

SUBJECT
Fiero Temporary Monitoring Plan
First Quarter Results

TO
Peter Ramanauskas, USEPA

DATE
May 20, 2022

PROJECT NUMBER
30112891

COPIES TO
File

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This memorandum summarizes the results of first quarter (1Q) 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). The monitoring locations included in the 1Q event are shown on **Figure 1**.

On March 21, 2022, Arcadis began monitoring activities by gauging Site monitoring wells. Following the gauging event SVMPs and monitoring wells were sampled for site-specific volatile organic compounds (VOCs) over a 5-day period. 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 south to southwest consistent with previous submittals. A groundwater mound was noted on the east side of the Site consistent with the discussion outlined as part of the *Draft 2021-2022 Fiero Site Investigation Summary* dated April 27, 2022. As previously reported and discussed in the April 8, 2022 *Proposed Fiero Well Abandonment*, MWF16-09 is damaged and therefore was not included in the gauging event.

Groundwater Analytical Summary

As part of the event samples from 30 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.
- None of the off-site monitoring well samples exceeded the residential SSVIAC.
- 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.

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.
- Current results indicate that there is no off-site exposure from vapor intrusion from exceedances of soil vapor criteria.

Closing

The results from this monitoring event do not alter the summary and next steps identified in the *Draft 2021-2022 Fiero Site Investigation Summary* dated April 27, 2022. In addition, except for replacing gauging of MWF16-09 with MWF8-01, no modifications to the approved FTMP are recommended. The next monitoring event as part of the FTMP is currently scheduled to take place from May 31st through June 3rd. For any questions or concerns related to the 1Q FTMP results please do not hesitate to contact Tiffany Linder by phone at 810-225-1928 or by email at Tiffany.Linder@arcadis.com.

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 1Q Monitoring Locations

Figure 2 – Fiero Groundwater Contour Map March 21, 2022

Figure 3 – Summary of Groundwater and Soil Gas Results March 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 ¹	Total Depth (ft)	Date	Depth to Water (ft) ²	Groundwater Elevation
Former Fiero Powerhouse						
MW-02-17	973.53	972.52	29.72	3/21/2022	25.43	947.09
MW-05-18	976.03	975.21	33.61	3/21/2022	26.75	948.46
MW-06-20	975.54	974.97	29.24	3/21/2022	25.55	949.42
MW-07-20	975.48	975.06	30.20	3/21/2022	26.15	948.91
MW-08-21	976.04	975.50	30.28	3/21/2022	26.32	949.18
MW-13-22	973.17	972.62	26.72	3/21/2022	21.59	951.03
MW-14-22	973.21	972.71	34.66	3/21/2022	22.00	950.71
MWF7-02	NA	970.58	23.12	3/21/2022	19.10	951.48
MWF7-03	973.63	973.31	32.52	3/21/2022	21.00	952.31
MWF12-01R	964.97	967.99	23.23	3/21/2022	19.97	948.02
MWF12-02R	962.38	961.91	22.50	3/21/2022	13.08	948.83
MWF15-01	NA	969.35	28.78	3/21/2022	18.32	951.03
MWF16-07	973.36	972.65	17.45	3/21/2022	5.18	967.47
MWF16-15	973.30	972.71	35.47	3/21/2022	21.50	951.21
MWF16-23	973.82	973.39	30.45	3/21/2022	23.51	949.88
TW-12-22	973.52	973.39	32.70	3/21/2022	22.42	950.97
Unknown-01	969.51	969.16	24.08	3/21/2022	18.15	951.01
Former Fiero Assembly						
MW-09-22	973.83	973.46	32.87	3/21/2022	20.57	952.89
MW-11-22	977.42	976.75	34.70	3/21/2022	27.07	949.68
MWF16-01	973.66	973.22	23.12	3/21/2022	15.00	958.22
MWF16-05	973.95	973.68	CNL	CNL	CNL	--
MWF16-06	974.02	973.77	28.65	3/21/2022	13.68	960.09
MWF16-09	973.50	973.16	8.03	3/21/2022	Dry	NA
MWF16-12	973.60	973.20	18.90	3/21/2022	13.69	959.51
MWF16-16	973.50	973.22	31.24	3/21/2022	22.08	951.14
MWF16-17	973.70	973.32	31.82	3/21/2022	19.45	953.87
MWF16-18	973.60	973.22	31.95	3/21/2022	20.42	952.80
MWF16-19	973.60	973.19	26.80	3/21/2022	11.92	961.27
MWF16-20	973.55	973.32	CNL	CNL	CNL	--
MWF16-22	973.50	973.18	33.92	3/21/2022	22.89	950.29
MWF16-24	973.64	973.38	29.82	3/21/2022	22.60	950.78
MWF16-25	NA	975.24	36.75	3/21/2022	25.56	949.68
MWF16-26	NA	974.14	35.85	3/21/2022	23.99	950.15
Offsite						
MWOS-08	975.55	975.09	28.80	3/21/2022	25.55	949.54
MWOS-09R	976.68	976.18	30.22	3/21/2022	26.80	949.38
MWOS-10	977.01	976.55	32.76	3/21/2022	27.98	948.57
Former Fiero Parking Lot						
PZF17-02	977.70	977.43	31.50	3/21/2022	23.35	954.08
PZF17-04	972.90	972.47	28.89	3/21/2022	19.49	952.98
PZF17-05	976.43	975.97	34.00	3/21/2022	25.45	950.52

Abbreviations:

ft - feet

NA - Not Applicable

Footnotes:

¹ Top of Temporary Well Casing/Stickup Elevation is in feet National Vertical Geodetic Datum (1988).

² 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 BASE	NR Fiero SSVIAC <50k SOG	Units	MW-02-17 03/22/22 MW-02-17_GW-032222	MW-05-18 03/22/22 MW-05-18_GW-032222	MW-06-20 03/24/22 MW-06-20_GW-032422	MW-07-20 03/22/22 MW-07-20_GW-032222	MW-08-21 03/22/22 MW-08-21_GW-032222	MW-09-22 03/24/22 MW-09-22_GW-032422	MW-11-22 03/24/22 MW-11-22_GW-032422	MW-13-22 03/23/22 MW-13-22_GW-032322	MW-14-22 03/23/22 MW-14-22_GW-032322	MWF12-01R 03/22/22 MWF12-01R_GW-032222
Volatile Organics													
Acetone	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	< 50 U	< 50 U
Benzene	18	1,100	ug/L	< 1 U [\leq 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromodichloromethane	31	1,700	ug/L	< 1 U [\leq 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromoform	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	< 1 U	< 1 U
Bromomethane	33	1,200	ug/L	< 5 U [\leq 5 U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
2-Butanone	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	< 25 U	< 25 U
Carbon Disulfide	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	< 5 U	< 5 U
Carbon Tetrachloride	7.2	440	ug/L	< 1 U [\leq 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	1	< 1 U	1	< 1 U
CFC-11	160	6,000	ug/L	< 1 U [\leq 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
CFC-12	38	1,400	ug/L	< 5 U [\leq 5 U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Chlorobenzene	720	27,000	ug/L	< 1 U [\leq 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Chlorodibromomethane	29	4,400	ug/L	< 5 U [\leq 5 U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Chloroethane	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	< 5 U	< 5 U
Chloroform	10	610	ug/L	< 1 U [\leq 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	1	< 1 U	< 1 U	< 1 U	< 1 U
Chloromethane	200	7,400	ug/L	< 5 U [\leq 5 U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Cyclohexane	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 U	< 1 U
1,2-Dibromo-3-chloropropane	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	< 5 U	< 5 U
1,2-Dibromoethane	4	250	ug/L	< 1 U [\leq 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dichlorobenzene	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 U	< 1 U
1,3-Dichlorobenzene	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 U	< 1 U
1,4-Dichlorobenzene	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 U	< 1 U
1,1-Dichloroethane	88	5,300	ug/L	2 [2]	4	5	7	2	< 1 U	< 1 U	< 1 U	5	5
1,2-Dichloroethane	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 U	< 1 U
1,1-Dichloroethene	220	8,300	ug/L	< 1 U [\leq 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
cis-1,2-Dichloroethene	62	2,300	ug/L	< 1 U [\leq 1 U]	7	6	10	< 1 U	1	< 1 U	< 1 U	< 1 U	< 1 U
trans-1,2-Dichloroethene	260	9,800	ug/L	< 1 U [\leq 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	2	< 1 U
Dichloromethane	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	< 5 U	< 5 U
1,2-Dichloropropane	56	2,100	ug/L	< 1 U [\leq 1 U]	< 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 [\leq 1 U]	< 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 [\leq 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Ethylbenzene	60	3,600	ug/L	< 1 U [\leq 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Isopropylbenzene	13	810	ug/L	< 1 U [\leq 1 U]	< 1 U	< 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	< 10 U	< 10 U
Methyl N-Butyl Ketone	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	< 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	< 1 U	< 1 U
4-Methyl-2-pentanone	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	< 50 U	< 50 U
Methyl tert-butyl ether	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	< 5 U	< 5 U
Styrene	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 U	< 1 U
1,1,2,2-Tetrachloroethane	66	4,100	ug/L	< 1 U [\leq 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Tetrachloroethene	130	3,400	ug/L	3 [4]	< 1 U	< 1 U	< 1 U	< 1 U	95	< 1 U	< 1 U	52	< 1 U
Toluene	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 U	< 1 U
1,2,4-Trichlorobenzene	130	5,100	ug/L	< 5 U [\leq 5 U]	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,1,1-Trichloroethane	11,000	210,000	ug/L	2 [2]	5	3	5	3	< 1 U	2	< 1 U	10	36
1,1,2-Trichloroethane	11	410	ug/L	< 1 U [\leq 1 U]	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Trichloroethene	8.1	210	ug/L	5 [5]	< 1 U	8	2	9	3	< 1 U	< 1 U	12	< 1 U
1,1,2-trichloro-1,2,2-trifluoroethane	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	< 1 U	< 1 U
Vinyl Chloride	1.2	260	ug/L	< 1 U [\leq 1 U]	< 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 [\leq 2 U]	< 2 U	< 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	< 1 U	< 1 U
Total Xylenes	1,600	60,000	ug/L	< 2 U [\leq 2 U]	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Volatile Organics-SIM													
1,4-Dioxane	22,000	1,500,000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals													
Iron (dissolved)	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous													
Alkalinity, total (as CaCO3)	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC													
Total organic carbon (TOC)	--	--	mg/L	NA	NA	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 BASE	NR Fiero SSVIAC <50k SOG	Units	MWF12-02R 03/22/22 MWF12-02R_GW-032222	MWF16-05 03/24/22 MWF16-05_GW-032422	MWF16-06 03/23/22 MWF16-06_GW-032322	MWF16-12 03/24/22 MWF16-12_GW-032422	MWF16-15 03/23/22 MWF16-15_GW-032322	MWF16-16 03/23/22 MWF16-16_GW-032322	MWF16-17 03/24/22 MWF16-17_GW-032422	MWF16-18 03/24/22 MWF16-18_GW-032422	MWF16-19 03/23/22 MWF16-19_GW-032322	MWF16-22 03/23/22 MWF16-22_GW-032322
Volatile Organics													
Acetone	18,000,000	240,000,000	ug/L	< 50 U	< 500 UY	< 50 U	< 50 U	< 50 U	< 500 UY [< 500 UY]	< 50 U	< 500 UY [< 500 UY]	< 500 UY	< 50 U
Benzene	18	1,100	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
Bromodichloromethane	31	1,700	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
Bromoform	3,200	200,000	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
Bromomethane	33	1,200	ug/L	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 50 UY [< 50 UY]	< 5 U	< 50 UY [< 50 UY]	< 50 UY	< 5 U
2-Butanone	2,200,000	59,000,000	ug/L	< 25 U	< 250 UY	< 25 U	< 25 U	< 25 U	< 250 UY [< 250 UY]	< 25 U	< 250 UY [< 250 UY]	< 250 UY	< 25 U
Carbon Disulfide	1,200	46,000	ug/L	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 50 UY [< 50 UY]	< 5 U	< 50 UY [< 50 UY]	< 50 UY	< 5 U
Carbon Tetrachloride	7.2	440	ug/L	< 1 U	< 10 UY	7	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
CFC-11	160	6,000	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
CFC-12	38	1,400	ug/L	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 50 UY [< 50 UY]	< 5 U	< 50 UY [< 50 UY]	< 50 UY	< 5 U
Chlorobenzene	720	27,000	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
Chlorodibromomethane	29	4,400	ug/L	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 50 UY [< 50 UY]	< 5 U	< 50 UY [< 50 UY]	< 50 UY	< 5 U
Chloroethane	8,600	320,000	ug/L	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 50 UY [< 50 UY]	< 5 U	< 50 UY [< 50 UY]	< 50 UY	< 5 U
Chloroform	10	610	ug/L	< 1 U	< 10 UY	15	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
Chloromethane	200	7,400	ug/L	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 50 UY [< 50 UY]	< 5 U	< 50 UY [< 50 UY]	< 50 UY	< 5 U
Cyclohexane	1,400	53,000	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
1,2-Dibromo-3-chloropropane	0.00045	0.042	ug/L	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 50 UY [< 50 UY]	< 5 U	< 50 UY [< 50 UY]	< 50 UY	< 5 U
1,2-Dibromoethane	4	250	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
1,2-Dichlorobenzene	9,900	160,000	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
1,3-Dichlorobenzene	70	2,700	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
1,4-Dichlorobenzene	160	9,800	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
1,1-Dichloroethane	88	5,300	ug/L	< 1 U	< 10 UY	72	< 1 U	2	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	40 Y	1
1,2-Dichloroethane	27	1,600	ug/L	< 1 U	< 10 UY	1	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
1,1-Dichloroethene	220	8,300	ug/L	< 1 U	< 10 UY	8	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
cis-1,2-Dichloroethene	62	2,300	ug/L	< 1 U	< 10 UY	21	< 1 U	4	10 Y [10 Y]	< 1 U	70 Y [70 Y]	< 10 UY	10
trans-1,2-Dichloroethene	260	9,800	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
Dichloromethane	5,000	190,000	ug/L	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 50 UY [< 50 UY]	< 5 U	< 50 UY [< 50 UY]	< 50 UY	< 5 U
1,2-Dichloropropane	56	2,100	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
cis-1,3-Dichloropropene	--	--	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
trans-1,3-Dichloropropene	--	--	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
Ethylbenzene	60	3,600	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
Isopropylbenzene	13	810	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
Methyl acetate	--	--	ug/L	< 10 U	< 100 UY	< 10 U	< 10 U	< 10 U	< 100 UY [< 100 UY]	< 10 U	< 100 UY [< 100 UY]	< 100 UY	< 10 U
Methyl N-Butyl Ketone	12,000	490,000	ug/L	< 50 U	< 500 UY	< 50 U	< 50 U	< 50 U	< 500 UY [< 500 UY]	< 50 U	< 500 UY [< 500 UY]	< 500 UY	< 50 U
Methylcyclohexane	--	--	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
4-Methyl-2-pentanone	810,000	19,000,000	ug/L	< 50 U	< 500 UY	< 50 U	< 50 U	< 50 U	< 500 UY [< 500 UY]	< 50 U	< 500 UY [< 500 UY]	< 500 UY	< 50 U
Methyl tert-butyl ether	5,300	320,000	ug/L	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 50 UY [< 50 UY]	< 5 U	< 50 UY [< 50 UY]	< 50 UY	< 5 U
Styrene	740	45,000	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
1,1,2,2-Tetrachloroethane	66	4,100	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
Tetrachloroethene	130	3,400	ug/L	< 1 U	480 Y	53	36	< 1 U	470 Y [490 Y]	< 1 U	1150 Y [1180 Y]	< 10 UY	76
Toluene	30,000	530,000	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
1,2,4-Trichlorobenzene	130	5,100	ug/L	< 5 U	< 50 UY	< 5 U	< 5 U	< 5 U	< 50 UY [< 50 UY]	< 5 U	< 50 UY [< 50 UY]	< 50 UY	< 5 U
1,1,1-Trichloroethane	11,000	210,000	ug/L	< 1 U	< 10 UY	111	< 1 U	9	< 10 UY [< 10 UY]	1	< 10 UY [< 10 UY]	230 Y	2
1,1,2-Trichloroethane	11	410	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
Trichloroethene	8.1	210	ug/L	< 1 U	20 Y	7	< 1 U	3	< 10 UY [< 10 UY]	< 1 U	20 Y [20 Y]	< 10 UY	2
1,1,2-trichloro-1,2,2-trifluoroethane	3,600	140,000	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
Vinyl Chloride	1.2	260	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
m&p-Xylene	--	--	ug/L	< 2 U	< 20 UY	< 2 U	< 2 U	< 2 U	< 20 UY [< 20 UY]	< 2 U	< 20 UY [< 20 UY]	< 20 UY	< 2 U
o-Xylene	--	--	ug/L	< 1 U	< 10 UY	< 1 U	< 1 U	< 1 U	< 10 UY [< 10 UY]	< 1 U	< 10 UY [< 10 UY]	< 10 UY	< 1 U
Total Xylenes	1,600	60,000	ug/L	< 2 U	< 20 UY	< 2 U	< 2 U	< 2 U	< 20 UY [< 20 UY]	< 2 U	< 20 UY [< 20 UY]	< 20 UY	< 2 U
Volatile Organics-SIM													
1,4-Dioxane	22,000	1,500,000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals													
Iron (dissolved)	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous													
Alkalinity, total (as CaCO3)	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC													
Total organic carbon (TOC)	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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



Location ID:	Res Fiero	NR Fiero		MWF16-23	MWF16-24	MWF16-25	MWF7-02	MWF7-03	MWOS-08	MWOS-09R	MWOS-10	TW-12-22	Unknown-1
Date Collected:	SSVIAC BASE	SSVIAC <50k SOG	Units	03/24/22	03/24/22	03/24/22	03/23/22	03/23/22	03/25/22	03/22/22	03/22/22	03/24/22	03/23/22
Sample Name:				MWF16-23_GW-032422	MWF16-24_GW-032422	MWF16-25_GW-032422	MWF7-02_GW-032322	MWF7-03_GW-032322	MWOS-08_GW-032522	MWOS-09_GW-032222	MWOS-10_GW-032222	TW-12-22_GW-032422	UNKNOWN-01_GW-032322
Volatile Organics													
Acetone	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	< 50 U	< 50 U
Benzene	18	1,100	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Bromodichloromethane	31	1,700	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Bromoform	3,200	200,000	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Bromomethane	33	1,200	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
2-Butanone	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	< 25 U	< 25 U
Carbon Disulfide	1,200	46,000	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
Carbon Tetrachloride	7.2	440	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
CFC-11	160	6,000	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
CFC-12	38	1,400	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
Chlorobenzene	720	27,000	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Chlorodibromomethane	29	4,400	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
Chloroethane	8,600	320,000	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
Chloroform	10	610	ug/L	< 1 U	< 1 U	4	1	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	8	< 1 U
Chloromethane	200	7,400	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
Cyclohexane	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 U	< 1 U
1,2-Dibromo-3-chloropropane	0.00045	0.042	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
1,2-Dibromoethane	4	250	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
1,2-Dichlorobenzene	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 U	< 1 U
1,3-Dichlorobenzene	70	2,700	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
1,4-Dichlorobenzene	160	9,800	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
1,1-Dichloroethane	88	5,300	ug/L	5	< 1 U	5	12	< 1 U	< 1 U	4 [4]	7	9	4
1,2-Dichloroethane	27	1,600	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
1,1-Dichloroethene	220	8,300	ug/L	< 1 U	< 1 U	< 1 U	13	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
cis-1,2-Dichloroethene	62	2,300	ug/L	5	< 1 U	27	2	< 1 U	1	28 [26]	6	67	< 1 U
trans-1,2-Dichloroethene	260	9,800	ug/L	< 1 U	< 1 U	2	< 1 U	< 1 U	< 1 U	2 [2]	< 1 U	3	< 1 U
Dichloromethane	5,000	190,000	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
1,2-Dichloropropane	56	2,100	ug/L	< 1 U	< 1 U	< 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	< 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	< 1 U	< 1 U
Ethylbenzene	60	3,600	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Isopropylbenzene	13	810	ug/L	< 1 U	< 1 U	< 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	< 10 U	< 10 U
Methyl N-Butyl Ketone	12,000	490,000	ug/L	< 50 U	< 50 U	< 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	< 1 U	< 1 U
4-Methyl-2-pentanone	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	< 50 U	< 50 U
Methyl tert-butyl ether	5,300	320,000	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
Styrene	740	45,000	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
1,1,2,2-Tetrachloroethane	66	4,100	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Tetrachloroethene	130	3,400	ug/L	< 1 U	< 1 U	< 1 U	95	< 1 U	< 1 U	10 [12]	< 1 U	< 1 U	23
Toluene	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 U	< 1 U
1,2,4-Trichlorobenzene	130	5,100	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
1,1,1-Trichloroethane	11,000	210,000	ug/L	8	2	4	88	< 1 U	4	3 [3]	4	5	54
1,1,2-Trichloroethane	11	410	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Trichloroethene	8.1	210	ug/L	13	< 1 U	< 1 U	4	< 1 U	< 1 U	3 [4]	7	6	< 1 U
1,1,2-trichloro-1,2,2-trifluoroethane	3,600	140,000	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Vinyl Chloride	1.2	260	ug/L	< 1 U	< 1 U	< 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	< 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	< 1 U	< 1 U
Total Xylenes	1,600	60,000	ug/L	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U [< 2 U]	< 2 U	< 2 U	< 2 U
Volatile Organics-SIM													
1,4-Dioxane	22,000	1,500,000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals													
Iron (dissolved)	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous													
Alkalinity, total (as CaCO3)	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC													
Total organic carbon (TOC)	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

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 4
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-02-21 23.25-23.75 3/22/2022	SV-03-21 11.5-12 3/22/2022	SV-04-21 22.5-23 3/22/2022	SV-05-21 11.5-12 3/22/2022	SV-06-21 22.5-23 3/22/2022
Analyte									
1,1-Dichloroethylene	7,000	7,000	ug/m ³	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	280	280	ug/m ³	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	2,800	2,800	ug/m ³	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	1,400	1,400	ug/m ³	ND	9.5	ND	ND	ND	ND
Trichloroethylene	67	67	ug/m ³	8.6	53	ND	11	ND	13
Vinyl Chloride	54	54	ug/m ³	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:

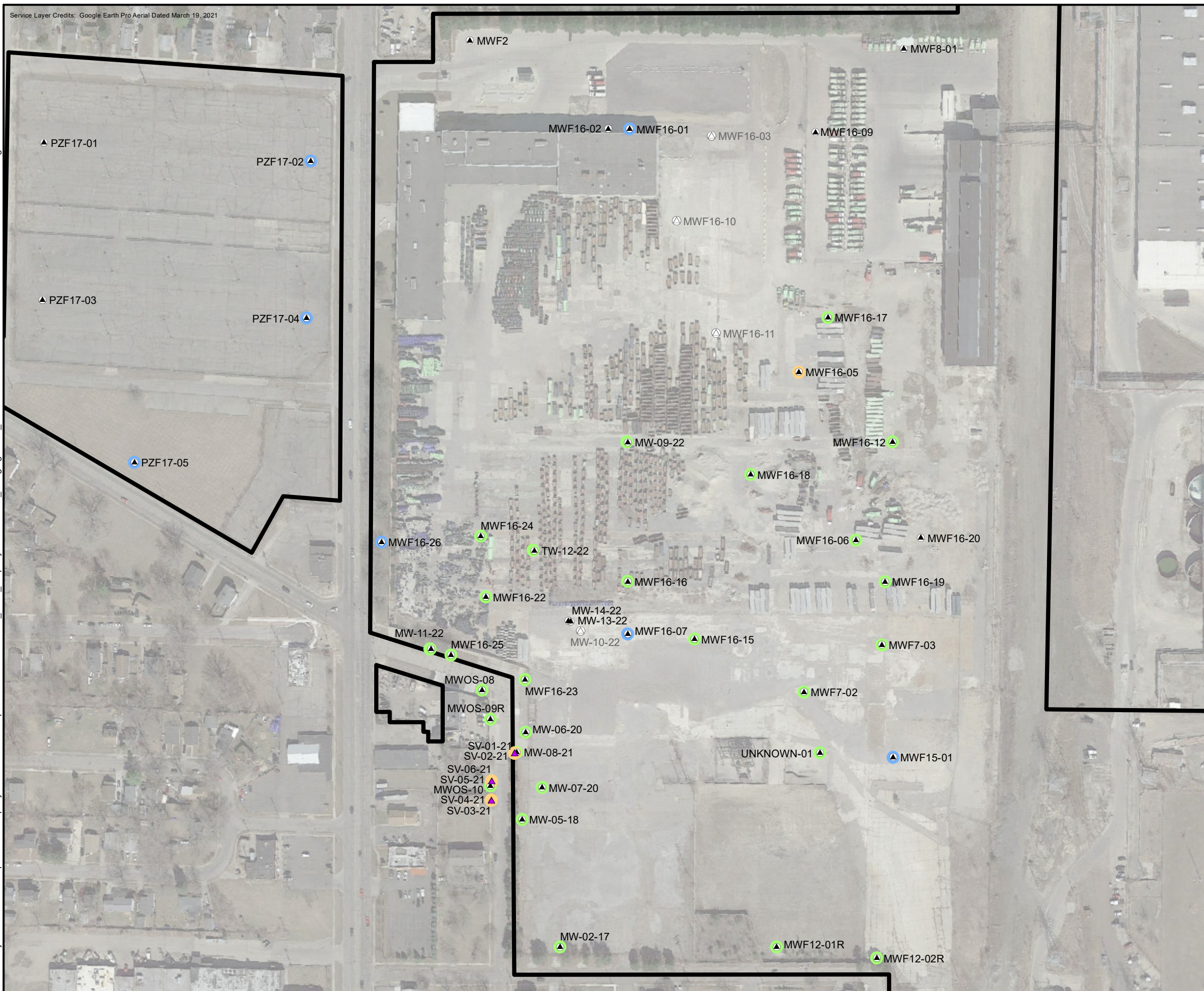
µg/m³ - Micrograms per cubic meter.

