

SUBJECT
2023 Fiero Temporary Monitoring Plan
Second Quarter Results

TO
Peter Ramanauskas, USEPA

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This memorandum summarizes the results of the second quarter semi-annual (2Q) 2023 monitoring event completed as part of the revised 2023 Fiero Temporary Monitoring Plan (FTMP) at the Revitalizing Auto Communities Environmental Response Trust (RACER) Pontiac North Campus Site (Site) located in Pontiac, Michigan. The event consisted of gauging and sampling select monitoring wells and sampling soil vapor monitoring points (SVMPs) at the former Fiero property. The monitoring locations included in the 2Q semi-annual event are shown on **Figure 1**.

On June 5th, 2023, Arcadis began monitoring activities by gauging Site monitoring wells. Monitoring Well MWF16-24 was not able to be gauged as planned due to Green for Life (GFL) equipment being placed over the location. Following the gauging event, monitoring wells were sampled for volatile organic compounds (VOCs) over a 6-day period from June 5th -12th. Soil vapor monitoring points (SVMP) were sampled on June 5th, 2023. All groundwater samples were submitted to Merit Laboratories and analyzed for VOCs in accordance with United States Environmental Protection Agency (USEPA) Method 8260 and all soil vapor samples were submitted to Eurofins Air Toxics and analyzed for VOCs in accordance with 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

A range of monitoring wells were gauged for depth to water and total depth during the 2Q event using an electronic water level meter accurate to 0.01-feet. The groundwater elevation data was used to create the groundwater elevation contour map included as **Figure 2**. As shown on **Figure 2**, groundwater gradient is to the southwest consistent with previous gauging events.

Groundwater Analytical Summary

Groundwater samples were collected from 28 monitoring wells and submitted for analysis of VOCs. A summary of the monitoring wells sampled and exceedances of the residential Site-Specific Volatilization to Indoor Air Criteria (SSVIAC) for groundwater is shown on **Figure 3**. Groundwater sampling logs can be found in **Attachment 2**. The following is based on the analytical results from the groundwater sampling:

- Groundwater samples collected from the 28 monitoring wells did not exceed the non-residential SSVIAC.

- Elevated VOC detections remain near the identified VOC source areas in the central portion of the Site and decrease steadily as they approach the southwest property boundary.
- One off-site location, Monitoring Well MWOS-10, exceeded the residential SSVIAC for TCE during the first and second quarter sampling event. TCE at this location has ranged from 7 – 12 µg/L from November 2021 through June 2023.

Groundwater Stability Analysis

Mann-Kendall trend tests were conducted at wells with sufficient data for constituents present at concentrations higher than the residential SSVIAC, and coefficient of variation values were calculated. The Mann-Kendall trend analysis included data from 2017 through 2023, to coincide with the more frequent sampling events, and only included wells with at least 5 data points collected since 2017 with at least 50 percent detections, which is further outlined in Arcadis' April 4, 2023 Fiero Temporary Groundwater Monitoring Program approved by USEPA. The methodology, preliminary results summary, figures, and trend graphs associated with the Mann-Kendall trend tests, as well as concentration over time trend graphs for wells that did not meet the criteria for Mann-Kendall analysis, are included in **Attachment 3**.

Key findings of the trend analysis include the following:

- PCE in groundwater is primarily stable with three wells indicating an increasing trend - downgradient well MW-14-22, MWF16-16 located near the source area, and MWF7-02 located south of the source area. Stability analysis results for PCE in groundwater are summarized in **Attachment 3 (Figure 1A)**.
- TCE in groundwater is primarily stable with four wells indicating an increasing trend - downgradient wells MW-06-20 and MW-02-17, and MWF7-02 and MWF16-15 located south of the source area. MWOS-10, located offsite and downgradient from MW-06-20 has no significant trend, as further described in the 2022 Fiero Temporary Groundwater Monitoring Plan Summary submitted to USEPA on April 21, 2023. Stability analysis results for TCE in groundwater are summarized in **Attachment 3 (Figure 1B)**.
- Cis-1,2-DCE in groundwater is increasing in MWF16-18 near a source area, and in MWF16-22 and MW-11-22 downgradient of the source area. All other sampled locations were stable or decreasing. Stability analysis results for cis-1,2-DCE in groundwater are summarized in **Attachment 3 (Figure 1C)**.

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**. Soil vapor collection logs can be found in **Attachment 4**. 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.

Soil Vapor Stability Analysis

Mann-Kendall trend tests were conducted at all SVMP with sufficient data for constituents present at concentrations higher than the residential SSVIAC, and coefficient of variation values were calculated. The Mann-Kendall trend analysis included all data collected from the SVMP's since installation in 2021 through June 2023. The methodology, preliminary results summary, figures, and trend graphs associated with the Mann-Kendall trend tests, as well as concentration over time trend graphs for SVMP's that did not meet the criteria for Mann-Kendall analysis, are included in **Attachment 3**.

Key findings of the trend analysis include the following:

- PCE in soil vapor is stable at all on-site and off-site locations. Stability analysis results for PCE in soil vapor are summarized in **Attachment 3 (Figure 2A)**.
- TCE in soil vapor is stable or decreasing at all on-site and off-site locations. Stability analysis results for TCE in soil vapor are summarized in **Attachment 3 (Figure 2B)**.

ZVI Summary

ZVI Injections were completed in Q1 2023 accompanied by quarterly sampling for four quarters. Currently two quarterly sampling events have been completed and ZVI performance data has been tracked. This ZVI injection event is being completed as a pilot test to collect installation and performance data for any future remedies at the site. Concentrations in Monitoring Wells MW-13-22, MW-15-22, and MWF16-16 remain unchanged while MW-14-22 and MW-16-22 have changed and are shown in **Table 2**. These changes are in the expected time after injection of ZVI but, monitoring will continue until the final performance data are analyzed after four quarters. The results will be discussed in the 2023 Annual Groundwater Monitoring Report.

Monitoring Well Status and Recommendations

Due to GFL construction activities at the northern portion of the Fiero properties, several wells have been damaged, destroyed, or are inaccessible. A summary of Fiero well status is below:

- MWF16-01 – Confirmed Destroyed – Could not be located using a GPS, metal detector, or hand digging during August 26, 2022, well inspection. Well is associated with AOI- F-6 (a SWMU) where little to no impacts were identified and groundwater plume boundary is well understood and well is not needed for delineation. Reinstallation is not recommended.
- MWF16-02 – Damaged – Could not be gauged during 3Q 2022 Fiero gauging event due to the top half of casing collapsing from GFL construction activities in the area. Well is associated with AOI- F-6 (a SWMU) where little to no impacts were identified and groundwater plume boundary is well understood and well is not needed for delineation. Reinstallation is not recommended.
- MWF16-19 – Inaccessible – Has not been visually located since 3Q 2022 Fiero groundwater sampling event. Well is believed to be under a large pile of rubble. Well will be assessed once construction activities are complete, but the groundwater plume boundary is well understood, and the well is not needed for delineation. Reinstallation is not recommended.
- MWF16-20 – Damaged – Well was under a large pile of rubble and inaccessible during 1Q and 2Q events in 2022. The well was located and gauged in 3Q 2022 after the pile had been moved. The well was covered by mud and the lid was no longer in place. Due to the recent measured total depth being less than the as-built total depth, it is believed this well has filled in. The groundwater plume boundary is well understood, and the well is not needed for delineation. Reinstallation is not recommended.

