Notes:**

- 1) Criteria listed are from the EGLE Former Fiero Assembly Site-Specific Criteria Evaluation dated April 21, 2020.
- 2) Values in bold italics denotes exceedance and/or equal to Residential Site-Specific Volatilization to Indoor Air Criteria.
- 3) Values in red type denotes exceedance and/or equal to Non-Residential Site-Specific Volatilization to Indoor Air Criteria.
- 4) Duplicate analyses are presented in brackets.
- 5) Analytical data from 1Q only shown for wells also sampled in 2Q. Omitted data can be found in 1Q Fiero Data Package.

**Abbreviations:**

µg/L	Micrograms per liter.
BAS	Basement scenario.
NR	Non-Residential
Res	Residential
SOG	Slab-On-Grade scenario
SSVIAC	Site-Specific Volatilization to Indoor Air Criteria
E	Concentration exceeds calibration range
U	Compound was analyzed for but not detected. The associated value is the compound quantitation limit.
Y	Elevated reporting limit due to high target concentration.
<50k	Less than 50,000 square feet
>50k	Greater than 50,000 square feet

Table 3  
 Summary of Soil Vapor Analytical Results  
 RACER Trust Pontiac North Campus  
 Pontiac, Michigan



Location ID: Sample Depth: Date Collected:	Fiero SSVIAC Soil Gas Residential SOG Criteria	Fiero SSVIAC Soil Gas Residential Basement Criteria	Units	SV-01-21 14-14.5 3/22/2022	SV-01-21 14-14.5 6/8/2022	SV-02-21 23.25-23.75 3/22/2022	SV-02-21 23.25-23.75 6/8/2022	SV-03-21 11.5-12 3/22/2022	SV-03-21 11.5-12 6/8/2022	SV-04-21 22.5-23 3/22/2022	SV-04-21 22.5-23 6/8/2022	SV-05-21 11.5-12 3/22/2022	SV-05-21 11.5-12 6/8/2022	SV-06-21 22.5-23 3/22/2022	SV-06-21 22.5-23 6/8/2022
<b>Analyte</b>															
1,1-Dichloroethylene	<b>7,000</b>	7,000	ug/m <sup>3</sup>	ND	ND	ND	ND [ND]	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	<b>280</b>	280	ug/m <sup>3</sup>	ND	ND	ND	ND [ND]	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	<b>2,800</b>	2,800	ug/m <sup>3</sup>	ND	ND	ND	ND [ND]	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	<b>1,400</b>	1,400	ug/m <sup>3</sup>	ND	10	9.5	8.2 [12 ]	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	<b>67</b>	67	ug/m <sup>3</sup>	8.6	23	53	55 [57 ]	ND	ND	11	12	ND	ND	13	14
Vinyl Chloride	<b>54</b>	54	ug/m <sup>3</sup>	ND	ND	ND	ND [ND]	ND	ND	ND	ND	ND	ND	ND	ND

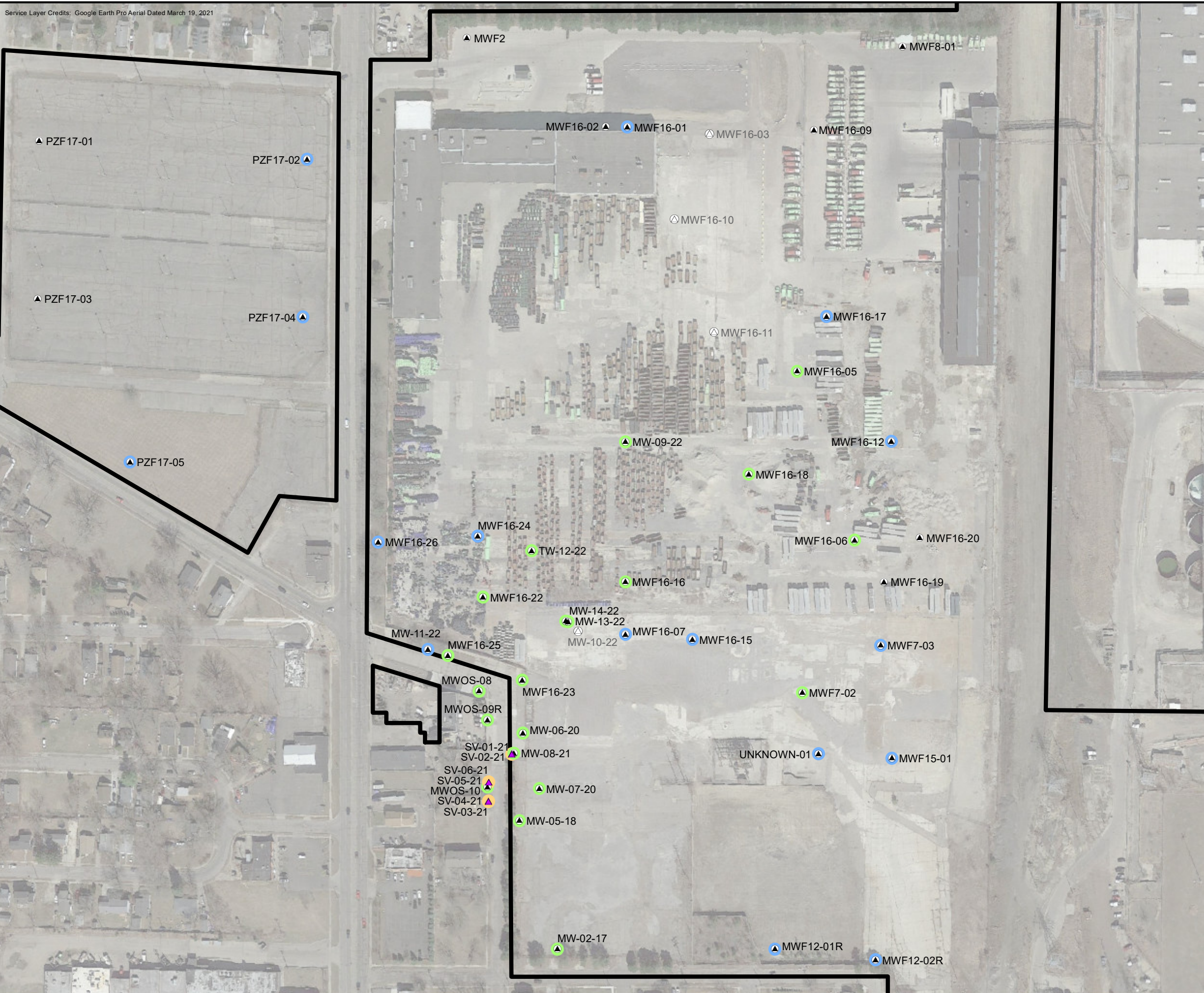
**NOTES:**

- 1) Criteria listed are from the EGLE Former Fiero Assembly Site-Specific Criteria Evaluation dated April 21, 2020.
- 2) Values in bold denotes exceedance and/or equal to Residential Site-Specific Volatilization to Indoor Air soil gas SOG criteria .
- 3) Values in red type denotes exceedance and/or equal to Residential Site-Specific Volatilization to Indoor Air soil gas basement criteria.

**Abbreviations:**

µg/m<sup>3</sup> - Micrograms per cubic meter.  
 SSVIAC - Site-Specific Volatilization to Indoor Air Criteria  
 ND - Non detect  
 SOG - Slab-On-Grade scenario.

# Figures

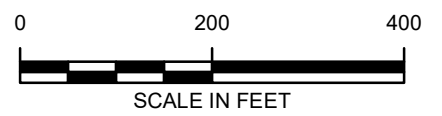


**LEGEND**

- ▲ EXISTING MONITORING WELL
- ▲ SOIL VAPOR MONITORING POINT
- ABANDONED MONITORING WELL
- SAMPLED ONLY
- GAUGED ONLY
- GAUGED AND SAMPLED
- ▭ CURRENT OR FORMER RACER PROPERTY

**NOTES:**

1. MWF16-05 WAS UNABLE TO BE LOCATED DURING GAUGING, BUT WAS LOCATED LATER IN THE WEEK AND SAMPLED.
2. MWF16-10 AND MWF16-11 WERE DESTROYED DURING GFL CONSTRUCTION ACTIVITIES.
3. MWF16-20 IS COVERED WITH A LARGE PILE OF DEBRIS FROM GFL CONSTRUCTION ACTIVITIES AND COULD NOT BE ACCESSED FOR GAUGING OR SAMPLING.

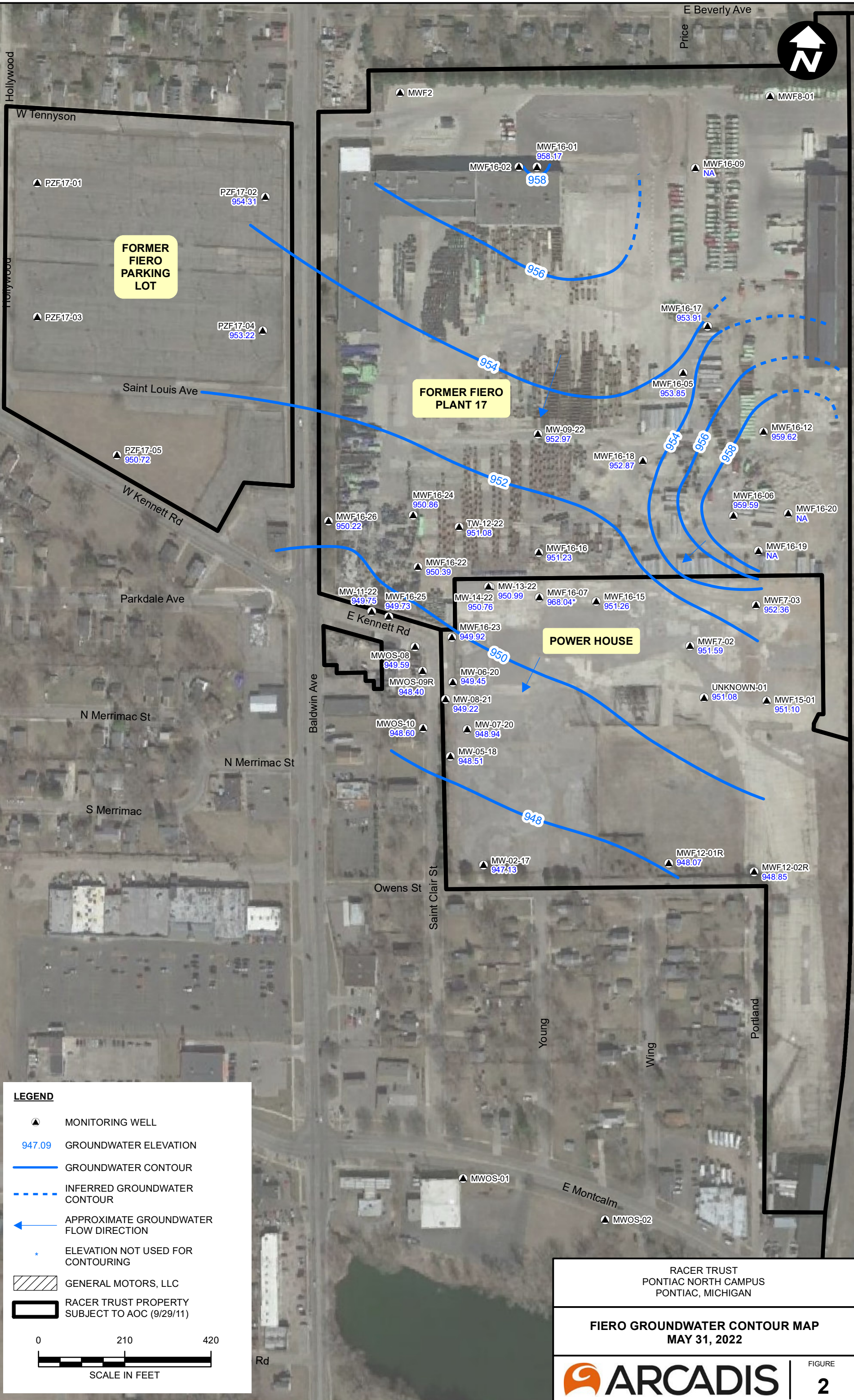


RACER TRUST  
PONTIAC NORTH CAMPUS  
PONTIAC, MICHIGAN

**2022 FIERO TEMPORARY MONITORING PLAN - 2Q MONITORING LOCATIONS**



CITY: NOVI, MI DIV: ENV DB: TRY PIC: PM: TR: PROJECT NUMBER: 30112891.00005 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl  
 D:\GIS\Project Files\MotorsLiquidation\Company\PontiacNorthCampus\Documents\Fioro Fiero Property\DataPackage 2022 2Q\FieroProperty\_GWE\_202205.mxd PLOTTED: 8/10/2022 3:47:57 PM BY: TYarborough



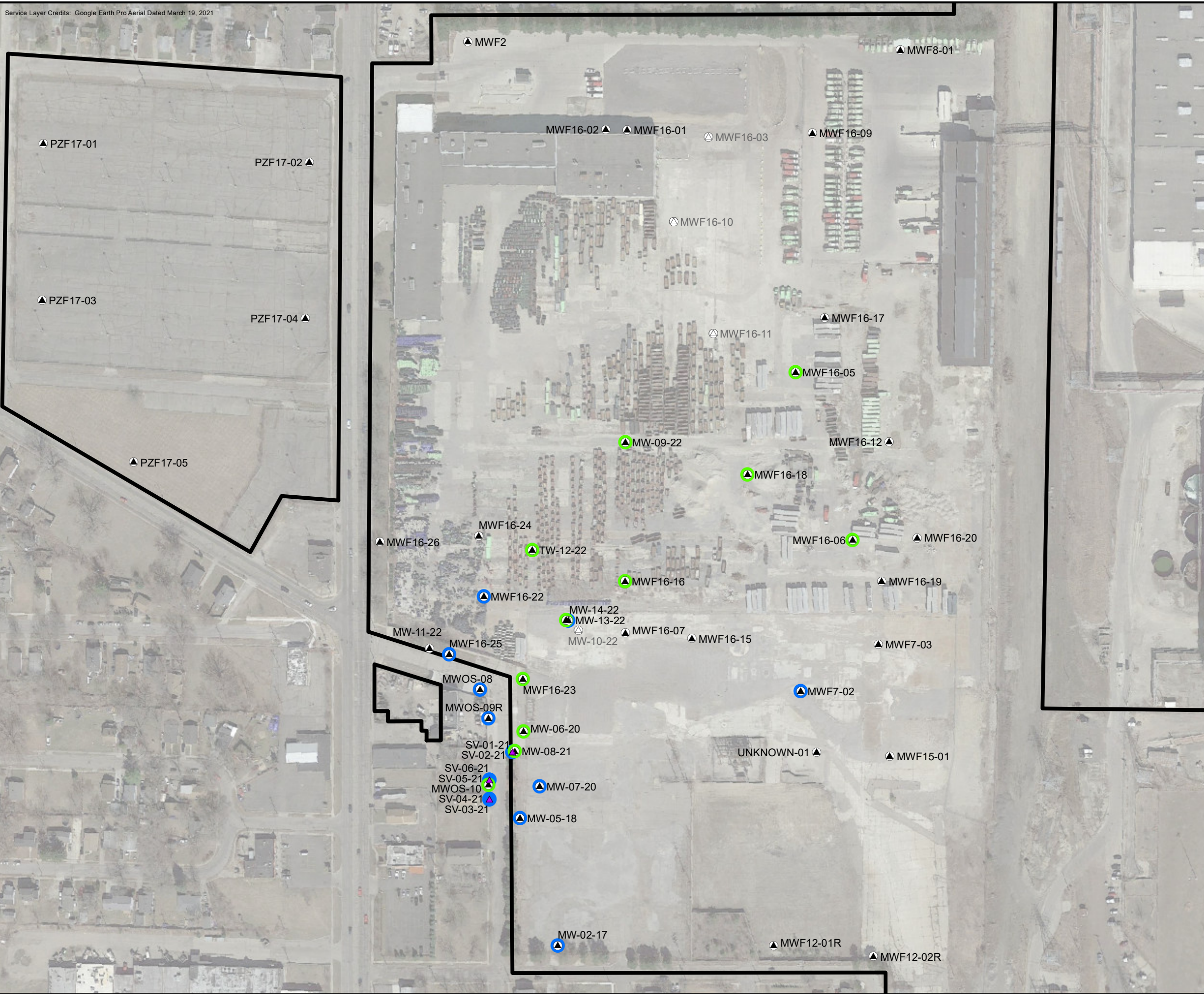
**LEGEND**

- ▲ MONITORING WELL
- 947.09 GROUNDWATER ELEVATION
- GROUNDWATER CONTOUR
- - - INFERRED GROUNDWATER CONTOUR
- ← APPROXIMATE GROUNDWATER FLOW DIRECTION
- \* ELEVATION NOT USED FOR CONTOURING
- ▨ GENERAL MOTORS, LLC
- ▭ RACER TRUST PROPERTY SUBJECT TO AOC (9/29/11)



RACER TRUST  
 PONTIAC NORTH CAMPUS  
 PONTIAC, MICHIGAN

**FIERO GROUNDWATER CONTOUR MAP**  
 MAY 31, 2022

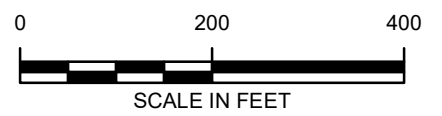


**LEGEND**

- ▲ EXISTING MONITORING WELL
- ▲ SOIL VAPOR MONITORING POINT
- △ ABANDONED MONITORING WELL
- EXCEEDS RESIDENTIAL SSVIAC
- DOES NOT EXCEED RESIDENTIAL SSVIAC
- ▭ CURRENT OR FORMER RACER PROPERTY

**NOTES:**

1. SSVIAC - SITE SPECIFIC VOLATILIZATION TO INDOOR AIR CRITERIA
2. GROUNDWATER AND SOIL GAS DATA DOES NOT EXCEED NONRESIDENTIAL SSVIAC.
3. CRITERIA FROM DEPARTMENT OF ENVIRONMENT, GREAT LAKES AND ENERGY (EGLE) DEVELOPED SITE-SPECIFIC VOLATILIZATION TO INDOOR AIR CRITERIA FOR THE FORMER FIERO ASSEMBLY, APRIL 21, 2020.