SSVIAC - Site-Specific Volatilization to Indoor Air Criteria

ND - Non detect

SOG - Slab-On-Grade scenario.

Figures

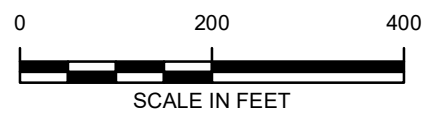


LEGEND

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

NOTES:

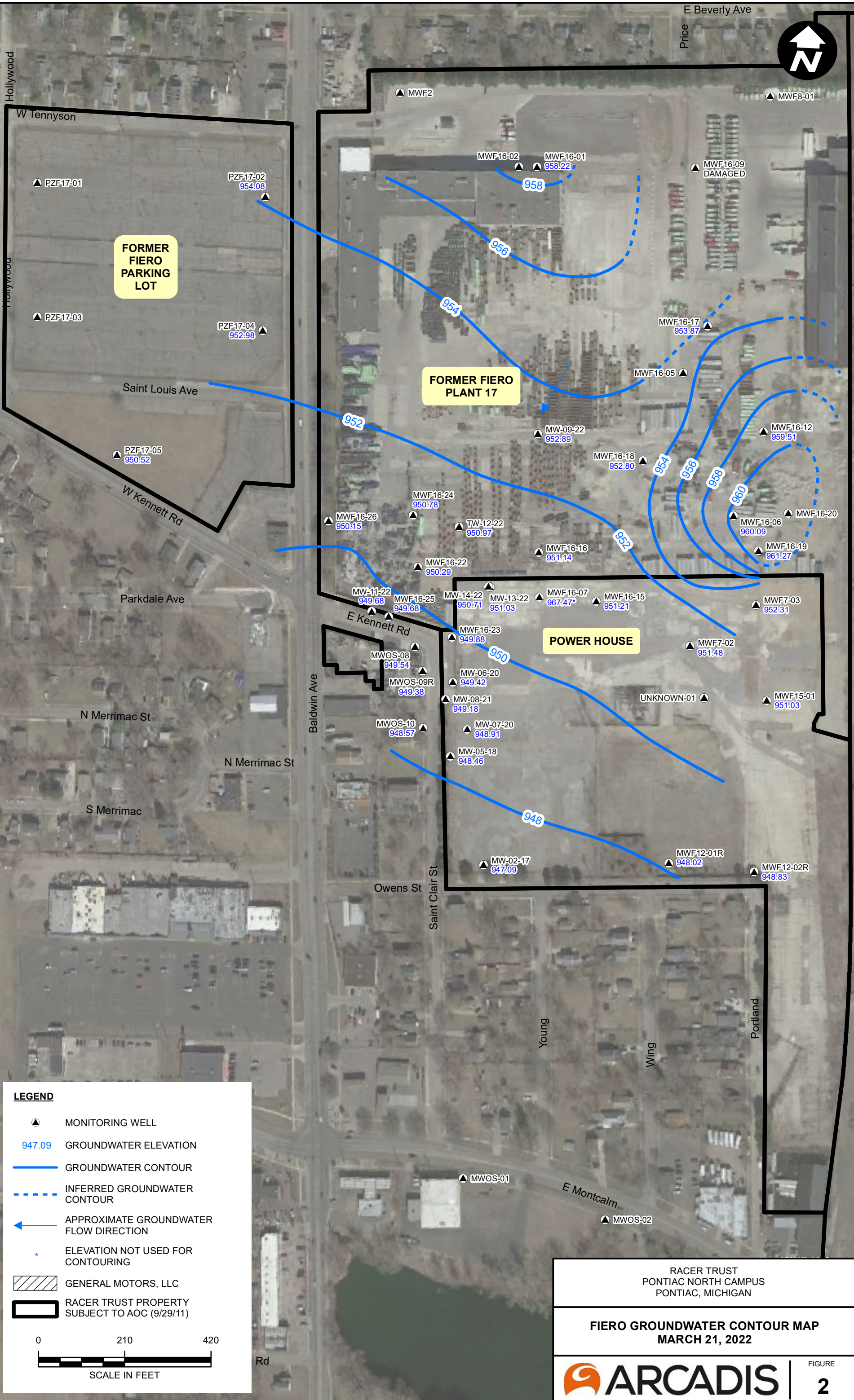
1. MWF16-05 WAS UNABLE TO BE LOCATED DURING GAUGING, BUT WAS LOCATED LATER IN THE WEEK AND SAMPLED.
2. MWF16-10 AND MWF16-11 WERE DESTROYED DURING GFL CONSTRUCTION ACTIVITIES.
3. MWF16-20 IS COVERED WITH A LARGE PILE OF DEBRIS FROM GFL CONSTRUCTION ACTIVITIES AND COULD NOT BE ACCESSED FOR GAUGING OR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



RACER TRUST
PONTIAC NORTH CAMPUS
PONTIAC, MICHIGAN

2022 FIERO TEMPORARY MONITORING PLAN - 1Q 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\Motors\NorthCampus\Documents\Fioer Fiero Property\FieroProperty_GWE_202203.mxd, PLOTTED: 4/26/2022 8:58:54 PM, BY: TYatbrough



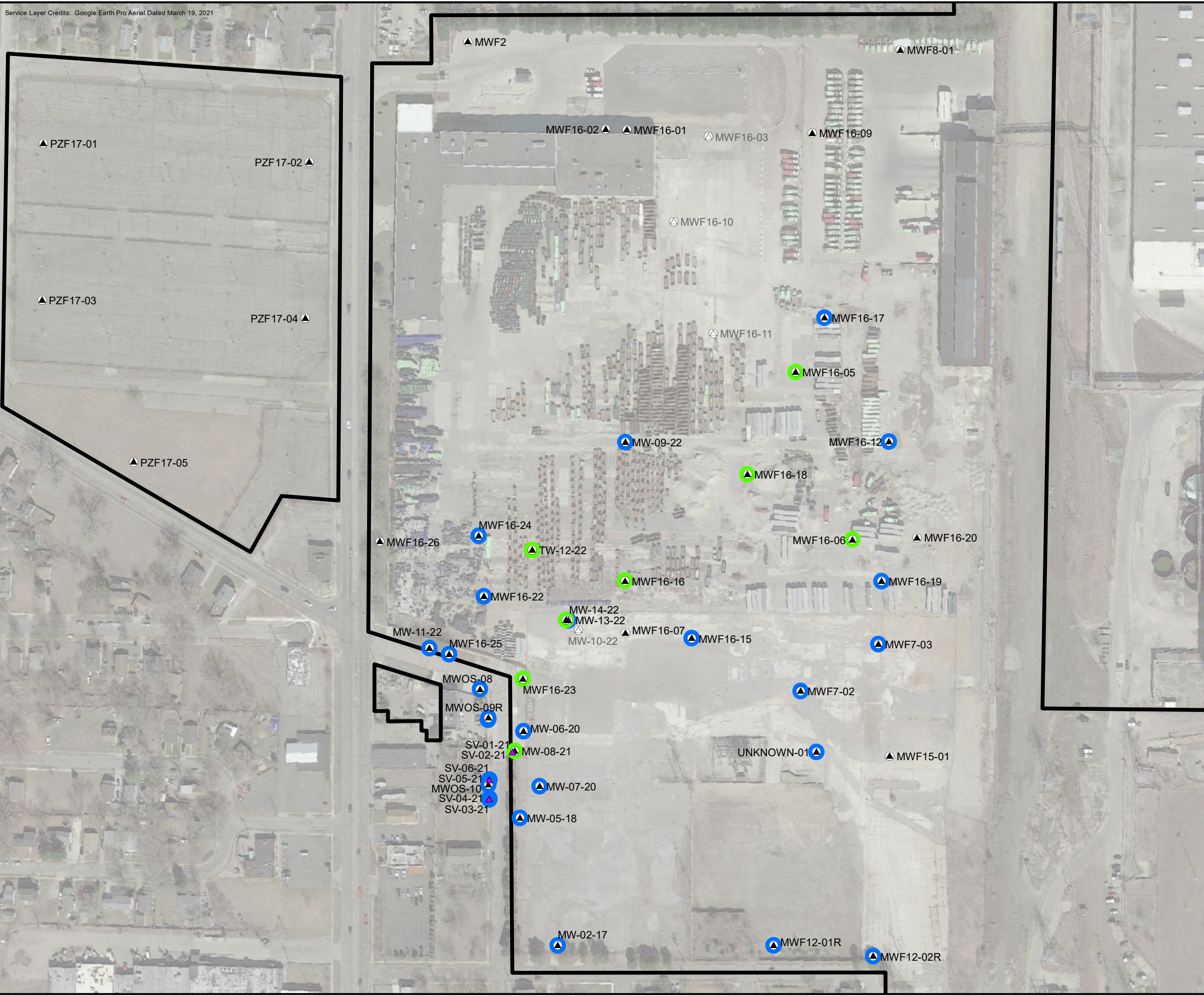
LEGEND

- 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
MARCH 21, 2022

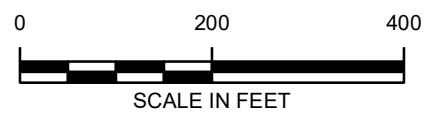


LEGEND

- ▲ 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 MARCH 2022



Attachment 1

Analytical Reports

3/31/2022

Ms. Lexi Crisp

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Suite 200

Columbus OH 43235

Project Name: RACER PNC

Project #: 30112891.4

Workorder #: 2203666

Dear Ms. Lexi Crisp

The following report includes the data for the above referenced project for sample(s) received on 3/24/2022 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 #: 2203666

Work Order Summary

CLIENT:	Ms. Lexi Crisp Arcadis U.S., Inc. 100 E. Campus View Blvd Suite 200 Columbus, OH 43235	BILL TO:	Accounts Payable Arcadis U.S., Inc. 630 Plaza Drive Suite 600 Highlands Ranch, CO 80129
PHONE:		P.O. #	30112891.4
FAX:		PROJECT #	30112891.4 RACER PNC
DATE RECEIVED:	03/24/2022	CONTACT:	Jade White
DATE COMPLETED:	03/31/2022		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SV-06-21_SG-032222	TO-15	5.1 "Hg	10 psi
02A	SV-04-21_SG-032222	TO-15	5.5 "Hg	8.6 psi
03A	SV-05-21_SG-032222	TO-15	5.7 "Hg	9.8 psi
04A	SV-03-21_SG-032222	TO-15	5.1 "Hg	9.7 psi
05A	SV-02-21_SG-032222	TO-15	4.7 "Hg	10 psi
06A	SV-01-21_SG-032222	TO-15	5.7 "Hg	9.9 psi
07A	DUP-01_SG-032222	TO-15	5.3 "Hg	9.9 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: 03/30/22

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# 2203666

Seven 1 Liter Summa Canister samples were received on March 24, 2022. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

Receiving Notes

There were no receiving discrepancies.

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-06-21_SG-032222

Lab ID#: 2203666-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	1.0	2.5	5.4	13

Client Sample ID: SV-04-21_SG-032222

Lab ID#: 2203666-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.97	2.0	5.2	11

Client Sample ID: SV-05-21_SG-032222

Lab ID#: 2203666-03A

No Detections Were Found.

Client Sample ID: SV-03-21_SG-032222

Lab ID#: 2203666-04A

No Detections Were Found.

Client Sample ID: SV-02-21_SG-032222

Lab ID#: 2203666-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	1.0	9.8	5.3	53
Tetrachloroethene	1.0	1.4	6.7	9.5

Client Sample ID: SV-01-21_SG-032222

Lab ID#: 2203666-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	1.0	1.6	5.6	8.6

Client Sample ID: DUP-01_SG-032222

Lab ID#: 2203666-07A



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

Client Sample ID: DUP-01_SG-032222

Lab ID#: 2203666-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	1.0	9.8	5.4	53
Tetrachloroethene	1.0	1.4	6.9	9.6



Air Toxics

Client Sample ID: SV-06-21_SG-032222

Lab ID#: 2203666-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j032908	Date of Collection:	3/22/22 9:37:00 AM
Dil. Factor:	2.02	Date of Analysis:	3/29/22 01:47 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.0	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Trichloroethene	1.0	2.5	5.4	13
trans-1,2-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Tetrachloroethene	1.0	Not Detected	6.8	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	94	70-130



Air Toxics

Client Sample ID: SV-04-21_SG-032222

Lab ID#: 2203666-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j032907	Date of Collection:	3/22/22 10:02:00 AM
Dil. Factor:	1.94	Date of Analysis:	3/29/22 01:14 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.97	Not Detected	2.5	Not Detected
1,1-Dichloroethene	0.97	Not Detected	3.8	Not Detected
cis-1,2-Dichloroethene	0.97	Not Detected	3.8	Not Detected
Trichloroethene	0.97	2.0	5.2	11
trans-1,2-Dichloroethene	0.97	Not Detected	3.8	Not Detected
Tetrachloroethene	0.97	Not Detected	6.6	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	97	70-130



Air Toxics

Client Sample ID: SV-05-21_SG-032222

Lab ID#: 2203666-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j032909	Date of Collection:	3/22/22 10:22:00 AM
Dil. Factor:	2.06	Date of Analysis:	3/29/22 02:21 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.1	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Trichloroethene	1.0	Not Detected	5.5	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Tetrachloroethene	1.0	Not Detected	7.0	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: SV-03-21_SG-032222

Lab ID#: 2203666-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j032906	Date of Collection:	3/22/22 10:42:00 AM
Dil. Factor:	2.00	Date of Analysis:	3/29/22 12:41 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.0	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Trichloroethene	1.0	Not Detected	5.4	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Tetrachloroethene	1.0	Not Detected	6.8	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: SV-02-21_SG-032222

Lab ID#: 2203666-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j032910	Date of Collection:	3/22/22 11:42:00 AM
Dil. Factor:	1.99	Date of Analysis:	3/29/22 02:54 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.5	Not Detected
1,1-Dichloroethene	1.0	Not Detected	3.9	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	3.9	Not Detected
Trichloroethene	1.0	9.8	5.3	53
trans-1,2-Dichloroethene	1.0	Not Detected	3.9	Not Detected
Tetrachloroethene	1.0	1.4	6.7	9.5

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	95	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: SV-01-21_SG-032222

Lab ID#: 2203666-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j032911	Date of Collection:	3/22/22 11:16:00 AM
Dil. Factor:	2.07	Date of Analysis:	3/29/22 03:27 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.1	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Trichloroethene	1.0	1.6	5.6	8.6
trans-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Tetrachloroethene	1.0	Not Detected	7.0	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: DUP-01_SG-032222

Lab ID#: 2203666-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j032912	Date of Collection:	3/22/22
Dil. Factor:	2.03	Date of Analysis:	3/29/22 04:01 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.0	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Trichloroethene	1.0	9.8	5.4	53
trans-1,2-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Tetrachloroethene	1.0	1.4	6.9	9.6

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2203666-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j032905a	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	3/29/22 11:11 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	97	70-130
1,2-Dichloroethane-d4	95	70-130
4-Bromofluorobenzene	99	70-130

Client Sample ID: CCV

Lab ID#: 2203666-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j032902	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/29/22 09:15 AM

Compound	%Recovery
Vinyl Chloride	74
1,1-Dichloroethene	81
cis-1,2-Dichloroethene	89
Trichloroethene	97
trans-1,2-Dichloroethene	84
Tetrachloroethene	118

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	101	70-130

Client Sample ID: LCS

Lab ID#: 2203666-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j032903	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/29/22 09:46 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	81	70-130
1,1-Dichloroethene	85	70-130
cis-1,2-Dichloroethene	92	70-130
Trichloroethene	98	70-130
trans-1,2-Dichloroethene	89	70-130
Tetrachloroethene	119	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: LCSD

Lab ID#: 2203666-10AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j032904	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/29/22 10:16 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	81	70-130
1,1-Dichloroethene	84	70-130
cis-1,2-Dichloroethene	92	70-130
Trichloroethene	98	70-130
trans-1,2-Dichloroethene	89	70-130
Tetrachloroethene	120	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	95	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Analysis Request / Canister Chain of Custody

For Laboratory Use Only

PID: _____
Workorder #: 2203666

180 Blue Ravine Rd, Suite B, Folsom, CA 95630
Phone (800) 985-5955 - Fax (916) 351-8279

page - of 1

Client: ARCADE'S Special Instructions/Notes: ANALYZE FOR: 1,1-DCE; CIS-1,2-DCE; TRANS-1,2-DCE; PCE; TCE; VINYL CHLORIDE

Project Name: RACER PUC Project # 301128914

Project Manager: TIFFANY LINDER Sample: CHRISTINA WEBER

Site Name: RACER PUC

Lab ID	Field Sample Identification (Location)	Can #	Flow Controller #	Start Sampling Information		Stop Sampling Information		Initial (in Hg)	Final (in Hg)	Receipt	Final (psig) Gas: N ₂ / He	Requested Analyses
				Date	Time	Date	Time					
01A	SV-06-21-SG-032222	122239	23203	3/22/22	0931	3/22/22	0937	-28	-5			X
02A	SV-04-21-SG-032222	161560	23211	3/22/22	0955	3/22/22	1002	-28	-5			X
03A	SV-05-21-SG-032222	SLC015	24299	3/22/22	1016	3/22/22	1022	-29	-5			X
04A	SV-03-21-SG-032222	14138	23228	3/22/22	1035	3/22/22	1042	-28	-5			X
05A	SV-02-21-SG-032222	141504	23387	3/22/22	1136	3/22/22	1142	-28	-5			X
06A	SV-01-21-SG-032222	141864	24719	3/22/22	1109	3/22/22	1116	-29	-5			X
07A	DVR-01-SG-032222	LC1134	24256	3/22/22	—	3/22/22	—	-28	-6			X
Relinquished by: (Signature/Affiliation) <u>[Signature] / ARCADE'S</u> Date <u>3/22/22</u> Time <u>1800</u> Received by: (Signature/Affiliation) <u>FEDEX</u> Date <u>3/22/22</u> Time <u>1800</u>												
Relinquished by: (Signature/Affiliation) <u>[Signature] / ARCADE'S</u> Date _____ Time _____ Received by: (Signature/Affiliation) <u>[Signature] TMV</u> Date <u>03/24/22</u> Time <u>1111</u>												
Relinquished by: (Signature/Affiliation) _____ Date _____ Time _____ Received by: (Signature/Affiliation) _____ Date _____ Time _____												

Shipper Name: FEDEX Custody Seals Intact? Yes No Lab Use Only None

Sample Transportation Notice: Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, of shipping of samples. D.O.T Hotline (800) 467-4922



Quality Control Report

Report ID: QC-S34185-01
Generated on 04/04/2022

Report to

Attention: Alexis Crisp
Arcadis US, Inc.
28550 Cabot Drive
Suite 500
Novi, MI 48377

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

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

Phone: 810-225-1909 FAX:

Report Summary

Lab Sample ID(s): S34185.01-S34185.12
Project: 30112891.00005 / Racer PNC
Submitted Date/Time: 03/23/2022 15:00
Sampled by: Gary Schafer
P.O. #: 30112891.00005

QC Report Sections

Cover Page (Page 1)
Analysis Summary (Pages 2-13)
Prep Batch Summary (Page 14)
Surrogates per Lab Sample (Pages 15-24)
Surrogates per QC Sample (Pages 25-26)
Batch QC Results (Pages 27-34)

Report Flag Descriptions

*: QC result is outside of indicated control limits
W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S34185.01

Sample Tag: MWOS-10_GW-032222

Collected Date/Time: 03/22/2022 10:21

Matrix: Groundwater

COC Reference: 140671

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 16:19	220330A7	VF220330W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34185.02

Sample Tag: MWOS-09_GW-032222

Collected Date/Time: 03/22/2022 11:51

Matrix: Groundwater

COC Reference: 140671

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 16:43	220330A7	VF220330W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34185.03

Sample Tag: MW-07-20_GW-032222

Collected Date/Time: 03/22/2022 13:26

Matrix: Groundwater

COC Reference: 140671

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 15:56	220330A7	VF220330W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34185.04

Sample Tag: MW-07-20-MS_GW-032222

Collected Date/Time: 03/22/2022 13:26

Matrix: Groundwater

COC Reference: 140671

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 12:41	220330A7	VF220330W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34185.05

Sample Tag: MW-07-20-MSD_GW-032222

Collected Date/Time: 03/22/2022 13:26

Matrix: Groundwater

COC Reference: 140671

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 13:04	220330A7	VF220330W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34185.06

Sample Tag: MWF12-01R_GW-032222

Collected Date/Time: 03/22/2022 15:01

Matrix: Groundwater

COC Reference: 140671

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	04/02/22 08:59	220401B7	VF220401W3	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34185.07

Sample Tag: MWF12-02R_GW-032222

Collected Date/Time: 03/22/2022 16:01

Matrix: Groundwater

COC Reference: 140671

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 17:06	220330A7	VF220330W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34185.08

Sample Tag: DUP-01_GW-032222

Collected Date/Time: 03/22/2022 00:01

Matrix: Groundwater

COC Reference: 140671

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 17:29	220330A7	VF220330W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34185.09

Sample Tag: Unknown-01_GW-032322

Collected Date/Time: 03/23/2022 10:06

Matrix: Groundwater

COC Reference: 140671

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 17:53	220330A7	VF220330W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34185.10

Sample Tag: MWF7-02_GW-032322

Collected Date/Time: 03/23/2022 11:21

Matrix: Groundwater

COC Reference: 140671

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 18:17	220330A7	VF220330W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34185.11

Sample Tag: MWF7-03_GW-032322

Collected Date/Time: 03/23/2022 13:11

Matrix: Groundwater

COC Reference: 140671

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 18:40	220330A7	VF220330W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34185.12

Sample Tag: Trip Blank

Collected Date/Time: 03/22/2022 00:01

Matrix: Water

COC Reference: 140671

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 14:46	220330A7	VF220330W1	Yes	BLK/LCS/LCSD

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: VF220330W1

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S34185.01	Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 16:19	220330A7
S34185.02	Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 16:43	220330A7
S34185.03	Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 15:56	220330A7
S34185.04	Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 12:41	220330A7
S34185.05	Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 13:04	220330A7
S34185.07	Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 17:06	220330A7
S34185.08	Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 17:29	220330A7
S34185.09	Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 17:53	220330A7
S34185.10	Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 18:17	220330A7
S34185.11	Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 18:40	220330A7
S34185.12	Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 14:46	220330A7

Organics - Volatiles, Prep Batch ID: VF220401W3

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S34185.06	Volatile Organics - Arcadis	SW5030C/8260C	04/02/22 08:59	220401B7

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34185.01

Sample Tag: MWOS-10_GW-032222

Collected Date/Time: 03/22/2022 10:21

Matrix: Groundwater

COC Reference: 140671

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330A7, Run Date: 03/30/2022 16:19, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		97.0	80.0	124.0
1,2-Dichloroethane-D4		94.5	72.0	125.0
Toluene-D8		101.5	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34185.02

Sample Tag: MWOS-09_GW-032222

Collected Date/Time: 03/22/2022 11:51

Matrix: Groundwater

COC Reference: 140671

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330A7, Run Date: 03/30/2022 16:43, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		94.9	80.0	124.0
1,2-Dichloroethane-D4		89.7	72.0	125.0
Toluene-D8		99.7	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34185.03