A photo log documenting the wells listed above are included as **Attachment 5**.

Peter Ramanauskas
USEPA
October 3, 2023

Closing

No modifications to the approved FTMP are recommended at this time. The 3rd quarter 2023 FTMP monitoring event was completed August 28th, 2023, through August 31st, 2023, and a data package summarizing the data collected will be forthcoming. For any questions or concerns related to the 2Q FTMP results contact Tiffany Linder by phone at 810-225-1928 or by email at Tiffany.Linder@arcadis.com.

Enclosures:

Tables:

Table 1 – 2023 Groundwater Elevation Summary

Table 2 – 2023 Summary of Groundwater Analytical Results

Table 3 – 2023 Summary of Soil Gas Analytical Results

Figures:

Figure 1 – 2023 Fiero Temporary Monitoring Plan 2Q Monitoring Locations

Figure 2 – Fiero Groundwater Contour Map June 5, 2023

Figure 3 – Summary of Groundwater and Soil Gas Results June 2023

Attachments:

Attachment 1 – Analytical Reports

Attachment 2 – Groundwater Sampling Logs

Attachment 3 – Groundwater and Soil Vapor Stability Analysis

Attachment 4 – Soil Vapor Collection Logs

Attachment 5 – Photograph Log

TABLES

Table 1
2023 Groundwater Elevation Summary
RACER Trust Pontiac North Campus
Former Fiero Properties
Pontiac, Michigan



Well ID	Ground Elevation	Well Elevation ¹	Total Depth (ft) ²	1st Quarter			Date
				Date	Depth to Water (ft) ²	Groundwater Elevation	
Former Fiero Powerhouse							
MW-02-17	973.53	972.52	29.71	--	--	--	6/5/2023
MW-05-18	976.03	975.21	33.58	--	--	--	6/5/2023
MW-06-20	975.54	974.97	29.22	3/6/2023	29.22	945.75	6/5/2023
MW-07-20	975.48	975.06	30.15	--	--	--	6/5/2023
MW-08-21	976.04	975.50	30.28	3/6/2023	27.58	947.92	6/5/2023
MW-13-22	973.17	972.62	26.72	3/6/2023	22.88	949.74	6/5/2023
MW-14-22	973.21	972.71	34.62	3/6/2023	23.25	949.46	6/5/2023
MW-15-22	972.97	972.66	35.93	3/6/2023	23.37	949.29	6/5/2023
MW-16-22	972.84	972.50	34.52	3/7/2023	23.45	949.05	6/5/2023
MWF7-02	NA	970.58	22.62	--	--	--	6/5/2023
MWF7-03	973.63	973.31	32.52	--	--	--	6/5/2023
MWF12-01R	964.97	967.99	23.24	--	--	--	6/5/2023
MWF12-02R	962.38	961.91	22.49	--	--	--	6/5/2023
MWF15-01	NA	969.35	28.78	--	--	--	6/7/2023
MWF16-07	973.36	972.65	17.48	--	--	--	6/5/2023
MWF16-15	973.30	972.71	35.48	--	--	--	6/5/2023
MWF16-23	973.82	973.39	30.44	3/6/2023	24.76	948.63	6/5/2023
Unknown-01	969.51	969.16	24.06	--	--	--	6/5/2023
Former Fiero Assembly							
MW-09-22	973.83	973.46	32.83	3/6/2023	21.84	951.62	6/5/2023
MW-11-22	977.42	976.75	34.69	--	--	--	6/5/2023
MWF2	NA	971.74	84.88	--	--	--	6/5/2023
MWF8-01	NA	972.94	27.18	--	--	--	6/5/2023
TW-12-22	973.52	973.39	32.68	--	--	--	6/5/2023
MWF16-05	973.95	973.68	22.81	3/6/2023	21.22	952.46	6/5/2023
MWF16-06	974.02	973.77	28.85	--	--	--	6/5/2023
MWF16-12	973.60	973.20	18.89	--	--	--	6/5/2023
MWF16-16	973.44	973.22	31.28	3/6/2023	23.32	949.90	6/5/2023
MWF16-17	973.70	973.32	31.81	--	--	--	6/5/2023
MWF16-18	973.60	973.22	31.96	3/6/2023	21.69	951.53	6/5/2023
MWF16-22	973.50	973.18	33.92	--	--	--	6/5/2023
MWF16-24	973.64	973.38	NM	--	--	--	NM
MWF16-25	NA	975.24	37.19	--	--	--	6/5/2023
MWF16-26	NA	974.14	36.25	--	--	--	6/5/2023
Offsite							
MWOS-08	975.55	975.09	28.80	3/6/2023	26.82	948.27	6/5/2023
MWOS-09R	976.68	976.18	32.25	3/6/2023	28.05	948.13	6/5/2023
MWOS-10	977.01	976.55	32.77	3/6/2023	29.19	947.36	6/5/2023
Fiero Parking Lot							
PZF17-02	977.70	977.43	31.01	--	--	--	6/5/2023
PZF17-04	972.90	972.47	28.87	--	--	--	6/5/2023
PZF17-05	976.43	975.97	34.00	--	--	--	6/5/2023

Abbreviations:

ft - feet

NA - Not Available

NM - Not Measured

-- Not gauged during quarterly events

Notes:

- MW15-01 was covered at the time of gauging and was gauged at a later date
- MWF16-24 was covered by a roll-off and could not be uncovered before the end of the event

Footnotes:

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

² Measurements collected from top of temporary well casing/stickup.