RACER TRUST  
PONTIAC NORTH CAMPUS  
PONTIAC, MICHIGAN

**SUMMARY OF GROUNDWATER  
AND SOIL GAS RESULTS JUNE 2022**



# Attachment 1

**Analytical Reports**



# Analytical Laboratory Report

Revised Report

Report ID: S36554.01(02)  
Generated on 06/24/2022  
Replaces report S36554.01(01) generated on 06/09/2022

Report to

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Report Summary

Lab Sample ID(s): S36554.01-S36554.08  
Project: 30112891.00005 / Racer PNC  
Collected Date(s): 05/31/2022 - 06/01/2022  
Submitted Date/Time: 06/01/2022 13:50  
Sampled by: Christina Weaver  
P.O. #: 30112891.00005

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Maya Murshak  
Technical Director



## General Report Notes

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Analytical results relate only to the samples tested, in the condition received by the laboratory.

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).

When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.

Full accreditation certificates are available upon request. Starred (\*) analytes are not NELAP accredited.

Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the

FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."

Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.

Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.

## Report Narrative

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VOC pH check result corrected.



Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched



## Method Summary

Method	Version
N/A	Not Applicable
SW5030C/8260C	SW 846 Method 8260C Revision 3 August 2006 / 5030C Revision 3 May 2003



## Sample Summary (8 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S36554.01	MW-07-20_GW-053122	Groundwater	05/31/22 13:10
S36554.02	MW-07-20_GW-053122_MS	Groundwater	05/31/22 13:10
S36554.03	MW-07-20_GW-053122_MSD	Groundwater	05/31/22 13:10
S36554.04	MW-06-20_GW-053122	Groundwater	05/31/22 14:35
S36554.05	Trip Blank	Water	05/31/22 00:01
S36554.06	MWF7-02_GW-060122	Groundwater	06/01/22 09:05
S36554.07	MWF16-25_GW-060122	Groundwater	06/01/22 10:10
S36554.08	MWOS-09R_GW-060122	Groundwater	06/01/22 11:05



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Lab Sample ID: S36554.01

Sample Tag: MW-07-20\_GW-053122

Collected Date/Time: 05/31/2022 13:10

Matrix: Groundwater

COC Reference: 138072

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	3.2	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/09/22 09:00	KAG	

### Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 03:08, Analyst: BML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	15	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	5	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	3	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	



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Lab Sample ID: S36554.01 (continued)

Sample Tag: MW-07-20\_GW-053122

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 03:08, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	8	1		ug/L	1	75-34-3	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	



# Analytical Laboratory Report

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Lab Sample ID: S36554.02

Sample Tag: MW-07-20\_GW-053122\_MS

Collected Date/Time: 05/31/2022 13:10

Matrix: Groundwater

COC Reference: 138072

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	3.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/09/22 09:00	KAG	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/08/22 23:58, Analyst: BML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	1
2-Butanone (MEK)	36	25		ug/L	1	78-93-3	1
Benzene	53	1		ug/L	1	71-43-2	1
Bromodichloromethane	49	1		ug/L	1	75-27-4	1
Bromoform	48	1		ug/L	1	75-25-2	1
Bromomethane	52	5		ug/L	1	74-83-9	1
Carbon disulfide	61	5		ug/L	1	75-15-0	1
Carbon tetrachloride	47	1		ug/L	1	56-23-5	1
Chlorobenzene	55	1		ug/L	1	108-90-7	1
Chloroethane	51	5		ug/L	1	75-00-3	1
Chloroform	52	1		ug/L	1	67-66-3	1
Chloromethane	52	5		ug/L	1	74-87-3	1
1,2-Dibromo-3-chloropropane	43	5		ug/L	1	96-12-8	1
1,2-Dichlorobenzene	54	1		ug/L	1	95-50-1	1
1,2-Dichloroethane	45	1		ug/L	1	107-06-2	1
1,2-Dichloropropane	52	1		ug/L	1	78-87-5	1
1,3-Dichlorobenzene	54	1		ug/L	1	541-73-1	1
1,4-Dichlorobenzene	54	1		ug/L	1	106-46-7	1
cis-1,2-Dichloroethene	69	1		ug/L	1	156-59-2	1
Dibromochloromethane	51	5		ug/L	1	124-48-1	1
Dichlorodifluoromethane	50	5		ug/L	1	75-71-8	1
trans-1,2-Dichloroethene	52	1		ug/L	1	156-60-5	1
Ethylbenzene	54	1		ug/L	1	100-41-4	1
2-Hexanone	Not detected	50		ug/L	1	591-78-6	1
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	1
tert-Methyl butyl ether (MTBE)	47	5		ug/L	1	1634-04-4	1
Methylene chloride	51	5		ug/L	1	75-09-2	1
Styrene	56	1		ug/L	1	100-42-5	1
1,1,1-Trichloroethane	52	1		ug/L	1	71-55-6	1
1,1,2-Trichloroethane	48	1		ug/L	1	79-00-5	1
1,2,4-Trichlorobenzene	56	5		ug/L	1	120-82-1	1
Tetrachloroethene	50	1		ug/L	1	127-18-4	1
Toluene	52	1		ug/L	1	108-88-3	1
Trichloroethene	53	1		ug/L	1	79-01-6	1
Trichlorofluoromethane	51	1		ug/L	1	75-69-4	1
Vinyl chloride	53	1		ug/L	1	75-01-4	1

1-Spiked at 50ug/L



Lab Sample ID: S36554.02 (continued)

Sample Tag: MW-07-20\_GW-053122\_MS

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/08/22 23:58, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
o-Xylene	55	1		ug/L	1	95-47-6	1
p,m-Xylene*	111	2		ug/L	1		1
Isopropylbenzene	55	1		ug/L	1	98-82-8	1
Cyclohexane	50	1		ug/L	1	110-82-7	1
1,1-Dichloroethane	59	1		ug/L	1	75-34-3	1
1,1-Dichloroethene	49	1		ug/L	1	75-35-4	1
Methyl Acetate	36	10		ug/L	1	79-20-9	1
Methyl cyclohexane	50	1		ug/L	1	108-87-2	1
1,1,2-Trichloro-1,2,2-trifluoroethane	49	1		ug/L	1	76-13-1	1
1,2-Dibromoethane	48	1		ug/L	1	106-93-4	1
1,1,2,2-Tetrachloroethane	48	1		ug/L	1	79-34-5	1
cis-1,3-Dichloropropene	49	1		ug/L	1	10061-01-5	1
trans-1,3-Dichloropropene	45	1		ug/L	1	10061-02-6	1

1-Spiked at 50ug/L



# Analytical Laboratory Report

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Lab Sample ID: S36554.03

Sample Tag: MW-07-20\_GW-053122\_MSD

Collected Date/Time: 05/31/2022 13:10

Matrix: Groundwater

COC Reference: 138072

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	3.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/09/22 09:00	KAG	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 00:22, Analyst: BML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	1
2-Butanone (MEK)	38	25		ug/L	1	78-93-3	1
Benzene	53	1		ug/L	1	71-43-2	1
Bromodichloromethane	50	1		ug/L	1	75-27-4	1
Bromoform	50	1		ug/L	1	75-25-2	1
Bromomethane	53	5		ug/L	1	74-83-9	1
Carbon disulfide	60	5		ug/L	1	75-15-0	1
Carbon tetrachloride	46	1		ug/L	1	56-23-5	1
Chlorobenzene	54	1		ug/L	1	108-90-7	1
Chloroethane	53	5		ug/L	1	75-00-3	1
Chloroform	52	1		ug/L	1	67-66-3	1
Chloromethane	51	5		ug/L	1	74-87-3	1
1,2-Dibromo-3-chloropropane	44	5		ug/L	1	96-12-8	1
1,2-Dichlorobenzene	54	1		ug/L	1	95-50-1	1
1,2-Dichloroethane	45	1		ug/L	1	107-06-2	1
1,2-Dichloropropane	52	1		ug/L	1	78-87-5	1
1,3-Dichlorobenzene	53	1		ug/L	1	541-73-1	1
1,4-Dichlorobenzene	53	1		ug/L	1	106-46-7	1
cis-1,2-Dichloroethene	69	1		ug/L	1	156-59-2	1
Dibromochloromethane	52	5		ug/L	1	124-48-1	1
Dichlorodifluoromethane	49	5		ug/L	1	75-71-8	1
trans-1,2-Dichloroethene	51	1		ug/L	1	156-60-5	1
Ethylbenzene	53	1		ug/L	1	100-41-4	1
2-Hexanone	Not detected	50		ug/L	1	591-78-6	1
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	1
tert-Methyl butyl ether (MTBE)	49	5		ug/L	1	1634-04-4	1
Methylene chloride	51	5		ug/L	1	75-09-2	1
Styrene	56	1		ug/L	1	100-42-5	1
1,1,1-Trichloroethane	51	1		ug/L	1	71-55-6	1
1,1,2-Trichloroethane	49	1		ug/L	1	79-00-5	1
1,2,4-Trichlorobenzene	54	5		ug/L	1	120-82-1	1
Tetrachloroethene	50	1		ug/L	1	127-18-4	1
Toluene	52	1		ug/L	1	108-88-3	1
Trichloroethene	54	1		ug/L	1	79-01-6	1
Trichlorofluoromethane	51	1		ug/L	1	75-69-4	1
Vinyl chloride	53	1		ug/L	1	75-01-4	1

1-Spiked at 50ug/L



Lab Sample ID: S36554.03 (continued)  
Sample Tag: MW-07-20\_GW-053122\_MSD

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 00:22, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
o-Xylene	54	1		ug/L	1	95-47-6	1
p,m-Xylene*	109	2		ug/L	1		1
Isopropylbenzene	54	1		ug/L	1	98-82-8	1
Cyclohexane	49	1		ug/L	1	110-82-7	1
1,1-Dichloroethane	59	1		ug/L	1	75-34-3	1
1,1-Dichloroethene	46	1		ug/L	1	75-35-4	1
Methyl Acetate	39	10		ug/L	1	79-20-9	1
Methyl cyclohexane	49	1		ug/L	1	108-87-2	1
1,1,2-Trichloro-1,2,2-trifluoroethane	46	1		ug/L	1	76-13-1	1
1,2-Dibromoethane	49	1		ug/L	1	106-93-4	1
1,1,2,2-Tetrachloroethane	50	1		ug/L	1	79-34-5	1
cis-1,3-Dichloropropene	50	1		ug/L	1	10061-01-5	1
trans-1,3-Dichloropropene	46	1		ug/L	1	10061-02-6	1

1-Spiked at 50ug/L



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Lab Sample ID: S36554.04

Sample Tag: MW-06-20\_GW-053122

Collected Date/Time: 05/31/2022 14:35

Matrix: Groundwater

COC Reference: 138072

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	3.2	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/09/22 09:00	KAG	

### Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 03:32, Analyst: BML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	7	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	3	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	9	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36554.04 (continued)

Sample Tag: MW-06-20\_GW-053122

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 03:32, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	7	1		ug/L	1	75-34-3	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36554.05

Sample Tag: Trip Blank

Collected Date/Time: 05/31/2022 00:01

Matrix: Water

COC Reference: 138072

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	3.2	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/09/22 10:00	BML	

### Organics - Volatiles

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 02:21, Analyst: BML**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	



Lab Sample ID: S36554.05 (continued)

Sample Tag: Trip Blank

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 02:21, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36554.06

Sample Tag: MWF7-02\_GW-060122

Collected Date/Time: 06/01/2022 09:05

Matrix: Groundwater

COC Reference: 138072

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	3.2	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/09/22 09:00	KAG	

### Organics - Volatiles

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 03:56, Analyst: BML**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	2	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	76	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	77	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	3	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36554.06 (continued)

Sample Tag: MWF7-02\_GW-060122

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 03:56, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	13	1		ug/L	1	75-34-3	
1,1-Dichloroethene	11	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36554.07

Sample Tag: MWF16-25\_GW-060122

Collected Date/Time: 06/01/2022 10:10

Matrix: Groundwater

COC Reference: 138072

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	3.2	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/09/22 09:00	KAG	

### Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 04:20, Analyst: BML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	3	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	35	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	2	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	3	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36554.07 (continued)

Sample Tag: MWF16-25\_GW-060122

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 04:20, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	5	1		ug/L	1	75-34-3	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36554.08

Sample Tag: MWOS-09R\_GW-060122

Collected Date/Time: 06/01/2022 11:05

Matrix: Groundwater

COC Reference: 138072

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	3.2	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/09/22 09:00	KAG	

### Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 04:44, Analyst: BML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	28	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	2	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	3	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	13	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	4	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	



Lab Sample ID: S36554.08 (continued)

Sample Tag: MWOS-09R\_GW-060122

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 04:44, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	5	1		ug/L	1	75-34-3	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	

# Merit Laboratories Login Checklist

Lab Set ID:S36554

Client:ARCADIS\_NOVI (ARCADIS U.S., Inc.)

Project: 30112891.00005 / Racer PNC

Submitted:06/01/2022 13:50 Login User: MMC

Attention: Alexis Crisp

Address: Arcadis US, Inc.  
28550 Cabot Drive  
Suite 500  
Novi, MI 48377

Phone: 810-225-1909 FAX:

Email: Alexis.Crisp@arcadis.com

Selection	Description	Note
<b>Sample Receiving</b>		
01.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Samples are received at 4C +/- 2C Thermometer # IR 3.2
02.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Received on ice/ cooling process begun
03.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples shipped
04.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples left in 24 hr. drop box
05.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Are there custody seals/tape or is the drop box locked
<b>Chain of Custody</b>		
06.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	COC adequately filled out
07.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	COC signed and relinquished to the lab
08.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sample tag on bottles match COC
09.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Subcontracting needed? Subcontracted to:
<b>Preservation</b>		
10.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Do sample have correct chemical preservation
11.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Completed pH checks on preserved samples? (no VOAs)
12.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Did any samples need to be preserved in the lab?
<b>Bottle Conditions</b>		
13.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	All bottles intact
14.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Appropriate analytical bottles are used
15.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Merit bottles used
16.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sufficient sample volume received
17.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples require laboratory filtration
18.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Samples submitted within holding time
19.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Do water VOC or TOX bottles contain headspace

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: \_\_\_\_\_ Date: \_\_\_\_\_



2680 East Lansing Dr., East Lansing, MI 48823  
 Phone (517) 332-0167 Fax (517) 332-4034  
 www.meritlabs.com

C.O.C. PAGE # 1 OF 1 138072

**REPORT TO**

**CHAIN OF CUSTODY RECORD**

**INVOICE TO**

CONTACT NAME **LEXI CRISP; TIFFANY LINDER**  
 COMPANY **ARCADIS**  
 ADDRESS **28550 CABOT DRIVE #500**  
 CITY **NOVI** STATE **MI** ZIP CODE **48377**  
 PHONE NO. **614-985-9163** FAX NO. **---** P.O. NO. **---**  
 E-MAIL ADDRESS **LEXI.CRISP@ARCADIS.COM; TIFFANY.LINDER@ARCADIS.COM** QUOTE NO. **---**

CONTACT NAME **ACCOUNTS PAYABLE**  SAME  
 COMPANY **ARCADIS**  
 ADDRESS **630 PLAZA DRIVE #600**  
 CITY **HIGHLANDS RANCH** STATE **CO** ZIP CODE **80129**  
 PHONE NO. **---** E-MAIL ADDRESS **ACCOUNTSPAYABLE.AMINISTRATION@ARCADIS.COM**

PROJECT NO./NAME **30112891.00005/RACER PUC** SAMPLER(S) - PLEASE PRINT/SIGN NAME **CHRISTINA WEAVER / *Chr W***  
 TURNAROUND TIME REQUIRED  1 DAY  2 DAYS  3 DAYS  STANDARD  OTHER \_\_\_\_\_  
 DELIVERABLES REQUIRED  STD  LEVEL II  LEVEL III  LEVEL IV  EDD  OTHER \_\_\_\_\_

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID  
 SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

# Containers & Preservatives

MATRIX	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	MeOH	OTHER	ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)	Certifications <input type="checkbox"/> OHIO VAP <input type="checkbox"/> Drinking Water <input type="checkbox"/> DoD <input type="checkbox"/> NPDES Project Locations <input type="checkbox"/> Detroit <input type="checkbox"/> New York <input type="checkbox"/> Other _____ Special Instructions
	5/31/22	1310	MW-07-20-GW-053122	GW	3		3						X	
	.02 5/31/22	1310	MW-07-20-GW-053122_MS	GW	3		3						X	RUN MS
	.03 5/31/22	1310	MW-07-20-GW-053122_USD	GW	3		3						X	RUN MSD
	.04 5/31/22	1435	MW-06-20-GW-053122	GW	3		3						X	
	.05 5/31/22	---	TRIP BLANK		1		1						X	TRIP BLANK
	.06 6/1/22	0905	MWF7-02-GW-060122	GW	3		3						X	
	.07 6/1/22	1010	MWF16-25-GW-060122	GW	3		3						X	
	.08 6/1/22	1105	MW05-09R-GW-060122	GW	3		3						X	

RELINQUISHED BY: *Chr W* / ARCADIS  Sampler DATE **6/1/22** TIME **11:00**  
 RECEIVED BY: *JW Miller* DATE **6/1/22** TIME **11:00**  
 RELINQUISHED BY: *JW Miller* DATE **6/1/22** TIME **1315**  
 RECEIVED BY: *M Gilbert* DATE **6/1/22** TIME **1350**

RELINQUISHED BY: \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_  
 RECEIVED BY: \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_  
 SEAL NO. SEAL INTACT YES  NO  INITIALS \_\_\_\_\_ NOTES: TEMP. ON ARRIVAL **3.2**  
 SEAL NO. SEAL INTACT YES  NO  INITIALS \_\_\_\_\_

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE



# Analytical Laboratory Report

Revised Report

Report ID: S36661.01(02)

Generated on 06/24/2022

Replaces report S36661.01(01) generated on 06/17/2022

Report to

Attention: Alexis Crisp

Arcadis US, Inc.