Sample Tag: MW-07-20_GW-032222

Collected Date/Time: 03/22/2022 13:26

Matrix: Groundwater

COC Reference: 140671

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330A7, Run Date: 03/30/2022 15:56, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		98.6	80.0	124.0
1,2-Dichloroethane-D4		93.5	72.0	125.0
Toluene-D8		99.9	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34185.06

Sample Tag: MWF12-01R_GW-032222

Collected Date/Time: 03/22/2022 15:01

Matrix: Groundwater

COC Reference: 140671

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220401B7, Run Date: 04/02/2022 08:59, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		93.8	80.0	124.0
1,2-Dichloroethane-D4		89.3	72.0	125.0
Toluene-D8		97.9	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34185.07

Sample Tag: MWF12-02R_GW-032222

Collected Date/Time: 03/22/2022 16:01

Matrix: Groundwater

COC Reference: 140671

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330A7, Run Date: 03/30/2022 17:06, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		97.4	80.0	124.0
1,2-Dichloroethane-D4		94.7	72.0	125.0
Toluene-D8		101.4	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: **S34185.08**

Sample Tag: DUP-01_GW-032222

Collected Date/Time: 03/22/2022 00:01

Matrix: Groundwater

COC Reference: 140671

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330A7, Run Date: 03/30/2022 17:29, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		102.7	80.0	124.0
1,2-Dichloroethane-D4		90.7	72.0	125.0
Toluene-D8		100.6	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34185.09

Sample Tag: Unknown-01_GW-032322

Collected Date/Time: 03/23/2022 10:06

Matrix: Groundwater

COC Reference: 140671

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330A7, Run Date: 03/30/2022 17:53, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		96.4	80.0	124.0
1,2-Dichloroethane-D4		94.2	72.0	125.0
Toluene-D8		100.3	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34185.10

Sample Tag: MWF7-02_GW-032322

Collected Date/Time: 03/23/2022 11:21

Matrix: Groundwater

COC Reference: 140671

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330A7, Run Date: 03/30/2022 18:17, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		101.9	80.0	124.0
1,2-Dichloroethane-D4		95.0	72.0	125.0
Toluene-D8		102.7	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34185.11

Sample Tag: MWF7-03_GW-032322

Collected Date/Time: 03/23/2022 13:11

Matrix: Groundwater

COC Reference: 140671

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330A7, Run Date: 03/30/2022 18:40, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		99.4	80.0	124.0
1,2-Dichloroethane-D4		90.9	72.0	125.0
Toluene-D8		99.9	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34185.12

Sample Tag: Trip Blank

Collected Date/Time: 03/22/2022 00:01

Matrix: Water

COC Reference: 140671

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330A7, Run Date: 03/30/2022 14:46, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		99.8	80.0	124.0
1,2-Dichloroethane-D4		95.8	72.0	125.0
Toluene-D8		101.6	89.0	112.0

QC Report - Surrogates per QC Sample

Organics - Volatiles, Prep Batch ID: VF220330W1

QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 220330A7.BLKW30A

Run in Batch: 220330A7, Run Date: 03/30/2022 14:14, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		100.9	80.0	124.0
1,2-Dichloroethane-D4		91.9	72.0	125.0
Toluene-D8		100.7	89.0	112.0

Laboratory Control Sample (LCS)

Lab Sample ID: 220330A7.LCSW30A

Run in Batch: 220330A7, Run Date: 03/30/2022 11:54, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		102.9	80.0	124.0
1,2-Dichloroethane-D4		91.8	72.0	125.0
Toluene-D8		101.1	89.0	112.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 220330A7.LCSDW30A, Parent Sample ID: 220330A7.LCSW30A

Run in Batch: 220330A7, Run Date: 03/30/2022 12:18, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		101.1	80.0	124.0
1,2-Dichloroethane-D4		96.2	72.0	125.0
Toluene-D8		101.5	89.0	112.0

QC Report - Surrogates per QC Sample

Organics - Volatiles, Prep Batch ID: VF220401W3

QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 220401B7.BLKW01B

Run in Batch: 220401B7, Run Date: 04/02/2022 01:58, Prep Date: 04/01/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		93.4	80.0	124.0
1,2-Dichloroethane-D4		84.5	72.0	125.0
Toluene-D8		97.8	89.0	112.0

Laboratory Control Sample (LCS)

Lab Sample ID: 220401B7.LCSW01B

Run in Batch: 220401B7, Run Date: 04/02/2022 00:25, Prep Date: 04/01/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		95.3	80.0	124.0
1,2-Dichloroethane-D4		90.6	72.0	125.0
Toluene-D8		98.0	89.0	112.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 220401B7.LCSDW01B, Parent Sample ID: 220401B7.LCSW01B

Run in Batch: 220401B7, Run Date: 04/02/2022 00:49, Prep Date: 04/01/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		100.1	80.0	124.0
1,2-Dichloroethane-D4		96.4	72.0	125.0
Toluene-D8		99.3	89.0	112.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220330W1

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 220330A7.BLKW30A

Run in Batch: 220330A7, Run Date: 03/30/2022 14:14, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Acetone		ND	10.00	ug/l
2-Butanone (MEK)		ND	10.00	ug/l
Benzene		ND	1.00	ug/l
Bromodichloromethane		ND	1.00	ug/l
Bromoform		ND	1.00	ug/l
Bromomethane		ND	1.00	ug/l
Carbon disulfide		ND	1.00	ug/l
Carbon tetrachloride		ND	1.00	ug/l
Chlorobenzene		ND	1.00	ug/l
Chloroethane		ND	1.00	ug/l
Chloroform		ND	1.00	ug/l
Chloromethane		ND	1.00	ug/l
1,2-Dibromo-3-chloropropane		ND	1.00	ug/l
1,2-Dichlorobenzene		ND	1.00	ug/l
1,2-Dichloroethane		ND	1.00	ug/l
1,2-Dichloropropane		ND	1.00	ug/l
1,3-Dichlorobenzene		ND	1.00	ug/l
1,4-Dichlorobenzene		ND	1.00	ug/l
cis-1,2-Dichloroethene		ND	1.00	ug/l
Dibromochloromethane		ND	1.00	ug/l
Dichlorodifluoromethane		ND	1.00	ug/l
trans-1,2-Dichloroethene		ND	1.00	ug/l
Ethylbenzene		ND	1.00	ug/l
2-Hexanone		ND	10.00	ug/l
4-Methyl-2-pentanone (MIBK)		ND	10.00	ug/l
tert-Methyl butyl ether (MTBE)		ND	1.00	ug/l
Methylene chloride		ND	1.00	ug/l
Styrene		ND	1.00	ug/l
1,1,1-Trichloroethane		ND	1.00	ug/l
1,1,2-Trichloroethane		ND	1.00	ug/l
1,2,4-Trichlorobenzene		ND	1.00	ug/l
Tetrachloroethene		ND	1.00	ug/l
Toluene		ND	1.00	ug/l
Trichloroethene		ND	1.00	ug/l
Trichlorofluoromethane		ND	1.00	ug/l
Vinyl chloride		ND	1.00	ug/l
o-Xylene		ND	1.00	ug/l
p,m-Xylene		ND	1.00	ug/l
Isopropylbenzene		ND	1.00	ug/l
Cyclohexane		ND	1.00	ug/l
1,1-Dichloroethane		ND	1.00	ug/l
1,1-Dichloroethene		ND	1.00	ug/l
Methyl Acetate		ND	1.00	ug/l
Methyl cyclohexane		ND	1.00	ug/l
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	1.00	ug/l
1,2-Dibromoethane		ND	1.00	ug/l

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220330W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK) (continued)

Lab Sample ID: 220330A7.BLKW30A

Run in Batch: 220330A7, Run Date: 03/30/2022 14:14, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
1,1,2,2-Tetrachloroethane		ND	1.00	ug/l
cis-1,3-Dichloropropene		ND	1.00	ug/l
trans-1,3-Dichloropropene		ND	1.00	ug/l

Laboratory Control Sample (LCS)

Lab Sample ID: 220330A7.LCSW30A

Run in Batch: 220330A7, Run Date: 03/30/2022 11:54, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Acetone		77.6	29.9	161.5
2-Butanone (MEK)		99.2	44.0	134.4
Benzene		109.6	79.9	124.9
Bromodichloromethane		105.0	80.4	128.2
Bromoform		102.9	69.4	128.0
Bromomethane		106.2	56.8	151.3
Carbon disulfide		110.5	63.8	137.4
Carbon tetrachloride		96.7	72.6	133.0
Chlorobenzene		109.3	79.2	122.7
Chloroethane		101.0	53.4	149.4
Chloroform		104.9	78.4	124.0
Chloromethane		101.9	23.8	166.5
1,2-Dibromo-3-chloropropane		98.0	21.2	189.4
1,2-Dichlorobenzene		109.0	10.0	166.2
1,2-Dichloroethane		93.1	76.0	126.3
1,2-Dichloropropane		108.0	78.6	126.4
1,3-Dichlorobenzene		109.1	77.0	131.3
1,4-Dichlorobenzene		106.8	20.7	137.7
cis-1,2-Dichloroethene		108.9	76.6	122.1
Dibromochloromethane		106.3	74.6	127.2
Dichlorodifluoromethane		91.0	10.0	222.8
trans-1,2-Dichloroethene		105.4	73.6	129.3
Ethylbenzene		110.1	79.5	129.1
2-Hexanone		95.5	55.4	136.9
4-Methyl-2-pentanone (MIBK)		97.4	71.6	125.2
tert-Methyl butyl ether (MTBE)		100.8	73.2	122.4
Methylene chloride		106.5	73.3	121.1
Styrene		113.9	69.5	126.7
1,1,1-Trichloroethane		97.3	79.4	130.9
1,1,2-Trichloroethane		105.5	78.7	123.1
1,2,4-Trichlorobenzene		109.6	27.4	143.4
Tetrachloroethene		103.3	74.5	124.5
Toluene		107.6	79.8	124.5
Trichloroethene		104.0	79.7	124.2
Trichlorofluoromethane		96.5	59.7	151.8
Vinyl chloride		103.7	43.5	149.1
o-Xylene		109.7	80.2	131.0
p,m-Xylene		111.2	79.4	132.2

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220330W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: 220330A7.LCSW30A

Run in Batch: 220330A7, Run Date: 03/30/2022 11:54, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Isopropylbenzene		111.2	74.4	121.5
Cyclohexane		99.0	10.0	169.1
1,1-Dichloroethane		104.8	71.5	126.2
1,1-Dichloroethene		99.3	69.6	139.4
Methyl Acetate		93.6	64.7	125.4
Methyl cyclohexane		100.8	76.6	131.3
1,1,2-Trichloro-1,2,2-trifluoroethane		100.9	75.1	135.9
1,2-Dibromoethane		105.4	70.3	133.7
1,1,2,2-Tetrachloroethane		106.3	79.8	126.3
cis-1,3-Dichloropropene		109.3	79.8	129.9
trans-1,3-Dichloropropene		106.8	74.0	131.3

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 220330A7.LCSDW30A, Parent Sample ID: 220330A7.LCSW30A

Run in Batch: 220330A7, Run Date: 03/30/2022 12:18, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Acetone		89.2	29.9	161.5	13.9	30.0
2-Butanone (MEK)		106.1	44.0	134.4	6.7	30.0
Benzene		105.0	79.9	124.9	4.3	30.0
Bromodichloromethane		100.9	80.4	128.2	4.0	30.0
Bromoform		101.4	69.4	128.0	1.5	30.0
Bromomethane		107.0	56.8	151.3	0.7	30.0
Carbon disulfide		105.7	63.8	137.4	4.5	30.0
Carbon tetrachloride		93.7	72.6	133.0	3.1	30.0
Chlorobenzene		104.4	79.2	122.7	4.6	30.0
Chloroethane		103.4	53.4	149.4	2.3	30.0
Chloroform		102.8	78.4	124.0	2.0	30.0
Chloromethane		102.3	23.8	166.5	0.4	30.0
1,2-Dibromo-3-chloropropane		105.1	21.2	189.4	7.0	30.0
1,2-Dichlorobenzene		105.4	10.0	166.2	3.3	30.0
1,2-Dichloroethane		94.2	76.0	126.3	1.2	30.0
1,2-Dichloropropane		105.3	78.6	126.4	2.6	30.0
1,3-Dichlorobenzene		104.5	77.0	131.3	4.3	30.0
1,4-Dichlorobenzene		103.2	20.7	137.7	3.4	30.0
cis-1,2-Dichloroethene		107.9	76.6	122.1	0.9	30.0
Dibromochloromethane		103.3	74.6	127.2	2.9	30.0
Dichlorodifluoromethane		89.2	10.0	222.8	2.0	30.0
trans-1,2-Dichloroethene		102.9	73.6	129.3	2.4	30.0
Ethylbenzene		102.8	79.5	129.1	6.8	30.0
2-Hexanone		100.9	55.4	136.9	5.5	30.0
4-Methyl-2-pentanone (MIBK)		104.5	71.6	125.2	7.1	30.0
tert-Methyl butyl ether (MTBE)		104.8	73.2	122.4	3.9	30.0
Methylene chloride		104.3	73.3	121.1	2.1	30.0
Styrene		106.6	69.5	126.7	6.6	30.0
1,1,1-Trichloroethane		97.2	79.4	130.9	0.0	30.0
1,1,2-Trichloroethane		104.6	78.7	123.1	0.9	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220330W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: 220330A7.LCSDW30A, Parent Sample ID: 220330A7.LCSW30A

Run in Batch: 220330A7, Run Date: 03/30/2022 12:18, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,2,4-Trichlorobenzene		110.0	27.4	143.4	0.4	30.0
Tetrachloroethene		102.3	74.5	124.5	1.1	30.0
Toluene		103.7	79.8	124.5	3.7	30.0
Trichloroethene		100.4	79.7	124.2	3.6	30.0
Trichlorofluoromethane		94.1	59.7	151.8	2.5	30.0
Vinyl chloride		102.5	43.5	149.1	1.2	30.0
o-Xylene		104.6	80.2	131.0	4.8	30.0
p,m-Xylene		104.7	79.4	132.2	6.1	30.0
Isopropylbenzene		103.5	74.4	121.5	7.2	30.0
Cyclohexane		96.2	10.0	169.1	2.9	30.0
1,1-Dichloroethane		103.5	71.5	126.2	1.3	30.0
1,1-Dichloroethene		97.5	69.6	139.4	1.8	30.0
Methyl Acetate		100.6	64.7	125.4	7.3	30.0
Methyl cyclohexane		94.5	76.6	131.3	6.4	30.0
1,1,2-Trichloro-1,2,2-trifluoroethane		98.6	75.1	135.9	2.3	30.0
1,2-Dibromoethane		102.8	70.3	133.7	2.5	30.0
1,1,2,2-Tetrachloroethane		107.8	79.8	126.3	1.4	30.0
cis-1,3-Dichloropropene		107.3	79.8	129.9	1.8	30.0
trans-1,3-Dichloropropene		103.7	74.0	131.3	3.0	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220401W3

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 220401B7.BLKW01B

Run in Batch: 220401B7, Run Date: 04/02/2022 01:58, Prep Date: 04/01/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Acetone		ND	10.00	ug/l
2-Butanone (MEK)		ND	10.00	ug/l
Benzene		ND	1.00	ug/l
Bromodichloromethane		ND	1.00	ug/l
Bromoform		ND	1.00	ug/l
Bromomethane		ND	1.00	ug/l
Carbon disulfide		ND	1.00	ug/l
Carbon tetrachloride		ND	1.00	ug/l
Chlorobenzene		ND	1.00	ug/l
Chloroethane		ND	1.00	ug/l
Chloroform		ND	1.00	ug/l
Chloromethane		ND	1.00	ug/l
1,2-Dibromo-3-chloropropane		ND	1.00	ug/l
1,2-Dichlorobenzene		ND	1.00	ug/l
1,2-Dichloroethane		ND	1.00	ug/l
1,2-Dichloropropane		ND	1.00	ug/l
1,3-Dichlorobenzene		ND	1.00	ug/l
1,4-Dichlorobenzene		ND	1.00	ug/l
cis-1,2-Dichloroethene		ND	1.00	ug/l
Dibromochloromethane		ND	1.00	ug/l
Dichlorodifluoromethane		ND	1.00	ug/l
trans-1,2-Dichloroethene		ND	1.00	ug/l
Ethylbenzene		ND	1.00	ug/l
2-Hexanone		ND	10.00	ug/l
4-Methyl-2-pentanone (MIBK)		ND	10.00	ug/l
tert-Methyl butyl ether (MTBE)		ND	1.00	ug/l
Methylene chloride		ND	1.00	ug/l
Styrene		ND	1.00	ug/l
1,1,1-Trichloroethane		ND	1.00	ug/l
1,1,2-Trichloroethane		ND	1.00	ug/l
1,2,4-Trichlorobenzene		ND	1.00	ug/l
Tetrachloroethene		ND	1.00	ug/l
Toluene		ND	1.00	ug/l
Trichloroethene		ND	1.00	ug/l
Trichlorofluoromethane		ND	1.00	ug/l
Vinyl chloride		ND	1.00	ug/l
o-Xylene		ND	1.00	ug/l
p,m-Xylene		ND	1.00	ug/l
Isopropylbenzene		ND	1.00	ug/l
Cyclohexane		ND	1.00	ug/l
1,1-Dichloroethane		ND	1.00	ug/l
1,1-Dichloroethene		ND	1.00	ug/l
Methyl Acetate		ND	1.00	ug/l
Methyl cyclohexane		ND	1.00	ug/l
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	1.00	ug/l
1,2-Dibromoethane		ND	1.00	ug/l

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220401W3 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK) (continued)

Lab Sample ID: 220401B7.BLKW01B

Run in Batch: 220401B7, Run Date: 04/02/2022 01:58, Prep Date: 04/01/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
1,1,2,2-Tetrachloroethane		ND	1.00	ug/l
cis-1,3-Dichloropropene		ND	1.00	ug/l
trans-1,3-Dichloropropene		ND	1.00	ug/l

Laboratory Control Sample (LCS)

Lab Sample ID: 220401B7.LCSW01B

Run in Batch: 220401B7, Run Date: 04/02/2022 00:25, Prep Date: 04/01/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Acetone		78.6	29.9	161.5
2-Butanone (MEK)		89.9	44.0	134.4
Benzene		101.5	79.9	124.9
Bromodichloromethane		94.6	80.4	128.2
Bromoform		95.7	69.4	128.0
Bromomethane		98.7	56.8	151.3
Carbon disulfide		99.2	63.8	137.4
Carbon tetrachloride		86.5	72.6	133.0
Chlorobenzene		107.3	79.2	122.7
Chloroethane		96.5	53.4	149.4
Chloroform		96.0	78.4	124.0
Chloromethane		94.6	23.8	166.5
1,2-Dibromo-3-chloropropane		99.3	21.2	189.4
1,2-Dichlorobenzene		109.0	10.0	166.2
1,2-Dichloroethane		88.1	76.0	126.3
1,2-Dichloropropane		101.8	78.6	126.4
1,3-Dichlorobenzene		107.9	77.0	131.3
1,4-Dichlorobenzene		106.8	20.7	137.7
cis-1,2-Dichloroethene		101.4	76.6	122.1
Dibromochloromethane		101.4	74.6	127.2
Dichlorodifluoromethane		79.8	10.0	222.8
trans-1,2-Dichloroethene		94.0	73.6	129.3
Ethylbenzene		106.0	79.5	129.1
2-Hexanone		90.2	55.4	136.9
4-Methyl-2-pentanone (MIBK)		92.7	71.6	125.2
tert-Methyl butyl ether (MTBE)		94.2	73.2	122.4
Methylene chloride		97.1	73.3	121.1
Styrene		110.0	69.5	126.7
1,1,1-Trichloroethane		88.5	79.4	130.9
1,1,2-Trichloroethane		99.6	78.7	123.1
1,2,4-Trichlorobenzene		111.7	27.4	143.4
Tetrachloroethene		93.6	74.5	124.5
Toluene		100.4	79.8	124.5
Trichloroethene		95.9	79.7	124.2
Trichlorofluoromethane		88.9	59.7	151.8
Vinyl chloride		96.1	43.5	149.1
o-Xylene		105.8	80.2	131.0
p,m-Xylene		105.9	79.4	132.2

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220401W3 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: 220401B7.LCSW01B

Run in Batch: 220401B7, Run Date: 04/02/2022 00:25, Prep Date: 04/01/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Isopropylbenzene		106.7	74.4	121.5
Cyclohexane		93.4	10.0	169.1
1,1-Dichloroethane		96.2	71.5	126.2
1,1-Dichloroethene		90.1	69.6	139.4
Methyl Acetate		89.0	64.7	125.4
Methyl cyclohexane		92.0	76.6	131.3
1,1,2-Trichloro-1,2,2-trifluoroethane		92.2	75.1	135.9
1,2-Dibromoethane		103.7	70.3	133.7
1,1,2,2-Tetrachloroethane		106.3	79.8	126.3
cis-1,3-Dichloropropene		98.1	79.8	129.9
trans-1,3-Dichloropropene		94.3	74.0	131.3

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 220401B7.LCSDW01B, Parent Sample ID: 220401B7.LCSW01B

Run in Batch: 220401B7, Run Date: 04/02/2022 00:49, Prep Date: 04/01/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Acetone		92.6	29.9	161.5	16.4	30.0
2-Butanone (MEK)		104.8	44.0	134.4	15.3	30.0
Benzene		96.5	79.9	124.9	5.1	30.0
Bromodichloromethane		92.0	80.4	128.2	2.8	30.0
Bromoform		96.2	69.4	128.0	0.5	30.0
Bromomethane		95.2	56.8	151.3	3.7	30.0
Carbon disulfide		95.2	63.8	137.4	4.2	30.0
Carbon tetrachloride		80.7	72.6	133.0	6.9	30.0
Chlorobenzene		101.4	79.2	122.7	5.6	30.0
Chloroethane		92.9	53.4	149.4	3.8	30.0
Chloroform		93.6	78.4	124.0	2.6	30.0
Chloromethane		92.0	23.8	166.5	2.8	30.0
1,2-Dibromo-3-chloropropane		101.7	21.2	189.4	2.4	30.0
1,2-Dichlorobenzene		101.6	10.0	166.2	7.1	30.0
1,2-Dichloroethane		84.8	76.0	126.3	3.8	30.0
1,2-Dichloropropane		97.5	78.6	126.4	4.3	30.0
1,3-Dichlorobenzene		100.2	77.0	131.3	7.4	30.0
1,4-Dichlorobenzene		97.8	20.7	137.7	8.8	30.0
cis-1,2-Dichloroethene		98.8	76.6	122.1	2.6	30.0
Dibromochloromethane		98.3	74.6	127.2	3.1	30.0
Dichlorodifluoromethane		77.4	10.0	222.8	3.2	30.0
trans-1,2-Dichloroethene		92.3	73.6	129.3	1.8	30.0
Ethylbenzene		99.6	79.5	129.1	6.1	30.0
2-Hexanone		104.2	55.4	136.9	14.4	30.0
4-Methyl-2-pentanone (MIBK)		104.5	71.6	125.2	12.0	30.0
tert-Methyl butyl ether (MTBE)		96.7	73.2	122.4	2.7	30.0
Methylene chloride		97.7	73.3	121.1	0.6	30.0
Styrene		104.8	69.5	126.7	4.9	30.0
1,1,1-Trichloroethane		86.0	79.4	130.9	2.9	30.0
1,1,2-Trichloroethane		99.4	78.7	123.1	0.2	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220401W3 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: 220401B7.LCSDW01B, Parent Sample ID: 220401B7.LCSW01B

Run in Batch: 220401B7, Run Date: 04/02/2022 00:49, Prep Date: 04/01/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,2,4-Trichlorobenzene		101.7	27.4	143.4	9.4	30.0
Tetrachloroethene		90.6	74.5	124.5	3.2	30.0
Toluene		97.0	79.8	124.5	3.4	30.0
Trichloroethene		90.9	79.7	124.2	5.3	30.0
Trichlorofluoromethane		84.8	59.7	151.8	4.8	30.0
Vinyl chloride		91.8	43.5	149.1	4.6	30.0
o-Xylene		98.2	80.2	131.0	7.5	30.0
p,m-Xylene		100.6	79.4	132.2	5.2	30.0
Isopropylbenzene		97.8	74.4	121.5	8.7	30.0
Cyclohexane		88.9	10.0	169.1	5.0	30.0
1,1-Dichloroethane		94.7	71.5	126.2	1.5	30.0
1,1-Dichloroethene		87.8	69.6	139.4	2.6	30.0
Methyl Acetate		97.7	64.7	125.4	9.3	30.0
Methyl cyclohexane		86.9	76.6	131.3	5.7	30.0
1,1,2-Trichloro-1,2,2-trifluoroethane		87.4	75.1	135.9	5.3	30.0
1,2-Dibromoethane		103.2	70.3	133.7	0.4	30.0
1,1,2,2-Tetrachloroethane		107.5	79.8	126.3	1.1	30.0
cis-1,3-Dichloropropene		95.5	79.8	129.9	2.7	30.0
trans-1,3-Dichloropropene		94.7	74.0	131.3	0.5	30.0