Table 2
2023 Summary of Groundwater Analytical Results
RACER Trust Pontiac North Campus
Former Fiero Properties
Pontiac, Michigan



Location ID: Date Collected: Sample Name:	Res Fiero SSVIAC SOG	Res Fiero SSVIAC BASE	NR Fiero SSVIAC <50k SOG	Units	MW-02-17 6/6/2023 MW-02-17_GW-060623	MW-05-18 6/6/2023 MW-05-18_GW-060623	MW-06-20 3/7/2023 MW-06-20_GW-030723	MW-06-20 6/6/2023 MW-06-20_GW-060623
Volatile Organics								
1,1,1,2-Tetrachloroethane	180	93	5,700	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]
1,1,1-Trichloroethane	22,000	11,000	210,000	ug/L	2	8	5 [5]	3 [3]
1,1,2,2-Tetrachloroethane	130	66	4,100	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]
1,1,2-Trichloroethane	21	11	410	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]
1,1-Dichloroethane	160	88	5,300	ug/L	1	6	7 [7]	5 [5]
1,1-Dichloroethene	410	220	8,300	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]
1,2,3-Trichlorobenzene	4,100	2,100	18,000	ug/L	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U [< 5 U]
1,2,3-Trichloropropane	91	47	1,800	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]
1,2,3-Trimethylbenzene	2,000	1,100	41,000	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]
1,2,4-Trichlorobenzene	270	130	5,100	ug/L	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U [< 5 U]
1,2,4-Trimethylbenzene	1,100	590	22,000	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]
1,2-Dibromo-3-chloropropane	0.00045	0.00045	0.042	ug/L	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U [< 5 U]
1,2-Dibromoethane	8	4	250	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]
1,2-Dichlorobenzene	19,000	9,900	160,000	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]
1,2-Dichloroethane	50	27	1,600	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]
1,2-Dichloropropane	100	56	2,100	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]
1,3,5-Trimethylbenzene	800	420	16,000	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]
1,3-Dichlorobenzene	130	70	2,700	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]
1,4-Dichlorobenzene	310	160	9,800	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]
2-Butanone	4,000,000	2,200,000	59,000,000	ug/L	< 25 U	< 25 U	< 25 U [< 25 U]	< 25 U [< 25 U]
2-Methylnaphthalene	3,500	1,800	25,000	ug/L	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U [< 5 U]
4-Methyl-2-pentanone	1,600,000	810,000	19,000,000	ug/L	< 50 U	< 50 U	< 50 U [< 50 U]	< 50 U [< 50 U]
Acetone	32,000,000	18,000,000	240,000,000	ug/L	< 50 U	< 50 U	< 50 U [< 50 U]	< 50 U [< 50 U]
Acrylonitrile	120	67	4,100	ug/L	< 2 U	< 2 U	< 2 U [< 2 U]	< 2 U [< 2 U]
Benzene	34	18	1,100	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]
Bromobenzene	3,300	1,700	66,000	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]
Bromodichloromethane	60	31	1,700	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]
Bromoform	6,400	3,200	200,000	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]
Bromomethane	59	33	1,200	ug/L	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U [< 5 U]
Carbon Disulfide	2,200	1,200	46,000	ug/L	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U [< 5 U]
Carbon Tetrachloride	14	7.2	440	ug/L	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]

Table 2
2023 Summary of Groundwater Analytical Results
RACER Trust Pontiac North Campus
Former Fiero Properties
Pontiac, Michigan



Location ID: Date Collected: Sample Name:	Res Fiero SSVIAC SOG	Res Fiero SSVIAC BASE	NR Fiero SSVIAC <50k SOG	Units	MW-02-17 6/6/2023 MW-02-17_GW-060623	MW-05-18 6/6/2023 MW-05-18_GW-060623	MW-06-20 3/7/2023 MW-06-20_GW-030723	MW-06-20 6/6/2023 MW-06-20_GW-060623
CFC-11	300	160	6,000	ug/L	< 1 U	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]
CFC-12	71	38	1,400	ug/L	< 5 U	< 5 U	< 5 U [$\leq$ 5 U]	< 5 U [$\leq$ 5 U]
Chlorobenzene	1,300	720	27,000	ug/L	< 1 U	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]
Chlorodibromomethane	58	29	4,400	ug/L	< 5 U	< 5 U	< 5 U [$\leq$ 5 U]	< 5 U [$\leq$ 5 U]
Chlorobromomethane	--	--	--	ug/L	< 1 U	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]
Chloroethane	15,000	8,600	320,000	ug/L	< 5 U	< 5 U	< 5 U [$\leq$ 5 U]	< 5 U [$\leq$ 5 U]
Chloroform	19	10	610	ug/L	< 1 U	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]
Chloromethane	340	200	7,400	ug/L	< 5 U	< 5 U	< 5 U [$\leq$ 5 U]	< 5 U [$\leq$ 5 U]
cis-1,2-Dichloroethene	110	62	2,300	ug/L	1	11	7 [7]	6 [6]
cis-1,3-Dichloropropene	--	--	--	ug/L	< 1 U	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]
Dibromomethane	450	230	9,000	ug/L	< 5 U	< 5 U	< 5 U [$\leq$ 5 U]	< 5 U [$\leq$ 5 U]
Ethyl ether	44,000	24,000	900,000	ug/L	< 10 U	< 10 U	< 10 U [$\leq$ 10 U]	< 10 U [$\leq$ 10 U]
Ethylbenzene	110	60	3,600	ug/L	< 1 U	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]
Hexachloroethane	130	64	3,900	ug/L	< 5 U	< 5 U	< 5 U [$\leq$ 5 U]	< 5 U [$\leq$ 5 U]
Iodomethane	--	--	--	ug/L	< 1 U	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]
Isopropyl benzene	26	13	810	ug/L	< 5 U	< 5 U	< 5 U [$\leq$ 5 U]	< 5 U [$\leq$ 5 U]
m&p-Xylene	--	--	--	ug/L	< 2 U	< 2 U	< 2 U [$\leq$ 2 U]	< 2 U [$\leq$ 2 U]
Methyl N-Butyl Ketone	24,000	12,000	490,000	ug/L	< 50 U	< 50 U	< 50 U [$\leq$ 50 U]	< 50 U [$\leq$ 50 U]
Methyl tert-butyl ether	10,000	5,300	320,000	ug/L	< 5 U	< 5 U	< 5 U [$\leq$ 5 U]	< 5 U [$\leq$ 5 U]
Methylene chloride	9,100	5,000	190,000	ug/L	< 5 U	< 5 U	< 5 U [$\leq$ 5 U]	< 5 U [$\leq$ 5 U]
Naphthalene	190	100	6,200	ug/L	< 5 U	< 5 U	< 5 U [$\leq$ 5 U]	< 5 U [$\leq$ 5 U]
N-Butylbenzene	2,000	1,100	12,000	ug/L	< 1 U	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]
N-Propylbenzene	10,000	5,400	52,000	ug/L	< 1 U	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]
o-Xylene	--	--	--	ug/L	< 1 U	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]
p-Isopropyltoluene	--	--	--	ug/L	< 5 U	< 5 U	< 5 U [$\leq$ 5 U]	< 5 U [$\leq$ 5 U]
sec-Butylbenzene	9,200	4,300	18,000	ug/L	< 1 U	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]
Styrene	1,400	740	45,000	ug/L	< 1 U	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]
tert-Butylbenzene	3.4	1.8	67	ug/L	< 1 U	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]
Tetrachloroethene	250	130	3,400	ug/L	5	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]
Tetrahydrofuran	1,300,000	690,000	27,000,000	ug/L	< 90 U	< 90 U	< 90 U [$\leq$ 90 U]	< 90 U [$\leq$ 90 U]
Toluene	56,000	30,000	530,000	ug/L	< 1 U	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]
trans-1,2-Dichloroethene	480	260	9,800	ug/L	1	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]
trans-1,3-Dichloropropene	--	--	--	ug/L	< 1 U	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]
trans-1,4-Dichloro-2-butene	--	--	--	ug/L	< 1 U	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]
Trichloroethene	15	8.1	210	ug/L	5	2	14 [14]	12 [12]
Vinyl Chloride	2.2	1.2	260	ug/L	< 1 U	< 1 U	< 1 U [$\leq$ 1 U]	< 1 U [$\leq$ 1 U]