28550 Cabot Drive

Suite 500

Novi, MI 48377

Phone: 810-225-1909 FAX:

Email: Alexis.Crisp@arcadis.com

Additional Contacts: Tiffany Linder, Ian Drost

Report produced by

Merit Laboratories, Inc.

2680 East Lansing Drive

East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:

John Lavery (johnlavery@meritlabs.com)

Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S36661.01-S36661.20

Project: 30112891.00005 / Racer PNC

Collected Date(s): 05/31/2022 - 06/02/2022

Submitted Date/Time: 06/03/2022 13:10

Sampled by: Gary Schafer/Christine Weaver

P.O. #: 30112891.00005

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Maya Murshak

Technical Director



## General Report Notes

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Analytical results relate only to the samples tested, in the condition received by the laboratory.

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).

When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.

Full accreditation certificates are available upon request. Starred (\*) analytes are not NELAP accredited.

Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the

FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."

Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.

Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.

## Report Narrative

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VOC pH check result corrected.



## Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

## Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

## Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched



## Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
E300.0	EPA Method 300.0 Revision 2.1 (1993)
N/A	Not Applicable
RSK-175	RSK-175
SM5310C	Standard Method 5310C 2011
SW3015A	SW 846 Method 3015A Revision 1 February 2007
SW5030C/8260C	SW 846 Method 8260C Revision 3 August 2006 / 5030C Revision 3 May 2003



## Sample Summary (20 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S36661.01	MW-02-17-GW_053122	Groundwater	05/31/22 13:36
S36661.02	MW-05-18-GW_053122	Groundwater	05/31/22 14:46
S36661.03	Trip Blank	Water	06/01/22 00:01
S36661.04	MW-13-22-GW_060122	Groundwater	06/01/22 14:06
S36661.05	MW-14-22-GW_060122	Groundwater	06/01/22 15:21
S36661.06	MWF16-22-GW_060122	Groundwater	06/01/22 16:46
S36661.07	Trip Blank	Water	06/02/22 00:01
S36661.08	MWF16-05-GW_060222	Groundwater	06/02/22 10:21
S36661.09	MWF16-16-GW_060222	Groundwater	06/02/22 11:46
S36661.10	MWOS-08-GW_060222	Groundwater	06/02/22 13:31
S36661.11	MWOS-10-GW_060222	Groundwater	06/02/22 16:16
S36661.12	DUP-01-GW_060222	Groundwater	06/02/22 00:01
S36661.13	MW-08-21_GW_060122	Groundwater	06/01/22 13:35
S36661.14	MWF16-23_GW_060122	Groundwater	06/01/22 15:10
S36661.15	Trip Blank	Water	06/01/22 00:01
S36661.16	TW-12-22_GW-060222	Groundwater	06/02/22 10:00
S36661.17	MW-09-22_GW-060222	Groundwater	06/02/22 12:05
S36661.18	MWF16-06_GW-060222	Groundwater	06/02/22 13:05
S36661.19	MWF16-18_GW-060222	Groundwater	06/02/22 14:00
S36661.20	DUP-02_GW-060222	Groundwater	06/02/22 00:01



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.01

Sample Tag: MW-02-17-GW\_053122

Collected Date/Time: 05/31/2022 13:36

Matrix: Groundwater

COC Reference: 138070

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	3.6	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/10/22 09:00	BDO	

### Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 16:41, Analyst: BML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	3	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	5	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	



Lab Sample ID: S36661.01 (continued)

Sample Tag: MW-02-17-GW\_053122

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 16:41, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	2	1		ug/L	1	75-34-3	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.02

Sample Tag: MW-05-18-GW\_053122

Collected Date/Time: 05/31/2022 14:46

Matrix: Groundwater

COC Reference: 138070

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	3.6	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/10/22 09:00	BDO	

### Organics - Volatiles

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 17:05, Analyst: BML**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	8	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.02 (continued)

Sample Tag: MW-05-18-GW\_053122

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 17:05, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	5	1		ug/L	1	75-34-3	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.03

Sample Tag: Trip Blank

Collected Date/Time: 06/01/2022 00:01

Matrix: Water

COC Reference: 138070

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	3.6	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/10/22 09:00	BDO	

### Organics - Volatiles

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 15:31, Analyst: BML**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	



Lab Sample ID: S36661.03 (continued)

Sample Tag: Trip Blank

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 15:31, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.04

Sample Tag: MW-13-22-GW\_060122

Collected Date/Time: 06/01/2022 14:06

Matrix: Groundwater

COC Reference: 138070

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
6	40ml Glass	HCL	Yes	3.6	IR
2	125ml Plastic	HNO3	Yes	3.6	IR
1	250ml Plastic	None	Yes	3.6	IR
2	40ml Glass	H2SO4	Yes	3.6	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/10/22 09:00	BDO	
Metal Digestion	Completed	SW3015A	06/12/22 13:00	CCM	
Metal Digestion	Completed	SW3015A	06/12/22 13:30	CCM	

Inorganics

Method: E300.0, Run Date: 06/07/22 11:00, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	45	25	2.6	mg/L	25	14808-79-8	

Method: SM5310C, Run Date: 06/15/22 18:34, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	27.6	1		mg/L	1		

Metals

Method: E200.8, Run Date: 06/12/22 14:52, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron, Dissolved	22.5	0.02		mg/L	5	7439-89-6	

Method: E200.8, Run Date: 06/12/22 14:23, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	22.4	0.02		mg/L	5	7439-89-6	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 17:28, Analyst: BML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.04 (continued)

Sample Tag: MW-13-22-GW\_060122

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 17:28, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	

**Organics**

**Method: RSK-175, Run Date: 06/10/22 13:38, Analyst: TA**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dissolved Gases*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.



# Analytical Laboratory Report

Revised Report

**Lab Sample ID: S36661.05**

Sample Tag: MW-14-22-GW\_060122

Collected Date/Time: 06/01/2022 15:21

Matrix: Groundwater

COC Reference: 138070

**Sample Containers**

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
6	40ml Glass	HCL	Yes	3.6	IR
2	125ml Plastic	HNO3	Yes	3.6	IR
1	250ml Plastic	None	Yes	3.6	IR
2	40ml Glass	H2SO4	Yes	3.6	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/10/22 09:00	BDO	
Metal Digestion	Completed	SW3015A	06/12/22 13:00	CCM	
Metal Digestion	Completed	SW3015A	06/12/22 13:30	CCM	

**Inorganics**

**Method: E300.0, Run Date: 06/07/22 11:10, Analyst: JDP**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	57	25	2.6	mg/L	25	14808-79-8	

**Method: SM5310C, Run Date: 06/15/22 18:53, Analyst: JKB**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	3.5	1		mg/L	1		

**Metals**

**Method: E200.8, Run Date: 06/12/22 14:53, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron, Dissolved	0.04	0.02		mg/L	5	7439-89-6	

**Method: E200.8, Run Date: 06/12/22 14:26, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.12	0.02		mg/L	5	7439-89-6	

**Organics - Volatiles**

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 17:52, Analyst: BML**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	2	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.05 (continued)

Sample Tag: MW-14-22-GW\_060122

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 17:52, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	13	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	2	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	67	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	16	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	6	1		ug/L	1	75-34-3	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	

**Organics**

**Method: RSK-175, Run Date: 06/10/22 13:55, Analyst: TA**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dissolved Gases*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.06

Sample Tag: MWF16-22-GW\_060122

Collected Date/Time: 06/01/2022 16:46

Matrix: Groundwater

COC Reference: 138070

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
6	40ml Glass	HCL	Yes	3.6	IR
2	125ml Plastic	HNO3	Yes	3.6	IR
1	250ml Plastic	None	Yes	3.6	IR
2	40ml Glass	H2SO4	Yes	3.6	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/10/22 09:00	BDO	
Metal Digestion	Completed	SW3015A	06/12/22 13:00	CCM	
Metal Digestion	Completed	SW3015A	06/12/22 13:30	CCM	

**Inorganics**

**Method: E300.0, Run Date: 06/07/22 11:20, Analyst: JDP**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	52	25	2.6	mg/L	25	14808-79-8	

**Method: SM5310C, Run Date: 06/15/22 19:12, Analyst: JKB**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	3.3	1		mg/L	1		

**Metals**

**Method: E200.8, Run Date: 06/12/22 14:54, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron, Dissolved	0.03	0.02		mg/L	5	7439-89-6	

**Method: E200.8, Run Date: 06/12/22 14:27, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.24	0.02		mg/L	5	7439-89-6	

**Organics - Volatiles**

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 18:15, Analyst: BML**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.06 (continued)

Sample Tag: MWF16-22-GW\_060122

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 18:15, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	6	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	69	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	2	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	

**Organics**

**Method: RSK-175, Run Date: 06/10/22 14:12, Analyst: TA**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dissolved Gases*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.07

Sample Tag: Trip Blank

Collected Date/Time: 06/02/2022 00:01

Matrix: Water

COC Reference: 138070

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	3.6	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	>2	N/A	06/09/22 09:00	JKJ	

### Organics - Volatiles

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 15:55, Analyst: BML**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	



Lab Sample ID: S36661.07 (continued)

Sample Tag: Trip Blank

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 15:55, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.08

Sample Tag: MWF16-05-GW\_060222

Collected Date/Time: 06/02/2022 10:21

Matrix: Groundwater

COC Reference: 138070

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
6	40ml Glass	HCL	Yes	3.6	IR
2	125ml Plastic	HNO3	Yes	3.6	IR
1	250ml Plastic	None	Yes	3.6	IR
2	40ml Glass	H2SO4	Yes	3.6	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/10/22 09:00	BDO	
Metal Digestion	Completed	SW3015A	06/12/22 13:00	CCM	
Metal Digestion	Completed	SW3015A	06/12/22 13:30	CCM	

**Inorganics**

**Method: E300.0, Run Date: 06/07/22 11:30, Analyst: JDP**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	25	25	2.6	mg/L	25	14808-79-8	

**Method: SM5310C, Run Date: 06/15/22 19:31, Analyst: JKB**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	3.4	1		mg/L	1		

**Metals**

**Method: E200.8, Run Date: 06/12/22 14:55, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron, Dissolved	Not detected	0.02		mg/L	5	7439-89-6	

**Method: E200.8, Run Date: 06/12/22 14:29, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.11	0.02		mg/L	5	7439-89-6	

**Organics - Volatiles**

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/13/22 18:58, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	1,000		ug/L	20	67-64-1	Y
2-Butanone (MEK)	Not detected	500		ug/L	20	78-93-3	Y
Benzene	Not detected	20		ug/L	20	71-43-2	Y
Bromodichloromethane	Not detected	20		ug/L	20	75-27-4	Y
Bromoform	Not detected	20		ug/L	20	75-25-2	Y
Bromomethane	Not detected	100		ug/L	20	74-83-9	Y
Carbon disulfide	Not detected	100		ug/L	20	75-15-0	Y
Carbon tetrachloride	Not detected	20		ug/L	20	56-23-5	Y
Chlorobenzene	Not detected	20		ug/L	20	108-90-7	Y
Chloroethane	Not detected	100		ug/L	20	75-00-3	Y
Chloroform	Not detected	20		ug/L	20	67-66-3	Y
Chloromethane	Not detected	100		ug/L	20	74-87-3	Y
1,2-Dibromo-3-chloropropane	Not detected	100		ug/L	20	96-12-8	Y

Y-Elevated reporting limit due to high target concentration



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.08 (continued)

Sample Tag: MWF16-05-GW\_060222

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/13/22 18:58, Analyst: KAG (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dichlorobenzene	Not detected	20		ug/L	20	95-50-1	Y
1,2-Dichloroethane	Not detected	20		ug/L	20	107-06-2	Y
1,2-Dichloropropane	Not detected	20		ug/L	20	78-87-5	Y
1,3-Dichlorobenzene	Not detected	20		ug/L	20	541-73-1	Y
1,4-Dichlorobenzene	Not detected	20		ug/L	20	106-46-7	Y
cis-1,2-Dichloroethene	Not detected	20		ug/L	20	156-59-2	Y
Dibromochloromethane	Not detected	100		ug/L	20	124-48-1	Y
Dichlorodifluoromethane	Not detected	100		ug/L	20	75-71-8	Y
trans-1,2-Dichloroethene	Not detected	20		ug/L	20	156-60-5	Y
Ethylbenzene	Not detected	20		ug/L	20	100-41-4	Y
2-Hexanone	Not detected	1,000		ug/L	20	591-78-6	Y
4-Methyl-2-pentanone (MIBK)	Not detected	1,000		ug/L	20	108-10-1	Y
tert-Methyl butyl ether (MTBE)	Not detected	100		ug/L	20	1634-04-4	Y
Methylene chloride	Not detected	100		ug/L	20	75-09-2	Y
Styrene	Not detected	20		ug/L	20	100-42-5	Y
1,1,1-Trichloroethane	Not detected	20		ug/L	20	71-55-6	Y
1,1,2-Trichloroethane	Not detected	20		ug/L	20	79-00-5	Y
1,2,4-Trichlorobenzene	Not detected	100		ug/L	20	120-82-1	Y
Tetrachloroethene	420	20		ug/L	20	127-18-4	Y
Toluene	Not detected	20		ug/L	20	108-88-3	Y
Trichloroethene	Not detected	20		ug/L	20	79-01-6	Y
Trichlorofluoromethane	Not detected	20		ug/L	20	75-69-4	Y
Vinyl chloride	Not detected	20		ug/L	20	75-01-4	Y
o-Xylene	Not detected	20		ug/L	20	95-47-6	Y
p,m-Xylene*	Not detected	40		ug/L	20		Y
Isopropylbenzene	Not detected	20		ug/L	20	98-82-8	Y
Cyclohexane	Not detected	20		ug/L	20	110-82-7	Y
1,1-Dichloroethane	Not detected	20		ug/L	20	75-34-3	Y
1,1-Dichloroethene	Not detected	20		ug/L	20	75-35-4	Y
Methyl Acetate	Not detected	200		ug/L	20	79-20-9	Y
Methyl cyclohexane	Not detected	20		ug/L	20	108-87-2	Y
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	20		ug/L	20	76-13-1	Y
1,2-Dibromoethane	Not detected	20		ug/L	20	106-93-4	Y
1,1,2,2-Tetrachloroethane	Not detected	20		ug/L	20	79-34-5	Y
cis-1,3-Dichloropropene	Not detected	20		ug/L	20	10061-01-5	Y
trans-1,3-Dichloropropene	Not detected	20		ug/L	20	10061-02-6	Y

**Organics**

**Method: RSK-175, Run Date: 06/10/22 14:29, Analyst: TA**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dissolved Gases*	Completed				1		O

Y-Elevated reporting limit due to high target concentration

O-Analysis performed by outside laboratory. See attached report.