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

C.O.C. PAGE # _____ OF _____ 140671

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: LEXI CRISP j Tiffany Linder
 COMPANY: ARCADIS
 ADDRESS: 23550 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: Accounts Payable SAME
 COMPANY: Arccadis
 ADDRESS: _____
 CITY: _____ STATE: _____ ZIP CODE: _____
 PHONE NO.: _____ E-MAIL ADDRESS: _____

PROJECT NO./NAME: 30112891.00005 / Racer PVC SAMPLER(S) - PLEASE PRINT/SIGN NAME: Gary Schefer / Gary Schefer
 TURNAROUND TIME REQUIRED 1 DAY 2 DAYS 3 DAYS STANDARD OTHER _____
 DELIVERABLES REQUIRED STD LEVEL II LEVEL III LEVEL IV EDD OTHER _____

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

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 ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	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
	DATE	TIME											
34185.01	3/22/22	10:21	MW05-10-GW-032222	GW	3		X						X
.02	3/22/22	11:51	MW05-09-GW-032222	GW	3		X						X
.03	3/22/22	13:24	MW-07-20-GW-032222	GW	3		X						X
.04	3/22/22	13:24	MW-07-20-MS-GW-032222	GW	3		X						X
.05	3/22/22	13:24	MW-07-20-MSD-GW-032222	GW	3		X						X
.06	3/22/22	15:01	MWF12-01R-GW-032222	GW	3		X						X
.07	3/22/22	16:01	MWF12-02R-GW-032222	GW	3		X						X
.08	3/22/22		DUP-01-GW-032222	GW	3		X						X
.09	3/23/22	10:06	Unknown-01-GW-032322	GW	3		X						X
.10	3/23/22	11:21	MWF7-02-GW-032322	GW	3		X						X
.11	3/23/22	13:11	MWF7-03-GW-032322	GW	3		X						X
.12													

Site Specific VOCs

RELINQUISHED BY: [Signature] *Sampler DATE: 3/23/22 TIME: 1400
 RECEIVED BY: [Signature] DATE: 3/23/22 TIME: 1400
 RELINQUISHED BY: [Signature] DATE: 3/23/22 TIME: 15:00
 RECEIVED BY: [Signature] DATE: 3/23/22 TIME: 1500

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 4.4



Quality Control Report

Report ID: QC-S34186-01
Generated on 03/25/2022

Report to

Attention: Alexis Crisp
Arcadis US, Inc.
28550 Cabot Drive
Suite 500
Novi, MI 48377

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

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

Phone: 810-225-1909 FAX:

Report Summary

Lab Sample ID(s): S34186.01-S34186.08
Project: 30112891.00005 / Racer PNC
Submitted Date/Time: 03/23/2022 15:00
Sampled by: Christina Weaver
P.O. #: 30112891.00005

QC Report Sections

Cover Page (Page 1)
Analysis Summary (Pages 2-9)
Prep Batch Summary (Page 10)
Surrogates per Lab Sample (Pages 11-18)
Surrogates per QC Sample (Page 19)
Batch QC Results (Pages 20-23)

Report Flag Descriptions

*: QC result is outside of indicated control limits
W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S34186.01

Sample Tag: MW-05-18_GW-032222

Collected Date/Time: 03/22/2022 13:20

Matrix: Groundwater

COC Reference: 140668

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/25/22 00:06	220324B9	VF220324W4	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34186.02

Sample Tag: MW-02-17_GW-032222

Collected Date/Time: 03/22/2022 14:40

Matrix: Groundwater

COC Reference: 140668

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/25/22 00:25	220324B9	VF220324W4	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34186.03

Sample Tag: DUP-02_GW-032222

Collected Date/Time: 03/22/2022 00:01

Matrix: Groundwater

COC Reference: 140668

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/25/22 00:44	220324B9	VF220324W4	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34186.04

Sample Tag: MW-08-21_GW-032222

Collected Date/Time: 03/22/2022 15:40

Matrix: Groundwater

COC Reference: 140668

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/25/22 01:04	220324B9	VF220324W4	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34186.05

Sample Tag: MWF16-15_GW-032322

Collected Date/Time: 03/23/2022 10:15

Matrix: Groundwater

COC Reference: 140668

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/25/22 01:23	220324B9	VF220324W4	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34186.06

Sample Tag: MW-13-22_GW-032322

Collected Date/Time: 03/23/2022 11:40

Matrix: Groundwater

COC Reference: 140668

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/25/22 01:42	220324B9	VF220324W4	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34186.07

Sample Tag: MW-14-22_GW-032322

Collected Date/Time: 03/23/2022 12:55

Matrix: Groundwater

COC Reference: 140668

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/25/22 02:02	220324B9	VF220324W4	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34186.08

Sample Tag: Trip Blank

Collected Date/Time: 03/23/2022 00:01

Matrix: Water

COC Reference: 140668

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/24/22 23:09	220324B9	VF220324W4	Yes	BLK/LCS/LCSD

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: VF220324W4

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S34186.01	Volatile Organics - Arcadis	SW5030C/8260C	03/25/22 00:06	220324B9
S34186.02	Volatile Organics - Arcadis	SW5030C/8260C	03/25/22 00:25	220324B9
S34186.03	Volatile Organics - Arcadis	SW5030C/8260C	03/25/22 00:44	220324B9
S34186.04	Volatile Organics - Arcadis	SW5030C/8260C	03/25/22 01:04	220324B9
S34186.05	Volatile Organics - Arcadis	SW5030C/8260C	03/25/22 01:23	220324B9
S34186.06	Volatile Organics - Arcadis	SW5030C/8260C	03/25/22 01:42	220324B9
S34186.07	Volatile Organics - Arcadis	SW5030C/8260C	03/25/22 02:02	220324B9
S34186.08	Volatile Organics - Arcadis	SW5030C/8260C	03/24/22 23:09	220324B9

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34186.01

Sample Tag: MW-05-18_GW-032222

Collected Date/Time: 03/22/2022 13:20

Matrix: Groundwater

COC Reference: 140668

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220324B9, Run Date: 03/25/2022 00:06, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		102.4	80.0	124.0
1,2-Dichloroethane-D4		97.3	72.0	125.0
Toluene-D8		93.9	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34186.02

Sample Tag: MW-02-17_GW-032222

Collected Date/Time: 03/22/2022 14:40

Matrix: Groundwater

COC Reference: 140668

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220324B9, Run Date: 03/25/2022 00:25, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		102.1	80.0	124.0
1,2-Dichloroethane-D4		96.1	72.0	125.0
Toluene-D8		93.0	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34186.03

Sample Tag: DUP-02_GW-032222

Collected Date/Time: 03/22/2022 00:01

Matrix: Groundwater

COC Reference: 140668

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220324B9, Run Date: 03/25/2022 00:44, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		102.0	80.0	124.0
1,2-Dichloroethane-D4		94.0	72.0	125.0
Toluene-D8		92.8	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34186.04

Sample Tag: MW-08-21_GW-032222

Collected Date/Time: 03/22/2022 15:40

Matrix: Groundwater

COC Reference: 140668

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220324B9, Run Date: 03/25/2022 01:04, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		102.3	80.0	124.0
1,2-Dichloroethane-D4		93.2	72.0	125.0
Toluene-D8		94.4	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34186.05

Sample Tag: MWF16-15_GW-032322

Collected Date/Time: 03/23/2022 10:15

Matrix: Groundwater

COC Reference: 140668

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220324B9, Run Date: 03/25/2022 01:23, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		102.3	80.0	124.0
1,2-Dichloroethane-D4		96.1	72.0	125.0
Toluene-D8		94.5	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34186.06

Sample Tag: MW-13-22_GW-032322

Collected Date/Time: 03/23/2022 11:40

Matrix: Groundwater

COC Reference: 140668

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220324B9, Run Date: 03/25/2022 01:42, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		100.7	80.0	124.0
1,2-Dichloroethane-D4		92.5	72.0	125.0
Toluene-D8		92.8	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34186.07

Sample Tag: MW-14-22_GW-032322

Collected Date/Time: 03/23/2022 12:55

Matrix: Groundwater

COC Reference: 140668

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220324B9, Run Date: 03/25/2022 02:02, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		101.3	80.0	124.0
1,2-Dichloroethane-D4		94.0	72.0	125.0
Toluene-D8		93.6	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34186.08

Sample Tag: Trip Blank

Collected Date/Time: 03/23/2022 00:01

Matrix: Water

COC Reference: 140668

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220324B9, Run Date: 03/24/2022 23:09, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		102.9	80.0	124.0
1,2-Dichloroethane-D4		94.6	72.0	125.0
Toluene-D8		94.1	89.0	112.0

QC Report - Surrogates per QC Sample

Organics - Volatiles, Prep Batch ID: VF220324W4

QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 220324B9.BLKW24B

Run in Batch: 220324B9, Run Date: 03/24/2022 22:49, Prep Date: 03/24/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		102.2	80.0	124.0
1,2-Dichloroethane-D4		95.4	72.0	125.0
Toluene-D8		93.4	89.0	112.0

Laboratory Control Sample (LCS)

Lab Sample ID: 220324B9.LCSW24B

Run in Batch: 220324B9, Run Date: 03/24/2022 21:33, Prep Date: 03/24/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		108.5	80.0	124.0
1,2-Dichloroethane-D4		90.6	72.0	125.0
Toluene-D8		103.3	89.0	112.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 220324B9.LCSDW24B, Parent Sample ID: 220324B9.LCSW24B

Run in Batch: 220324B9, Run Date: 03/24/2022 21:52, Prep Date: 03/24/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		107.4	80.0	124.0
1,2-Dichloroethane-D4		96.1	72.0	125.0
Toluene-D8		103.7	89.0	112.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220324W4

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 220324B9.BLKW24B

Run in Batch: 220324B9, Run Date: 03/24/2022 22:49, Prep Date: 03/24/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Acetone		ND	10.00	ug/l
2-Butanone (MEK)		ND	10.00	ug/l
Benzene		ND	1.00	ug/l
Bromodichloromethane		ND	1.00	ug/l
Bromoform		ND	1.00	ug/l
Bromomethane		ND	1.00	ug/l
Carbon disulfide		ND	1.00	ug/l
Carbon tetrachloride		ND	1.00	ug/l
Chlorobenzene		ND	1.00	ug/l
Chloroethane		ND	1.00	ug/l
Chloroform		ND	1.00	ug/l
Chloromethane		ND	1.00	ug/l
1,2-Dibromo-3-chloropropane		ND	1.00	ug/l
1,2-Dichlorobenzene		ND	1.00	ug/l
1,2-Dichloroethane		ND	1.00	ug/l
1,2-Dichloropropane		ND	1.00	ug/l
1,3-Dichlorobenzene		ND	1.00	ug/l
1,4-Dichlorobenzene		ND	1.00	ug/l
cis-1,2-Dichloroethene		ND	1.00	ug/l
Dibromochloromethane		ND	1.00	ug/l
Dichlorodifluoromethane		ND	1.00	ug/l
trans-1,2-Dichloroethene		ND	1.00	ug/l
Ethylbenzene		ND	1.00	ug/l
2-Hexanone		ND	10.00	ug/l
4-Methyl-2-pentanone (MIBK)		ND	10.00	ug/l
tert-Methyl butyl ether (MTBE)		ND	1.00	ug/l
Methylene chloride		ND	1.00	ug/l
Styrene		ND	1.00	ug/l
1,1,1-Trichloroethane		ND	1.00	ug/l
1,1,2-Trichloroethane		ND	1.00	ug/l
1,2,4-Trichlorobenzene		ND	1.00	ug/l
Tetrachloroethene		ND	1.00	ug/l
Toluene		ND	1.00	ug/l
Trichloroethene		ND	1.00	ug/l
Trichlorofluoromethane		ND	1.00	ug/l
Vinyl chloride		ND	1.00	ug/l
o-Xylene		ND	1.00	ug/l
p,m-Xylene		ND	1.00	ug/l
Isopropylbenzene		ND	1.00	ug/l
Cyclohexane		ND	1.00	ug/l
1,1-Dichloroethane		ND	1.00	ug/l
1,1-Dichloroethene		ND	1.00	ug/l
Methyl Acetate		ND	1.00	ug/l
Methyl cyclohexane		ND	1.00	ug/l
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	1.00	ug/l
1,2-Dibromoethane		ND	1.00	ug/l

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220324W4 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK) (continued)

Lab Sample ID: 220324B9.BLKW24B

Run in Batch: 220324B9, Run Date: 03/24/2022 22:49, Prep Date: 03/24/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
1,1,2,2-Tetrachloroethane		ND	1.00	ug/l
cis-1,3-Dichloropropene		ND	1.00	ug/l
trans-1,3-Dichloropropene		ND	1.00	ug/l

Laboratory Control Sample (LCS)

Lab Sample ID: 220324B9.LCSW24B

Run in Batch: 220324B9, Run Date: 03/24/2022 21:33, Prep Date: 03/24/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Acetone		83.0	29.9	161.5
2-Butanone (MEK)		89.8	44.0	134.4
Benzene		89.3	79.9	124.9
Bromodichloromethane		98.5	80.4	128.2
Bromoform		97.4	69.4	128.0
Bromomethane		57.8	56.8	151.3
Carbon disulfide		85.1	63.8	137.4
Carbon tetrachloride		92.6	72.6	133.0
Chlorobenzene		101.7	79.2	122.7
Chloroethane		55.0	53.4	149.4
Chloroform		97.7	78.4	124.0
Chloromethane		69.8	23.8	166.5
1,2-Dibromo-3-chloropropane		145.3	21.2	189.4
1,2-Dichlorobenzene		105.4	10.0	166.2
1,2-Dichloroethane		89.4	76.0	126.3
1,2-Dichloropropane		91.0	78.6	126.4
1,3-Dichlorobenzene		104.3	77.0	131.3
1,4-Dichlorobenzene		101.2	20.7	137.7
cis-1,2-Dichloroethene		94.9	76.6	122.1
Dibromochloromethane		100.3	74.6	127.2
Dichlorodifluoromethane		104.6	10.0	222.8
trans-1,2-Dichloroethene		89.7	73.6	129.3
Ethylbenzene		99.8	79.5	129.1
2-Hexanone		91.8	55.4	136.9
4-Methyl-2-pentanone (MIBK)		94.2	71.6	125.2
tert-Methyl butyl ether (MTBE)		87.3	73.2	122.4
Methylene chloride		88.3	73.3	121.1
Styrene		74.7	69.5	126.7
1,1,1-Trichloroethane		93.9	79.4	130.9
1,1,2-Trichloroethane		96.9	78.7	123.1
1,2,4-Trichlorobenzene	*	147.2	27.4	143.4
Tetrachloroethene		112.9	74.5	124.5
Toluene		97.9	79.8	124.5
Trichloroethene		100.1	79.7	124.2
Trichlorofluoromethane		72.0	59.7	151.8
Vinyl chloride		63.4	43.5	149.1
o-Xylene		97.9	80.2	131.0
p,m-Xylene		97.9	79.4	132.2

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220324W4 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: 220324B9.LCSW24B

Run in Batch: 220324B9, Run Date: 03/24/2022 21:33, Prep Date: 03/24/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Isopropylbenzene		102.5	74.4	121.5
Cyclohexane		81.9	10.0	169.1
1,1-Dichloroethane		92.2	71.5	126.2
1,1-Dichloroethene		86.1	69.6	139.4
Methyl Acetate		79.3	64.7	125.4
Methyl cyclohexane		88.0	76.6	131.3
1,1,2-Trichloro-1,2,2-trifluoroethane		87.8	75.1	135.9
1,2-Dibromoethane		105.2	70.3	133.7
1,1,2,2-Tetrachloroethane		99.0	79.8	126.3
cis-1,3-Dichloropropene		99.1	79.8	129.9
trans-1,3-Dichloropropene		107.0	74.0	131.3

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 220324B9.LCSDW24B, Parent Sample ID: 220324B9.LCSW24B

Run in Batch: 220324B9, Run Date: 03/24/2022 21:52, Prep Date: 03/24/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Acetone		86.4	29.9	161.5	4.0	30.0
2-Butanone (MEK)		93.1	44.0	134.4	3.7	30.0
Benzene		87.1	79.9	124.9	2.5	30.0
Bromodichloromethane		98.5	80.4	128.2	0.0	30.0
Bromoform		97.8	69.4	128.0	0.3	30.0
Bromomethane	*	56.1	56.8	151.3	3.0	30.0
Carbon disulfide		81.1	63.8	137.4	4.8	30.0
Carbon tetrachloride		88.9	72.6	133.0	4.1	30.0
Chlorobenzene		97.8	79.2	122.7	3.9	30.0
Chloroethane	*	53.2	53.4	149.4	3.3	30.0
Chloroform		96.9	78.4	124.0	0.8	30.0
Chloromethane		66.8	23.8	166.5	4.4	30.0
1,2-Dibromo-3-chloropropane		148.6	21.2	189.4	2.3	30.0
1,2-Dichlorobenzene		102.7	10.0	166.2	2.7	30.0
1,2-Dichloroethane		91.5	76.0	126.3	2.3	30.0
1,2-Dichloropropane		91.4	78.6	126.4	0.4	30.0
1,3-Dichlorobenzene		102.4	77.0	131.3	1.8	30.0
1,4-Dichlorobenzene		99.1	20.7	137.7	2.1	30.0
cis-1,2-Dichloroethene		97.0	76.6	122.1	2.3	30.0
Dibromochloromethane		100.4	74.6	127.2	0.1	30.0
Dichlorodifluoromethane		101.5	10.0	222.8	3.0	30.0
trans-1,2-Dichloroethene		88.5	73.6	129.3	1.3	30.0
Ethylbenzene		92.9	79.5	129.1	7.2	30.0
2-Hexanone		98.5	55.4	136.9	7.1	30.0
4-Methyl-2-pentanone (MIBK)		99.0	71.6	125.2	5.0	30.0
tert-Methyl butyl ether (MTBE)		91.7	73.2	122.4	5.0	30.0
Methylene chloride		87.2	73.3	121.1	1.2	30.0
Styrene		71.6	69.5	126.7	4.3	30.0
1,1,1-Trichloroethane		90.4	79.4	130.9	3.8	30.0
1,1,2-Trichloroethane		99.5	78.7	123.1	2.6	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220324W4 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: 220324B9.LCSDW24B, Parent Sample ID: 220324B9.LCSW24B

Run in Batch: 220324B9, Run Date: 03/24/2022 21:52, Prep Date: 03/24/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,2,4-Trichlorobenzene	*	147.8	27.4	143.4	0.4	30.0
Tetrachloroethene		109.9	74.5	124.5	2.7	30.0
Toluene		95.2	79.8	124.5	2.8	30.0
Trichloroethene		96.6	79.7	124.2	3.6	30.0
Trichlorofluoromethane		67.3	59.7	151.8	6.7	30.0
Vinyl chloride		61.7	43.5	149.1	2.8	30.0
o-Xylene		93.4	80.2	131.0	4.8	30.0
p,m-Xylene		92.4	79.4	132.2	5.8	30.0
Isopropylbenzene		95.3	74.4	121.5	7.3	30.0
Cyclohexane		80.0	10.0	169.1	2.3	30.0
1,1-Dichloroethane		92.2	71.5	126.2	0.0	30.0
1,1-Dichloroethene		81.0	69.6	139.4	6.1	30.0
Methyl Acetate		85.8	64.7	125.4	7.9	30.0
Methyl cyclohexane		86.1	76.6	131.3	2.2	30.0
1,1,2-Trichloro-1,2,2-trifluoroethane		84.6	75.1	135.9	3.7	30.0
1,2-Dibromoethane		105.5	70.3	133.7	0.3	30.0
1,1,2,2-Tetrachloroethane		99.2	79.8	126.3	0.2	30.0
cis-1,3-Dichloropropene		100.2	79.8	129.9	1.1	30.0
trans-1,3-Dichloropropene		109.2	74.0	131.3	2.0	30.0



Quality Control Report

Report ID: QC-S34268-01
Generated on 04/04/2022

Report to

Attention: Alexis Crisp
Arcadis US, Inc.
28550 Cabot Drive
Suite 500
Novi, MI 48377

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

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

Phone: 810-225-1909 FAX:

Report Summary

Lab Sample ID(s): S34268.01-S34268.12
Project: 30112891.00005 / Racer PNC
Submitted Date/Time: 03/25/2022 12:45
Sampled by: Christina Weaver
P.O. #: 30112891.00005

QC Report Sections

Cover Page (Page 1)
Analysis Summary (Pages 2-13)
Prep Batch Summary (Page 14)
Surrogates per Lab Sample (Pages 15-24)
Surrogates per QC Sample (Pages 25-26)
Batch QC Results (Pages 27-34)

Report Flag Descriptions

*: QC result is outside of indicated control limits
W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S34268.01

Sample Tag: Trip Blank

Collected Date/Time: 03/23/2022 00:01

Matrix: Water

COC Reference: 140670

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 02:26	220330B7	VF220330W3	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34268.02

Sample Tag: MWF16-22_GW-032322

Collected Date/Time: 03/23/2022 14:45

Matrix: Groundwater

COC Reference: 140670

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 03:13	220330B7	VF220330W3	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34268.03

Sample Tag: MWF16-16_GW-032322

Collected Date/Time: 03/23/2022 15:40

Matrix: Groundwater

COC Reference: 140670

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 17:50	220331B9	VF220331W2	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34268.04

Sample Tag: MW-06-20_GW-032422

Collected Date/Time: 03/24/2022 09:25

Matrix: Groundwater

COC Reference: 140670

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 04:00	220330B7	VF220330W3	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34268.05

Sample Tag: MWF16-23_GW-032422

Collected Date/Time: 03/24/2022 10:30

Matrix: Groundwater

COC Reference: 140670

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 04:23	220330B7	VF220330W3	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34268.06

Sample Tag: MWF16-25_GW-032422

Collected Date/Time: 03/24/2022 11:25

Matrix: Groundwater

COC Reference: 140670

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 04:46	220330B7	VF220330W3	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34268.07

Sample Tag: MW-11-22_GW-032422

Collected Date/Time: 03/24/2022 12:15

Matrix: Groundwater

COC Reference: 140670

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 05:11	220330B7	VF220330W3	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34268.08

Sample Tag: MWF16-24_GW-032422

Collected Date/Time: 03/24/2022 13:40

Matrix: Groundwater

COC Reference: 140670

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 02:50	220330B7	VF220330W3	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34268.09

Sample Tag: MWF16-24_GW-032422 MS

Collected Date/Time: 03/24/2022 13:40

Matrix: Groundwater

COC Reference: 140670

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 00:29	220330B7	VF220330W3	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34268.10

Sample Tag: MWF16-24_GW-032422 MSD

Collected Date/Time: 03/24/2022 13:40

Matrix: Groundwater

COC Reference: 140670

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 00:52	220330B7	VF220330W3	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34268.11

Sample Tag: DUP-03_GW-032322

Collected Date/Time: 03/23/2022 00:01

Matrix: Groundwater

COC Reference: 140670

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 18:09	220331B9	VF220331W2	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34268.12

Sample Tag: TW-12-22_GW-032422

Collected Date/Time: 03/24/2022 15:20

Matrix: Groundwater

COC Reference: 140670

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 05:58	220330B7	VF220330W3	Yes	BLK/LCS/LCSD

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: VF220330W3

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S34268.01	Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 02:26	220330B7
S34268.02	Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 03:13	220330B7
S34268.04	Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 04:00	220330B7
S34268.05	Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 04:23	220330B7
S34268.06	Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 04:46	220330B7
S34268.07	Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 05:11	220330B7
S34268.08	Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 02:50	220330B7
S34268.09	Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 00:29	220330B7
S34268.10	Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 00:52	220330B7
S34268.12	Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 05:58	220330B7

Organics - Volatiles, Prep Batch ID: VF220331W2

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S34268.03	Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 17:50	220331B9
S34268.11	Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 18:09	220331B9