Table 2
2023 Summary of Groundwater Analytical Results
RACER Trust Pontiac North Campus
Former Fiero Properties
Pontiac, Michigan



Location ID: Date Collected: Sample Name:	MW-07-20 6/6/2023 MW-07-20_GW-060623	MW-08-21 3/7/2023 MW-08-21_GW-030723	MW-08-21 6/8/2023 MW-08-21_GW-060823	MW-09-22 3/6/2023 MW-09-22_GW-030623	MW-09-22 6/8/2023 MW-09-22_GW-060823	MW-13-22 3/7/2023 MW-13-22_GW-030723
Volatile Organics						
1,1,1,2-Tetrachloroethane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1,1-Trichloroethane	4	3	3	< 1 U	< 1 U	< 1 U
1,1,2,2-Tetrachloroethane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1,2-Trichloroethane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1-Dichloroethane	6	9	4	< 1 U	< 1 U	< 1 U
1,1-Dichloroethene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2,3-Trichlorobenzene	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,2,3-Trichloropropane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2,3-Trimethylbenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2,4-Trichlorobenzene	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,2,4-Trimethylbenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dibromo-3-chloropropane	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,2-Dibromoethane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dichlorobenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dichloroethane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dichloropropane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,3,5-Trimethylbenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,3-Dichlorobenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,4-Dichlorobenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
2-Butanone	< 25 U	< 25 U	< 25 U	< 25 U	< 25 U	< 25 U
2-Methylnaphthalene	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
4-Methyl-2-pentanone	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Acetone	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Acrylonitrile	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Benzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromobenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromodichloromethane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromoform	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromomethane	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Carbon Disulfide	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Carbon Tetrachloride	< 1 U	< 1 U	< 1 U	1	1	< 1 U

Table 2
2023 Summary of Groundwater Analytical Results
RACER Trust Pontiac North Campus
Former Fiero Properties
Pontiac, Michigan



Location ID: Date Collected: Sample Name:	MW-07-20 6/6/2023 MW-07-20_GW-060623	MW-08-21 3/7/2023 MW-08-21_GW-030723	MW-08-21 6/8/2023 MW-08-21_GW-060823	MW-09-22 3/6/2023 MW-09-22_GW-030623	MW-09-22 6/8/2023 MW-09-22_GW-060823	MW-13-22 3/7/2023 MW-13-22_GW-030723
CFC-11	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
CFC-12	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Chlorobenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Chlorodibromomethane	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Chlorobromomethane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Chloroethane	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Chloroform	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Chloromethane	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
cis-1,2-Dichloroethene	7	11	4	< 1 U	< 1 U	< 1 U
cis-1,3-Dichloropropene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Dibromomethane	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Ethyl ether	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Ethylbenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Hexachloroethane	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Iodomethane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Isopropyl benzene	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
m&p-Xylene	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Methyl N-Butyl Ketone	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Methyl tert-butyl ether	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Methylene chloride	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Naphthalene	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
N-Butylbenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
N-Propylbenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
o-Xylene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
p-Isopropyltoluene	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
sec-Butylbenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Styrene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
tert-Butylbenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Tetrachloroethene	< 1 U	< 1 U	< 1 U	148	122	< 1 U
Tetrahydrofuran	< 90 U	< 90 U	< 90 U	< 90 U	< 90 U	< 90 U
Toluene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
trans-1,2-Dichloroethene	< 1 U	1	< 1 U	< 1 U	< 1 U	< 1 U
trans-1,3-Dichloropropene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
trans-1,4-Dichloro-2-butene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Trichloroethene	2	11	11	4	4	< 1 U
Vinyl Chloride	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U

Table 2
2023 Summary of Groundwater Analytical Results
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Location ID:	MW-13-22	MW-14-22	MW-14-22	MW-15-22	MW-15-22	MW-16-22
Date Collected:	6/6/2023	3/7/2023	6/6/2023	3/7/2023	6/6/2023	4/7/2023
Sample Name:	MW-13-22_GW-060623	MW-14-22_GW-030723	MW-14-22_GW-060623	MW-15-22_GW-030723	MW-15-22_GW-060623	MW-16-22_GW-040723
Volatile Organics						
1,1,1,2-Tetrachloroethane	< 1 U	< 1 U	< 1 U	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
1,1,1-Trichloroethane	< 1 U	6	13	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
1,1,2,2-Tetrachloroethane	< 1 U	< 1 U	< 1 U	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
1,1,2-Trichloroethane	< 1 U	< 1 U	< 1 U	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
1,1-Dichloroethane	< 1 U	< 1 U	2	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
1,1-Dichloroethene	< 1 U	< 1 U	< 1 U	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
1,2,3-Trichlorobenzene	< 5 U	< 5 U	< 5 U	< 5 U [<5 U]	< 5 U [< 5 U]	< 50 UY
1,2,3-Trichloropropane	< 1 U	< 1 U	< 1 U	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
1,2,3-Trimethylbenzene	< 1 U	< 1 U	< 1 U	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
1,2,4-Trichlorobenzene	< 5 U	< 5 U	< 5 U	< 5 U [<5 U]	< 5 U [< 5 U]	< 50 UY
1,2,4-Trimethylbenzene	< 1 U	< 1 U	< 1 U	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
1,2-Dibromo-3-chloropropane	< 5 U	< 5 U	< 5 U	< 5 U [<5 U]	< 5 U [< 5 U]	< 50 UY
1,2-Dibromoethane	< 1 U	< 1 U	< 1 U	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
1,2-Dichlorobenzene	< 1 U	< 1 U	< 1 U	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
1,2-Dichloroethane	< 1 U	< 1 U	< 1 U	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
1,2-Dichloropropane	< 1 U	< 1 U	< 1 U	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
1,3,5-Trimethylbenzene	< 1 U	< 1 U	< 1 U	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
1,3-Dichlorobenzene	< 1 U	< 1 U	< 1 U	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
1,4-Dichlorobenzene	< 1 U	< 1 U	< 1 U	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
2-Butanone	< 25 U	< 25 U	< 25 U	< 25 U [<25 U]	< 25 U [< 25 U]	< 250 UY
2-Methylnaphthalene	< 5 U	< 5 U	< 5 U	< 5 U [<5 U]	< 5 U [< 5 U]	< 50 UY
4-Methyl-2-pentanone	< 50 U	< 50 U	< 50 U	< 50 U [<50 U]	< 50 U [< 50 U]	< 500 UY
Acetone	< 50 U	< 50 U	< 50 U	< 50 U [<50 U]	< 50 U [< 50 U]	< 500 UY
Acrylonitrile	< 2 U	< 2 U	< 2 U	< 2 U [<2 U]	< 2 U [< 2 U]	< 20 UY
Benzene	< 1 U	< 1 U	< 1 U	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
Bromobenzene	< 1 U	< 1 U	< 1 U	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
Bromodichloromethane	< 1 U	< 1 U	< 1 U	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
Bromoform	< 1 U	< 1 U	< 1 U	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY
Bromomethane	< 5 U	< 5 U	< 5 U	< 5 U [<5 U]	< 5 U [< 5 U]	< 50 UY
Carbon Disulfide	< 5 U	< 5 U	< 5 U	< 5 U [<5 U]	< 5 U [< 5 U]	< 50 UY
Carbon Tetrachloride	< 1 U	3	5	< 1 U [<1 U]	< 1 U [< 1 U]	< 10 UY