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.09

Sample Tag: MWF16-16-GW\_060222

Collected Date/Time: 06/02/2022 11:46

Matrix: Groundwater

COC Reference: 138070

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
6	40ml Glass	HCL	Yes	3.6	IR
2	125ml Plastic	HNO3	Yes	3.6	IR
1	250ml Plastic	None	Yes	3.6	IR
2	40ml Glass	H2SO4	Yes	3.6	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/13/22 09:30	KAG	
Metal Digestion	Completed	SW3015A	06/12/22 13:00	CCM	
Metal Digestion	Completed	SW3015A	06/12/22 13:30	CCM	

### Inorganics

Method: E300.0, Run Date: 06/07/22 11:40, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	42	25	2.6	mg/L	25	14808-79-8	

Method: SM5310C, Run Date: 06/15/22 19:50, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	3.5	1		mg/L	1		

### Metals

Method: E200.8, Run Date: 06/12/22 14:56, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron, Dissolved	0.02	0.02		mg/L	5	7439-89-6	

Method: E200.8, Run Date: 06/12/22 14:31, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.19	0.02		mg/L	5	7439-89-6	

### Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/13/22 19:21, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	1,000		ug/L	20	67-64-1	Y
2-Butanone (MEK)	Not detected	500		ug/L	20	78-93-3	Y
Benzene	Not detected	20		ug/L	20	71-43-2	Y
Bromodichloromethane	Not detected	20		ug/L	20	75-27-4	Y
Bromoform	Not detected	20		ug/L	20	75-25-2	Y
Bromomethane	Not detected	100		ug/L	20	74-83-9	Y
Carbon disulfide	Not detected	100		ug/L	20	75-15-0	Y
Carbon tetrachloride	Not detected	20		ug/L	20	56-23-5	Y
Chlorobenzene	Not detected	20		ug/L	20	108-90-7	Y
Chloroethane	Not detected	100		ug/L	20	75-00-3	Y
Chloroform	Not detected	20		ug/L	20	67-66-3	Y
Chloromethane	Not detected	100		ug/L	20	74-87-3	Y
1,2-Dibromo-3-chloropropane	Not detected	100		ug/L	20	96-12-8	Y

Y-Elevated reporting limit due to high target concentration



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.09 (continued)

Sample Tag: MWF16-16-GW\_060222

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/13/22 19:21, Analyst: KAG (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dichlorobenzene	Not detected	20		ug/L	20	95-50-1	Y
1,2-Dichloroethane	Not detected	20		ug/L	20	107-06-2	Y
1,2-Dichloropropane	Not detected	20		ug/L	20	78-87-5	Y
1,3-Dichlorobenzene	Not detected	20		ug/L	20	541-73-1	Y
1,4-Dichlorobenzene	Not detected	20		ug/L	20	106-46-7	Y
cis-1,2-Dichloroethene	20	20		ug/L	20	156-59-2	Y
Dibromochloromethane	Not detected	100		ug/L	20	124-48-1	Y
Dichlorodifluoromethane	Not detected	100		ug/L	20	75-71-8	Y
trans-1,2-Dichloroethene	Not detected	20		ug/L	20	156-60-5	Y
Ethylbenzene	Not detected	20		ug/L	20	100-41-4	Y
2-Hexanone	Not detected	1,000		ug/L	20	591-78-6	Y
4-Methyl-2-pentanone (MIBK)	Not detected	1,000		ug/L	20	108-10-1	Y
tert-Methyl butyl ether (MTBE)	Not detected	100		ug/L	20	1634-04-4	Y
Methylene chloride	Not detected	100		ug/L	20	75-09-2	Y
Styrene	Not detected	20		ug/L	20	100-42-5	Y
1,1,1-Trichloroethane	Not detected	20		ug/L	20	71-55-6	Y
1,1,2-Trichloroethane	Not detected	20		ug/L	20	79-00-5	Y
1,2,4-Trichlorobenzene	Not detected	100		ug/L	20	120-82-1	Y
Tetrachloroethene	340	20		ug/L	20	127-18-4	Y
Toluene	Not detected	20		ug/L	20	108-88-3	Y
Trichloroethene	Not detected	20		ug/L	20	79-01-6	Y
Trichlorofluoromethane	Not detected	20		ug/L	20	75-69-4	Y
Vinyl chloride	Not detected	20		ug/L	20	75-01-4	Y
o-Xylene	Not detected	20		ug/L	20	95-47-6	Y
p,m-Xylene*	Not detected	40		ug/L	20		Y
Isopropylbenzene	Not detected	20		ug/L	20	98-82-8	Y
Cyclohexane	Not detected	20		ug/L	20	110-82-7	Y
1,1-Dichloroethane	Not detected	20		ug/L	20	75-34-3	Y
1,1-Dichloroethene	Not detected	20		ug/L	20	75-35-4	Y
Methyl Acetate	Not detected	200		ug/L	20	79-20-9	Y
Methyl cyclohexane	Not detected	20		ug/L	20	108-87-2	Y
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	20		ug/L	20	76-13-1	Y
1,2-Dibromoethane	Not detected	20		ug/L	20	106-93-4	Y
1,1,2,2-Tetrachloroethane	Not detected	20		ug/L	20	79-34-5	Y
cis-1,3-Dichloropropene	Not detected	20		ug/L	20	10061-01-5	Y
trans-1,3-Dichloropropene	Not detected	20		ug/L	20	10061-02-6	Y

**Organics**

**Method: RSK-175, Run Date: 06/10/22 14:46, Analyst: TA**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dissolved Gases*	Completed				1		O

Y-Elevated reporting limit due to high target concentration

O-Analysis performed by outside laboratory. See attached report.



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.10

Sample Tag: MWOS-08-GW\_060222

Collected Date/Time: 06/02/2022 13:31

Matrix: Groundwater

COC Reference: 138070

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	3.6	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	>2	N/A	06/09/22 09:00	JKJ	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 19:26, Analyst: BML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	2	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	



Lab Sample ID: S36661.10 (continued)

Sample Tag: MWOS-08-GW\_060222

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 19:26, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.11

Sample Tag: MWOS-10-GW\_060222

Collected Date/Time: 06/02/2022 16:16

Matrix: Groundwater

COC Reference: 138070

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
6	40ml Glass	HCL	Yes	3.6	IR
2	125ml Plastic	HNO3	Yes	3.6	IR
1	250ml Plastic	None	Yes	3.6	IR
2	40ml Glass	H2SO4	Yes	3.6	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	>2	N/A	06/09/22 09:00	JKJ	
Metal Digestion	Completed	SW3015A	06/12/22 13:00	CCM	
Metal Digestion	Completed	SW3015A	06/12/22 13:30	CCM	

**Inorganics**

**Method: E300.0, Run Date: 06/07/22 11:50, Analyst: JDP**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	99	25	2.6	mg/L	25	14808-79-8	

**Method: SM5310C, Run Date: 06/15/22 20:09, Analyst: JKB**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	4.0	1		mg/L	1		

**Metals**

**Method: E200.8, Run Date: 06/12/22 14:57, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron, Dissolved	0.08	0.02		mg/L	5	7439-89-6	

**Method: E200.8, Run Date: 06/12/22 14:32, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.75	0.02		mg/L	5	7439-89-6	

**Organics - Volatiles**

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 19:50, Analyst: BML**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.11 (continued)

Sample Tag: MWOS-10-GW\_060222

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 19:50, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	7	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	9	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	6	1		ug/L	1	75-34-3	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	

**Organics**

**Method: RSK-175, Run Date: 06/10/22 15:03, Analyst: TA**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dissolved Gases*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.12

Sample Tag: DUP-01-GW\_060222

Collected Date/Time: 06/02/2022 00:01

Matrix: Groundwater

COC Reference: 138070

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
6	40ml Glass	HCL	Yes	3.6	IR
2	125ml Plastic	HNO3	Yes	3.6	IR
1	250ml Plastic	None	Yes	3.6	IR
2	40ml Glass	H2SO4	Yes	3.6	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/10/22 09:00	BDO	
Metal Digestion	Completed	SW3015A	06/12/22 13:00	CCM	
Metal Digestion	Completed	SW3015A	06/12/22 13:30	CCM	

**Inorganics**

**Method: E300.0, Run Date: 06/07/22 13:15, Analyst: JDP**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	41	10	1.0	mg/L	10	14808-79-8	

**Method: SM5310C, Run Date: 06/15/22 20:28, Analyst: JKB**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	3.6	1		mg/L	1		

**Metals**

**Method: E200.8, Run Date: 06/12/22 14:58, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron, Dissolved	Not detected	0.02		mg/L	5	7439-89-6	

**Method: E200.8, Run Date: 06/12/22 14:33, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	Not detected	0.02		mg/L	5	7439-89-6	

**Organics - Volatiles**

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/13/22 19:45, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	1,000		ug/L	20	67-64-1	Y
2-Butanone (MEK)	Not detected	500		ug/L	20	78-93-3	Y
Benzene	Not detected	20		ug/L	20	71-43-2	Y
Bromodichloromethane	Not detected	20		ug/L	20	75-27-4	Y
Bromoform	Not detected	20		ug/L	20	75-25-2	Y
Bromomethane	Not detected	100		ug/L	20	74-83-9	Y
Carbon disulfide	Not detected	100		ug/L	20	75-15-0	Y
Carbon tetrachloride	Not detected	20		ug/L	20	56-23-5	Y
Chlorobenzene	Not detected	20		ug/L	20	108-90-7	Y
Chloroethane	Not detected	100		ug/L	20	75-00-3	Y
Chloroform	Not detected	20		ug/L	20	67-66-3	Y
Chloromethane	Not detected	100		ug/L	20	74-87-3	Y
1,2-Dibromo-3-chloropropane	Not detected	100		ug/L	20	96-12-8	Y

Y-Elevated reporting limit due to high target concentration



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.12 (continued)

Sample Tag: DUP-01-GW\_060222

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/13/22 19:45, Analyst: KAG (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dichlorobenzene	Not detected	20		ug/L	20	95-50-1	Y
1,2-Dichloroethane	Not detected	20		ug/L	20	107-06-2	Y
1,2-Dichloropropane	Not detected	20		ug/L	20	78-87-5	Y
1,3-Dichlorobenzene	Not detected	20		ug/L	20	541-73-1	Y
1,4-Dichlorobenzene	Not detected	20		ug/L	20	106-46-7	Y
cis-1,2-Dichloroethene	20	20		ug/L	20	156-59-2	Y
Dibromochloromethane	Not detected	100		ug/L	20	124-48-1	Y
Dichlorodifluoromethane	Not detected	100		ug/L	20	75-71-8	Y
trans-1,2-Dichloroethene	Not detected	20		ug/L	20	156-60-5	Y
Ethylbenzene	Not detected	20		ug/L	20	100-41-4	Y
2-Hexanone	Not detected	1,000		ug/L	20	591-78-6	Y
4-Methyl-2-pentanone (MIBK)	Not detected	1,000		ug/L	20	108-10-1	Y
tert-Methyl butyl ether (MTBE)	Not detected	100		ug/L	20	1634-04-4	Y
Methylene chloride	Not detected	100		ug/L	20	75-09-2	Y
Styrene	Not detected	20		ug/L	20	100-42-5	Y
1,1,1-Trichloroethane	Not detected	20		ug/L	20	71-55-6	Y
1,1,2-Trichloroethane	Not detected	20		ug/L	20	79-00-5	Y
1,2,4-Trichlorobenzene	Not detected	100		ug/L	20	120-82-1	Y
Tetrachloroethene	330	20		ug/L	20	127-18-4	Y
Toluene	Not detected	20		ug/L	20	108-88-3	Y
Trichloroethene	Not detected	20		ug/L	20	79-01-6	Y
Trichlorofluoromethane	Not detected	20		ug/L	20	75-69-4	Y
Vinyl chloride	Not detected	20		ug/L	20	75-01-4	Y
o-Xylene	Not detected	20		ug/L	20	95-47-6	Y
p,m-Xylene*	Not detected	40		ug/L	20		Y
Isopropylbenzene	Not detected	20		ug/L	20	98-82-8	Y
Cyclohexane	Not detected	20		ug/L	20	110-82-7	Y
1,1-Dichloroethane	Not detected	20		ug/L	20	75-34-3	Y
1,1-Dichloroethene	Not detected	20		ug/L	20	75-35-4	Y
Methyl Acetate	Not detected	200		ug/L	20	79-20-9	Y
Methyl cyclohexane	Not detected	20		ug/L	20	108-87-2	Y
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	20		ug/L	20	76-13-1	Y
1,2-Dibromoethane	Not detected	20		ug/L	20	106-93-4	Y
1,1,2,2-Tetrachloroethane	Not detected	20		ug/L	20	79-34-5	Y
cis-1,3-Dichloropropene	Not detected	20		ug/L	20	10061-01-5	Y
trans-1,3-Dichloropropene	Not detected	20		ug/L	20	10061-02-6	Y

**Organics**

**Method: RSK-175, Run Date: 06/10/22 15:36, Analyst: TA**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dissolved Gases*	Completed				1		O

Y-Elevated reporting limit due to high target concentration

O-Analysis performed by outside laboratory. See attached report.



Lab Sample ID: S36661.13

Sample Tag: MW-08-21\_GW\_060122

Collected Date/Time: 06/01/2022 13:35

Matrix: Groundwater

COC Reference: 150911

Sample Containers

Table with 6 columns: #, Type, Preservative(s), Refrigerated?, Arrival Temp. (C), Thermometer #. Rows include 40ml Glass, 125ml Plastic, 250ml Plastic, and 40ml Glass with various preservatives and temperatures.

Extraction / Prep.

Table with 6 columns: Parameter, Result, Method, Run Date, Analyst, Flags. Rows include pH check for VOCs\*, Metal Digestion, and Metal Digestion.

Inorganics

Method: E300.0, Run Date: 06/07/22 13:27, Analyst: JDP

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row for Sulfate with result 153.

Method: SM5310C, Run Date: 06/15/22 20:47, Analyst: JKB

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row for TOC with result 4.4.

Metals

Method: E200.8, Run Date: 06/12/22 14:59, Analyst: CCM

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row for Iron, Dissolved with result Not detected.

Method: E200.8, Run Date: 06/12/22 14:33, Analyst: CCM

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row for Iron with result 0.03.

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 20:36, Analyst: BML

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Lists various organic compounds like Acetone, Benzene, Chlorobenzene, etc., with results mostly 'Not detected'.



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.13 (continued)

Sample Tag: MW-08-21\_GW\_060122

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 20:36, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	3	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	9	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	3	1		ug/L	1	75-34-3	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	

**Organics**

**Method: RSK-175, Run Date: 06/10/22 15:53, Analyst: TA**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dissolved Gases*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.



# Analytical Laboratory Report

Revised Report

**Lab Sample ID: S36661.14**

Sample Tag: MWF16-23\_GW\_060122

Collected Date/Time: 06/01/2022 15:10

Matrix: Groundwater

COC Reference: 150911

**Sample Containers**

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
6	40ml Glass	HCL	Yes	3.6	IR
2	125ml Plastic	HNO3	Yes	3.6	IR
1	250ml Plastic	None	Yes	3.6	IR
2	40ml Glass	H2SO4	Yes	3.6	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	>2	N/A	06/09/22 09:00	JKJ	
Metal Digestion	Completed	SW3015A	06/12/22 13:00	CCM	
Metal Digestion	Completed	SW3015A	06/12/22 13:30	CCM	

**Inorganics**

**Method: E300.0, Run Date: 06/07/22 13:38, Analyst: JDP**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	45	10	1.0	mg/L	10	14808-79-8	

**Method: SM5310C, Run Date: 06/15/22 21:07, Analyst: JKB**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	3.5	1		mg/L	1		

**Metals**

**Method: E200.8, Run Date: 06/12/22 15:00, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron, Dissolved	Not detected	0.02		mg/L	5	7439-89-6	

**Method: E200.8, Run Date: 06/12/22 14:34, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.29	0.02		mg/L	5	7439-89-6	

**Organics - Volatiles**

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 20:59, Analyst: BML**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.14 (continued)

Sample Tag: MWF16-23\_GW\_060122

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 20:59, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	5	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	2	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	16	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	5	1		ug/L	1	75-34-3	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	

**Organics**

**Method: RSK-175, Run Date: 06/10/22 16:10, Analyst: TA**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dissolved Gases*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.15

Sample Tag: Trip Blank

Collected Date/Time: 06/01/2022 00:01

Matrix: Water

COC Reference: 150911

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	3.6	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/10/22 09:00	BDO	

### Organics - Volatiles

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 16:18, Analyst: BML**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	



Lab Sample ID: S36661.15 (continued)

Sample Tag: Trip Blank

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 16:18, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	



# Analytical Laboratory Report

Revised Report

**Lab Sample ID: S36661.16**

Sample Tag: TW-12-22\_GW-060222

Collected Date/Time: 06/02/2022 10:00

Matrix: Groundwater

COC Reference: 150911

**Sample Containers**

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
6	40ml Glass	HCL	Yes	3.6	IR
2	125ml Plastic	HNO3	Yes	3.6	IR
1	250ml Plastic	None	Yes	3.6	IR
2	40ml Glass	H2SO4	Yes	3.6	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/10/22 09:00	BDO	
Metal Digestion	Completed	SW3015A	06/12/22 13:00	CCM	
Metal Digestion	Completed	SW3015A	06/12/22 13:30	CCM	

**Inorganics**

**Method: E300.0, Run Date: 06/07/22 13:48, Analyst: JDP**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	60	10	1.0	mg/L	10	14808-79-8	

**Method: SM5310C, Run Date: 06/15/22 21:26, Analyst: JKB**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	2.8	1		mg/L	1		

**Metals**

**Method: E200.8, Run Date: 06/12/22 15:00, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron, Dissolved	0.40	0.02		mg/L	5	7439-89-6	

**Method: E200.8, Run Date: 06/12/22 14:40, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.41	0.02		mg/L	5	7439-89-6	

**Organics - Volatiles**

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 21:23, Analyst: BML**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	7	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.16 (continued)

Sample Tag: TW-12-22\_GW-060222

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 21:23, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	85	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	3	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	7	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	9	1		ug/L	1	75-34-3	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	

**Organics**

**Method: RSK-175, Run Date: 06/10/22 16:27, Analyst: TA**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dissolved Gases*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.17

Sample Tag: MW-09-22\_GW-060222

Collected Date/Time: 06/02/2022 12:05

Matrix: Groundwater

COC Reference: 150911

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
6	40ml Glass	HCL	Yes	3.6	IR
2	125ml Plastic	HNO3	Yes	3.6	IR
1	250ml Plastic	None	Yes	3.6	IR
2	40ml Glass	H2SO4	Yes	3.6	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/10/22 09:00	BDO	
Metal Digestion	Completed	SW3015A	06/12/22 13:00	CCM	
Metal Digestion	Completed	SW3015A	06/12/22 13:30	CCM	