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34268.01

Sample Tag: Trip Blank

Collected Date/Time: 03/23/2022 00:01

Matrix: Water

COC Reference: 140670

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330B7, Run Date: 03/31/2022 02:26, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		99.7	80.0	124.0
1,2-Dichloroethane-D4		89.7	72.0	125.0
Toluene-D8		100.8	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34268.02

Sample Tag: MWF16-22_GW-032322

Collected Date/Time: 03/23/2022 14:45

Matrix: Groundwater

COC Reference: 140670

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330B7, Run Date: 03/31/2022 03:13, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		98.4	80.0	124.0
1,2-Dichloroethane-D4		87.7	72.0	125.0
Toluene-D8		101.2	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: **S34268.03**

Sample Tag: MWF16-16_GW-032322

Collected Date/Time: 03/23/2022 15:40

Matrix: Groundwater

COC Reference: 140670

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220331B9, Run Date: 03/31/2022 17:50, Matrix: WW, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		94.1	80.0	124.0
1,2-Dichloroethane-D4		110.0	72.0	125.0
Toluene-D8		106.1	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34268.04

Sample Tag: MW-06-20_GW-032422

Collected Date/Time: 03/24/2022 09:25

Matrix: Groundwater

COC Reference: 140670

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330B7, Run Date: 03/31/2022 04:00, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		98.0	80.0	124.0
1,2-Dichloroethane-D4		90.2	72.0	125.0
Toluene-D8		100.7	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34268.05

Sample Tag: MWF16-23_GW-032422

Collected Date/Time: 03/24/2022 10:30

Matrix: Groundwater

COC Reference: 140670

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330B7, Run Date: 03/31/2022 04:23, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		98.5	80.0	124.0
1,2-Dichloroethane-D4		95.3	72.0	125.0
Toluene-D8		101.6	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34268.06

Sample Tag: MWF16-25_GW-032422

Collected Date/Time: 03/24/2022 11:25

Matrix: Groundwater

COC Reference: 140670

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330B7, Run Date: 03/31/2022 04:46, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		98.5	80.0	124.0
1,2-Dichloroethane-D4		90.2	72.0	125.0
Toluene-D8		101.7	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34268.07

Sample Tag: MW-11-22_GW-032422

Collected Date/Time: 03/24/2022 12:15

Matrix: Groundwater

COC Reference: 140670

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330B7, Run Date: 03/31/2022 05:11, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		97.4	80.0	124.0
1,2-Dichloroethane-D4		91.3	72.0	125.0
Toluene-D8		97.6	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34268.08

Sample Tag: MWF16-24_GW-032422

Collected Date/Time: 03/24/2022 13:40

Matrix: Groundwater

COC Reference: 140670

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330B7, Run Date: 03/31/2022 02:50, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		100.0	80.0	124.0
1,2-Dichloroethane-D4		92.3	72.0	125.0
Toluene-D8		100.7	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34268.11

Sample Tag: DUP-03_GW-032322

Collected Date/Time: 03/23/2022 00:01

Matrix: Groundwater

COC Reference: 140670

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220331B9, Run Date: 03/31/2022 18:09, Matrix: WW, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		94.1	80.0	124.0
1,2-Dichloroethane-D4		112.5	72.0	125.0
Toluene-D8		107.6	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34268.12

Sample Tag: TW-12-22_GW-032422

Collected Date/Time: 03/24/2022 15:20

Matrix: Groundwater

COC Reference: 140670

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330B7, Run Date: 03/31/2022 05:58, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		97.4	80.0	124.0
1,2-Dichloroethane-D4		88.4	72.0	125.0
Toluene-D8		101.6	89.0	112.0

QC Report - Surrogates per QC Sample

Organics - Volatiles, Prep Batch ID: VF220330W3

QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 220330B7.BLKW30B

Run in Batch: 220330B7, Run Date: 03/31/2022 02:03, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		97.6	80.0	124.0
1,2-Dichloroethane-D4		86.9	72.0	125.0
Toluene-D8		101.1	89.0	112.0

Laboratory Control Sample (LCS)

Lab Sample ID: 220330B7.LCSW30B

Run in Batch: 220330B7, Run Date: 03/30/2022 23:42, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		105.1	80.0	124.0
1,2-Dichloroethane-D4		94.7	72.0	125.0
Toluene-D8		100.3	89.0	112.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 220330B7.LCSDW30B, Parent Sample ID: 220330B7.LCSW30B

Run in Batch: 220330B7, Run Date: 03/31/2022 00:06, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		101.0	80.0	124.0
1,2-Dichloroethane-D4		89.8	72.0	125.0
Toluene-D8		99.3	89.0	112.0

QC Report - Surrogates per QC Sample

Organics - Volatiles, Prep Batch ID: VF220331W2

QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 220331B9.BLKW31A

Run in Batch: 220331B9, Run Date: 03/31/2022 16:13, Prep Date: 03/31/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		93.9	80.0	124.0
1,2-Dichloroethane-D4		109.9	72.0	125.0
Toluene-D8		106.0	89.0	112.0

Laboratory Control Sample (LCS)

Lab Sample ID: 220331B9.LCSW31A

Run in Batch: 220331B9, Run Date: 03/31/2022 14:56, Prep Date: 03/31/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		110.8	80.0	124.0
1,2-Dichloroethane-D4		107.6	72.0	125.0
Toluene-D8		106.8	89.0	112.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 220331B9.LCSDW31A, Parent Sample ID: 220331B9.LCSW31A

Run in Batch: 220331B9, Run Date: 03/31/2022 15:15, Prep Date: 03/31/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		108.4	80.0	124.0
1,2-Dichloroethane-D4		103.9	72.0	125.0
Toluene-D8		101.1	89.0	112.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220330W3

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 220330B7.BLKW30B

Run in Batch: 220330B7, Run Date: 03/31/2022 02:03, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Acetone		ND	10.00	ug/l
2-Butanone (MEK)		ND	10.00	ug/l
Benzene		ND	1.00	ug/l
Bromodichloromethane		ND	1.00	ug/l
Bromoform		ND	1.00	ug/l
Bromomethane		ND	1.00	ug/l
Carbon disulfide		ND	1.00	ug/l
Carbon tetrachloride		ND	1.00	ug/l
Chlorobenzene		ND	1.00	ug/l
Chloroethane		ND	1.00	ug/l
Chloroform		ND	1.00	ug/l
Chloromethane		ND	1.00	ug/l
1,2-Dibromo-3-chloropropane		ND	1.00	ug/l
1,2-Dichlorobenzene		ND	1.00	ug/l
1,2-Dichloroethane		ND	1.00	ug/l
1,2-Dichloropropane		ND	1.00	ug/l
1,3-Dichlorobenzene		ND	1.00	ug/l
1,4-Dichlorobenzene		ND	1.00	ug/l
cis-1,2-Dichloroethene		ND	1.00	ug/l
Dibromochloromethane		ND	1.00	ug/l
Dichlorodifluoromethane		ND	1.00	ug/l
trans-1,2-Dichloroethene		ND	1.00	ug/l
Ethylbenzene		ND	1.00	ug/l
2-Hexanone		ND	10.00	ug/l
4-Methyl-2-pentanone (MIBK)		ND	10.00	ug/l
tert-Methyl butyl ether (MTBE)		ND	1.00	ug/l
Methylene chloride		ND	1.00	ug/l
Styrene		ND	1.00	ug/l
1,1,1-Trichloroethane		ND	1.00	ug/l
1,1,2-Trichloroethane		ND	1.00	ug/l
1,2,4-Trichlorobenzene		ND	1.00	ug/l
Tetrachloroethene		ND	1.00	ug/l
Toluene		ND	1.00	ug/l
Trichloroethene		ND	1.00	ug/l
Trichlorofluoromethane		ND	1.00	ug/l
Vinyl chloride		ND	1.00	ug/l
o-Xylene		ND	1.00	ug/l
p,m-Xylene		ND	1.00	ug/l
Isopropylbenzene		ND	1.00	ug/l
Cyclohexane		ND	1.00	ug/l
1,1-Dichloroethane		ND	1.00	ug/l
1,1-Dichloroethene		ND	1.00	ug/l
Methyl Acetate		ND	1.00	ug/l
Methyl cyclohexane		ND	1.00	ug/l
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	1.00	ug/l
1,2-Dibromoethane		ND	1.00	ug/l

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220330W3 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK) (continued)

Lab Sample ID: 220330B7.BLKW30B

Run in Batch: 220330B7, Run Date: 03/31/2022 02:03, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
1,1,2,2-Tetrachloroethane		ND	1.00	ug/l
cis-1,3-Dichloropropene		ND	1.00	ug/l
trans-1,3-Dichloropropene		ND	1.00	ug/l

Laboratory Control Sample (LCS)

Lab Sample ID: 220330B7.LCSW30B

Run in Batch: 220330B7, Run Date: 03/30/2022 23:42, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Acetone		95.5	29.9	161.5
2-Butanone (MEK)		98.0	44.0	134.4
Benzene		101.9	79.9	124.9
Bromodichloromethane		97.9	80.4	128.2
Bromoform		100.7	69.4	128.0
Bromomethane		98.1	56.8	151.3
Carbon disulfide		98.7	63.8	137.4
Carbon tetrachloride		84.9	72.6	133.0
Chlorobenzene		102.3	79.2	122.7
Chloroethane		95.3	53.4	149.4
Chloroform		102.3	78.4	124.0
Chloromethane		96.7	23.8	166.5
1,2-Dibromo-3-chloropropane		97.2	21.2	189.4
1,2-Dichlorobenzene		102.3	10.0	166.2
1,2-Dichloroethane		89.9	76.0	126.3
1,2-Dichloropropane		103.5	78.6	126.4
1,3-Dichlorobenzene		101.6	77.0	131.3
1,4-Dichlorobenzene		100.1	20.7	137.7
cis-1,2-Dichloroethene		107.9	76.6	122.1
Dibromochloromethane		97.8	74.6	127.2
Dichlorodifluoromethane		84.5	10.0	222.8
trans-1,2-Dichloroethene		98.6	73.6	129.3
Ethylbenzene		99.8	79.5	129.1
2-Hexanone		102.6	55.4	136.9
4-Methyl-2-pentanone (MIBK)		100.3	71.6	125.2
tert-Methyl butyl ether (MTBE)		100.3	73.2	122.4
Methylene chloride		104.9	73.3	121.1
Styrene		108.5	69.5	126.7
1,1,1-Trichloroethane		90.5	79.4	130.9
1,1,2-Trichloroethane		102.3	78.7	123.1
1,2,4-Trichlorobenzene		99.8	27.4	143.4
Tetrachloroethene		94.2	74.5	124.5
Toluene		100.0	79.8	124.5
Trichloroethene		95.5	79.7	124.2
Trichlorofluoromethane		88.8	59.7	151.8
Vinyl chloride		93.1	43.5	149.1
o-Xylene		101.2	80.2	131.0
p,m-Xylene		103.8	79.4	132.2

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220330W3 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: 220330B7.LCSW30B

Run in Batch: 220330B7, Run Date: 03/30/2022 23:42, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Isopropylbenzene		98.8	74.4	121.5
Cyclohexane		92.8	10.0	169.1
1,1-Dichloroethane		102.0	71.5	126.2
1,1-Dichloroethene		93.6	69.6	139.4
Methyl Acetate		99.0	64.7	125.4
Methyl cyclohexane		88.8	76.6	131.3
1,1,2-Trichloro-1,2,2-trifluoroethane		91.0	75.1	135.9
1,2-Dibromoethane		102.6	70.3	133.7
1,1,2,2-Tetrachloroethane		104.8	79.8	126.3
cis-1,3-Dichloropropene		101.1	79.8	129.9
trans-1,3-Dichloropropene		99.0	74.0	131.3

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 220330B7.LCSDW30B, Parent Sample ID: 220330B7.LCSW30B

Run in Batch: 220330B7, Run Date: 03/31/2022 00:06, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Acetone		87.6	29.9	161.5	8.7	30.0
2-Butanone (MEK)		96.2	44.0	134.4	1.9	30.0
Benzene		102.1	79.9	124.9	0.1	30.0
Bromodichloromethane		97.1	80.4	128.2	0.8	30.0
Bromoform		98.7	69.4	128.0	1.9	30.0
Bromomethane		101.4	56.8	151.3	3.3	30.0
Carbon disulfide		101.5	63.8	137.4	2.8	30.0
Carbon tetrachloride		87.3	72.6	133.0	2.7	30.0
Chlorobenzene		103.3	79.2	122.7	0.9	30.0
Chloroethane		95.5	53.4	149.4	0.2	30.0
Chloroform		100.2	78.4	124.0	2.0	30.0
Chloromethane		95.3	23.8	166.5	1.4	30.0
1,2-Dibromo-3-chloropropane		95.5	21.2	189.4	1.8	30.0
1,2-Dichlorobenzene		103.8	10.0	166.2	1.5	30.0
1,2-Dichloroethane		88.9	76.0	126.3	1.0	30.0
1,2-Dichloropropane		102.0	78.6	126.4	1.5	30.0
1,3-Dichlorobenzene		103.2	77.0	131.3	1.5	30.0
1,4-Dichlorobenzene		102.2	20.7	137.7	2.1	30.0
cis-1,2-Dichloroethene		105.8	76.6	122.1	2.0	30.0
Dibromochloromethane		99.6	74.6	127.2	1.8	30.0
Dichlorodifluoromethane		81.5	10.0	222.8	3.6	30.0
trans-1,2-Dichloroethene		97.5	73.6	129.3	1.2	30.0
Ethylbenzene		102.1	79.5	129.1	2.2	30.0
2-Hexanone		91.3	55.4	136.9	11.6	30.0
4-Methyl-2-pentanone (MIBK)		94.5	71.6	125.2	6.0	30.0
tert-Methyl butyl ether (MTBE)		97.4	73.2	122.4	2.9	30.0
Methylene chloride		102.4	73.3	121.1	2.4	30.0
Styrene		108.3	69.5	126.7	0.1	30.0
1,1,1-Trichloroethane		90.2	79.4	130.9	0.4	30.0
1,1,2-Trichloroethane		99.8	78.7	123.1	2.4	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220330W3 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: 220330B7.LCSDW30B, Parent Sample ID: 220330B7.LCSW30B

Run in Batch: 220330B7, Run Date: 03/31/2022 00:06, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,2,4-Trichlorobenzene		103.5	27.4	143.4	3.6	30.0
Tetrachloroethene		94.8	74.5	124.5	0.6	30.0
Toluene		100.2	79.8	124.5	0.2	30.0
Trichloroethene		96.7	79.7	124.2	1.2	30.0
Trichlorofluoromethane		88.5	59.7	151.8	0.4	30.0
Vinyl chloride		92.5	43.5	149.1	0.6	30.0
o-Xylene		103.6	80.2	131.0	2.3	30.0
p,m-Xylene		105.1	79.4	132.2	1.2	30.0
Isopropylbenzene		103.3	74.4	121.5	4.5	30.0
Cyclohexane		92.1	10.0	169.1	0.7	30.0
1,1-Dichloroethane		99.7	71.5	126.2	2.3	30.0
1,1-Dichloroethene		90.8	69.6	139.4	3.0	30.0
Methyl Acetate		92.7	64.7	125.4	6.6	30.0
Methyl cyclohexane		88.4	76.6	131.3	0.5	30.0
1,1,2-Trichloro-1,2,2-trifluoroethane		91.3	75.1	135.9	0.4	30.0
1,2-Dibromoethane		101.2	70.3	133.7	1.4	30.0
1,1,2,2-Tetrachloroethane		103.2	79.8	126.3	1.5	30.0
cis-1,3-Dichloropropene		99.3	79.8	129.9	1.8	30.0
trans-1,3-Dichloropropene		94.6	74.0	131.3	4.6	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220331W2

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 220331B9.BLKW31A

Run in Batch: 220331B9, Run Date: 03/31/2022 16:13, Prep Date: 03/31/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Acetone		ND	10.00	ug/l
2-Butanone (MEK)		ND	10.00	ug/l
Benzene		ND	1.00	ug/l
Bromodichloromethane		ND	1.00	ug/l
Bromoform		ND	1.00	ug/l
Bromomethane		ND	1.00	ug/l
Carbon disulfide		ND	1.00	ug/l
Carbon tetrachloride		ND	1.00	ug/l
Chlorobenzene		ND	1.00	ug/l
Chloroethane		ND	1.00	ug/l
Chloroform		ND	1.00	ug/l
Chloromethane		ND	1.00	ug/l
1,2-Dibromo-3-chloropropane		ND	1.00	ug/l
1,2-Dichlorobenzene		ND	1.00	ug/l
1,2-Dichloroethane		ND	1.00	ug/l
1,2-Dichloropropane		ND	1.00	ug/l
1,3-Dichlorobenzene		ND	1.00	ug/l
1,4-Dichlorobenzene		ND	1.00	ug/l
cis-1,2-Dichloroethene		ND	1.00	ug/l
Dibromochloromethane		ND	1.00	ug/l
Dichlorodifluoromethane		ND	1.00	ug/l
trans-1,2-Dichloroethene		ND	1.00	ug/l
Ethylbenzene		ND	1.00	ug/l
2-Hexanone		ND	10.00	ug/l
4-Methyl-2-pentanone (MIBK)		ND	10.00	ug/l
tert-Methyl butyl ether (MTBE)		ND	1.00	ug/l
Methylene chloride		ND	1.00	ug/l
Styrene		ND	1.00	ug/l
1,1,1-Trichloroethane		ND	1.00	ug/l
1,1,2-Trichloroethane		ND	1.00	ug/l
1,2,4-Trichlorobenzene		ND	1.00	ug/l
Tetrachloroethene		ND	1.00	ug/l
Toluene		ND	1.00	ug/l
Trichloroethene		ND	1.00	ug/l
Trichlorofluoromethane		ND	1.00	ug/l
Vinyl chloride		ND	1.00	ug/l
o-Xylene		ND	1.00	ug/l
p,m-Xylene		ND	1.00	ug/l
Isopropylbenzene		ND	1.00	ug/l
Cyclohexane		ND	1.00	ug/l
1,1-Dichloroethane		ND	1.00	ug/l
1,1-Dichloroethene		ND	1.00	ug/l
Methyl Acetate		ND	1.00	ug/l
Methyl cyclohexane		ND	1.00	ug/l
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	1.00	ug/l
1,2-Dibromoethane		ND	1.00	ug/l

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220331W2 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK) (continued)

Lab Sample ID: 220331B9.BLKW31A

Run in Batch: 220331B9, Run Date: 03/31/2022 16:13, Prep Date: 03/31/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
1,1,2,2-Tetrachloroethane		ND	1.00	ug/l
cis-1,3-Dichloropropene		ND	1.00	ug/l
trans-1,3-Dichloropropene		ND	1.00	ug/l

Laboratory Control Sample (LCS)

Lab Sample ID: 220331B9.LCSW31A

Run in Batch: 220331B9, Run Date: 03/31/2022 14:56, Prep Date: 03/31/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Acetone		88.9	29.9	161.5
2-Butanone (MEK)		102.0	44.0	134.4
Benzene		98.9	79.9	124.9
Bromodichloromethane		103.1	80.4	128.2
Bromoform	*	129.8	69.4	128.0
Bromomethane		78.5	56.8	151.3
Carbon disulfide		100.6	63.8	137.4
Carbon tetrachloride		98.8	72.6	133.0
Chlorobenzene		111.6	79.2	122.7
Chloroethane		79.1	53.4	149.4
Chloroform		100.1	78.4	124.0
Chloromethane		80.3	23.8	166.5
1,2-Dibromo-3-chloropropane		132.7	21.2	189.4
1,2-Dichlorobenzene		116.8	10.0	166.2
1,2-Dichloroethane		94.6	76.0	126.3
1,2-Dichloropropane		97.9	78.6	126.4
1,3-Dichlorobenzene		117.0	77.0	131.3
1,4-Dichlorobenzene		115.0	20.7	137.7
cis-1,2-Dichloroethene		101.0	76.6	122.1
Dibromochloromethane		122.8	74.6	127.2
Dichlorodifluoromethane		92.5	10.0	222.8
trans-1,2-Dichloroethene		99.7	73.6	129.3
Ethylbenzene		111.7	79.5	129.1
2-Hexanone		97.9	55.4	136.9
4-Methyl-2-pentanone (MIBK)		100.5	71.6	125.2
tert-Methyl butyl ether (MTBE)		94.6	73.2	122.4
Methylene chloride		94.0	73.3	121.1
Styrene		112.7	69.5	126.7
1,1,1-Trichloroethane		97.0	79.4	130.9
1,1,2-Trichloroethane		99.2	78.7	123.1
1,2,4-Trichlorobenzene		127.2	27.4	143.4
Tetrachloroethene		102.4	74.5	124.5
Toluene		102.1	79.8	124.5
Trichloroethene		103.1	79.7	124.2
Trichlorofluoromethane		78.1	59.7	151.8
Vinyl chloride		83.2	43.5	149.1
o-Xylene		109.0	80.2	131.0
p,m-Xylene		113.3	79.4	132.2

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220331W2 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: 220331B9.LCSW31A

Run in Batch: 220331B9, Run Date: 03/31/2022 14:56, Prep Date: 03/31/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Isopropylbenzene		113.9	74.4	121.5
Cyclohexane		90.2	10.0	169.1
1,1-Dichloroethane		98.2	71.5	126.2
1,1-Dichloroethene		94.0	69.6	139.4
Methyl Acetate		93.2	64.7	125.4
Methyl cyclohexane		97.0	76.6	131.3
1,1,2-Trichloro-1,2,2-trifluoroethane		92.4	75.1	135.9
1,2-Dibromoethane		113.2	70.3	133.7
1,1,2,2-Tetrachloroethane		110.9	79.8	126.3
cis-1,3-Dichloropropene		107.5	79.8	129.9
trans-1,3-Dichloropropene		111.2	74.0	131.3

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 220331B9.LCSDW31A, Parent Sample ID: 220331B9.LCSW31A

Run in Batch: 220331B9, Run Date: 03/31/2022 15:15, Prep Date: 03/31/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Acetone		92.9	29.9	161.5	4.4	30.0
2-Butanone (MEK)		102.2	44.0	134.4	0.2	30.0
Benzene		95.0	79.9	124.9	4.0	30.0
Bromodichloromethane		99.0	80.4	128.2	4.0	30.0
Bromoform	*	131.2	69.4	128.0	1.1	30.0
Bromomethane		77.1	56.8	151.3	1.8	30.0
Carbon disulfide		96.7	63.8	137.4	4.0	30.0
Carbon tetrachloride		95.4	72.6	133.0	3.6	30.0
Chlorobenzene		110.3	79.2	122.7	1.2	30.0
Chloroethane		77.4	53.4	149.4	2.1	30.0
Chloroform		96.2	78.4	124.0	3.9	30.0
Chloromethane		78.1	23.8	166.5	2.9	30.0
1,2-Dibromo-3-chloropropane		137.6	21.2	189.4	3.6	30.0
1,2-Dichlorobenzene		117.3	10.0	166.2	0.4	30.0
1,2-Dichloroethane		91.4	76.0	126.3	3.5	30.0
1,2-Dichloropropane		92.9	78.6	126.4	5.3	30.0
1,3-Dichlorobenzene		116.3	77.0	131.3	0.6	30.0
1,4-Dichlorobenzene		114.5	20.7	137.7	0.5	30.0
cis-1,2-Dichloroethene		98.7	76.6	122.1	2.3	30.0
Dibromochloromethane		124.5	74.6	127.2	1.4	30.0
Dichlorodifluoromethane		88.3	10.0	222.8	4.6	30.0
trans-1,2-Dichloroethene		96.7	73.6	129.3	3.1	30.0
Ethylbenzene		109.0	79.5	129.1	2.5	30.0
2-Hexanone		100.2	55.4	136.9	2.3	30.0
4-Methyl-2-pentanone (MIBK)		99.7	71.6	125.2	0.7	30.0
tert-Methyl butyl ether (MTBE)		94.2	73.2	122.4	0.5	30.0
Methylene chloride		91.6	73.3	121.1	2.7	30.0
Styrene		109.3	69.5	126.7	3.0	30.0
1,1,1-Trichloroethane		92.9	79.4	130.9	4.3	30.0
1,1,2-Trichloroethane		95.8	78.7	123.1	3.5	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220331W2 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: 220331B9.LCSDW31A, Parent Sample ID: 220331B9.LCSW31A