Table 2
2023 Summary of Groundwater Analytical Results
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Location ID: Date Collected: Sample Name:	MW-13-22 6/6/2023 MW-13-22_GW-060623	MW-14-22 3/7/2023 MW-14-22_GW-030723	MW-14-22 6/6/2023 MW-14-22_GW-060623	MW-15-22 3/7/2023 MW-15-22_GW-030723	MW-15-22 6/6/2023 MW-15-22_GW-060623	MW-16-22 4/7/2023 MW-16-22_GW-040723
CFC-11	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]	< 10 UY
CFC-12	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U [< 5 U]	< 50 UY
Chlorobenzene	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]	< 10 UY
Chlorodibromomethane	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U [< 5 U]	< 50 UY
Chlorobromomethane	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]	< 10 UY
Chloroethane	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U [< 5 U]	< 50 UY
Chloroform	< 1 U	1	1	< 1 U [< 1 U]	< 1 U [< 1 U]	< 10 UY
Chloromethane	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U [< 5 U]	< 50 UY
cis-1,2-Dichloroethene	< 1 U	8	5	< 1 U [< 1 U]	< 1 U [< 1 U]	20 Y
cis-1,3-Dichloropropene	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]	< 10 UY
Dibromomethane	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U [< 5 U]	< 50 UY
Ethyl ether	< 10 U	< 10 U	< 10 U	< 10 U [< 10 U]	< 10 U [< 10 U]	< 100 UY
Ethylbenzene	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]	< 10 UY
Hexachloroethane	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U [< 5 U]	< 50 UY
Iodomethane	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]	< 10 UY
Isopropyl benzene	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U [< 5 U]	< 50 UY
m&p-Xylene	< 2 U	< 2 U	< 2 U	< 2 U [< 2 U]	< 2 U [< 2 U]	< 20 UY
Methyl N-Butyl Ketone	< 50 U	< 50 U	< 50 U	< 50 U [< 50 U]	< 50 U [< 50 U]	< 500 UY
Methyl tert-butyl ether	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U [< 5 U]	< 50 UY
Methylene chloride	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U [< 5 U]	< 50 UY
Naphthalene	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U [< 5 U]	< 50 UY
N-Butylbenzene	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]	< 10 UY
N-Propylbenzene	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]	< 10 UY
o-Xylene	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]	< 10 UY
p-Isopropyltoluene	< 5 U	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U [< 5 U]	< 50 UY
sec-Butylbenzene	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]	< 10 UY
Styrene	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]	< 10 UY
tert-Butylbenzene	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]	< 10 UY
Tetrachloroethene	< 1 U	100	212 E	< 1 U [< 1 U]	< 1 U [< 1 U]	300 Y
Tetrahydrofuran	< 90 U	< 90 U	< 90 U	< 90 U [< 90 U]	< 90 U [< 90 U]	< 900 UY
Toluene	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]	< 10 UY
trans-1,2-Dichloroethene	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]	< 10 UY
trans-1,3-Dichloropropene	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]	< 10 UY
trans-1,4-Dichloro-2-butene	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]	< 10 UY
Trichloroethene	< 1 U	15	22	< 1 U [< 1 U]	< 1 U [< 1 U]	10 Y
Vinyl Chloride	< 1 U	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U [< 1 U]	< 10 UY

Table 2
2023 Summary of Groundwater Analytical Results
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Location ID: Date Collected: Sample Name:	MW-16-22 6/6/2023 MW-16-22_GW-060623	MWF15-01 6/7/2023 MWF15-01_GW-060723	MWF16-05 3/8/2023 MWF16-05_GW-030823	MWF16-05 6/8/2023 MWF16-05_GW-060823	MWF16-06 6/9/2023 MWF16-06_GW-060923	MWF16-07 6/7/2023 MWF16-07_GW-060723	MWF16-12 6/8/2023 MWF16-12_GW-060823
Volatile Organics							
1,1,1,2-Tetrachloroethane	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
1,1,1-Trichloroethane	< 10 UY	4	4	< 20 UY	93	< 1 U	< 1 U
1,1,2,2-Tetrachloroethane	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
1,1,2-Trichloroethane	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
1,1-Dichloroethane	< 10 UY	< 1 U	< 1 U	< 20 UY	52	< 1 U	< 1 U
1,1-Dichloroethene	< 10 UY	< 1 U	< 1 U	< 20 UY	5	< 1 U	< 1 U
1,2,3-Trichlorobenzene	< 50 UY	< 5 U	< 5 U	< 100 UY	< 5 U	< 5 U	< 5 U
1,2,3-Trichloropropane	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
1,2,3-Trimethylbenzene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
1,2,4-Trichlorobenzene	< 50 UY	< 5 U	< 5 U	< 100 UY	< 5 U	< 5 U	< 5 U
1,2,4-Trimethylbenzene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
1,2-Dibromo-3-chloropropane	< 50 UY	< 5 U	< 5 U	< 100 UY	< 5 U	< 5 U	< 5 U
1,2-Dibromoethane	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
1,2-Dichlorobenzene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
1,2-Dichloroethane	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
1,2-Dichloropropane	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
1,3,5-Trimethylbenzene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
1,3-Dichlorobenzene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
1,4-Dichlorobenzene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
2-Butanone	< 250 UY	< 25 U	< 25 U	< 500 UY	< 25 U	< 25 U	< 25 U
2-Methylnaphthalene	< 50 UY	< 5 U	< 5 U	< 100 UY	< 5 U	< 5 U	< 5 U
4-Methyl-2-pentanone	< 500 UY	< 50 U	< 50 U	< 1000 UY	< 50 U	< 50 U	< 50 U
Acetone	< 500 UY	< 50 U	< 50 U	< 1000 UY	< 50 U	< 50 U	< 50 U
Acrylonitrile	< 20 UY	< 2 U	< 2 U	< 40 UY	< 2 U	< 2 U	< 2 U
Benzene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
Bromobenzene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
Bromodichloromethane	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
Bromoform	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
Bromomethane	< 50 UY	< 5 U	< 5 U	< 100 UY	< 5 U	< 5 U	< 5 U
Carbon Disulfide	< 50 UY	< 5 U	< 5 U	< 100 UY	< 5 U	< 5 U	< 5 U
Carbon Tetrachloride	< 10 UY	< 1 U	< 1 U	< 20 UY	7	< 1 U	< 1 U