### Inorganics

Method: E300.0, Run Date: 06/07/22 13:58, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	39	10	1.0	mg/L	10	14808-79-8	

Method: SM5310C, Run Date: 06/16/22 12:50, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	3.6	1		mg/L	1		

### Metals

Method: E200.8, Run Date: 06/12/22 15:05, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron, Dissolved	0.02	0.02		mg/L	5	7439-89-6	

Method: E200.8, Run Date: 06/12/22 14:35, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.22	0.02		mg/L	5	7439-89-6	

### Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/13/22 20:08, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	500		ug/L	10	67-64-1	Y
2-Butanone (MEK)	Not detected	250		ug/L	10	78-93-3	Y
Benzene	Not detected	10		ug/L	10	71-43-2	Y
Bromodichloromethane	Not detected	10		ug/L	10	75-27-4	Y
Bromoform	Not detected	10		ug/L	10	75-25-2	Y
Bromomethane	Not detected	50		ug/L	10	74-83-9	Y
Carbon disulfide	Not detected	50		ug/L	10	75-15-0	Y
Carbon tetrachloride	Not detected	10		ug/L	10	56-23-5	Y
Chlorobenzene	Not detected	10		ug/L	10	108-90-7	Y
Chloroethane	Not detected	50		ug/L	10	75-00-3	Y
Chloroform	Not detected	10		ug/L	10	67-66-3	Y
Chloromethane	Not detected	50		ug/L	10	74-87-3	Y
1,2-Dibromo-3-chloropropane	Not detected	50		ug/L	10	96-12-8	Y

Y-Elevated reporting limit due to high target concentration



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.17 (continued)

Sample Tag: MW-09-22\_GW-060222

## Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/13/22 20:08, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dichlorobenzene	Not detected	10		ug/L	10	95-50-1	Y
1,2-Dichloroethane	Not detected	10		ug/L	10	107-06-2	Y
1,2-Dichloropropane	Not detected	10		ug/L	10	78-87-5	Y
1,3-Dichlorobenzene	Not detected	10		ug/L	10	541-73-1	Y
1,4-Dichlorobenzene	Not detected	10		ug/L	10	106-46-7	Y
cis-1,2-Dichloroethene	Not detected	10		ug/L	10	156-59-2	Y
Dibromochloromethane	Not detected	50		ug/L	10	124-48-1	Y
Dichlorodifluoromethane	Not detected	50		ug/L	10	75-71-8	Y
trans-1,2-Dichloroethene	Not detected	10		ug/L	10	156-60-5	Y
Ethylbenzene	Not detected	10		ug/L	10	100-41-4	Y
2-Hexanone	Not detected	500		ug/L	10	591-78-6	Y
4-Methyl-2-pentanone (MIBK)	Not detected	500		ug/L	10	108-10-1	Y
tert-Methyl butyl ether (MTBE)	Not detected	50		ug/L	10	1634-04-4	Y
Methylene chloride	Not detected	50		ug/L	10	75-09-2	Y
Styrene	Not detected	10		ug/L	10	100-42-5	Y
1,1,1-Trichloroethane	Not detected	10		ug/L	10	71-55-6	Y
1,1,2-Trichloroethane	Not detected	10		ug/L	10	79-00-5	Y
1,2,4-Trichlorobenzene	Not detected	50		ug/L	10	120-82-1	Y
Tetrachloroethene	150	10		ug/L	10	127-18-4	Y
Toluene	Not detected	10		ug/L	10	108-88-3	Y
Trichloroethene	Not detected	10		ug/L	10	79-01-6	Y
Trichlorofluoromethane	Not detected	10		ug/L	10	75-69-4	Y
Vinyl chloride	Not detected	10		ug/L	10	75-01-4	Y
o-Xylene	Not detected	10		ug/L	10	95-47-6	Y
p,m-Xylene*	Not detected	20		ug/L	10		Y
Isopropylbenzene	Not detected	10		ug/L	10	98-82-8	Y
Cyclohexane	Not detected	10		ug/L	10	110-82-7	Y
1,1-Dichloroethane	Not detected	10		ug/L	10	75-34-3	Y
1,1-Dichloroethene	Not detected	10		ug/L	10	75-35-4	Y
Methyl Acetate	Not detected	100		ug/L	10	79-20-9	Y
Methyl cyclohexane	Not detected	10		ug/L	10	108-87-2	Y
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	10		ug/L	10	76-13-1	Y
1,2-Dibromoethane	Not detected	10		ug/L	10	106-93-4	Y
1,1,2,2-Tetrachloroethane	Not detected	10		ug/L	10	79-34-5	Y
cis-1,3-Dichloropropene	Not detected	10		ug/L	10	10061-01-5	Y
trans-1,3-Dichloropropene	Not detected	10		ug/L	10	10061-02-6	Y

## Organics

### Method: RSK-175, Run Date: 06/10/22 16:44, Analyst: TA

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dissolved Gases*	Completed				1		O

Y-Elevated reporting limit due to high target concentration

O-Analysis performed by outside laboratory. See attached report.



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.18

Sample Tag: MWF16-06\_GW-060222

Collected Date/Time: 06/02/2022 13:05

Matrix: Groundwater

COC Reference: 150911

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
6	40ml Glass	HCL	Yes	3.6	IR
2	125ml Plastic	HNO3	Yes	3.6	IR
1	250ml Plastic	None	Yes	3.6	IR
2	40ml Glass	H2SO4	Yes	3.6	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/10/22 09:00	BDO	
Metal Digestion	Completed	SW3015A	06/12/22 13:00	CCM	
Metal Digestion	Completed	SW3015A	06/12/22 13:30	CCM	

### Inorganics

Method: E300.0, Run Date: 06/07/22 13:58, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	56	10	0.59	mg/L	10	14808-79-8	

Method: SM5310C, Run Date: 06/16/22 13:10, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	3.7	1		mg/L	1		

### Metals

Method: E200.8, Run Date: 06/12/22 15:06, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron, Dissolved	Not detected	0.02		mg/L	5	7439-89-6	

Method: E200.8, Run Date: 06/12/22 14:40, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.15	0.02		mg/L	5	7439-89-6	

### Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 22:09, Analyst: BML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Benzene	Not detected	1		ug/L	1	71-43-2	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Bromoform	Not detected	1		ug/L	1	75-25-2	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
Carbon tetrachloride	9	1		ug/L	1	56-23-5	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Chloroform	17	1		ug/L	1	67-66-3	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.18 (continued)

Sample Tag: MWF16-06\_GW-060222

## Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 22:09, Analyst: BML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dichloroethane	2	1		ug/L	1	107-06-2	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
cis-1,2-Dichloroethene	53	1		ug/L	1	156-59-2	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
trans-1,2-Dichloroethene	1	1		ug/L	1	156-60-5	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
Styrene	Not detected	1		ug/L	1	100-42-5	
1,1,1-Trichloroethane	134	1		ug/L	1	71-55-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
Tetrachloroethene	66	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	10	1		ug/L	1	79-01-6	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
o-Xylene	Not detected	1		ug/L	1	95-47-6	
p,m-Xylene*	Not detected	2		ug/L	1		
Isopropylbenzene	Not detected	1		ug/L	1	98-82-8	
Cyclohexane	Not detected	1		ug/L	1	110-82-7	
1,1-Dichloroethane	133	1		ug/L	1	75-34-3	
1,1-Dichloroethene	12	1		ug/L	1	75-35-4	
Methyl Acetate	Not detected	10		ug/L	1	79-20-9	
Methyl cyclohexane	Not detected	1		ug/L	1	108-87-2	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1		ug/L	1	76-13-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	

### Organics

#### Method: RSK-175, Run Date: 06/10/22 17:01, Analyst: TA

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dissolved Gases*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.



# Analytical Laboratory Report

Revised Report

**Lab Sample ID: S36661.19**

Sample Tag: MWF16-18\_GW-060222

Collected Date/Time: 06/02/2022 14:00

Matrix: Groundwater

COC Reference: 150911

**Sample Containers**

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
6	40ml Glass	HCL	Yes	3.6	IR
2	125ml Plastic	HNO3	Yes	3.6	IR
1	250ml Plastic	None	Yes	3.6	IR
2	40ml Glass	H2SO4	Yes	3.6	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/10/22 09:00	BDO	
Metal Digestion	Completed	SW3015A	06/12/22 13:00	CCM	
Metal Digestion	Completed	SW3015A	06/12/22 13:30	CCM	

**Inorganics**

**Method: E300.0, Run Date: 06/07/22 14:10, Analyst: JDP**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	79	10	0.59	mg/L	10	14808-79-8	

**Method: SM5310C, Run Date: 06/16/22 13:29, Analyst: JKB**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	9.4	1		mg/L	1		

**Metals**

**Method: E200.8, Run Date: 06/12/22 15:07, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron, Dissolved	Not detected	0.02		mg/L	5	7439-89-6	

**Method: E200.8, Run Date: 06/12/22 14:41, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	Not detected	0.02		mg/L	5	7439-89-6	

**Organics - Volatiles**

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 22:33, Analyst: BML**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	500		ug/L	10	67-64-1	Y
2-Butanone (MEK)	Not detected	250		ug/L	10	78-93-3	Y
Benzene	Not detected	10		ug/L	10	71-43-2	Y
Bromodichloromethane	Not detected	10		ug/L	10	75-27-4	Y
Bromoform	Not detected	10		ug/L	10	75-25-2	Y
Bromomethane	Not detected	50		ug/L	10	74-83-9	Y
Carbon disulfide	Not detected	50		ug/L	10	75-15-0	Y
Carbon tetrachloride	Not detected	10		ug/L	10	56-23-5	Y
Chlorobenzene	Not detected	10		ug/L	10	108-90-7	Y
Chloroethane	Not detected	50		ug/L	10	75-00-3	Y
Chloroform	Not detected	10		ug/L	10	67-66-3	Y
Chloromethane	Not detected	50		ug/L	10	74-87-3	Y
1,2-Dibromo-3-chloropropane	Not detected	50		ug/L	10	96-12-8	Y

Y-Elevated reporting limit due to high target concentration



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.19 (continued)

Sample Tag: MWF16-18\_GW-060222

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/09/22 22:33, Analyst: BML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dichlorobenzene	Not detected	10		ug/L	10	95-50-1	Y
1,2-Dichloroethane	Not detected	10		ug/L	10	107-06-2	Y
1,2-Dichloropropane	Not detected	10		ug/L	10	78-87-5	Y
1,3-Dichlorobenzene	Not detected	10		ug/L	10	541-73-1	Y
1,4-Dichlorobenzene	Not detected	10		ug/L	10	106-46-7	Y
cis-1,2-Dichloroethene	70	10		ug/L	10	156-59-2	Y
Dibromochloromethane	Not detected	50		ug/L	10	124-48-1	Y
Dichlorodifluoromethane	Not detected	50		ug/L	10	75-71-8	Y
trans-1,2-Dichloroethene	Not detected	10		ug/L	10	156-60-5	Y
Ethylbenzene	Not detected	10		ug/L	10	100-41-4	Y
2-Hexanone	Not detected	500		ug/L	10	591-78-6	Y
4-Methyl-2-pentanone (MIBK)	Not detected	500		ug/L	10	108-10-1	Y
tert-Methyl butyl ether (MTBE)	Not detected	50		ug/L	10	1634-04-4	Y
Methylene chloride	Not detected	50		ug/L	10	75-09-2	Y
Styrene	Not detected	10		ug/L	10	100-42-5	Y
1,1,1-Trichloroethane	Not detected	10		ug/L	10	71-55-6	Y
1,1,2-Trichloroethane	Not detected	10		ug/L	10	79-00-5	Y
1,2,4-Trichlorobenzene	Not detected	50		ug/L	10	120-82-1	Y
Tetrachloroethene	930	10		ug/L	10	127-18-4	Y
Toluene	Not detected	10		ug/L	10	108-88-3	Y
Trichloroethene	20	10		ug/L	10	79-01-6	Y
Trichlorofluoromethane	Not detected	10		ug/L	10	75-69-4	Y
Vinyl chloride	Not detected	10		ug/L	10	75-01-4	Y
o-Xylene	Not detected	10		ug/L	10	95-47-6	Y
p,m-Xylene*	Not detected	20		ug/L	10		Y
Isopropylbenzene	Not detected	10		ug/L	10	98-82-8	Y
Cyclohexane	Not detected	10		ug/L	10	110-82-7	Y
1,1-Dichloroethane	Not detected	10		ug/L	10	75-34-3	Y
1,1-Dichloroethene	Not detected	10		ug/L	10	75-35-4	Y
Methyl Acetate	Not detected	100		ug/L	10	79-20-9	Y
Methyl cyclohexane	Not detected	10		ug/L	10	108-87-2	Y
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	10		ug/L	10	76-13-1	Y
1,2-Dibromoethane	Not detected	10		ug/L	10	106-93-4	Y
1,1,2,2-Tetrachloroethane	Not detected	10		ug/L	10	79-34-5	Y
cis-1,3-Dichloropropene	Not detected	10		ug/L	10	10061-01-5	Y
trans-1,3-Dichloropropene	Not detected	10		ug/L	10	10061-02-6	Y

**Organics**

**Method: RSK-175, Run Date: 06/10/22 17:18, Analyst: TA**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dissolved Gases*	Completed				1		O

Y-Elevated reporting limit due to high target concentration

O-Analysis performed by outside laboratory. See attached report.



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.20

Sample Tag: DUP-02\_GW-060222

Collected Date/Time: 06/02/2022 00:01

Matrix: Groundwater

COC Reference: 150911

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
6	40ml Glass	HCL	Yes	3.6	IR
2	125ml Plastic	HNO3	Yes	3.6	IR
1	250ml Plastic	None	Yes	3.6	IR
2	40ml Glass	H2SO4	Yes	3.6	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/10/22 09:00	BDO	
Metal Digestion	Completed	SW3015A	06/12/22 13:00	CCM	
Metal Digestion	Completed	SW3015A	06/12/22 13:30	CCM	

Inorganics

Method: E300.0, Run Date: 06/07/22 14:23, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	79	10	0.59	mg/L	10	14808-79-8	

Method: SM5310C, Run Date: 06/16/22 13:48, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	9.3	1		mg/L	1		

Metals

Method: E200.8, Run Date: 06/12/22 15:08, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron, Dissolved	Not detected	0.02		mg/L	5	7439-89-6	

Method: E200.8, Run Date: 06/12/22 14:42, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	Not detected	0.02		mg/L	5	7439-89-6	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/14/22 14:42, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	500		ug/L	10	67-64-1	Y
2-Butanone (MEK)	Not detected	250		ug/L	10	78-93-3	Y
Benzene	Not detected	10		ug/L	10	71-43-2	Y
Bromodichloromethane	Not detected	10		ug/L	10	75-27-4	Y
Bromoform	Not detected	10		ug/L	10	75-25-2	Y
Bromomethane	Not detected	50		ug/L	10	74-83-9	Y
Carbon disulfide	Not detected	50		ug/L	10	75-15-0	Y
Carbon tetrachloride	Not detected	10		ug/L	10	56-23-5	Y
Chlorobenzene	Not detected	10		ug/L	10	108-90-7	Y
Chloroethane	Not detected	50		ug/L	10	75-00-3	Y
Chloroform	Not detected	10		ug/L	10	67-66-3	Y
Chloromethane	Not detected	50		ug/L	10	74-87-3	Y
1,2-Dibromo-3-chloropropane	Not detected	50		ug/L	10	96-12-8	Y

Y-Elevated reporting limit due to high target concentration



# Analytical Laboratory Report

Revised Report

Lab Sample ID: S36661.20 (continued)

Sample Tag: DUP-02\_GW-060222

**Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 06/14/22 14:42, Analyst: KAG (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dichlorobenzene	Not detected	10		ug/L	10	95-50-1	Y
1,2-Dichloroethane	Not detected	10		ug/L	10	107-06-2	Y
1,2-Dichloropropane	Not detected	10		ug/L	10	78-87-5	Y
1,3-Dichlorobenzene	Not detected	10		ug/L	10	541-73-1	Y
1,4-Dichlorobenzene	Not detected	10		ug/L	10	106-46-7	Y
cis-1,2-Dichloroethene	80	10		ug/L	10	156-59-2	Y
Dibromochloromethane	Not detected	50		ug/L	10	124-48-1	Y
Dichlorodifluoromethane	Not detected	50		ug/L	10	75-71-8	Y
trans-1,2-Dichloroethene	Not detected	10		ug/L	10	156-60-5	Y
Ethylbenzene	Not detected	10		ug/L	10	100-41-4	Y
2-Hexanone	Not detected	500		ug/L	10	591-78-6	Y
4-Methyl-2-pentanone (MIBK)	Not detected	500		ug/L	10	108-10-1	Y
tert-Methyl butyl ether (MTBE)	Not detected	50		ug/L	10	1634-04-4	Y
Methylene chloride	Not detected	50		ug/L	10	75-09-2	Y
Styrene	Not detected	10		ug/L	10	100-42-5	Y
1,1,1-Trichloroethane	Not detected	10		ug/L	10	71-55-6	Y
1,1,2-Trichloroethane	Not detected	10		ug/L	10	79-00-5	Y
1,2,4-Trichlorobenzene	Not detected	50		ug/L	10	120-82-1	Y
Tetrachloroethene	1,090	10		ug/L	10	127-18-4	Y
Toluene	Not detected	10		ug/L	10	108-88-3	Y
Trichloroethene	20	10		ug/L	10	79-01-6	Y
Trichlorofluoromethane	Not detected	10		ug/L	10	75-69-4	Y
Vinyl chloride	Not detected	10		ug/L	10	75-01-4	Y
o-Xylene	Not detected	10		ug/L	10	95-47-6	Y
p,m-Xylene*	Not detected	20		ug/L	10		Y
Isopropylbenzene	Not detected	10		ug/L	10	98-82-8	Y
Cyclohexane	Not detected	10		ug/L	10	110-82-7	Y
1,1-Dichloroethane	Not detected	10		ug/L	10	75-34-3	Y
1,1-Dichloroethene	Not detected	10		ug/L	10	75-35-4	Y
Methyl Acetate	Not detected	100		ug/L	10	79-20-9	Y
Methyl cyclohexane	Not detected	10		ug/L	10	108-87-2	Y
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	10		ug/L	10	76-13-1	Y
1,2-Dibromoethane	Not detected	10		ug/L	10	106-93-4	Y
1,1,2,2-Tetrachloroethane	Not detected	10		ug/L	10	79-34-5	Y
cis-1,3-Dichloropropene	Not detected	10		ug/L	10	10061-01-5	Y
trans-1,3-Dichloropropene	Not detected	10		ug/L	10	10061-02-6	Y

**Organics**

**Method: RSK-175, Run Date: 06/10/22 17:35, Analyst: TA**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dissolved Gases*	Completed				1		O

Y-Elevated reporting limit due to high target concentration

O-Analysis performed by outside laboratory. See attached report.