Run in Batch: 220331B9, Run Date: 03/31/2022 15:15, Prep Date: 03/31/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,2,4-Trichlorobenzene		128.0	27.4	143.4	0.6	30.0
Tetrachloroethene		97.0	74.5	124.5	5.4	30.0
Toluene		95.0	79.8	124.5	7.2	30.0
Trichloroethene		99.1	79.7	124.2	4.0	30.0
Trichlorofluoromethane		76.2	59.7	151.8	2.5	30.0
Vinyl chloride		79.9	43.5	149.1	4.0	30.0
o-Xylene		105.2	80.2	131.0	3.5	30.0
p,m-Xylene		109.4	79.4	132.2	3.5	30.0
Isopropylbenzene		110.6	74.4	121.5	2.9	30.0
Cyclohexane		84.9	10.0	169.1	6.0	30.0
1,1-Dichloroethane		95.1	71.5	126.2	3.3	30.0
1,1-Dichloroethene		89.4	69.6	139.4	5.0	30.0
Methyl Acetate		92.7	64.7	125.4	0.5	30.0
Methyl cyclohexane		91.1	76.6	131.3	6.2	30.0
1,1,2-Trichloro-1,2,2-trifluoroethane		90.3	75.1	135.9	2.4	30.0
1,2-Dibromoethane		116.8	70.3	133.7	3.1	30.0
1,1,2,2-Tetrachloroethane		113.2	79.8	126.3	2.1	30.0
cis-1,3-Dichloropropene		101.9	79.8	129.9	5.3	30.0
trans-1,3-Dichloropropene		106.0	74.0	131.3	4.8	30.0



Quality Control Report

Report ID: QC-S34270-01
Generated on 04/04/2022

Report to
Attention: Alexis Crisp
Arcadis US, Inc.
28550 Cabot Drive
Suite 500
Novi, MI 48377

Report Produced by
Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

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

Phone: 810-225-1909 FAX:

Report Summary

Lab Sample ID(s): S34270.01-S34270.10
Project: 30112891.00005 / Racer PNC
Submitted Date/Time: 03/25/2022 12:45
Sampled by: Gary Schafer
P.O. #: 30112891.00005

QC Report Sections

Cover Page (Page 1)
Analysis Summary (Pages 2-11)
Prep Batch Summary (Page 12)
Surrogates per Lab Sample (Pages 13-22)
Surrogates per QC Sample (Pages 23-24)
Batch QC Results (Pages 25-32)

Report Flag Descriptions

*: QC result is outside of indicated control limits
W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S34270.01

Sample Tag: Trip Blank

Collected Date/Time: 03/24/2022 00:01

Matrix: Water

COC Reference: 140672

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 15:32	220330A7	VF220330W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34270.02

Sample Tag: MWF16-05_GW-032422

Collected Date/Time: 03/24/2022 10:36

Matrix: Groundwater

COC Reference: 140672

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 16:55	220331A7	VF220331W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34270.03

Sample Tag: MWF16-17_GW-032422

Collected Date/Time: 03/24/2022 12:01

Matrix: Groundwater

COC Reference: 140672

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 19:27	220330A7	VF220330W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34270.04

Sample Tag: MWF16-12_GW-032422

Collected Date/Time: 03/24/2022 13:36

Matrix: Groundwater

COC Reference: 140672

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 19:50	220330A7	VF220330W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34270.05

Sample Tag: MWF16-18_GW-032422

Collected Date/Time: 03/24/2022 14:46

Matrix: Groundwater

COC Reference: 140672

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 17:18	220331A7	VF220331W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34270.06

Sample Tag: MW-09-22_GW-032422

Collected Date/Time: 03/24/2022 15:51

Matrix: Groundwater

COC Reference: 140672

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 20:36	220330A7	VF220330W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34270.07

Sample Tag: DUP-04_GW-032422

Collected Date/Time: 03/24/2022 00:01

Matrix: Groundwater

COC Reference: 140672

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 17:41	220331A7	VF220331W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34270.08

Sample Tag: MWF16-06_GW-032322

Collected Date/Time: 03/23/2022 16:36

Matrix: Groundwater

COC Reference: 140672

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 21:23	220330A7	VF220330W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34270.09

Sample Tag: MWF16-19_GW-032322

Collected Date/Time: 03/23/2022 15:26

Matrix: Groundwater

COC Reference: 140672

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 18:04	220331A7	VF220331W1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S34270.10

Sample Tag: MWOS-08_GW-032522

Collected Date/Time: 03/25/2022 09:36

Matrix: Groundwater

COC Reference: 140672

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 22:10	220330A7	VF220330W1	Yes	BLK/LCS/LCSD

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: VF220330W1

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S34270.01	Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 15:32	220330A7
S34270.03	Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 19:27	220330A7
S34270.04	Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 19:50	220330A7
S34270.06	Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 20:36	220330A7
S34270.08	Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 21:23	220330A7
S34270.10	Volatile Organics - Arcadis	SW5030C/8260C	03/30/22 22:10	220330A7

Organics - Volatiles, Prep Batch ID: VF220331W1

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S34270.02	Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 16:55	220331A7
S34270.05	Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 17:18	220331A7
S34270.07	Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 17:41	220331A7
S34270.09	Volatile Organics - Arcadis	SW5030C/8260C	03/31/22 18:04	220331A7

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34270.01

Sample Tag: Trip Blank

Collected Date/Time: 03/24/2022 00:01

Matrix: Water

COC Reference: 140672

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330A7, Run Date: 03/30/2022 15:32, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		98.4	80.0	124.0
1,2-Dichloroethane-D4		91.1	72.0	125.0
Toluene-D8		98.2	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34270.02

Sample Tag: MWF16-05_GW-032422

Collected Date/Time: 03/24/2022 10:36

Matrix: Groundwater

COC Reference: 140672

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220331A7, Run Date: 03/31/2022 16:55, Matrix: WW, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		96.4	80.0	124.0
1,2-Dichloroethane-D4		93.4	72.0	125.0
Toluene-D8		100.3	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34270.03

Sample Tag: MWF16-17_GW-032422

Collected Date/Time: 03/24/2022 12:01

Matrix: Groundwater

COC Reference: 140672

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330A7, Run Date: 03/30/2022 19:27, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		99.3	80.0	124.0
1,2-Dichloroethane-D4		92.3	72.0	125.0
Toluene-D8		101.6	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34270.04

Sample Tag: MWF16-12_GW-032422

Collected Date/Time: 03/24/2022 13:36

Matrix: Groundwater

COC Reference: 140672

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330A7, Run Date: 03/30/2022 19:50, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		101.2	80.0	124.0
1,2-Dichloroethane-D4		92.8	72.0	125.0
Toluene-D8		100.6	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34270.05

Sample Tag: MWF16-18_GW-032422

Collected Date/Time: 03/24/2022 14:46

Matrix: Groundwater

COC Reference: 140672

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220331A7, Run Date: 03/31/2022 17:18, Matrix: WW, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		100.1	80.0	124.0
1,2-Dichloroethane-D4		91.2	72.0	125.0
Toluene-D8		100.5	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34270.06

Sample Tag: MW-09-22_GW-032422

Collected Date/Time: 03/24/2022 15:51

Matrix: Groundwater

COC Reference: 140672

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330A7, Run Date: 03/30/2022 20:36, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		96.8	80.0	124.0
1,2-Dichloroethane-D4		92.2	72.0	125.0
Toluene-D8		100.2	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34270.07

Sample Tag: DUP-04_GW-032422

Collected Date/Time: 03/24/2022 00:01

Matrix: Groundwater

COC Reference: 140672

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220331A7, Run Date: 03/31/2022 17:41, Matrix: WW, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		95.2	80.0	124.0
1,2-Dichloroethane-D4		90.5	72.0	125.0
Toluene-D8		100.5	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34270.08

Sample Tag: MWF16-06_GW-032322

Collected Date/Time: 03/23/2022 16:36

Matrix: Groundwater

COC Reference: 140672

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330A7, Run Date: 03/30/2022 21:23, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		98.3	80.0	124.0
1,2-Dichloroethane-D4		90.5	72.0	125.0
Toluene-D8		101.3	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34270.09

Sample Tag: MWF16-19_GW-032322

Collected Date/Time: 03/23/2022 15:26

Matrix: Groundwater

COC Reference: 140672

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220331A7, Run Date: 03/31/2022 18:04, Matrix: WW, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		94.8	80.0	124.0
1,2-Dichloroethane-D4		92.2	72.0	125.0
Toluene-D8		101.1	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S34270.10

Sample Tag: MWOS-08_GW-032522

Collected Date/Time: 03/25/2022 09:36

Matrix: Groundwater

COC Reference: 140672

Organics - Volatiles, Analysis: Volatile Organics - Arcadis

Run in Batch: 220330A7, Run Date: 03/30/2022 22:10, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		99.0	80.0	124.0
1,2-Dichloroethane-D4		90.0	72.0	125.0
Toluene-D8		101.7	89.0	112.0

QC Report - Surrogates per QC Sample

Organics - Volatiles, Prep Batch ID: VF220330W1

QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 220330A7.BLKW30A

Run in Batch: 220330A7, Run Date: 03/30/2022 14:14, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		100.9	80.0	124.0
1,2-Dichloroethane-D4		91.9	72.0	125.0
Toluene-D8		100.7	89.0	112.0

Laboratory Control Sample (LCS)

Lab Sample ID: 220330A7.LCSW30A

Run in Batch: 220330A7, Run Date: 03/30/2022 11:54, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		102.9	80.0	124.0
1,2-Dichloroethane-D4		91.8	72.0	125.0
Toluene-D8		101.1	89.0	112.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 220330A7.LCSDW30A, Parent Sample ID: 220330A7.LCSW30A

Run in Batch: 220330A7, Run Date: 03/30/2022 12:18, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		101.1	80.0	124.0
1,2-Dichloroethane-D4		96.2	72.0	125.0
Toluene-D8		101.5	89.0	112.0

QC Report - Surrogates per QC Sample

Organics - Volatiles, Prep Batch ID: VF220331W1

QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 220331A7.BLKW31A

Run in Batch: 220331A7, Run Date: 03/31/2022 14:32, Prep Date: 03/31/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		96.8	80.0	124.0
1,2-Dichloroethane-D4		85.9	72.0	125.0
Toluene-D8		101.2	89.0	112.0

Laboratory Control Sample (LCS)

Lab Sample ID: 220331A7.LCSW31A

Run in Batch: 220331A7, Run Date: 03/31/2022 13:00, Prep Date: 03/31/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		101.0	80.0	124.0
1,2-Dichloroethane-D4		91.8	72.0	125.0
Toluene-D8		100.8	89.0	112.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 220331A7.LCSDW31A, Parent Sample ID: 220331A7.LCSW31A

Run in Batch: 220331A7, Run Date: 03/31/2022 13:23, Prep Date: 03/31/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		104.3	80.0	124.0
1,2-Dichloroethane-D4		95.0	72.0	125.0
Toluene-D8		101.1	89.0	112.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220330W1

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 220330A7.BLKW30A

Run in Batch: 220330A7, Run Date: 03/30/2022 14:14, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Acetone		ND	10.00	ug/l
2-Butanone (MEK)		ND	10.00	ug/l
Benzene		ND	1.00	ug/l
Bromodichloromethane		ND	1.00	ug/l
Bromoform		ND	1.00	ug/l
Bromomethane		ND	1.00	ug/l
Carbon disulfide		ND	1.00	ug/l
Carbon tetrachloride		ND	1.00	ug/l
Chlorobenzene		ND	1.00	ug/l
Chloroethane		ND	1.00	ug/l
Chloroform		ND	1.00	ug/l
Chloromethane		ND	1.00	ug/l
1,2-Dibromo-3-chloropropane		ND	1.00	ug/l
1,2-Dichlorobenzene		ND	1.00	ug/l
1,2-Dichloroethane		ND	1.00	ug/l
1,2-Dichloropropane		ND	1.00	ug/l
1,3-Dichlorobenzene		ND	1.00	ug/l
1,4-Dichlorobenzene		ND	1.00	ug/l
cis-1,2-Dichloroethene		ND	1.00	ug/l
Dibromochloromethane		ND	1.00	ug/l
Dichlorodifluoromethane		ND	1.00	ug/l
trans-1,2-Dichloroethene		ND	1.00	ug/l
Ethylbenzene		ND	1.00	ug/l
2-Hexanone		ND	10.00	ug/l
4-Methyl-2-pentanone (MIBK)		ND	10.00	ug/l
tert-Methyl butyl ether (MTBE)		ND	1.00	ug/l
Methylene chloride		ND	1.00	ug/l
Styrene		ND	1.00	ug/l
1,1,1-Trichloroethane		ND	1.00	ug/l
1,1,2-Trichloroethane		ND	1.00	ug/l
1,2,4-Trichlorobenzene		ND	1.00	ug/l
Tetrachloroethene		ND	1.00	ug/l
Toluene		ND	1.00	ug/l
Trichloroethene		ND	1.00	ug/l
Trichlorofluoromethane		ND	1.00	ug/l
Vinyl chloride		ND	1.00	ug/l
o-Xylene		ND	1.00	ug/l
p,m-Xylene		ND	1.00	ug/l
Isopropylbenzene		ND	1.00	ug/l
Cyclohexane		ND	1.00	ug/l
1,1-Dichloroethane		ND	1.00	ug/l
1,1-Dichloroethene		ND	1.00	ug/l
Methyl Acetate		ND	1.00	ug/l
Methyl cyclohexane		ND	1.00	ug/l
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	1.00	ug/l
1,2-Dibromoethane		ND	1.00	ug/l

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220330W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK) (continued)

Lab Sample ID: 220330A7.BLKW30A

Run in Batch: 220330A7, Run Date: 03/30/2022 14:14, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
1,1,2,2-Tetrachloroethane		ND	1.00	ug/l
cis-1,3-Dichloropropene		ND	1.00	ug/l
trans-1,3-Dichloropropene		ND	1.00	ug/l

Laboratory Control Sample (LCS)

Lab Sample ID: 220330A7.LCSW30A

Run in Batch: 220330A7, Run Date: 03/30/2022 11:54, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Acetone		77.6	29.9	161.5
2-Butanone (MEK)		99.2	44.0	134.4
Benzene		109.6	79.9	124.9
Bromodichloromethane		105.0	80.4	128.2
Bromoform		102.9	69.4	128.0
Bromomethane		106.2	56.8	151.3
Carbon disulfide		110.5	63.8	137.4
Carbon tetrachloride		96.7	72.6	133.0
Chlorobenzene		109.3	79.2	122.7
Chloroethane		101.0	53.4	149.4
Chloroform		104.9	78.4	124.0
Chloromethane		101.9	23.8	166.5
1,2-Dibromo-3-chloropropane		98.0	21.2	189.4
1,2-Dichlorobenzene		109.0	10.0	166.2
1,2-Dichloroethane		93.1	76.0	126.3
1,2-Dichloropropane		108.0	78.6	126.4
1,3-Dichlorobenzene		109.1	77.0	131.3
1,4-Dichlorobenzene		106.8	20.7	137.7
cis-1,2-Dichloroethene		108.9	76.6	122.1
Dibromochloromethane		106.3	74.6	127.2
Dichlorodifluoromethane		91.0	10.0	222.8
trans-1,2-Dichloroethene		105.4	73.6	129.3
Ethylbenzene		110.1	79.5	129.1
2-Hexanone		95.5	55.4	136.9
4-Methyl-2-pentanone (MIBK)		97.4	71.6	125.2
tert-Methyl butyl ether (MTBE)		100.8	73.2	122.4
Methylene chloride		106.5	73.3	121.1
Styrene		113.9	69.5	126.7
1,1,1-Trichloroethane		97.3	79.4	130.9
1,1,2-Trichloroethane		105.5	78.7	123.1
1,2,4-Trichlorobenzene		109.6	27.4	143.4
Tetrachloroethene		103.3	74.5	124.5
Toluene		107.6	79.8	124.5
Trichloroethene		104.0	79.7	124.2
Trichlorofluoromethane		96.5	59.7	151.8
Vinyl chloride		103.7	43.5	149.1
o-Xylene		109.7	80.2	131.0
p,m-Xylene		111.2	79.4	132.2

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220330W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: 220330A7.LCSW30A

Run in Batch: 220330A7, Run Date: 03/30/2022 11:54, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Isopropylbenzene		111.2	74.4	121.5
Cyclohexane		99.0	10.0	169.1
1,1-Dichloroethane		104.8	71.5	126.2
1,1-Dichloroethene		99.3	69.6	139.4
Methyl Acetate		93.6	64.7	125.4
Methyl cyclohexane		100.8	76.6	131.3
1,1,2-Trichloro-1,2,2-trifluoroethane		100.9	75.1	135.9
1,2-Dibromoethane		105.4	70.3	133.7
1,1,2,2-Tetrachloroethane		106.3	79.8	126.3
cis-1,3-Dichloropropene		109.3	79.8	129.9
trans-1,3-Dichloropropene		106.8	74.0	131.3

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 220330A7.LCSDW30A, Parent Sample ID: 220330A7.LCSW30A

Run in Batch: 220330A7, Run Date: 03/30/2022 12:18, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Acetone		89.2	29.9	161.5	13.9	30.0
2-Butanone (MEK)		106.1	44.0	134.4	6.7	30.0
Benzene		105.0	79.9	124.9	4.3	30.0
Bromodichloromethane		100.9	80.4	128.2	4.0	30.0
Bromoform		101.4	69.4	128.0	1.5	30.0
Bromomethane		107.0	56.8	151.3	0.7	30.0
Carbon disulfide		105.7	63.8	137.4	4.5	30.0
Carbon tetrachloride		93.7	72.6	133.0	3.1	30.0
Chlorobenzene		104.4	79.2	122.7	4.6	30.0
Chloroethane		103.4	53.4	149.4	2.3	30.0
Chloroform		102.8	78.4	124.0	2.0	30.0
Chloromethane		102.3	23.8	166.5	0.4	30.0
1,2-Dibromo-3-chloropropane		105.1	21.2	189.4	7.0	30.0
1,2-Dichlorobenzene		105.4	10.0	166.2	3.3	30.0
1,2-Dichloroethane		94.2	76.0	126.3	1.2	30.0
1,2-Dichloropropane		105.3	78.6	126.4	2.6	30.0
1,3-Dichlorobenzene		104.5	77.0	131.3	4.3	30.0
1,4-Dichlorobenzene		103.2	20.7	137.7	3.4	30.0
cis-1,2-Dichloroethene		107.9	76.6	122.1	0.9	30.0
Dibromochloromethane		103.3	74.6	127.2	2.9	30.0
Dichlorodifluoromethane		89.2	10.0	222.8	2.0	30.0
trans-1,2-Dichloroethene		102.9	73.6	129.3	2.4	30.0
Ethylbenzene		102.8	79.5	129.1	6.8	30.0
2-Hexanone		100.9	55.4	136.9	5.5	30.0
4-Methyl-2-pentanone (MIBK)		104.5	71.6	125.2	7.1	30.0
tert-Methyl butyl ether (MTBE)		104.8	73.2	122.4	3.9	30.0
Methylene chloride		104.3	73.3	121.1	2.1	30.0
Styrene		106.6	69.5	126.7	6.6	30.0
1,1,1-Trichloroethane		97.2	79.4	130.9	0.0	30.0
1,1,2-Trichloroethane		104.6	78.7	123.1	0.9	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220330W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: 220330A7.LCSDW30A, Parent Sample ID: 220330A7.LCSW30A

Run in Batch: 220330A7, Run Date: 03/30/2022 12:18, Prep Date: 03/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,2,4-Trichlorobenzene		110.0	27.4	143.4	0.4	30.0
Tetrachloroethene		102.3	74.5	124.5	1.1	30.0
Toluene		103.7	79.8	124.5	3.7	30.0
Trichloroethene		100.4	79.7	124.2	3.6	30.0
Trichlorofluoromethane		94.1	59.7	151.8	2.5	30.0
Vinyl chloride		102.5	43.5	149.1	1.2	30.0
o-Xylene		104.6	80.2	131.0	4.8	30.0
p,m-Xylene		104.7	79.4	132.2	6.1	30.0
Isopropylbenzene		103.5	74.4	121.5	7.2	30.0
Cyclohexane		96.2	10.0	169.1	2.9	30.0
1,1-Dichloroethane		103.5	71.5	126.2	1.3	30.0
1,1-Dichloroethene		97.5	69.6	139.4	1.8	30.0
Methyl Acetate		100.6	64.7	125.4	7.3	30.0
Methyl cyclohexane		94.5	76.6	131.3	6.4	30.0
1,1,2-Trichloro-1,2,2-trifluoroethane		98.6	75.1	135.9	2.3	30.0
1,2-Dibromoethane		102.8	70.3	133.7	2.5	30.0
1,1,2,2-Tetrachloroethane		107.8	79.8	126.3	1.4	30.0
cis-1,3-Dichloropropene		107.3	79.8	129.9	1.8	30.0
trans-1,3-Dichloropropene		103.7	74.0	131.3	3.0	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220331W1

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 220331A7.BLKW31A

Run in Batch: 220331A7, Run Date: 03/31/2022 14:32, Prep Date: 03/31/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Acetone		ND	10.00	ug/l
2-Butanone (MEK)		ND	10.00	ug/l
Benzene		ND	1.00	ug/l
Bromodichloromethane		ND	1.00	ug/l
Bromoform		ND	1.00	ug/l
Bromomethane		ND	1.00	ug/l
Carbon disulfide		ND	1.00	ug/l
Carbon tetrachloride		ND	1.00	ug/l
Chlorobenzene		ND	1.00	ug/l
Chloroethane		ND	1.00	ug/l
Chloroform		ND	1.00	ug/l
Chloromethane		ND	1.00	ug/l
1,2-Dibromo-3-chloropropane		ND	1.00	ug/l
1,2-Dichlorobenzene		ND	1.00	ug/l
1,2-Dichloroethane		ND	1.00	ug/l
1,2-Dichloropropane		ND	1.00	ug/l
1,3-Dichlorobenzene		ND	1.00	ug/l
1,4-Dichlorobenzene		ND	1.00	ug/l
cis-1,2-Dichloroethene		ND	1.00	ug/l
Dibromochloromethane		ND	1.00	ug/l
Dichlorodifluoromethane		ND	1.00	ug/l
trans-1,2-Dichloroethene		ND	1.00	ug/l
Ethylbenzene		ND	1.00	ug/l
2-Hexanone		ND	10.00	ug/l
4-Methyl-2-pentanone (MIBK)		ND	10.00	ug/l
tert-Methyl butyl ether (MTBE)		ND	1.00	ug/l
Methylene chloride		ND	1.00	ug/l
Styrene		ND	1.00	ug/l
1,1,1-Trichloroethane		ND	1.00	ug/l
1,1,2-Trichloroethane		ND	1.00	ug/l
1,2,4-Trichlorobenzene		ND	1.00	ug/l
Tetrachloroethene		ND	1.00	ug/l
Toluene		ND	1.00	ug/l
Trichloroethene		ND	1.00	ug/l
Trichlorofluoromethane		ND	1.00	ug/l
Vinyl chloride		ND	1.00	ug/l
o-Xylene		ND	1.00	ug/l
p,m-Xylene		ND	1.00	ug/l
Isopropylbenzene		ND	1.00	ug/l
Cyclohexane		ND	1.00	ug/l
1,1-Dichloroethane		ND	1.00	ug/l
1,1-Dichloroethene		ND	1.00	ug/l
Methyl Acetate		ND	1.00	ug/l
Methyl cyclohexane		ND	1.00	ug/l
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	1.00	ug/l
1,2-Dibromoethane		ND	1.00	ug/l

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220331W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK) (continued)

Lab Sample ID: 220331A7.BLKW31A

Run in Batch: 220331A7, Run Date: 03/31/2022 14:32, Prep Date: 03/31/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
1,1,2,2-Tetrachloroethane		ND	1.00	ug/l
cis-1,3-Dichloropropene		ND	1.00	ug/l
trans-1,3-Dichloropropene		ND	1.00	ug/l

Laboratory Control Sample (LCS)