Table 2
2023 Summary of Groundwater Analytical Results
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Location ID: Date Collected: Sample Name:	MW-16-22 6/6/2023 MW-16-22_GW-060623	MWF15-01 6/7/2023 MWF15-01_GW-060723	MWF16-05 3/8/2023 MWF16-05_GW-030823	MWF16-05 6/8/2023 MWF16-05_GW-060823	MWF16-06 6/9/2023 MWF16-06_GW-060923	MWF16-07 6/7/2023 MWF16-07_GW-060723	MWF16-12 6/8/2023 MWF16-12_GW-060823
CFC-11	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
CFC-12	< 50 UY	< 5 U	< 5 U	< 100 UY	< 5 U	< 5 U	< 5 U
Chlorobenzene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
Chlorodibromomethane	< 50 UY	< 5 U	< 5 U	< 100 UY	< 5 U	< 5 U	< 5 U
Chlorobromomethane	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
Chloroethane	< 50 UY	< 5 U	< 5 U	< 100 UY	< 5 U	< 5 U	< 5 U
Chloroform	< 10 UY	< 1 U	< 1 U	< 20 UY	9	< 1 U	< 1 U
Chloromethane	< 50 UY	< 5 U	< 5 U	< 100 UY	< 5 U	< 5 U	< 5 U
cis-1,2-Dichloroethene	10 Y	< 1 U	< 1 U	< 20 UY	18	< 1 U	< 1 U
cis-1,3-Dichloropropene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
Dibromomethane	< 50 UY	< 5 U	< 5 U	< 100 UY	< 5 U	< 5 U	< 5 U
Ethyl ether	< 100 UY	< 10 U	< 10 U	< 200 UY	< 10 U	< 10 U	< 10 U
Ethylbenzene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
Hexachloroethane	< 50 UY	< 5 U	< 5 U	< 100 UY	< 5 U	< 5 U	< 5 U
Iodomethane	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
Isopropyl benzene	< 50 UY	< 5 U	< 5 U	< 100 UY	< 5 U	< 5 U	< 5 U
m&p-Xylene	< 20 UY	< 2 U	< 2 U	< 40 UY	< 2 U	< 2 U	< 2 U
Methyl N-Butyl Ketone	< 500 UY	< 50 U	< 50 U	< 1000 UY	< 50 U	< 50 U	< 50 U
Methyl tert-butyl ether	< 50 UY	< 5 U	< 5 U	< 100 UY	< 5 U	< 5 U	< 5 U
Methylene chloride	< 50 UY	< 5 U	< 5 U	< 100 UY	< 5 U	< 5 U	< 5 U
Naphthalene	< 50 UY	< 5 U	< 5 U	< 100 UY	< 5 U	< 5 U	< 5 U
N-Butylbenzene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
N-Propylbenzene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
o-Xylene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
p-Isopropyltoluene	< 50 UY	< 5 U	< 5 U	< 100 UY	< 5 U	< 5 U	< 5 U
sec-Butylbenzene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
Styrene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
tert-Butylbenzene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
Tetrachloroethene	180 Y	< 1 U	550 Y	500 Y	36	< 1 U	25
Tetrahydrofuran	< 900 UY	< 90 U	< 90 U	< 1800 UY	< 90 U	< 90 U	< 90 U
Toluene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
trans-1,2-Dichloroethene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
trans-1,3-Dichloropropene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
trans-1,4-Dichloro-2-butene	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U
Trichloroethene	10 Y	< 1 U	23	< 20 UY	5	< 1 U	< 1 U
Vinyl Chloride	< 10 UY	< 1 U	< 1 U	< 20 UY	< 1 U	< 1 U	< 1 U

Table 2
2023 Summary of Groundwater Analytical Results
RACER Trust Pontiac North Campus
Former Fiero Properties
Pontiac, Michigan



Location ID: Date Collected: Sample Name:	MWF16-15 6/7/2023 MWF16-15_GW-060723	MWF16-16 3/6/2023 MWF16-16_GW-030623	MWF16-16 6/9/2023 MWF16-16_GW-060923	MWF16-17 6/8/2023 MWF16-17_GW-060823	MWF16-18 3/7/2023 MWF16-18_GW-030823	MWF16-18 6/8/2023 MWF16-18_GW-060823
Volatile Organics						
1,1,1,2-Tetrachloroethane	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
1,1,1-Trichloroethane	11	5	< 10 UY	2	< 10 UY	< 10 UY
1,1,2,2-Tetrachloroethane	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
1,1,2-Trichloroethane	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
1,1-Dichloroethane	2	6	< 10 UY	< 1 U	< 10 UY	< 10 UY
1,1-Dichloroethene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
1,2,3-Trichlorobenzene	< 5 U	< 5 U	< 50 UY	< 5 U	< 50 UY	< 50 UY
1,2,3-Trichloropropane	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
1,2,3-Trimethylbenzene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
1,2,4-Trichlorobenzene	< 5 U	< 5 U	< 50 UY	< 5 U	< 50 UY	< 50 UY
1,2,4-Trimethylbenzene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
1,2-Dibromo-3-chloropropane	< 5 U	< 5 U	< 50 UY	< 5 U	< 50 UY	< 50 UY
1,2-Dibromoethane	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
1,2-Dichlorobenzene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
1,2-Dichloroethane	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
1,2-Dichloropropane	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
1,3,5-Trimethylbenzene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
1,3-Dichlorobenzene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
1,4-Dichlorobenzene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
2-Butanone	< 25 U	< 25 U	< 250 UY	< 25 U	< 250 UY	< 250 UY
2-Methylnaphthalene	< 5 U	< 5 U	< 50 UY	< 5 U	< 50 UY	< 50 UY
4-Methyl-2-pentanone	< 50 U	< 50 U	< 500 UY	< 50 U	< 500 UY	< 500 UY
Acetone	< 50 U	< 50 U	< 500 UY	< 50 U	< 500 UY	< 500 UY
Acrylonitrile	< 2 U	< 2 U	< 20 UY	< 2 U	< 20 UY	< 20 UY
Benzene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
Bromobenzene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
Bromodichloromethane	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
Bromoform	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
Bromomethane	< 5 U	< 5 U	< 50 UY	< 5 U	< 50 UY	< 50 UY
Carbon Disulfide	< 5 U	< 5 U	< 50 UY	< 5 U	< 50 UY	< 50 UY
Carbon Tetrachloride	< 1 U	1	< 10 UY	< 1 U	< 10 UY	< 10 UY