# Merit Laboratories Login Checklist

Lab Set ID:S36661

Client:ARCADIS\_NOVI (ARCADIS U.S., Inc.)

Project: 30112891.00005 / Racer PNC

Submitted:06/03/2022 13:10 Login User: PFD

Attention: Alexis Crisp

Address: Arcadis US, Inc.  
28550 Cabot Drive  
Suite 500  
Novi, MI 48377

Phone: 810-225-1909 FAX:

Email: Alexis.Crisp@arcadis.com

Selection	Description	Note
-----------	-------------	------

**Sample Receiving**

- |     |  |  |        |
|-----|--|--|--------|
| 01. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Samples are received at 4C +/- 2C Thermometer #        | IR 3.6 |
| 02. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Received on ice/ cooling process begun                 |        |
| 03. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples shipped  |        |
| 04. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples left in 24 hr. drop box                        |        |
| 05. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Are there custody seals/tape or is the drop box locked |        |

**Chain of Custody**

- |     |  |  |  |
|-----|--|--|--|
| 06. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | COC adequately filled out                |  |
| 07. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | COC signed and relinquished to the lab   |  |
| 08. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Sample tag on bottles match COC          |  |
| 09. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Subcontracting needed? Subcontracted to: |  |

**Preservation**

- |     |  |   |  |
|-----|--|---|--|
| 10. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Do sample have correct chemical preservation        |  |
| 11. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Completed pH checks on preserved samples? (no VOAs) |  |
| 12. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Did any samples need to be preserved in the lab?    |  |

**Bottle Conditions**

- |     |  |   |  |
|-----|--|---|--|
| 13. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | All bottles intact                            |  |
| 14. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Appropriate analytical bottles are used       |  |
| 15. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Merit bottles used                            |  |
| 16. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Sufficient sample volume received             |  |
| 17. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples require laboratory filtration         |  |
| 18. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Samples submitted within holding time         |  |
| 19. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Do water VOC or TOX bottles contain headspace |  |

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: \_\_\_\_\_ Date: \_\_\_\_\_

### Merit Laboratories Bottle Preservation Check

Lab Set ID: S36661      Submitted: 06/03/2022 13:10

Client: ARCADIS\_NOVI (ARCADIS U.S., Inc.)

Project: 30112891.00005 / Racer PNC

Initial Preservation Check: 06/03/2022 14:01 PFD

Preservation Recheck (E200.8): N/A

Attention: Alexis Crisp

Address: Arcadis US, Inc.  
28550 Cabot Drive  
Suite 500  
Novi, MI 48377

Phone: 810-225-1909

FAX:

Email: Alexis.Crisp@arcadis.com

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S36661.04	125ml Plastic HNO3	<2			
S36661.04	125ml Plastic HNO3	<2			
S36661.05	125ml Plastic HNO3	<2			
S36661.05	125ml Plastic HNO3	<2			
S36661.06	125ml Plastic HNO3	<2			
S36661.06	125ml Plastic HNO3	<2			
S36661.08	125ml Plastic HNO3	<2			
S36661.08	125ml Plastic HNO3	<2			
S36661.09	125ml Plastic HNO3	<2			
S36661.09	125ml Plastic HNO3	<2			
S36661.11	125ml Plastic HNO3	<2			
S36661.11	125ml Plastic HNO3	<2			
S36661.12	125ml Plastic HNO3	<2			
S36661.12	125ml Plastic HNO3	<2			
S36661.13	125ml Plastic HNO3	<2			
S36661.13	125ml Plastic HNO3	<2			
S36661.14	125ml Plastic HNO3	<2			
S36661.14	125ml Plastic HNO3	<2			
S36661.16	125ml Plastic HNO3	<2			
S36661.16	125ml Plastic HNO3	<2			
S36661.17	125ml Plastic HNO3	<2			
S36661.17	125ml Plastic HNO3	<2			
S36661.18	125ml Plastic HNO3	<2			
S36661.18	125ml Plastic HNO3	<2			
S36661.19	125ml Plastic HNO3	<2			
S36661.19	125ml Plastic HNO3	<2			
S36661.20	125ml Plastic HNO3	<2			
S36661.20	125ml Plastic HNO3	<2			



**REPORT TO**

**CHAIN OF CUSTODY RECORD**

**INVOICE TO**

CONTACT NAME: Lexi Crisp / Tiffany Linder  
 COMPANY: Arcadis  
 ADDRESS: 28550 Cabot Dr. Suite 500  
 CITY: Novi STATE: MI ZIP CODE: 48377  
 PHONE NO.: 614-985-9163 FAX NO.: \_\_\_\_\_ P.O. NO.: \_\_\_\_\_  
 E-MAIL ADDRESS: Lexi.Crisp@arcadis.com / Tiffany.Linder@arcadis.com QUOTE NO.: \_\_\_\_\_

CONTACT NAME: \_\_\_\_\_  SAME  
 COMPANY: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_  
 CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP CODE: \_\_\_\_\_  
 PHONE NO.: \_\_\_\_\_ E-MAIL ADDRESS: \_\_\_\_\_

**ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)**

PROJECT NO./NAME: 30112891.00005 / River PNC SAMPLER(S) - PLEASE PRINT/SIGN NAME: Gary Schaefer / Gary Schaefer  
 TURNAROUND TIME REQUIRED:  1 DAY  2 DAYS  3 DAYS  STANDARD  OTHER \_\_\_\_\_  
 DELIVERABLES REQUIRED:  STD  LEVEL II  LEVEL III  LEVEL IV  EDD  OTHER \_\_\_\_\_

Site Specific Vocs	Total Iron	Dissolved Iron Filtered	Sulfate	Dissolved Gases	Total Organic Carbon
--------------------	------------	-------------------------	---------	-----------------	----------------------

Certifications  
 OHIO VAP  Drinking Water  
 DoD  NPDES  
 Project Locations  
 Detroit  New York  
 Other \_\_\_\_\_  
 Special Instructions

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID  
 SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

# Containers & Preservatives

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	MeOH	OTHER	Site Specific Vocs	Total Iron	Dissolved Iron Filtered	Sulfate	Dissolved Gases	Total Organic Carbon			
	DATE	TIME																			
36661.01	5/31/22	1336	MW-02-17-GW-053122	GW	3		3						X								
02	5/31/22	1446	MW-05-18-GW-053122	GW	3		3						X								
03	6/1/22		Trip Blank										X								Trip Blank
04	6/1/22	14:06	MW-13-22-GW-060122	GW	11	1	6	2	2				X	X	X	X	X	X			
05	6/1/22	1521	MW-14-22-GW-060122	GW	11	1	6	2	2				X	X	X	X	X	X			
06	6/1/22	1604	MWF16-22-GW-060122	GW	11	1	6	2	2				X	X	X	X	X	X			
07	6/2/22		Trip Blank										X								Trip Blank
08	6/2/22	10:21	MWF16-05-GW-060222	GW	11	1	6	2	2				X	X	X	X	X	X			
09	6/2/22	1146	MWF16-16-GW-060222	GW	11	1	6	2	2				X	X	X	X	X	X			
10	6/2/22	1331	MW05-08-GW-060222	GW	3		3						X								
11	6/2/22	1616	MW05-10-GW-060222	GW	11	1	6	2	2				X	X	X	X	X	X			
12	6/2/22		DUP-01-GW-060222		11	1	6	2	2				X	X	X	X	X	X			

RELINQUISHED BY: Gary Schaefer  Sampler DATE: 6/03/22 TIME: 11:52  
 RECEIVED BY: J. Miller DATE: 6/3/22 TIME: 11:22  
 RELINQUISHED BY: J. Miller DATE: 6/3/22 TIME: 13:10  
 RECEIVED BY: Johnanna Murray DATE: 6/3/22 TIME: 1310

RELINQUISHED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_  
 RECEIVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_  
 SEAL NO. SEAL INTACT YES  NO  INITIALS \_\_\_\_\_  
 SEAL NO. SEAL INTACT YES  NO  INITIALS \_\_\_\_\_  
 NOTES: TEMP. ON ARRIVAL 3.6



2680 East Lansing Dr., East Lansing, MI 48823  
 Phone (517) 332-0167 Fax (517) 332-4034  
 www.meritlabs.com

C.O.C. PAGE # 1 OF 1 150911

**REPORT TO**

**CHAIN OF CUSTODY RECORD**

**INVOICE TO**

CONTACT NAME: LEXI CRISP ; TIFFANY LINDER  
 COMPANY: ARCAOIS  
 ADDRESS: 28550 CABOT DRIVE #500  
 CITY: NOVI STATE: MI ZIP CODE: 48377  
 PHONE NO.: 614-985-9163 CELL NO.: — P.O. NO.: —  
 E-MAIL ADDRESS: LEXI.CRISP@ARCAOIS.COM; TIFFANY.LINDER@ARCAOIS.COM QUOTE NO.: —

CONTACT NAME: ACCOUNTS PAYABLE  SAME  
 COMPANY: ARCAOIS  
 ADDRESS: 630 PLAZA DRIVE # 600  
 CITY: HIGHLANDS RANCH STATE: CO ZIP CODE: 80129  
 PHONE NO.: — E-MAIL ADDRESS: ACCOUNTSPAYABLE.ADMINISTRATION@ARCAOIS.COM

**ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)**

PROJECT NO./NAME: 30112891.00005 / RACER PNC SAMPLER(S) - PLEASE PRINT/SIGN NAME: CHRISTINA WEAVER  
 TURNAROUND TIME REQUIRED:  1 DAY  2 DAYS  3 DAYS  STANDARD  OTHER  
 DELIVERABLES REQUIRED:  STD  LEVEL II  LEVEL III  LEVEL IV  EDD  OTHER

MATRIX W=WATER GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID  
 CODE: SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIFE A=AIR WS=WASTE

# Containers & Preservatives  
 Certifications:  OHIO VAP  Drinking Water  DoD  NPDES  
 Project Locations:  Detroit  New York  Other  
 Special Instructions

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	COLLECTION		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	MeOH	OTHER	* SITE SPECIFIC VOCs	TOTAL IRON	DISSOLVED IRON (FIELD USE)	SULFATE	DISSOLVED GASES	TOTAL ORGANIC CARBON					
	DATE	TIME																					
<u>36661.13</u>	<u>6/1/22</u>	<u>1335</u>	<u>MW-08-21_GW-060122</u>	<u>GW</u>	<u>11</u>		<u>1</u>	<u>6</u>	<u>2</u>	<u>2</u>				<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>				
<u>.14</u>	<u>6/1/22</u>	<u>1510</u>	<u>MWF16-23_GW-060122</u>	<u>GW</u>	<u>11</u>		<u>1</u>	<u>6</u>	<u>2</u>	<u>2</u>				<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>					
<u>.15</u>	<u>6/1/22</u>	<u>—</u>	<u>TRIP BLANK</u>	<u>—</u>	<u>1</u>		<u>1</u>							<u>X</u>									<u>TRIP BLANK</u>
<u>.16</u>	<u>6/2/22</u>	<u>1000</u>	<u>TW-12-22_GW-060222</u>	<u>GW</u>	<u>11</u>		<u>1</u>	<u>6</u>	<u>2</u>	<u>2</u>				<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>					
<u>.17</u>	<u>6/2/22</u>	<u>1205</u>	<u>MW-09-22_GW-060222</u>	<u>GW</u>	<u>11</u>		<u>1</u>	<u>6</u>	<u>2</u>	<u>2</u>				<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>					
<u>.18</u>	<u>6/2/22</u>	<u>1305</u>	<u>MWF16-06_GW-060222</u>	<u>GW</u>	<u>11</u>		<u>1</u>	<u>6</u>	<u>2</u>	<u>2</u>				<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>					
<u>.19</u>	<u>6/2/22</u>	<u>1400</u>	<u>MWF16-18_GW-060222</u>	<u>GW</u>	<u>11</u>		<u>1</u>	<u>6</u>	<u>2</u>	<u>2</u>				<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>					
<u>.20</u>	<u>6/2/22</u>	<u>—</u>	<u>DUP-02_GW-060222</u>	<u>GW</u>	<u>11</u>		<u>1</u>	<u>6</u>	<u>2</u>	<u>2</u>				<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>					

RELINQUISHED BY: Christina Weaver / ARCAOIS  Sampler  
 SIGNATURE/ORGANIZATION: [Signature]  
 DATE: 6/2/22 TIME: 1700  
 RECEIVED BY: Gary Achaf  
 SIGNATURE/ORGANIZATION: [Signature]  
 DATE: 6/2/22 TIME: 1700  
 RELINQUISHED BY: Gary Achaf  
 SIGNATURE/ORGANIZATION: [Signature]  
 DATE: 6/3/22 TIME: 11:52  
 RECEIVED BY: [Signature]  
 SIGNATURE/ORGANIZATION: [Signature]  
 DATE: 6/3/22 TIME: 11:52

RELINQUISHED BY: [Signature]  
 SIGNATURE/ORGANIZATION: [Signature]  
 DATE: 6/3/22 TIME: 12:00  
 RECEIVED BY: [Signature]  
 SIGNATURE/ORGANIZATION: [Signature]  
 DATE: 6/3/22 TIME: 13:10  
 SEAL NO. SEAL INTACT YES  NO  INITIALS  
 SEAL NO. SEAL INTACT YES  NO  INITIALS  
 NOTES: TEMP. ON ARRIVAL 3.6

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

## ANALYTICAL REPORT

Eurofins Michigan  
10448 Citation Drive  
Suite 200  
Brighton, MI 48116  
Tel: (810)229-2763

Laboratory Job ID: 190-28889-1  
Client Project/Site: S36661/RSK

For:  
Merit Laboratories  
2680 E Lansing Drive  
East Lansing, Michigan 48823

Attn: Lab Results

*Sue Schafer*

---

Authorized for release by:  
6/16/2022 9:06:57 AM

Sue Schafer, Project Manager II  
(810)229-2763  
[Sue.Schafer@et.eurofinsus.com](mailto:Sue.Schafer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://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.

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# Sample Summary

Client: Merit Laboratories  
Project/Site: S36661/RSK

Job ID: 190-28889-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
190-28889-1	S36661.04	Water	06/01/22 14:06	06/08/22 09:02
190-28889-2	S36661.05	Water	06/01/22 15:21	06/08/22 09:02
190-28889-3	S36661.06	Water	06/01/22 16:46	06/08/22 09:02
190-28889-4	S36661.08	Water	06/02/22 10:21	06/08/22 09:02
190-28889-5	S36661.09	Water	06/02/22 11:46	06/08/22 09:02
190-28889-6	S36661.11	Water	06/02/22 16:16	06/08/22 09:02
190-28889-7	S36661.12	Water	06/02/22 00:01	06/08/22 09:02
190-28889-8	S36661.13	Water	06/02/22 13:35	06/08/22 09:02
190-28889-9	S36661.14	Water	06/02/22 15:10	06/08/22 09:02
190-28889-10	S36661.16	Water	06/02/22 10:00	06/08/22 09:02
190-28889-11	S36661.17	Water	06/02/22 12:05	06/08/22 09:02
190-28889-12	S36661.18	Water	06/02/22 13:05	06/08/22 09:02
190-28889-13	S36661.19	Water	06/02/22 14:00	06/08/22 09:02
190-28889-14	S36661.20	Water	06/02/22 00:01	06/08/22 09:02

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# Case Narrative

Client: Merit Laboratories  
Project/Site: S36661/RSK

Job ID: 190-28889-1

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**Job ID: 190-28889-1**

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**Laboratory: Eurofins Michigan**

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**Narrative**

**Job Narrative**  
**190-28889-1**

**Comments**

No additional comments.

**Receipt**

The samples were received on 6/8/2022 9:02 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 1.5° C.