Lab Sample ID: 220331A7.LCSW31A

Run in Batch: 220331A7, Run Date: 03/31/2022 13:00, Prep Date: 03/31/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Acetone		88.3	29.9	161.5
2-Butanone (MEK)		93.6	44.0	134.4
Benzene		102.4	79.9	124.9
Bromodichloromethane		96.6	80.4	128.2
Bromoform		96.1	69.4	128.0
Bromomethane		99.4	56.8	151.3
Carbon disulfide		105.9	63.8	137.4
Carbon tetrachloride		88.1	72.6	133.0
Chlorobenzene		101.9	79.2	122.7
Chloroethane		97.2	53.4	149.4
Chloroform		101.2	78.4	124.0
Chloromethane		101.4	23.8	166.5
1,2-Dibromo-3-chloropropane		93.3	21.2	189.4
1,2-Dichlorobenzene		100.8	10.0	166.2
1,2-Dichloroethane		89.5	76.0	126.3
1,2-Dichloropropane		102.7	78.6	126.4
1,3-Dichlorobenzene		100.8	77.0	131.3
1,4-Dichlorobenzene		100.3	20.7	137.7
cis-1,2-Dichloroethene		106.3	76.6	122.1
Dibromochloromethane		96.7	74.6	127.2
Dichlorodifluoromethane		89.7	10.0	222.8
trans-1,2-Dichloroethene		98.8	73.6	129.3
Ethylbenzene		100.6	79.5	129.1
2-Hexanone		95.3	55.4	136.9
4-Methyl-2-pentanone (MIBK)		96.3	71.6	125.2
tert-Methyl butyl ether (MTBE)		98.0	73.2	122.4
Methylene chloride		104.8	73.3	121.1
Styrene		105.5	69.5	126.7
1,1,1-Trichloroethane		93.5	79.4	130.9
1,1,2-Trichloroethane		102.0	78.7	123.1
1,2,4-Trichlorobenzene		101.6	27.4	143.4
Tetrachloroethene		99.1	74.5	124.5
Toluene		101.9	79.8	124.5
Trichloroethene		97.8	79.7	124.2
Trichlorofluoromethane		94.1	59.7	151.8
Vinyl chloride		100.9	43.5	149.1
o-Xylene		100.0	80.2	131.0
p,m-Xylene		104.0	79.4	132.2

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220331W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: 220331A7.LCSW31A

Run in Batch: 220331A7, Run Date: 03/31/2022 13:00, Prep Date: 03/31/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Isopropylbenzene		100.9	74.4	121.5
Cyclohexane		96.9	10.0	169.1
1,1-Dichloroethane		100.7	71.5	126.2
1,1-Dichloroethene		95.5	69.6	139.4
Methyl Acetate		94.3	64.7	125.4
Methyl cyclohexane		93.2	76.6	131.3
1,1,2-Trichloro-1,2,2-trifluoroethane		99.1	75.1	135.9
1,2-Dibromoethane		99.4	70.3	133.7
1,1,2,2-Tetrachloroethane		101.7	79.8	126.3
cis-1,3-Dichloropropene		103.6	79.8	129.9
trans-1,3-Dichloropropene		101.8	74.0	131.3

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 220331A7.LCSDW31A, Parent Sample ID: 220331A7.LCSW31A

Run in Batch: 220331A7, Run Date: 03/31/2022 13:23, Prep Date: 03/31/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Acetone		91.5	29.9	161.5	3.6	30.0
2-Butanone (MEK)		92.7	44.0	134.4	1.0	30.0
Benzene		103.6	79.9	124.9	1.2	30.0
Bromodichloromethane		97.7	80.4	128.2	1.1	30.0
Bromoform		96.6	69.4	128.0	0.6	30.0
Bromomethane		99.4	56.8	151.3	0.1	30.0
Carbon disulfide		103.1	63.8	137.4	2.7	30.0
Carbon tetrachloride		88.8	72.6	133.0	0.7	30.0
Chlorobenzene		102.1	79.2	122.7	0.2	30.0
Chloroethane		97.1	53.4	149.4	0.1	30.0
Chloroform		102.5	78.4	124.0	1.3	30.0
Chloromethane		96.4	23.8	166.5	5.0	30.0
1,2-Dibromo-3-chloropropane		89.5	21.2	189.4	4.1	30.0
1,2-Dichlorobenzene		100.3	10.0	166.2	0.6	30.0
1,2-Dichloroethane		91.9	76.0	126.3	2.7	30.0
1,2-Dichloropropane		103.2	78.6	126.4	0.4	30.0
1,3-Dichlorobenzene		100.9	77.0	131.3	0.1	30.0
1,4-Dichlorobenzene		99.3	20.7	137.7	1.0	30.0
cis-1,2-Dichloroethene		106.8	76.6	122.1	0.4	30.0
Dibromochloromethane		99.7	74.6	127.2	3.1	30.0
Dichlorodifluoromethane		83.4	10.0	222.8	7.3	30.0
trans-1,2-Dichloroethene		100.7	73.6	129.3	1.9	30.0
Ethylbenzene		101.3	79.5	129.1	0.7	30.0
2-Hexanone		95.3	55.4	136.9	0.1	30.0
4-Methyl-2-pentanone (MIBK)		95.9	71.6	125.2	0.4	30.0
tert-Methyl butyl ether (MTBE)		100.9	73.2	122.4	2.9	30.0
Methylene chloride		106.4	73.3	121.1	1.5	30.0
Styrene		107.2	69.5	126.7	1.6	30.0
1,1,1-Trichloroethane		93.7	79.4	130.9	0.2	30.0
1,1,2-Trichloroethane		104.5	78.7	123.1	2.4	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: VF220331W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: 220331A7.LCSDW31A, Parent Sample ID: 220331A7.LCSW31A

Run in Batch: 220331A7, Run Date: 03/31/2022 13:23, Prep Date: 03/31/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,2,4-Trichlorobenzene		102.2	27.4	143.4	0.6	30.0
Tetrachloroethene		95.2	74.5	124.5	4.0	30.0
Toluene		102.8	79.8	124.5	0.9	30.0
Trichloroethene		97.4	79.7	124.2	0.4	30.0
Trichlorofluoromethane		91.5	59.7	151.8	2.8	30.0
Vinyl chloride		93.7	43.5	149.1	7.4	30.0
o-Xylene		99.9	80.2	131.0	0.2	30.0
p,m-Xylene		102.9	79.4	132.2	1.0	30.0
Isopropylbenzene		100.5	74.4	121.5	0.4	30.0
Cyclohexane		94.9	10.0	169.1	2.1	30.0
1,1-Dichloroethane		101.7	71.5	126.2	0.9	30.0
1,1-Dichloroethene		95.3	69.6	139.4	0.3	30.0
Methyl Acetate		93.7	64.7	125.4	0.6	30.0
Methyl cyclohexane		91.3	76.6	131.3	2.1	30.0
1,1,2-Trichloro-1,2,2-trifluoroethane		94.4	75.1	135.9	4.8	30.0
1,2-Dibromoethane		102.6	70.3	133.7	3.2	30.0
1,1,2,2-Tetrachloroethane		101.3	79.8	126.3	0.4	30.0
cis-1,3-Dichloropropene		105.4	79.8	129.9	1.7	30.0
trans-1,3-Dichloropropene		102.3	74.0	131.3	0.5	30.0



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: Accounts Payable SAME
 COMPANY: _____
 ADDRESS: _____
 CITY: _____ STATE: _____ ZIP CODE: _____
 PHONE NO.: _____ E-MAIL ADDRESS: _____

PROJECT NO./NAME: 30112891.00005 / River PNC SAMPLER(S) - PLEASE PRINT/SIGN NAME: Gary Schuster / Gary Schuster
 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

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	Site Specific Vec's	Certifications		Project Locations		Special Instructions
	DATE	TIME												<input type="checkbox"/> OHIO VAP	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> DoD	<input type="checkbox"/> NPDES	
34270.01	3/24/22		Trip Blank	GW	1		X						X					
.02	3/24/22	1036	MWF16-05-GW-032422	GW	3		X						X					
.03	3/24/22	1201	MWF16-17-GW-032422	GW	3		X						X					
.04	3/24/22	1336	MWF16-12-GW-032422	GW	3		X						X					
.05	3/24/22	1446	MWF16-18-GW-032422	GW	3		X						X					
.06	3/24/22	1551	MW-09-22-GW-032422	GW	3		X						X					
.07	3/24/22		DUP-04-GW-032422	GW	3		X						X					
.08	3/23/22	1436	MWF16-06-GW-032322	GW	3		X						X					
.09	3/23/22	1526	MWF16-19-GW-032322	GW	3		X						X					
.10	3/25/22	0936	MW05-08-GW-032522	GW	3		X						X					

RELINQUISHED BY: Gary Schuster Arcadis Sampler DATE: 3/25/22 TIME: 11:30
 RECEIVED BY: J. Smith DATE: 3/25/22 TIME: 11:30
 RELINQUISHED BY: J. Smith DATE: 3/25/22 TIME: 12:45
 RECEIVED BY: M. Adcox DATE: 3/25/22 TIME: 12:45

RELINQUISHED BY: _____ DATE: _____ TIME: _____
 RECEIVED BY: _____ DATE: _____ TIME: _____
 SEAL NO. SEAL INTACT YES NO INITIALS _____ NOTES: TEMP. ON ARRIVAL 4.4
 SEAL NO. SEAL INTACT YES NO INITIALS _____



Analytical Laboratory Report

Report ID: S34185.01(01)
Generated on 04/04/2022

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

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John Lavery (johnlavery@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S34185.01-S34185.12
Project: 30112891.00005 / Racer PNC
Collected Date(s): 03/22/2022 - 03/23/2022
Submitted Date/Time: 03/23/2022 15:00
Sampled by: Gary Schafer
P.O. #: 30112891.00005

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Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

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, acrylonitrile, and 2-chlorovinylethyl 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

There is no additional narrative for this analytical report



Analytical Laboratory Report

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



Analytical Laboratory Report

Method Summary

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



Analytical Laboratory Report

Sample Summary (12 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S34185.01	MWOS-10_GW-032222	Groundwater	03/22/22 10:21
S34185.02	MWOS-09_GW-032222	Groundwater	03/22/22 11:51
S34185.03	MW-07-20_GW-032222	Groundwater	03/22/22 13:26
S34185.04	MW-07-20-MS_GW-032222	Groundwater	03/22/22 13:26
S34185.05	MW-07-20-MSD_GW-032222	Groundwater	03/22/22 13:26
S34185.06	MWF12-01R_GW-032222	Groundwater	03/22/22 15:01
S34185.07	MWF12-02R_GW-032222	Groundwater	03/22/22 16:01
S34185.08	DUP-01_GW-032222	Groundwater	03/22/22 00:01
S34185.09	Unknown-01_GW-032322	Groundwater	03/23/22 10:06
S34185.10	MWF7-02_GW-032322	Groundwater	03/23/22 11:21
S34185.11	MWF7-03_GW-032322	Groundwater	03/23/22 13:11
S34185.12	Trip Blank	Water	03/22/22 00:01



Analytical Laboratory Report

Lab Sample ID: S34185.01

Sample Tag: MWOS-10_GW-032222

Collected Date/Time: 03/22/2022 10:21

Matrix: Groundwater

COC Reference: 140671

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 16:19, Analyst: KAG

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	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	4	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	



Analytical Laboratory Report

Lab Sample ID: S34185.01 (continued)

Sample Tag: MWOS-10_GW-032222

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 16:19, Analyst: KAG (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

Lab Sample ID: S34185.02

Sample Tag: MWOS-09_GW-032222

Collected Date/Time: 03/22/2022 11:51

Matrix: Groundwater

COC Reference: 140671

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 16:43, Analyst: KAG

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	10	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

Lab Sample ID: S34185.02 (continued)

Sample Tag: MWOS-09_GW-032222

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 16:43, Analyst: KAG (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	4	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

Lab Sample ID: S34185.03

Sample Tag: MW-07-20_GW-032222

Collected Date/Time: 03/22/2022 13:26

Matrix: Groundwater

COC Reference: 140671

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 15:56, Analyst: KAG

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	10	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	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	



Analytical Laboratory Report

Lab Sample ID: S34185.03 (continued)

Sample Tag: MW-07-20_GW-032222

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 15:56, Analyst: KAG (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

Lab Sample ID: S34185.04

Sample Tag: MW-07-20-MS_GW-032222

Collected Date/Time: 03/22/2022 13:26

Matrix: Groundwater

COC Reference: 140671

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 12:41, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	1
2-Butanone (MEK)	50	25		ug/L	1	78-93-3	1
Benzene	52	1		ug/L	1	71-43-2	1
Bromodichloromethane	50	1		ug/L	1	75-27-4	1
Bromoform	52	1		ug/L	1	75-25-2	1
Bromomethane	53	5		ug/L	1	74-83-9	1
Carbon disulfide	54	5		ug/L	1	75-15-0	1
Carbon tetrachloride	47	1		ug/L	1	56-23-5	1
Chlorobenzene	52	1		ug/L	1	108-90-7	1
Chloroethane	52	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	54	5		ug/L	1	96-12-8	1
1,2-Dichlorobenzene	51	1		ug/L	1	95-50-1	1
1,2-Dichloroethane	46	1		ug/L	1	107-06-2	1
1,2-Dichloropropane	52	1		ug/L	1	78-87-5	1
1,3-Dichlorobenzene	51	1		ug/L	1	541-73-1	1
1,4-Dichlorobenzene	51	1		ug/L	1	106-46-7	1
cis-1,2-Dichloroethene	63	1		ug/L	1	156-59-2	1
Dibromochloromethane	51	5		ug/L	1	124-48-1	1
Dichlorodifluoromethane	46	5		ug/L	1	75-71-8	1
trans-1,2-Dichloroethene	51	1		ug/L	1	156-60-5	1
Ethylbenzene	52	1		ug/L	1	100-41-4	1
2-Hexanone	55	50		ug/L	1	591-78-6	1
4-Methyl-2-pentanone (MIBK)	54	50		ug/L	1	108-10-1	1
tert-Methyl butyl ether (MTBE)	52	5		ug/L	1	1634-04-4	1
Methylene chloride	53	5		ug/L	1	75-09-2	1
Styrene	54	1		ug/L	1	100-42-5	1
1,1,1-Trichloroethane	53	1		ug/L	1	71-55-6	1
1,1,2-Trichloroethane	52	1		ug/L	1	79-00-5	1
1,2,4-Trichlorobenzene	54	5		ug/L	1	120-82-1	1
Tetrachloroethene	51	1		ug/L	1	127-18-4	1
Toluene	52	1		ug/L	1	108-88-3	1
Trichloroethene	52	1		ug/L	1	79-01-6	1
Trichlorofluoromethane	48	1		ug/L	1	75-69-4	1
Vinyl chloride	51	1		ug/L	1	75-01-4	1

1-Spiked at 50ug/L



Analytical Laboratory Report

Lab Sample ID: S34185.04 (continued)

Sample Tag: MW-07-20-MS_GW-032222

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 12:41, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
o-Xylene	52	1		ug/L	1	95-47-6	1
p,m-Xylene*	105	2		ug/L	1		1
Isopropylbenzene	52	1		ug/L	1	98-82-8	1
Cyclohexane	49	1		ug/L	1	110-82-7	1
1,1-Dichloroethane	58	1		ug/L	1	75-34-3	1
1,1-Dichloroethene	51	1		ug/L	1	75-35-4	1
Methyl Acetate	52	10		ug/L	1	79-20-9	1
Methyl cyclohexane	48	1		ug/L	1	108-87-2	1
1,1,2-Trichloro-1,2,2-trifluoroethane	51	1		ug/L	1	76-13-1	1
1,2-Dibromoethane	52	1		ug/L	1	106-93-4	1
1,1,2,2-Tetrachloroethane	55	1		ug/L	1	79-34-5	1
cis-1,3-Dichloropropene	53	1		ug/L	1	10061-01-5	1
trans-1,3-Dichloropropene	53	1		ug/L	1	10061-02-6	1

1-Spiked at 50ug/L



Analytical Laboratory Report

Lab Sample ID: S34185.05

Sample Tag: MW-07-20-MSD_GW-032222

Collected Date/Time: 03/22/2022 13:26

Matrix: Groundwater

COC Reference: 140671

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 13:04, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	1
2-Butanone (MEK)	57	25		ug/L	1	78-93-3	1
Benzene	51	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	51	5		ug/L	1	74-83-9	1
Carbon disulfide	52	5		ug/L	1	75-15-0	1
Carbon tetrachloride	46	1		ug/L	1	56-23-5	1
Chlorobenzene	50	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	50	5		ug/L	1	74-87-3	1
1,2-Dibromo-3-chloropropane	54	5		ug/L	1	96-12-8	1
1,2-Dichlorobenzene	50	1		ug/L	1	95-50-1	1
1,2-Dichloroethane	46	1		ug/L	1	107-06-2	1
1,2-Dichloropropane	51	1		ug/L	1	78-87-5	1
1,3-Dichlorobenzene	50	1		ug/L	1	541-73-1	1
1,4-Dichlorobenzene	49	1		ug/L	1	106-46-7	1
cis-1,2-Dichloroethene	62	1		ug/L	1	156-59-2	1
Dibromochloromethane	50	5		ug/L	1	124-48-1	1
Dichlorodifluoromethane	45	5		ug/L	1	75-71-8	1
trans-1,2-Dichloroethene	51	1		ug/L	1	156-60-5	1
Ethylbenzene	49	1		ug/L	1	100-41-4	1
2-Hexanone	55	50		ug/L	1	591-78-6	1
4-Methyl-2-pentanone (MIBK)	54	50		ug/L	1	108-10-1	1
tert-Methyl butyl ether (MTBE)	52	5		ug/L	1	1634-04-4	1
Methylene chloride	53	5		ug/L	1	75-09-2	1
Styrene	52	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	52	1		ug/L	1	79-00-5	1
1,2,4-Trichlorobenzene	53	5		ug/L	1	120-82-1	1
Tetrachloroethene	50	1		ug/L	1	127-18-4	1
Toluene	51	1		ug/L	1	108-88-3	1
Trichloroethene	52	1		ug/L	1	79-01-6	1
Trichlorofluoromethane	47	1		ug/L	1	75-69-4	1
Vinyl chloride	50	1		ug/L	1	75-01-4	1

1-Spiked at 50ug/L



Analytical Laboratory Report

Lab Sample ID: S34185.05 (continued)

Sample Tag: MW-07-20-MSD_GW-032222

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 13:04, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
o-Xylene	50	1		ug/L	1	95-47-6	1
p,m-Xylene*	101	2		ug/L	1		1
Isopropylbenzene	50	1		ug/L	1	98-82-8	1
Cyclohexane	47	1		ug/L	1	110-82-7	1
1,1-Dichloroethane	57	1		ug/L	1	75-34-3	1
1,1-Dichloroethene	50	1		ug/L	1	75-35-4	1
Methyl Acetate	53	10		ug/L	1	79-20-9	1
Methyl cyclohexane	47	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	51	1		ug/L	1	106-93-4	1
1,1,2,2-Tetrachloroethane	54	1		ug/L	1	79-34-5	1
cis-1,3-Dichloropropene	53	1		ug/L	1	10061-01-5	1
trans-1,3-Dichloropropene	52	1		ug/L	1	10061-02-6	1

1-Spiked at 50ug/L



Analytical Laboratory Report

Lab Sample ID: S34185.06

Sample Tag: MWF12-01R_GW-032222

Collected Date/Time: 03/22/2022 15:01

Matrix: Groundwater

COC Reference: 140671

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 04/02/22 08:59, Analyst: KAG

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	36	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

Lab Sample ID: S34185.06 (continued)

Sample Tag: MWF12-01R_GW-032222

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 04/02/22 08:59, Analyst: KAG (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

Lab Sample ID: S34185.07

Sample Tag: MWF12-02R_GW-032222

Collected Date/Time: 03/22/2022 16:01

Matrix: Groundwater

COC Reference: 140671

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 17:06, Analyst: KAG

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	



Analytical Laboratory Report

Lab Sample ID: S34185.07 (continued)

Sample Tag: MWF12-02R_GW-032222

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 17:06, Analyst: KAG (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

Lab Sample ID: S34185.08

Sample Tag: DUP-01_GW-032222

Collected Date/Time: 03/22/2022 00:01

Matrix: Groundwater

COC Reference: 140671

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 17:29, Analyst: KAG

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	26	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	12	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	



Analytical Laboratory Report

Lab Sample ID: S34185.08 (continued)

Sample Tag: DUP-01_GW-032222

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 17:29, Analyst: KAG (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	4	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

Lab Sample ID: S34185.09

Sample Tag: Unknown-01_GW-032322

Collected Date/Time: 03/23/2022 10:06

Matrix: Groundwater

COC Reference: 140671

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 17:53, Analyst: KAG

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	54	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	23	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

Lab Sample ID: S34185.09 (continued)

Sample Tag: Unknown-01_GW-032322

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 17:53, Analyst: KAG (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	4	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

Lab Sample ID: S34185.10

Sample Tag: MWF7-02_GW-032322

Collected Date/Time: 03/23/2022 11:21

Matrix: Groundwater

COC Reference: 140671

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 18:17, Analyst: KAG

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	1	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	88	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	95	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	



Analytical Laboratory Report

Lab Sample ID: S34185.10 (continued)

Sample Tag: MWF7-02_GW-032322

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 18:17, Analyst: KAG (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	12	1		ug/L	1	75-34-3	
1,1-Dichloroethene	13	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

Lab Sample ID: S34185.11

Sample Tag: MWF7-03_GW-032322

Collected Date/Time: 03/23/2022 13:11

Matrix: Groundwater

COC Reference: 140671

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 18:40, Analyst: KAG

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	



Analytical Laboratory Report

Lab Sample ID: S34185.11 (continued)

Sample Tag: MWF7-03_GW-032322

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 18:40, Analyst: KAG (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

Lab Sample ID: S34185.12

Sample Tag: Trip Blank

Collected Date/Time: 03/22/2022 00:01

Matrix: Water

COC Reference: 140671

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 14:46, Analyst: KAG

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	



Analytical Laboratory Report

Lab Sample ID: S34185.12 (continued)

Sample Tag: Trip Blank

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 14:46, Analyst: KAG (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	

Merit Laboratories Login Checklist

Lab Set ID:S34185

Client:ARCADIS_NOVI (ARCADIS U.S., Inc.)

Project: 30112891.00005 / Racer PNC

Submitted:03/23/2022 15:00 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
-----------	-------------	------

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 4.4 |
| 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Sample tag on bottles match COC Trip blank not listed on COC |
| 09. | <input type="checkbox"/> Yes <input checked="" 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 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? |

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: _____



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

C.O.C. PAGE # _____ OF _____ 140671

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: LEXI CRISP j Tiffany Linder
 COMPANY: ARCADIS
 ADDRESS: 23550 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: Accounts Payable SAME
 COMPANY: Arcaclis
 ADDRESS: _____
 CITY: _____ STATE: _____ ZIP CODE: _____
 PHONE NO.: _____ E-MAIL ADDRESS: _____

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

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

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

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	Site Specific VOCs
	DATE	TIME											
34185.01	3/22/22	10:21	MW05-10-GW-032222	GW	3		X						X
.02	3/22/22	11:51	MW05-09-GW-032222	GW	3		X						X
.03	3/22/22	13:24	MW-07-20-GW-032222	GW	3		X						X
.04	3/22/22	13:24	MW-07-20-MS-GW-032222	GW	3		X						X
.05	3/22/22	13:24	MW-07-20-MSD-GW-032222	GW	3		X						X
.06	3/22/22	15:01	MWF12-01R-GW-032222	GW	3		X						X
.07	3/22/22	16:01	MWF12-02R-GW-032222	GW	3		X						X
.08	3/22/22		DUP-01-GW-032222	GW	3		X						X
.09	3/23/22	10:06	Unknown-01-GW-032322	GW	3		X						X
.10	3/23/22	11:21	MWF7-02-GW-032322	GW	3		X						X
.11	3/23/22	13:11	MWF7-03-GW-032322	GW	3		X						X
.12													

RELINQUISHED BY: [Signature] DATE: 3/23/22 TIME: 1400
 RECEIVED BY: [Signature] DATE: 3/23/22 TIME: 1400
 RELINQUISHED BY: [Signature] DATE: 3/23/22 TIME: 15:00
 RECEIVED BY: [Signature] DATE: 3/23/22 TIME: 1500

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: 4.4

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



Analytical Laboratory Report

Report ID: S34186.01(01)
Generated on 03/25/2022

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): S34186.01-S34186.08
Project: 30112891.00005 / Racer PNC
Collected Date(s): 03/22/2022 - 03/23/2022
Submitted Date/Time: 03/23/2022 15:00
Sampled by: Christina Weaver
P.O. #: 30112891.00005

Table of Contents

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- General Report Notes (Page 2)
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Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

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 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.