Table 2
2023 Summary of Groundwater Analytical Results
RACER Trust Pontiac North Campus
Former Fiero Properties
Pontiac, Michigan



Location ID: Date Collected: Sample Name:	MWF16-15 6/7/2023 MWF16-15_GW-060723	MWF16-16 3/6/2023 MWF16-16_GW-030623	MWF16-16 6/9/2023 MWF16-16_GW-060923	MWF16-17 6/8/2023 MWF16-17_GW-060823	MWF16-18 3/7/2023 MWF16-18_GW-030823	MWF16-18 6/8/2023 MWF16-18_GW-060823
CFC-11	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
CFC-12	< 5 U	< 5 U	< 50 UY	< 5 U	< 50 UY	< 50 UY
Chlorobenzene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
Chlorodibromomethane	< 5 U	< 5 U	< 50 UY	< 5 U	< 50 UY	< 50 UY
Chlorobromomethane	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
Chloroethane	< 5 U	< 5 U	< 50 UY	< 5 U	< 50 UY	< 50 UY
Chloroform	< 1 U	1	< 10 UY	< 1 U	< 10 UY	< 10 UY
Chloromethane	< 5 U	< 5 U	< 50 UY	< 5 U	< 50 UY	< 50 UY
cis-1,2-Dichloroethene	9	8	20 Y	< 1 U	70 Y	110 Y
cis-1,3-Dichloropropene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
Dibromomethane	< 5 U	< 5 U	< 50 UY	< 5 U	< 50 UY	< 50 UY
Ethyl ether	< 10 U	< 10 U	< 100 UY	< 10 U	< 100 UY	< 100 UY
Ethylbenzene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
Hexachloroethane	< 5 U	< 5 U	< 50 UY	< 5 U	< 50 UY	< 50 UY
Iodomethane	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
Isopropyl benzene	< 5 U	< 5 U	< 50 UY	< 5 U	< 50 UY	< 50 UY
m&p-Xylene	< 2 U	< 2 U	< 20 UY	< 2 U	< 20 UY	< 20 UY
Methyl N-Butyl Ketone	< 50 U	< 50 U	< 500 UY	< 50 U	< 500 UY	< 500 UY
Methyl tert-butyl ether	< 5 U	< 5 U	< 50 UY	< 5 U	< 50 UY	< 50 UY
Methylene chloride	< 5 U	< 5 U	< 50 UY	< 5 U	< 50 UY	< 50 UY
Naphthalene	< 5 U	< 5 U	< 50 UY	< 5 U	< 50 UY	< 50 UY
N-Butylbenzene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
N-Propylbenzene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
o-Xylene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
p-Isopropyltoluene	< 5 U	< 5 U	< 50 UY	< 5 U	< 50 UY	< 50 UY
sec-Butylbenzene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
Styrene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
tert-Butylbenzene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
Tetrachloroethene	< 1 U	260 Y	400 Y	1	1,070 Y	1,040 Y
Tetrahydrofuran	< 90 U	< 90 U	< 900 UY	< 90 U	< 900 UY	< 900 UY
Toluene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
trans-1,2-Dichloroethene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
trans-1,3-Dichloropropene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
trans-1,4-Dichloro-2-butene	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY
Trichloroethene	4	8	10 Y	< 1 U	20 Y	20 Y
Vinyl Chloride	< 1 U	< 1 U	< 10 UY	< 1 U	< 10 UY	< 10 UY

Table 2
2023 Summary of Groundwater Analytical Results
RACER Trust Pontiac North Campus
Former Fiero Properties
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Location ID: Date Collected: Sample Name:	MWF16-22 6/9/2023 MWF16-22_GW-060923	MWF16-23 3/7/2023 MWF16-23_GW-030723	MWF16-23 6/6/2023 MWF16-23_GW-060623	MWF16-25 6/8/2023 MWF16-25_GW-060823	MWF7-02 6/7/2023 MWF7-02_GW-060723	MWOS-08 3/8/2023 MWOS-08_GW-030823
Volatile Organics						
1,1,1,2-Tetrachloroethane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1,1-Trichloroethane	1	12	13	4	81	4
1,1,2,2-Tetrachloroethane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1,2-Trichloroethane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1-Dichloroethane	2	6	7	3	15	< 1 U
1,1-Dichloroethene	< 1 U	< 1 U	< 1 U	< 1 U	8	< 1 U
1,2,3-Trichlorobenzene	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,2,3-Trichloropropane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2,3-Trimethylbenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2,4-Trichlorobenzene	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,2,4-Trimethylbenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dibromo-3-chloropropane	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,2-Dibromoethane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dichlorobenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dichloroethane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dichloropropane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,3,5-Trimethylbenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,3-Dichlorobenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,4-Dichlorobenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
2-Butanone	< 25 U	< 25 U	< 25 U	< 25 U	< 25 U	< 25 U
2-Methylnaphthalene	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
4-Methyl-2-pentanone	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Acetone	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Acrylonitrile	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Benzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromobenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromodichloromethane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromoform	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromomethane	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Carbon Disulfide	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Carbon Tetrachloride	< 1 U	< 1 U	< 1 U	1	< 1 U	< 1 U

Table 2
2023 Summary of Groundwater Analytical Results
RACER Trust Pontiac North Campus
Former Fiero Properties
Pontiac, Michigan