**GC VOA**

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

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# Client Sample Results

Client: Merit Laboratories  
Project/Site: S36661/RSK

Job ID: 190-28889-1

**Client Sample ID: S36661.04**

**Lab Sample ID: 190-28889-1**

Date Collected: 06/01/22 14:06

Matrix: Water

Date Received: 06/08/22 09:02

**Method: RSK-175 - Dissolved Gases (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	<1.0		1.0	ug/L			06/10/22 13:38	1
Ethene	<1.0		1.0	ug/L			06/10/22 13:38	1
<b>Methane</b>	<b>540</b>		1.0	ug/L			06/10/22 13:38	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,1,1-Trifluoroethane	100		60 - 140				06/10/22 13:38	1

**Client Sample ID: S36661.05**

**Lab Sample ID: 190-28889-2**

Date Collected: 06/01/22 15:21

Matrix: Water

Date Received: 06/08/22 09:02

**Method: RSK-175 - Dissolved Gases (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	<1.0		1.0	ug/L			06/10/22 13:55	1
Ethene	<1.0		1.0	ug/L			06/10/22 13:55	1
Methane	<1.0		1.0	ug/L			06/10/22 13:55	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,1,1-Trifluoroethane	102		60 - 140				06/10/22 13:55	1

**Client Sample ID: S36661.06**

**Lab Sample ID: 190-28889-3**

Date Collected: 06/01/22 16:46

Matrix: Water

Date Received: 06/08/22 09:02

**Method: RSK-175 - Dissolved Gases (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	<1.0		1.0	ug/L			06/10/22 14:12	1
Ethene	<1.0		1.0	ug/L			06/10/22 14:12	1
Methane	<1.0		1.0	ug/L			06/10/22 14:12	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,1,1-Trifluoroethane	103		60 - 140				06/10/22 14:12	1

**Client Sample ID: S36661.08**

**Lab Sample ID: 190-28889-4**

Date Collected: 06/02/22 10:21

Matrix: Water

Date Received: 06/08/22 09:02

**Method: RSK-175 - Dissolved Gases (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	<1.0		1.0	ug/L			06/10/22 14:29	1
Ethene	<1.0		1.0	ug/L			06/10/22 14:29	1
Methane	<1.0		1.0	ug/L			06/10/22 14:29	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,1,1-Trifluoroethane	103		60 - 140				06/10/22 14:29	1

# Client Sample Results

Client: Merit Laboratories  
Project/Site: S36661/RSK

Job ID: 190-28889-1

**Client Sample ID: S36661.09**

**Lab Sample ID: 190-28889-5**

Date Collected: 06/02/22 11:46

Matrix: Water

Date Received: 06/08/22 09:02

**Method: RSK-175 - Dissolved Gases (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	<1.0		1.0	ug/L			06/10/22 14:46	1
Ethene	<1.0		1.0	ug/L			06/10/22 14:46	1
Methane	<1.0		1.0	ug/L			06/10/22 14:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	102		60 - 140				06/10/22 14:46	1

**Client Sample ID: S36661.11**

**Lab Sample ID: 190-28889-6**

Date Collected: 06/02/22 16:16

Matrix: Water

Date Received: 06/08/22 09:02

**Method: RSK-175 - Dissolved Gases (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	<1.0		1.0	ug/L			06/10/22 15:03	1
Ethene	<1.0		1.0	ug/L			06/10/22 15:03	1
Methane	<1.0		1.0	ug/L			06/10/22 15:03	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	101		60 - 140				06/10/22 15:03	1

**Client Sample ID: S36661.12**

**Lab Sample ID: 190-28889-7**

Date Collected: 06/02/22 00:01

Matrix: Water

Date Received: 06/08/22 09:02

**Method: RSK-175 - Dissolved Gases (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	<1.0		1.0	ug/L			06/10/22 15:36	1
Ethene	<1.0		1.0	ug/L			06/10/22 15:36	1
Methane	<1.0		1.0	ug/L			06/10/22 15:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	103		60 - 140				06/10/22 15:36	1

**Client Sample ID: S36661.13**

**Lab Sample ID: 190-28889-8**

Date Collected: 06/02/22 13:35

Matrix: Water

Date Received: 06/08/22 09:02

**Method: RSK-175 - Dissolved Gases (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	<1.0		1.0	ug/L			06/10/22 15:53	1
Ethene	<1.0		1.0	ug/L			06/10/22 15:53	1
Methane	<1.0		1.0	ug/L			06/10/22 15:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	103		60 - 140				06/10/22 15:53	1

# Client Sample Results

Client: Merit Laboratories  
Project/Site: S36661/RSK

Job ID: 190-28889-1

**Client Sample ID: S36661.14**

**Lab Sample ID: 190-28889-9**

Date Collected: 06/02/22 15:10

Matrix: Water

Date Received: 06/08/22 09:02

**Method: RSK-175 - Dissolved Gases (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	<1.0		1.0	ug/L			06/10/22 16:10	1
Ethene	<1.0		1.0	ug/L			06/10/22 16:10	1
Methane	<1.0		1.0	ug/L			06/10/22 16:10	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,1,1-Trifluoroethane	103		60 - 140				06/10/22 16:10	1

**Client Sample ID: S36661.16**

**Lab Sample ID: 190-28889-10**

Date Collected: 06/02/22 10:00

Matrix: Water

Date Received: 06/08/22 09:02

**Method: RSK-175 - Dissolved Gases (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	<1.0		1.0	ug/L			06/10/22 16:27	1
Ethene	<1.0		1.0	ug/L			06/10/22 16:27	1
Methane	<1.0		1.0	ug/L			06/10/22 16:27	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,1,1-Trifluoroethane	103		60 - 140				06/10/22 16:27	1

**Client Sample ID: S36661.17**

**Lab Sample ID: 190-28889-11**

Date Collected: 06/02/22 12:05

Matrix: Water

Date Received: 06/08/22 09:02

**Method: RSK-175 - Dissolved Gases (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	<1.0		1.0	ug/L			06/10/22 16:44	1
Ethene	<1.0		1.0	ug/L			06/10/22 16:44	1
<b>Methane</b>	<b>1.7</b>		1.0	ug/L			06/10/22 16:44	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,1,1-Trifluoroethane	102		60 - 140				06/10/22 16:44	1

**Client Sample ID: S36661.18**

**Lab Sample ID: 190-28889-12**

Date Collected: 06/02/22 13:05

Matrix: Water

Date Received: 06/08/22 09:02

**Method: RSK-175 - Dissolved Gases (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	<1.0		1.0	ug/L			06/10/22 17:01	1
Ethene	<1.0		1.0	ug/L			06/10/22 17:01	1
Methane	<1.0		1.0	ug/L			06/10/22 17:01	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,1,1-Trifluoroethane	102		60 - 140				06/10/22 17:01	1

# Client Sample Results

Client: Merit Laboratories  
 Project/Site: S36661/RSK

Job ID: 190-28889-1

**Client Sample ID: S36661.19**

**Lab Sample ID: 190-28889-13**

Date Collected: 06/02/22 14:00

Matrix: Water

Date Received: 06/08/22 09:02

**Method: RSK-175 - Dissolved Gases (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	<1.0		1.0	ug/L			06/10/22 17:18	1
Ethene	<1.0		1.0	ug/L			06/10/22 17:18	1
Methane	<1.0		1.0	ug/L			06/10/22 17:18	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	101		60 - 140				06/10/22 17:18	1

**Client Sample ID: S36661.20**

**Lab Sample ID: 190-28889-14**

Date Collected: 06/02/22 00:01

Matrix: Water

Date Received: 06/08/22 09:02

**Method: RSK-175 - Dissolved Gases (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	<1.0		1.0	ug/L			06/10/22 17:35	1
Ethene	<1.0		1.0	ug/L			06/10/22 17:35	1
Methane	<1.0		1.0	ug/L			06/10/22 17:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	101		60 - 140				06/10/22 17:35	1

# QC Sample Results

Client: Merit Laboratories  
Project/Site: S36661/RSK

Job ID: 190-28889-1

## Method: RSK-175 - Dissolved Gases (GC)

**Lab Sample ID: MB 240-530127/3**  
**Matrix: Water**  
**Analysis Batch: 530127**

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

Analyte	MB MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Ethane	<1.0		1.0	ug/L			06/10/22 11:23	1
Ethene	<1.0		1.0	ug/L			06/10/22 11:23	1
Methane	<1.0		1.0	ug/L			06/10/22 11:23	1
Surrogate	MB MB		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
1,1,1-Trifluoroethane	106		60 - 140				06/10/22 11:23	1

**Lab Sample ID: LCS 240-530127/4**  
**Matrix: Water**  
**Analysis Batch: 530127**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethene	506	539		ug/L		107	80 - 120
Methane	284	306		ug/L		108	80 - 120
Surrogate	LCS LCS		Limits			%Rec	Limits
	%Recovery	Qualifier					
1,1,1-Trifluoroethane	106		60 - 140				

# Definitions/Glossary

Client: Merit Laboratories  
Project/Site: S36661/RSK

Job ID: 190-28889-1

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

# QC Association Summary

Client: Merit Laboratories  
Project/Site: S36661/RSK

Job ID: 190-28889-1

## GC VOA

### Analysis Batch: 530127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
190-28889-1	S36661.04	Total/NA	Water	RSK-175	
190-28889-2	S36661.05	Total/NA	Water	RSK-175	
190-28889-3	S36661.06	Total/NA	Water	RSK-175	
190-28889-4	S36661.08	Total/NA	Water	RSK-175	
190-28889-5	S36661.09	Total/NA	Water	RSK-175	
190-28889-6	S36661.11	Total/NA	Water	RSK-175	
190-28889-7	S36661.12	Total/NA	Water	RSK-175	
190-28889-8	S36661.13	Total/NA	Water	RSK-175	
190-28889-9	S36661.14	Total/NA	Water	RSK-175	
190-28889-10	S36661.16	Total/NA	Water	RSK-175	
190-28889-11	S36661.17	Total/NA	Water	RSK-175	
190-28889-12	S36661.18	Total/NA	Water	RSK-175	
190-28889-13	S36661.19	Total/NA	Water	RSK-175	
190-28889-14	S36661.20	Total/NA	Water	RSK-175	
MB 240-530127/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-530127/4	Lab Control Sample	Total/NA	Water	RSK-175	

# Lab Chronicle

Client: Merit Laboratories  
Project/Site: S36661/RSK

Job ID: 190-28889-1

**Client Sample ID: S36661.04**

**Date Collected: 06/01/22 14:06**

**Date Received: 06/08/22 09:02**

**Lab Sample ID: 190-28889-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	530127	06/10/22 13:38	JBN	TAL CAN

**Client Sample ID: S36661.05**

**Date Collected: 06/01/22 15:21**

**Date Received: 06/08/22 09:02**

**Lab Sample ID: 190-28889-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	530127	06/10/22 13:55	JBN	TAL CAN

**Client Sample ID: S36661.06**

**Date Collected: 06/01/22 16:46**

**Date Received: 06/08/22 09:02**

**Lab Sample ID: 190-28889-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	530127	06/10/22 14:12	JBN	TAL CAN

**Client Sample ID: S36661.08**

**Date Collected: 06/02/22 10:21**

**Date Received: 06/08/22 09:02**

**Lab Sample ID: 190-28889-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	530127	06/10/22 14:29	JBN	TAL CAN

**Client Sample ID: S36661.09**

**Date Collected: 06/02/22 11:46**

**Date Received: 06/08/22 09:02**

**Lab Sample ID: 190-28889-5**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	530127	06/10/22 14:46	JBN	TAL CAN

**Client Sample ID: S36661.11**

**Date Collected: 06/02/22 16:16**

**Date Received: 06/08/22 09:02**

**Lab Sample ID: 190-28889-6**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	530127	06/10/22 15:03	JBN	TAL CAN

**Client Sample ID: S36661.12**

**Date Collected: 06/02/22 00:01**

**Date Received: 06/08/22 09:02**

**Lab Sample ID: 190-28889-7**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	530127	06/10/22 15:36	JBN	TAL CAN

# Lab Chronicle

Client: Merit Laboratories  
Project/Site: S36661/RSK

Job ID: 190-28889-1

**Client Sample ID: S36661.13**

**Date Collected: 06/02/22 13:35**

**Date Received: 06/08/22 09:02**

**Lab Sample ID: 190-28889-8**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	530127	06/10/22 15:53	JBN	TAL CAN

**Client Sample ID: S36661.14**

**Date Collected: 06/02/22 15:10**

**Date Received: 06/08/22 09:02**

**Lab Sample ID: 190-28889-9**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	530127	06/10/22 16:10	JBN	TAL CAN

**Client Sample ID: S36661.16**

**Date Collected: 06/02/22 10:00**

**Date Received: 06/08/22 09:02**

**Lab Sample ID: 190-28889-10**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	530127	06/10/22 16:27	JBN	TAL CAN

**Client Sample ID: S36661.17**

**Date Collected: 06/02/22 12:05**

**Date Received: 06/08/22 09:02**

**Lab Sample ID: 190-28889-11**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	530127	06/10/22 16:44	JBN	TAL CAN

**Client Sample ID: S36661.18**

**Date Collected: 06/02/22 13:05**

**Date Received: 06/08/22 09:02**

**Lab Sample ID: 190-28889-12**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	530127	06/10/22 17:01	JBN	TAL CAN

**Client Sample ID: S36661.19**

**Date Collected: 06/02/22 14:00**

**Date Received: 06/08/22 09:02**

**Lab Sample ID: 190-28889-13**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	530127	06/10/22 17:18	JBN	TAL CAN

**Client Sample ID: S36661.20**

**Date Collected: 06/02/22 00:01**

**Date Received: 06/08/22 09:02**

**Lab Sample ID: 190-28889-14**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	530127	06/10/22 17:35	JBN	TAL CAN

**Laboratory References:**

TAL CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Eurofins Michigan

# Lab Chronicle

Client: Merit Laboratories  
Project/Site: S36661/RSK

Job ID: 190-28889-1

**Analyst References:**

Lab: TAL CAN

Batch Type: Analysis

JBN = Jeffrey Nestor

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# Accreditation/Certification Summary

Client: Merit Laboratories  
Project/Site: S36661/RSK

Job ID: 190-28889-1

## Laboratory: Eurofins 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	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22 *
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-23-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-22-17	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

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

Eurofins Michigan

# Method Summary

Client: Merit Laboratories  
Project/Site: S36661/RSK

Job ID: 190-28889-1

Method	Method Description	Protocol	Laboratory
RSK-175	Dissolved Gases (GC)	RSK	TAL CAN

**Protocol References:**

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

**Laboratory References:**

TAL CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396





2680 East Lansing Dr., East Lansing, MI 48823  
 Phone (517) 332-0167 Fax (517) 332-4034  
 www.meritlabs.com

C.O.C. PAGE # 1 OF 2

**REPORT TO**

**CHAIN OF CUSTODY RECORD**

**INVOICE TO**

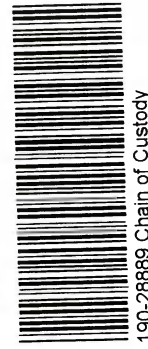
CONTACT NAME: Project Management Team  
 COMPANY: Merit Laboratories  
 ADDRESS: 2680 East Lansing Drive  
 CITY: East Lansing  
 STATE: MI  
 ZIP CODE: 48823  
 PHONE NO.: 517-332-0167  
 FAX NO.:  
 E-MAIL ADDRESS: results@meritlabs.com

CONTACT NAME: Julie Teague  
 COMPANY: Merit Laboratories  
 ADDRESS: 2680 East Lansing Drive  
 CITY: East Lansing  
 STATE: MI  
 ZIP CODE: 48823  
 PHONE NO.: 517-332-0167  
 FAX NO.:  
 E-MAIL ADDRESS: juliet@meritlabs.com

PROJECT NO./NAME: S36661  
 ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)  
 TURNAROUND TIME REQUIRED:  1 DAY  2 DAYS  3 DAYS  STANDARD  OTHER  
 DELIVERABLES REQUIRED:  STD  LEVEL II  LEVEL III  LEVEL IV  EDD  OTHER

MERT LAB NO. FOR LAB USE ONLY	YEAR	DATE	TIME	IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives							OTHER	
							H <sub>2</sub> O	HNO <sub>3</sub>	NaOH	MeOH	OTHER	H <sub>2</sub> O	HNO <sub>3</sub>		NaOH
	6/1/22	1406		S36661.04	GW	3									
	6/1/22	1521		S36661.05	GW	3									
	6/1/22	1646		S36661.06	GW	3									
	6/2/22	1021		S36661.08	GW	3									
	6/2/22	1146		S36661.09	GW	3									
	6/2/22	1616		S36661.11	GW	3									
	6/2/22	0001		S36661.12	GW	3									
	6/1/22	1335		S36661.13	GW	3									
	6/1/22	1510		S36661.14	GW	3									
	6/2/22	1000		S36661.16	GW	3									
	6/2/22	1205		S36661.17	GW	3									
	6/2/22	1305		S36661.18	GW	3									

RELINQUISHED BY: [Signature] DATE: 6/7/22 TIME: 1430  
 RECEIVED BY: [Signature] DATE: 6/7/22 TIME: 1540  
 SEAL NO.: [Signature] INITIALS: [Signature]  
 SEAL INFACT: YES  NO   
 SEAL INFACT: YES  NO   
 NOTES: 6/8/22 902an  
 TEMP. ON ARRIVAL: \_\_\_\_\_  
 DATE: 6/7/22 TIME: 1540  
 DATE: 6/7/22 TIME: 1540



PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE





Environment Testing  
TestAmerica

SDS or Known Hazard Information Supplied by Client  
 Discrepancies Client ID: Merit  
 Short Hold Work Oder #: 190-20809  
 Rush  24 Hr  2-Day  3-Day  5-Day  Other: \_\_\_\_\_  
Receipt Evaluation Performed by: Initials: TH Date: 6/8/22 Time: 9:02am