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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

There is no additional narrative for this analytical report



Analytical Laboratory Report

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



Analytical Laboratory Report

Method Summary

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



Analytical Laboratory Report

Sample Summary (8 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S34186.01	MW-05-18_GW-032222	Groundwater	03/22/22 13:20
S34186.02	MW-02-17_GW-032222	Groundwater	03/22/22 14:40
S34186.03	DUP-02_GW-032222	Groundwater	03/22/22 00:01
S34186.04	MW-08-21_GW-032222	Groundwater	03/22/22 15:40
S34186.05	MWF16-15_GW-032322	Groundwater	03/23/22 10:15
S34186.06	MW-13-22_GW-032322	Groundwater	03/23/22 11:40
S34186.07	MW-14-22_GW-032322	Groundwater	03/23/22 12:55
S34186.08	Trip Blank	Water	03/23/22 00:01



Analytical Laboratory Report

Lab Sample ID: S34186.01

Sample Tag: MW-05-18_GW-032222

Collected Date/Time: 03/22/2022 13:20

Matrix: Groundwater

COC Reference: 140668

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/25/22 11:00	BML	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/25/22 00:06, Analyst: KAG

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	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	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

Lab Sample ID: S34186.01 (continued)

Sample Tag: MW-05-18_GW-032222

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/25/22 00:06, Analyst: KAG (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	4	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

Lab Sample ID: S34186.02

Sample Tag: MW-02-17_GW-032222

Collected Date/Time: 03/22/2022 14:40

Matrix: Groundwater

COC Reference: 140668

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/25/22 11:00	BML	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/25/22 00:25, Analyst: KAG

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	2	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	



Analytical Laboratory Report

Lab Sample ID: S34186.02 (continued)

Sample Tag: MW-02-17_GW-032222

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/25/22 00:25, Analyst: KAG (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

Lab Sample ID: S34186.03

Sample Tag: DUP-02_GW-032222

Collected Date/Time: 03/22/2022 00:01

Matrix: Groundwater

COC Reference: 140668

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/25/22 11:00	BML	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/25/22 00:44, Analyst: KAG

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	2	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	4	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	



Analytical Laboratory Report

Lab Sample ID: S34186.03 (continued)

Sample Tag: DUP-02_GW-032222

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/25/22 00:44, Analyst: KAG (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

Lab Sample ID: S34186.04

Sample Tag: MW-08-21_GW-032222

Collected Date/Time: 03/22/2022 15:40

Matrix: Groundwater

COC Reference: 140668

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/25/22 11:00	BML	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/25/22 01:04, Analyst: KAG

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	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

Lab Sample ID: S34186.04 (continued)

Sample Tag: MW-08-21_GW-032222

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/25/22 01:04, Analyst: KAG (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

Lab Sample ID: S34186.05

Sample Tag: MWF16-15_GW-032322

Collected Date/Time: 03/23/2022 10:15

Matrix: Groundwater

COC Reference: 140668

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/25/22 11:00	BML	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/25/22 01:23, Analyst: KAG

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	4	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	9	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	



Analytical Laboratory Report

Lab Sample ID: S34186.05 (continued)

Sample Tag: MWF16-15_GW-032322

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/25/22 01:23, Analyst: KAG (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

Lab Sample ID: S34186.06

Sample Tag: MW-13-22_GW-032322

Collected Date/Time: 03/23/2022 11:40

Matrix: Groundwater

COC Reference: 140668

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/25/22 11:00	BML	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/25/22 01:42, Analyst: KAG

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	



Analytical Laboratory Report

Lab Sample ID: S34186.06 (continued)

Sample Tag: MW-13-22_GW-032322

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/25/22 01:42, Analyst: KAG (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

Lab Sample ID: S34186.07

Sample Tag: MW-14-22_GW-032322

Collected Date/Time: 03/23/2022 12:55

Matrix: Groundwater

COC Reference: 140668

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/25/22 11:00	BML	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/25/22 02:02, Analyst: KAG

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	1	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	10	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	10	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	52	1		ug/L	1	127-18-4	
Toluene	Not detected	1		ug/L	1	108-88-3	
Trichloroethene	12	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

Lab Sample ID: S34186.07 (continued)

Sample Tag: MW-14-22_GW-032322

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/25/22 02:02, Analyst: KAG (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

Lab Sample ID: S34186.08

Sample Tag: Trip Blank

Collected Date/Time: 03/23/2022 00:01

Matrix: Water

COC Reference: 140668

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/25/22 11:00	BML	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/24/22 23:09, Analyst: KAG

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	



Analytical Laboratory Report

Lab Sample ID: S34186.08 (continued)

Sample Tag: Trip Blank

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/24/22 23:09, Analyst: KAG (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	

Merit Laboratories Login Checklist

Lab Set ID:S34186

Client:ARCADIS_NOVI (ARCADIS U.S., Inc.)

Project: 30112891.00005 / Racer PNC

Submitted:03/23/2022 15:00 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
-----------	-------------	------

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 4.4 |
| 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 type="checkbox"/> Yes <input checked="" 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 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? |

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: _____



Analytical Laboratory Report

Report ID: S34268.01(01)
Generated on 04/01/2022

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): S34268.01-S34268.12
Project: 30112891.00005 / Racer PNC
Collected Date(s): 03/23/2022 - 03/24/2022
Submitted Date/Time: 03/25/2022 12:45
Sampled by: Christina Weaver
P.O. #: 30112891.00005

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Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

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, acrylonitrile, and 2-chlorovinylethyl 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

There is no additional narrative for this analytical report



Analytical Laboratory Report

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



Analytical Laboratory Report

Method Summary

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



Analytical Laboratory Report

Sample Summary (12 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S34268.01	Trip Blank	Water	03/23/22 00:01
S34268.02	MWF16-22_GW-032322	Groundwater	03/23/22 14:45
S34268.03	MWF16-16_GW-032322	Groundwater	03/23/22 15:40
S34268.04	MW-06-20_GW-032422	Groundwater	03/24/22 09:25
S34268.05	MWF16-23_GW-032422	Groundwater	03/24/22 10:30
S34268.06	MWF16-25_GW-032422	Groundwater	03/24/22 11:25
S34268.07	MW-11-22_GW-032422	Groundwater	03/24/22 12:15
S34268.08	MWF16-24_GW-032422	Groundwater	03/24/22 13:40
S34268.09	MWF16-24_GW-032422 MS	Groundwater	03/24/22 13:40
S34268.10	MWF16-24_GW-032422 MSD	Groundwater	03/24/22 13:40
S34268.11	DUP-03_GW-032322	Groundwater	03/23/22 00:01
S34268.12	TW-12-22_GW-032422	Groundwater	03/24/22 15:20



Analytical Laboratory Report

Lab Sample ID: S34268.01

Sample Tag: Trip Blank

Collected Date/Time: 03/23/2022 00:01

Matrix: Water

COC Reference: 140670

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 02:26, Analyst: KAG

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	



Analytical Laboratory Report

Lab Sample ID: S34268.01 (continued)

Sample Tag: Trip Blank

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 02:26, Analyst: KAG (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

Lab Sample ID: S34268.02

Sample Tag: MWF16-22_GW-032322

Collected Date/Time: 03/23/2022 14:45

Matrix: Groundwater

COC Reference: 140670

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 03:13, Analyst: KAG

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	10	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	2	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	76	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	



Analytical Laboratory Report

Lab Sample ID: S34268.02 (continued)

Sample Tag: MWF16-22_GW-032322

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 03:13, Analyst: KAG (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	1	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

Lab Sample ID: S34268.03

Sample Tag: MWF16-16_GW-032322

Collected Date/Time: 03/23/2022 15:40

Matrix: Groundwater

COC Reference: 140670

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 17:50, 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
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	10	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	470	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

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S34268.03 (continued)

Sample Tag: MWF16-16_GW-032322

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 17:50, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
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

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S34268.04

Sample Tag: MW-06-20_GW-032422

Collected Date/Time: 03/24/2022 09:25

Matrix: Groundwater

COC Reference: 140670

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 04:00, Analyst: KAG

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	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	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	8	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

Lab Sample ID: S34268.04 (continued)

Sample Tag: MW-06-20_GW-032422

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 04:00, Analyst: KAG (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

Lab Sample ID: S34268.05

Sample Tag: MWF16-23_GW-032422

Collected Date/Time: 03/24/2022 10:30

Matrix: Groundwater

COC Reference: 140670

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 04:23, Analyst: KAG

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	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	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	8	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	13	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

Lab Sample ID: S34268.05 (continued)

Sample Tag: MWF16-23_GW-032422

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 04:23, Analyst: KAG (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

Lab Sample ID: S34268.06

Sample Tag: MWF16-25_GW-032422

Collected Date/Time: 03/24/2022 11:25

Matrix: Groundwater

COC Reference: 140670

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 04:46, Analyst: KAG

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	4	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	27	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	4	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

Lab Sample ID: S34268.06 (continued)

Sample Tag: MWF16-25_GW-032422

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 04:46, Analyst: KAG (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

Lab Sample ID: S34268.07

Sample Tag: MW-11-22_GW-032422

Collected Date/Time: 03/24/2022 12:15

Matrix: Groundwater

COC Reference: 140670

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 05:11, Analyst: KAG

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	1	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	2	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

Lab Sample ID: S34268.07 (continued)

Sample Tag: MW-11-22_GW-032422

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 05:11, Analyst: KAG (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

Lab Sample ID: S34268.08

Sample Tag: MWF16-24_GW-032422

Collected Date/Time: 03/24/2022 13:40

Matrix: Groundwater

COC Reference: 140670

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 02:50, Analyst: KAG

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	2	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

Lab Sample ID: S34268.08 (continued)

Sample Tag: MWF16-24_GW-032422

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 02:50, Analyst: KAG (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

Lab Sample ID: S34268.09

Sample Tag: MWF16-24_GW-032422 MS

Collected Date/Time: 03/24/2022 13:40

Matrix: Groundwater

COC Reference: 140670

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 00:29, Analyst: KAG

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

1-Spiked at 50ug/L



Analytical Laboratory Report

Lab Sample ID: S34268.09 (continued)

Sample Tag: MWF16-24_GW-032422 MS

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 00:29, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
o-Xylene	51	1		ug/L	1	95-47-6	1
p,m-Xylene*	104	2		ug/L	1		1
Isopropylbenzene	51	1		ug/L	1	98-82-8	1
Cyclohexane	47	1		ug/L	1	110-82-7	1
1,1-Dichloroethane	50	1		ug/L	1	75-34-3	1
1,1-Dichloroethene	46	1		ug/L	1	75-35-4	1
Methyl Acetate	42	10		ug/L	1	79-20-9	1
Methyl cyclohexane	45	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	52	1		ug/L	1	106-93-4	1
1,1,2,2-Tetrachloroethane	54	1		ug/L	1	79-34-5	1
cis-1,3-Dichloropropene	51	1		ug/L	1	10061-01-5	1
trans-1,3-Dichloropropene	51	1		ug/L	1	10061-02-6	1

1-Spiked at 50ug/L



Analytical Laboratory Report

Lab Sample ID: S34268.10

Sample Tag: MWF16-24_GW-032422 MSD

Collected Date/Time: 03/24/2022 13:40

Matrix: Groundwater

COC Reference: 140670

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 00:52, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	50		ug/L	1	67-64-1	1
2-Butanone (MEK)	47	25		ug/L	1	78-93-3	1
Benzene	52	1		ug/L	1	71-43-2	1
Bromodichloromethane	49	1		ug/L	1	75-27-4	1
Bromoform	51	1		ug/L	1	75-25-2	1
Bromomethane	49	5		ug/L	1	74-83-9	1
Carbon disulfide	50	5		ug/L	1	75-15-0	1
Carbon tetrachloride	43	1		ug/L	1	56-23-5	1
Chlorobenzene	53	1		ug/L	1	108-90-7	1
Chloroethane	48	5		ug/L	1	75-00-3	1
Chloroform	50	1		ug/L	1	67-66-3	1
Chloromethane	48	5		ug/L	1	74-87-3	1
1,2-Dibromo-3-chloropropane	50	5		ug/L	1	96-12-8	1
1,2-Dichlorobenzene	52	1		ug/L	1	95-50-1	1
1,2-Dichloroethane	46	1		ug/L	1	107-06-2	1
1,2-Dichloropropane	52	1		ug/L	1	78-87-5	1
1,3-Dichlorobenzene	52	1		ug/L	1	541-73-1	1
1,4-Dichlorobenzene	51	1		ug/L	1	106-46-7	1
cis-1,2-Dichloroethene	52	1		ug/L	1	156-59-2	1
Dibromochloromethane	51	5		ug/L	1	124-48-1	1
Dichlorodifluoromethane	41	5		ug/L	1	75-71-8	1
trans-1,2-Dichloroethene	49	1		ug/L	1	156-60-5	1
Ethylbenzene	52	1		ug/L	1	100-41-4	1
2-Hexanone	50	50		ug/L	1	591-78-6	1
4-Methyl-2-pentanone (MIBK)	50	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	54	1		ug/L	1	100-42-5	1
1,1,1-Trichloroethane	48	1		ug/L	1	71-55-6	1
1,1,2-Trichloroethane	52	1		ug/L	1	79-00-5	1
1,2,4-Trichlorobenzene	53	5		ug/L	1	120-82-1	1
Tetrachloroethene	49	1		ug/L	1	127-18-4	1
Toluene	51	1		ug/L	1	108-88-3	1
Trichloroethene	49	1		ug/L	1	79-01-6	1
Trichlorofluoromethane	44	1		ug/L	1	75-69-4	1
Vinyl chloride	47	1		ug/L	1	75-01-4	1

1-Spiked at 50ug/L



Analytical Laboratory Report

Lab Sample ID: S34268.10 (continued)

Sample Tag: MWF16-24_GW-032422 MSD

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 00:52, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
o-Xylene	52	1		ug/L	1	95-47-6	1
p,m-Xylene*	106	2		ug/L	1		1
Isopropylbenzene	52	1		ug/L	1	98-82-8	1
Cyclohexane	45	1		ug/L	1	110-82-7	1
1,1-Dichloroethane	50	1		ug/L	1	75-34-3	1
1,1-Dichloroethene	47	1		ug/L	1	75-35-4	1
Methyl Acetate	40	10		ug/L	1	79-20-9	1
Methyl cyclohexane	46	1		ug/L	1	108-87-2	1
1,1,2-Trichloro-1,2,2-trifluoroethane	45	1		ug/L	1	76-13-1	1
1,2-Dibromoethane	53	1		ug/L	1	106-93-4	1
1,1,2,2-Tetrachloroethane	53	1		ug/L	1	79-34-5	1
cis-1,3-Dichloropropene	51	1		ug/L	1	10061-01-5	1
trans-1,3-Dichloropropene	51	1		ug/L	1	10061-02-6	1

1-Spiked at 50ug/L



Analytical Laboratory Report

Lab Sample ID: S34268.11

Sample Tag: DUP-03_GW-032322

Collected Date/Time: 03/23/2022 00:01

Matrix: Groundwater

COC Reference: 140670

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 18:09, 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
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	10	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	490	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

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S34268.11 (continued)

Sample Tag: DUP-03_GW-032322

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 18:09, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
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

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S34268.12

Sample Tag: TW-12-22_GW-032422

Collected Date/Time: 03/24/2022 15:20

Matrix: Groundwater

COC Reference: 140670

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 05:58, Analyst: KAG

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	8	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	67	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	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	6	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

Lab Sample ID: S34268.12 (continued)

Sample Tag: TW-12-22_GW-032422

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 05:58, Analyst: KAG (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	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	

Merit Laboratories Login Checklist

Lab Set ID:S34268

Client:ARCADIS_NOVI (ARCADIS U.S., Inc.)

Project: 30112891.00005 / Racer PNC

Submitted:03/25/2022 12:45 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
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 4.4
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 type="checkbox"/> Yes <input checked="" 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 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?
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: _____



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 140670

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 #800
 CITY HIGHLANDS RANCH STATE CO ZIP CODE 80129
 PHONE NO. — E-MAIL ADDRESS ACCOUNTSPAYABLE.ADMINISTRATIVE@ARCADIS.COM

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME 30112891.00005 / RACER PUC SAMPLER(S) - PLEASE PRINT/SIGN NAME CHRISTINA WEAVER / Christina W
 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 *

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 ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	* SITE SPECIFIC VOCs *							
	DATE	TIME																		
34268.01	3/23/22	—	TRIP BLANK	GW	1		1						X							(1) TRIP BLANK
.02	3/23/22	1445	MWF16-22-GW-032322	GW	3		3						X							
.03	3/23/22	1540	MWF16-16-GW-032322	GW	3		3						X							
.04	3/24/22	0925	MW-06-20-GW-032422	GW	3		3						X							
.05	3/24/22	1030	MWF16-23-GW-032422	GW	3		3						X							
.06	3/24/22	1125	MWF16-25-GW-032422	GW	3		3						X							
.07	3/24/22	1215	MW-11-22-GW-032422	GW	3		3						X							
.08	3/24/22	1340	MWF16-24-GW-032422	GW	3		3						X							PERFORM MS/MSD
.09	3/24/22	1340	MWF16-24-MS-GW-032422	GW	3		3						X							PERFORM MS/MSD
.10	3/24/22	1340	MWF16-24-MSD-GW-032422	GW	3		3						X							PERFORM MS/MSD
.11	3/23/22	—	DUP-03-GW-032322	GW	3		3						X							DUPLICATE
.12	3/24/22	1520	TW-12-22-GW-032422	GW	3		3						X							

RELINQUISHED BY: Christina Weaver Sampler DATE 3/25/22 TIME 10:30
 RECEIVED BY: Gary Schulte DATE 3/25/22 TIME 10:30
 RELINQUISHED BY: Christina Weaver DATE 3/25/22 TIME 11:45
 RECEIVED BY: M. Chilcote DATE 3/25/22 TIME 12:45

RELINQUISHED BY: Gary Schulte DATE 3/25/22 TIME 11:30
 RECEIVED BY: Gary Schulte DATE 3/25/22 TIME 11:30
 SEAL NO. SEAL INTACT YES NO INITIALS
 SEAL NO. SEAL INTACT YES NO INITIALS
 NOTES: TEMP. ON ARRIVAL 4.4



Analytical Laboratory Report

Report ID: S34270.01(01)
Generated on 04/01/2022

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): S34270.01-S34270.10
Project: 30112891.00005 / Racer PNC
Collected Date(s): 03/23/2022 - 03/25/2022
Submitted Date/Time: 03/25/2022 12:45
Sampled by: Gary Schafer
P.O. #: 30112891.00005

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Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

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, acrylonitrile, and 2-chlorovinylethyl 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.

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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

There is no additional narrative for this analytical report



Analytical Laboratory Report

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



Analytical Laboratory Report

Method Summary

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



Analytical Laboratory Report

Sample Summary (10 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S34270.01	Trip Blank	Water	03/24/22 00:01
S34270.02	MWF16-05_GW-032422	Groundwater	03/24/22 10:36
S34270.03	MWF16-17_GW-032422	Groundwater	03/24/22 12:01
S34270.04	MWF16-12_GW-032422	Groundwater	03/24/22 13:36
S34270.05	MWF16-18_GW-032422	Groundwater	03/24/22 14:46
S34270.06	MW-09-22_GW-032422	Groundwater	03/24/22 15:51
S34270.07	DUP-04_GW-032422	Groundwater	03/24/22 00:01
S34270.08	MWF16-06_GW-032322	Groundwater	03/23/22 16:36
S34270.09	MWF16-19_GW-032322	Groundwater	03/23/22 15:26
S34270.10	MWOS-08_GW-032522	Groundwater	03/25/22 09:36



Analytical Laboratory Report

Lab Sample ID: S34270.01

Sample Tag: Trip Blank

Collected Date/Time: 03/24/2022 00:01

Matrix: Water

COC Reference: 140672

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 15:32, Analyst: KAG

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	



Analytical Laboratory Report

Lab Sample ID: S34270.01 (continued)

Sample Tag: Trip Blank

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 15:32, Analyst: KAG (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

Lab Sample ID: S34270.02

Sample Tag: MWF16-05_GW-032422

Collected Date/Time: 03/24/2022 10:36

Matrix: Groundwater

COC Reference: 140672

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 16:55, 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
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	480	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

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S34270.02 (continued)

Sample Tag: MWF16-05_GW-032422

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 16:55, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
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

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S34270.03

Sample Tag: MWF16-17_GW-032422

Collected Date/Time: 03/24/2022 12:01

Matrix: Groundwater

COC Reference: 140672

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 19:27, Analyst: KAG

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	1	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

Lab Sample ID: S34270.03 (continued)

Sample Tag: MWF16-17_GW-032422

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 19:27, Analyst: KAG (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

Lab Sample ID: S34270.04

Sample Tag: MWF16-12_GW-032422

Collected Date/Time: 03/24/2022 13:36

Matrix: Groundwater

COC Reference: 140672

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 19:50, Analyst: KAG

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	36	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

Lab Sample ID: S34270.04 (continued)

Sample Tag: MWF16-12_GW-032422

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 19:50, Analyst: KAG (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

Lab Sample ID: S34270.05

Sample Tag: MWF16-18_GW-032422

Collected Date/Time: 03/24/2022 14:46

Matrix: Groundwater

COC Reference: 140672

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 17:18, 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
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	1,150	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

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S34270.05 (continued)

Sample Tag: MWF16-18_GW-032422

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 17:18, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
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

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S34270.06

Sample Tag: MW-09-22_GW-032422

Collected Date/Time: 03/24/2022 15:51

Matrix: Groundwater

COC Reference: 140672

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 20:36, Analyst: KAG

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	1	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	1	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	95	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

Lab Sample ID: S34270.06 (continued)

Sample Tag: MW-09-22_GW-032422

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 20:36, Analyst: KAG (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

Lab Sample ID: S34270.07

Sample Tag: DUP-04_GW-032422

Collected Date/Time: 03/24/2022 00:01

Matrix: Groundwater

COC Reference: 140672

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 17:41, 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
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	1,180	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

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S34270.07 (continued)

Sample Tag: DUP-04_GW-032422

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 17:41, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
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

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S34270.08

Sample Tag: MWF16-06_GW-032322

Collected Date/Time: 03/23/2022 16:36

Matrix: Groundwater

COC Reference: 140672

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 21:23, Analyst: KAG

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	7	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	15	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	1	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	21	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	111	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	53	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	



Analytical Laboratory Report

Lab Sample ID: S34270.08 (continued)

Sample Tag: MWF16-06_GW-032322

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 21:23, Analyst: KAG (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	72	1		ug/L	1	75-34-3	
1,1-Dichloroethene	8	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

Lab Sample ID: S34270.09

Sample Tag: MWF16-19_GW-032322

Collected Date/Time: 03/23/2022 15:26

Matrix: Groundwater

COC Reference: 140672

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 18:04, 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
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	230	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	Not detected	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

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S34270.09 (continued)

Sample Tag: MWF16-19_GW-032322

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/31/22 18:04, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
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	40	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

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S34270.10

Sample Tag: MWOS-08_GW-032522

Collected Date/Time: 03/25/2022 09:36

Matrix: Groundwater

COC Reference: 140672

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/31/22 11:45	NDK	

Organics - Volatiles

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 22:10, Analyst: KAG

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	1	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	4	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

Lab Sample ID: S34270.10 (continued)

Sample Tag: MWOS-08_GW-032522

Volatile Organics - Arcadis, Method: SW5030C/8260C, Run Date: 03/30/22 22:10, Analyst: KAG (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	

Merit Laboratories Login Checklist

Lab Set ID:S34270

Client:ARCADIS_NOVI (ARCADIS U.S., Inc.)

Project: 30112891.00005 / Racer PNC

Submitted:03/25/2022 12:45 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
-----------	-------------	------

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 4.4 |
| 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 type="checkbox"/> Yes <input checked="" 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 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? |

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: _____



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: Accounts Payable 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 Schuster / Gary Schuster
 TURNAROUND TIME REQUIRED: 1 DAY 2 DAYS 3 DAYS STANDARD OTHER _____
 DELIVERABLES REQUIRED: STD LEVEL II LEVEL III LEVEL IV EDD OTHER _____

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 ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	Site Specific Vec's
	DATE	TIME											
34270.01	3/24/22		Trip Blank	GW	1		X						X
.02	3/24/22	1036	MWF16-05-GW-032422	GW	3		X						X
.03	3/24/22	1201	MWF16-17-GW-032422	GW	3		X						X
.04	3/24/22	1336	MWF16-12-GW-032422	GW	3		X						X
.05	3/24/22	1446	MWF16-18-GW-032422	GW	3		X						X
.06	3/24/22	1551	MW-09-22-GW-032422	GW	3		X						X
.07	3/24/22		DUP-04-GW-032422	GW	3		X						X
.08	3/23/22	1436	MWF16-06-GW-032322	GW	3		X						X
.09	3/23/22	1526	MWF16-19-GW-032322	GW	3		X						X
.10	3/25/22	0936	MW05-08-GW-032522	GW	3		X						X

RELINQUISHED BY: Gary Schuster Arcadis Sampler DATE: 3/25/22 TIME: 11:30
 RECEIVED BY: J. Smith DATE: 3/25/22 TIME: 11:30
 RELINQUISHED BY: J. Smith DATE: 3/25/22 TIME: 12:45
 RECEIVED BY: M. Adcox DATE: 3/25/22 TIME: 12:45

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 4.4