### Cooler / Sample Receipt

After hours receipt: complete gray areas. Place cooler in walk-in, place form in Receiving box. Date: \_\_\_\_\_ Time: \_\_\_\_\_

### Method of Shipment:

Walk-In Client Eurofins TA Field/Courier  
Other Client / 3<sup>rd</sup> Party Courier: \_\_\_\_\_  
Fed Ex Tracking #: \_\_\_\_\_  
UPS Tracking #: \_\_\_\_\_  
Other: \_\_\_\_\_

### Shipping Container Type:

Cooler  Box  
 None  Other: \_\_\_\_\_  
**Packing Materials:**  
 Plastic Bags  Foam  
 Bubble Wrap  Paper  
 Packing Peanuts  None  
 Other: \_\_\_\_\_

### Custody Seals Intact:

Yes  No  
 NA (not used or required)

### Cooling Materials:

Ice (Solid)  Ice (Melted)  
 Blue Ice  None  
 Other: \_\_\_\_\_

Bacteriological Samples	Temp Corrected (°C)	Frozen?		Rec'd Within 2 Hrs?		Sample Flagged?	
		Yes	No	Yes	No	Yes	No

Received on same day sampled? Yes  No

Additional Sheets Required? Yes  No

### Receipt Temperatures

Thermometer ID	Observed (°C)	Corrected (°C)	Temp Blank	Sample Temp	Acceptable	Cooler ID	Affected Samples
<u>CP313207</u>	<u>1.5</u>	<u>1.5</u>		<u>X</u>	<u>X</u> Y <u>  </u> N		
					<u>  </u> Y <u>  </u> N		
					<u>  </u> Y <u>  </u> N		

Receipt Questions**	Y	N	NA	"No" answers require additional comment
CoC present and ETA receipt signature, date, and time properly documented?	<input checked="" type="checkbox"/>			
Containers and Labels in good condition? (unbroken, not leaking, appropriately filled, labels legible & attached)	<input checked="" type="checkbox"/>			
Appropriate containers used and adequate volume provided?	<input checked="" type="checkbox"/>			Preserved bottles checked for pH?* Yes No
Number of sample containers match CoC?	<input checked="" type="checkbox"/>			pH strip lot # _____
Samples received within hold?	<input checked="" type="checkbox"/>			
Samples submitted for GRO and Volatiles analysis (8260, 624, 524) received without headspace?			<input checked="" type="checkbox"/>	
Was a Trip Blank received with VOA samples?			<input checked="" type="checkbox"/>	
Were the samples free of any questionable physical conformities? (i.e.; field duplicates or multiple bottles of the same sample do not significantly vary in appearance – color, solid proportions, etc.)	<input checked="" type="checkbox"/>			
Were the CoC bottle labels and all other items free of all other discrepancies or issues that would need to be addressed with the Project Manager and/or Client?	<input checked="" type="checkbox"/>			
**May not be applicable if samples are not for compliance testing				*Excludes FOG, VOAs, TOC Vials, HEM

### Client Contact Record

Contact Via:  Phone  Email  Other: \_\_\_\_\_ Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Discrepancy allowance agreement is on record in the client project file

Discussion / Resolution

Any additional documentation and clarification from the client must be noted in the narrative and/or scanned into the CoC directory.

Reviewed by Jeri Hal Date: 6/8/22

WI-MI-010\_020720

**Chain of Custody Record**



<b>Client Information (Sub Contract Lab)</b>		Sampler Schafer, Sue	Lab PM Schafer, Sue	Camera Tracking No(s)	COC No 190-32891.1
Shipping/Receiving		Phone	E-Mail Sue.Schafer@et.eurofins.com	State of Origin Michigan	Page Page 1 of 2
Company Eurofins Environment Testing North Central		Accreditations Required (See note)		Job # 190-28889-1	Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2OAS Q - NaZSO3 R - NaZSO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma L - EDA Other:
Address 180 S. Van Buren Avenue, City Barberton State, Zip OH, 44203 Phone 330-497-9396(Tel) 330-497-0772(Fax) Email		Due Date Requested: 6/21/2022 TAT Requested (days):		Analysis Requested	
PO #		Field Filtered Sample (Yes or No)		Total Number of Containers	
WO #		Perform MS/MSD (Yes or No)		RSK_175 (MOD) MEE Only	
Project # S36661/RSK		Sample Date		Sample Time	
Site		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=wastewater)	
SSOW#		Preservation Code		Special Instructions/Note: <i>RSK</i>	
<b>Sample Identification - Client ID (Lab ID)</b>		Sample Date		Sample Time	
S36661.04 (190-28889-1)		6/1/22		14:06 Eastern	
S36661.05 (190-28889-2)		6/1/22		15:21 Eastern	
S36661.06 (190-28889-3)		6/1/22		16:46 Eastern	
S36661.08 (190-28889-4)		6/2/22		10:21 Eastern	
S36661.09 (190-28889-5)		6/2/22		11:46 Eastern	
S36661.11 (190-28889-6)		6/2/22		16:16 Eastern	
S36661.12 (190-28889-7)		6/2/22		00:01 Eastern	
S36661.13 (190-28889-8)		6/2/22		13:35 Eastern	
S36661.14 (190-28889-9)		6/2/22		15:10 Eastern	
Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.					
<b>Possible Hazard Identification</b>					
Unconfirmed					
Deliverable Requested: I, II, III, IV, Other (specify)					
Empty Kit Relinquished by: _____ Date: _____ Time: _____ Method of Shipment: _____					
Relinquished by: <i>Luichal</i> Date/Time: <i>6/16/22 17:00</i> Company: <i>EETNC</i>					
Relinquished by: _____ Date/Time: _____ Company: _____					
Relinquished by: _____ Date/Time: _____ Company: _____					
Custody Seals Intact: _____ Custody Seal No.: _____ Δ Yes Δ No					
Cooler Temperature(s) °C and Other Remarks					

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:

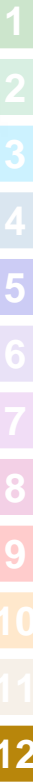
Primary Deliverable Rank: 2



# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Sampler: Lab PM		Camer Tracking No(s)		COC No	
Client Contact: Shipping/Receiving		Schafer, Sue		State of Origin		190-32891.2	
Company: Eurofins Environment Testing North Cent		E-Mail: Sue.Schafer@et.eurofins.com		Michigan		Page 2 of 2	
Address: 180 S. Van Buren Avenue, Barberton, OH, 44203		Due Date Requested: 6/21/2022		Accreditations Required (See note)		Job #: 190-28889-1	
Phone: 330-497-9396(Tel) 330-497-0772(Fax)		TAT Requested (days):		Analysis Requested		Preservation Codes:	
Email:		PO #		Field Filtered Sample (Yes or No)		A - HCL M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	
Project # S36661/RSK		WO #		Perform MS/MSD (Yes or No)		Other:	
Site		Project # 19001249		RSK_175/(MOD) MEE Only		Total Number of containers	
Site		SSOW#		Preservation Code:		Special Instructions/Note:	
<b>Sample Identification - Client ID (Lab ID)</b>		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)	
S36661.16 (190-28889-10)		6/2/22		10:00 Eastern		Water	
S36661.17 (190-28889-11)		6/2/22		12:05 Eastern		Water	
S36661.18 (190-28889-12)		6/2/22		13:05 Eastern		Water	
S36661.19 (190-28889-13)		6/2/22		14:00 Eastern		Water	
S36661.20 (190-28889-14)		6/2/22		00:01 Eastern		Water	
<p>Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte &amp; accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/analyte being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.</p>							
<b>Possible Hazard Identification</b>							
Unconfirmed							
Deliverable Requested: I, II, III, IV, Other (specify)							
Primary Deliverable Rank: 2							
Empty Kit Relinquished by: _____ Date: _____ Time: _____ Method of Shipment: _____							
Relinquished by: <i>Jeri Auld</i> Date/Time: 6/8/22 17:00 Company: _____							
Relinquished by: <i>Jeri Auld</i> Date/Time: 6-9-22 08:00 Company: CCETNC							
Relinquished by: _____ Date/Time: _____ Company: _____							
Custody Seals Intact: _____ Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks: _____							
<p>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</p> <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months							
Special Instructions/QC Requirements:							



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**Eurofins - Canton Sample Receipt Form/Narrative** Login # : \_\_\_\_\_  
**Barberton Facility**

Client Eurofins - Michigan Site Name \_\_\_\_\_ Cooler unpacked by: (JMP)  
Cooler Received on 6-9-22 Opened on 6-9-22  
FedEx: 1<sup>st</sup> Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other \_\_\_\_\_


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

Eurofins 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-13 (CF 0.0 °C) Observed Cooler Temp. 1.6 °C Corrected Cooler Temp. 1.6 °C  
IR GUN #IR-15 (CF -0.7°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 NA  
-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# HC178690  
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

Contacted PM \_\_\_\_\_ Date \_\_\_\_\_ by \_\_\_\_\_ via Verbal Voice Mail Other \_\_\_\_\_  
Concerning \_\_\_\_\_

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

**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: \_\_\_\_\_

6/17/2022

Ms. Lexi Crisp

Arcadis U.S., Inc.

100 E. Campus View Blvd

Suite 200

Columbus OH 43235

Project Name: RACER PNC

Project #: 30112891.00004

Workorder #: 2206233

Dear Ms. Lexi Crisp

The following report includes the data for the above referenced project for sample(s) received on 6/10/2022 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Jade White at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Jade White

Project Manager

**WORK ORDER #: 2206233**

Work Order Summary

<b>CLIENT:</b>	Ms. Lexi Crisp Arcadis U.S., Inc. 100 E. Campus View Blvd Suite 200 Columbus, OH 43235	<b>BILL TO:</b>	Accounts Payable Arcadis U.S., Inc. 630 Plaza Drive Suite 600 Highlands Ranch, CO 80129
<b>PHONE:</b>		<b>P.O. #</b>	30112891.00004
<b>FAX:</b>		<b>PROJECT #</b>	30112891.00004 RACER PNC
<b>DATE RECEIVED:</b>	06/10/2022	<b>CONTACT:</b>	Jade White
<b>DATE COMPLETED:</b>	06/17/2022		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SV-01-21_SG-060822	TO-15	6.3 "Hg	10 psi
02A	SV-06-21_SG-060822	TO-15	7.1 "Hg	9.8 psi
03A	SV-04-21_SG-060822	TO-15	7.6 "Hg	10 psi
04A	SV-05-21_SG-060822	TO-15	6.1 "Hg	9.9 psi
05A	SV-03-21_SG-060822	TO-15	6.1 "Hg	10.1 psi
06A	SV-02-21_SG-060822	TO-15	6.7 "Hg	9.9 psi
07A	DUP-01_SG-060822	TO-15	6.7 "Hg	10 psi
08A	Lab Blank	TO-15	NA	NA
09A	CCV	TO-15	NA	NA
10A	LCS	TO-15	NA	NA
10AA	LCSD	TO-15	NA	NA

CERTIFIED BY:   
 \_\_\_\_\_  
 Technical Director

DATE: 06/17/22

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP - 209221, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-21-17, UT NELAP – CA009332021-13, VA NELAP - 10615, WA NELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)  
 Accreditation number: CA300005-015, Effective date: 10/18/2021, Expiration date: 10/17/2022.

Eurofins Air Toxics, LLC certifies that the test results contained in this report meet all requirements of the NELAC standards

*This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC.*

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630  
 (916) 985-1000 . (800) 985-5955 . FAX (916) 351-8279

**LABORATORY NARRATIVE**  
**EPA Method TO-15**  
**Arcadis U.S., Inc.**  
**Workorder# 2206233**

Seven 1 Liter Summa Canister samples were received on June 10, 2022. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

**Receiving Notes**

**Analytical Notes**

There were no analytical discrepancies.

**Definition of Data Qualifying Flags**

Ten qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

**Summary of Detected Compounds  
EPA METHOD TO-15 GC/MS FULL SCAN**

**Client Sample ID: SV-01-21\_SG-060822**

**Lab ID#: 2206233-01A**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Trichloroethene	1.1	4.3	5.7	23
Tetrachloroethene	1.1	1.5	7.2	10

**Client Sample ID: SV-06-21\_SG-060822**

**Lab ID#: 2206233-02A**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Trichloroethene	1.1	2.7	5.8	14

**Client Sample ID: SV-04-21\_SG-060822**

**Lab ID#: 2206233-03A**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Trichloroethene	1.1	2.2	6.0	12

**Client Sample ID: SV-05-21\_SG-060822**

**Lab ID#: 2206233-04A**

No Detections Were Found.

**Client Sample ID: SV-03-21\_SG-060822**

**Lab ID#: 2206233-05A**

No Detections Were Found.

**Client Sample ID: SV-02-21\_SG-060822**

**Lab ID#: 2206233-06A**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Trichloroethene	1.1	10	5.8	55
Tetrachloroethene	1.1	1.2	7.3	8.2

**Summary of Detected Compounds**  
**EPA METHOD TO-15 GC/MS FULL SCAN**

**Client Sample ID: DUP-01\_SG-060822**

**Lab ID#: 2206233-07A**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Trichloroethene	1.1	11	5.8	57
Tetrachloroethene	1.1	1.8	7.3	12

Client Sample ID: SV-01-21\_SG-060822

Lab ID#: 2206233-01A

EPA METHOD TO-15 GC/MS FULL SCAN

<b>File Name:</b>	p061617	<b>Date of Collection:</b> 6/8/22 9:26:00 AM
<b>Dil. Factor:</b>	2.13	<b>Date of Analysis:</b> 6/16/22 08:40 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.7	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.2	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Trichloroethene	1.1	4.3	5.7	23
trans-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Tetrachloroethene	1.1	1.5	7.2	10

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	104	70-130



Air Toxics

Client Sample ID: SV-06-21\_SG-060822

Lab ID#: 2206233-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p061618	Date of Collection:	6/8/22 10:03:00 AM
Dil. Factor:	2.18	Date of Analysis:	6/16/22 09:10 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.8	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.3	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Trichloroethene	1.1	2.7	5.8	14
trans-1,2-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Tetrachloroethene	1.1	Not Detected	7.4	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	108	70-130



Air Toxics

Client Sample ID: SV-04-21\_SG-060822

Lab ID#: 2206233-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p061619	Date of Collection:	6/8/22 10:23:00 AM
Dil. Factor:	2.25	Date of Analysis:	6/16/22 09:39 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.5	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Trichloroethene	1.1	2.2	6.0	12
trans-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Tetrachloroethene	1.1	Not Detected	7.6	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	107	70-130
4-Bromofluorobenzene	109	70-130



Air Toxics

Client Sample ID: SV-05-21\_SG-060822

Lab ID#: 2206233-04A

EPA METHOD TO-15 GC/MS FULL SCAN

<b>File Name:</b>	p061620	<b>Date of Collection:</b> 6/8/22 10:44:00 AM
<b>Dil. Factor:</b>	2.10	<b>Date of Analysis:</b> 6/16/22 10:09 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.7	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.2	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.2	Not Detected
Trichloroethene	1.0	Not Detected	5.6	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.2	Not Detected
Tetrachloroethene	1.0	Not Detected	7.1	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	108	70-130
4-Bromofluorobenzene	108	70-130



Air Toxics

Client Sample ID: SV-03-21\_SG-060822

Lab ID#: 2206233-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p061621	Date of Collection:	6/8/22 11:03:00 AM
Dil. Factor:	2.12	Date of Analysis:	6/16/22 10:38 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.7	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.2	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Trichloroethene	1.1	Not Detected	5.7	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Tetrachloroethene	1.1	Not Detected	7.2	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	107	70-130
4-Bromofluorobenzene	109	70-130



Air Toxics

Client Sample ID: SV-02-21\_SG-060822

Lab ID#: 2206233-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p061622	Date of Collection:	6/8/22 11:28:00 AM
Dil. Factor:	2.15	Date of Analysis:	6/16/22 11:08 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.7	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.3	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Trichloroethene	1.1	10	5.8	55
trans-1,2-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Tetrachloroethene	1.1	1.2	7.3	8.2

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	107	70-130

Client Sample ID: DUP-01\_SG-060822

Lab ID#: 2206233-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p061623	Date of Collection:	6/8/22
Dil. Factor:	2.16	Date of Analysis:	6/16/22 11:37 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.8	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.3	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Trichloroethene	1.1	11	5.8	57
trans-1,2-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Tetrachloroethene	1.1	1.8	7.3	12

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	111	70-130

Client Sample ID: Lab Blank

Lab ID#: 2206233-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p061605c	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	6/16/22 11:37 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: CCV

Lab ID#: 2206233-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p061602	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/16/22 09:46 AM

Compound	%Recovery
Vinyl Chloride	88
1,1-Dichloroethene	91
cis-1,2-Dichloroethene	104
Trichloroethene	100
trans-1,2-Dichloroethene	95
Tetrachloroethene	112

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	106	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: LCS

Lab ID#: 2206233-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p061603	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/16/22 10:14 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	95	70-130
1,1-Dichloroethene	101	70-130
cis-1,2-Dichloroethene	111	70-130
Trichloroethene	103	70-130
trans-1,2-Dichloroethene	106	70-130
Tetrachloroethene	119	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	108	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: LCSD

Lab ID#: 2206233-10AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p061604	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/16/22 10:43 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	95	70-130
1,1-Dichloroethene	103	70-130
cis-1,2-Dichloroethene	113	70-130
Trichloroethene	105	70-130
trans-1,2-Dichloroethene	105	70-130
Tetrachloroethene	116	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	102	70-130