Location ID: Date Collected: Sample Name:	MWF16-22 6/9/2023 MWF16-22_GW-060923	MWF16-23 3/7/2023 MWF16-23_GW-030723	MWF16-23 6/6/2023 MWF16-23_GW-060623	MWF16-25 6/8/2023 MWF16-25_GW-060823	MWF7-02 6/7/2023 MWF7-02_GW-060723	MWOS-08 3/8/2023 MWOS-08_GW-030823
CFC-11	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
CFC-12	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Chlorobenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Chlorodibromomethane	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Chlorobromomethane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Chloroethane	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Chloroform	< 1 U	< 1 U	< 1 U	3	< 1 U	1
Chloromethane	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
cis-1,2-Dichloroethene	14	7	8	40	2	5
cis-1,3-Dichloropropene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Dibromomethane	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Ethyl ether	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Ethylbenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Hexachloroethane	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Iodomethane	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Isopropyl benzene	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
m&p-Xylene	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Methyl N-Butyl Ketone	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Methyl tert-butyl ether	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Methylene chloride	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Naphthalene	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
N-Butylbenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
N-Propylbenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
o-Xylene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
p-Isopropyltoluene	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
sec-Butylbenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Styrene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
tert-Butylbenzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Tetrachloroethene	77	< 1 U	< 1 U	< 1 U	84	< 1 U
Tetrahydrofuran	< 90 U	< 90 U	< 90 U	< 90 U	< 90 U	< 90 U
Toluene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
trans-1,2-Dichloroethene	< 1 U	2	3	3	< 1 U	< 1 U
trans-1,3-Dichloropropene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
trans-1,4-Dichloro-2-butene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Trichloroethene	3	16	21	< 1 U	4	< 1 U
Vinyl Chloride	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U

Table 2
2023 Summary of Groundwater Analytical Results
RACER Trust Pontiac North Campus
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Location ID: Date Collected: Sample Name:	MWOS-08 6/8/2023 MWOS-08_GW-060823	MWOS-09R 3/7/2023 MWOS-09R_GW-030723	MWOS-09R 6/8/2023 MWOS-09R_GW-060823	MWOS-10 3/7/2023 MWOS-10_GW-030723	MWOS-10 6/12/2023 MWOS-10_GW-061223	TW-12-22 6/8/2023 TW-12-22_GW-060823
Volatile Organics						
1,1,1,2-Tetrachloroethane	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
1,1,1-Trichloroethane	4	4	4 [4]	4	4	11
1,1,2,2-Tetrachloroethane	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
1,1,2-Trichloroethane	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
1,1-Dichloroethane	1	4	3 [3]	7	5	7
1,1-Dichloroethene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
1,2,3-Trichlorobenzene	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
1,2,3-Trichloropropane	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
1,2,3-Trimethylbenzene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
1,2,4-Trichlorobenzene	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
1,2,4-Trimethylbenzene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
1,2-Dibromo-3-chloropropane	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
1,2-Dibromoethane	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
1,2-Dichlorobenzene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
1,2-Dichloroethane	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
1,2-Dichloropropane	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
1,3,5-Trimethylbenzene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
1,3-Dichlorobenzene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
1,4-Dichlorobenzene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
2-Butanone	< 25 U	< 25 U	< 25 U [< 25 U]	< 25 U	< 25 U	< 25 U
2-Methylnaphthalene	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
4-Methyl-2-pentanone	< 50 U	< 50 U	< 50 U [< 50 U]	< 50 U	< 50 U	< 50 U
Acetone	< 50 U	< 50 U	< 50 U [< 50 U]	< 50 U	< 50 U	< 50 U
Acrylonitrile	< 2 U	< 2 U	< 2 U [< 2 U]	< 2 U	< 2 U	< 2 U
Benzene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Bromobenzene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Bromodichloromethane	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Bromoform	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Bromomethane	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
Carbon Disulfide	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
Carbon Tetrachloride	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	2

Table 2
2023 Summary of Groundwater Analytical Results
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Pontiac, Michigan



Location ID: Date Collected: Sample Name:	MWOS-08 6/8/2023 MWOS-08_GW-060823	MWOS-09R 3/7/2023 MWOS-09R_GW-030723	MWOS-09R 6/8/2023 MWOS-09R_GW-060823	MWOS-10 3/7/2023 MWOS-10_GW-030723	MWOS-10 6/12/2023 MWOS-10_GW-061223	TW-12-22 6/8/2023 TW-12-22_GW-060823
CFC-11	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
CFC-12	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
Chlorobenzene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Chlorodibromomethane	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
Chlorobromomethane	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Chloroethane	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
Chloroform	1	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	10
Chloromethane	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
cis-1,2-Dichloroethene	2	28	22 [21]	9	7	48
cis-1,3-Dichloropropene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Dibromomethane	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
Ethyl ether	< 10 U	< 10 U	< 10 U [< 10 U]	< 10 U	< 10 U	< 10 U
Ethylbenzene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Hexachloroethane	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
Iodomethane	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Isopropyl benzene	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
m&p-Xylene	< 2 U	< 2 U	< 2 U [< 2 U]	< 2 U	< 2 U	< 2 U
Methyl N-Butyl Ketone	< 50 U	< 50 U	< 50 U [< 50 U]	< 50 U	< 50 U	< 50 U
Methyl tert-butyl ether	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
Methylene chloride	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
Naphthalene	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
N-Butylbenzene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
N-Propylbenzene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
o-Xylene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
p-Isopropyltoluene	< 5 U	< 5 U	< 5 U [< 5 U]	< 5 U	< 5 U	< 5 U
sec-Butylbenzene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Styrene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
tert-Butylbenzene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Tetrachloroethene	< 1 U	17	11 [12]	< 1 U	< 1 U	4
Tetrahydrofuran	< 90 U	< 90 U	< 90 U [< 90 U]	< 90 U	< 90 U	< 90 U
Toluene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
trans-1,2-Dichloroethene	< 1 U	2	2 [2]	1	1	2
trans-1,3-Dichloropropene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
trans-1,4-Dichloro-2-butene	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U
Trichloroethene	< 1 U	3	3 [3]	11	12	13
Vinyl Chloride	< 1 U	< 1 U	< 1 U [< 1 U]	< 1 U	< 1 U	< 1 U

Table 2
2023 Summary of Groundwater Analytical Results
RACER Trust Pontiac North Campus
Former Fiero Properties
Pontiac, Michigan



Location ID:	UNKNOWN-1
Date Collected:	6/7/2023
Sample Name:	UNKNOWN-01_GW-060723
Volatile Organics	
1,1,1,2-Tetrachloroethane	< 1 U
1,1,1-Trichloroethane	47
1,1,2,2-Tetrachloroethane	< 1 U
1,1,2-Trichloroethane	< 1 U
1,1-Dichloroethane	5
1,1-Dichloroethene	< 1 U
1,2,3-Trichlorobenzene	< 5 U
1,2,3-Trichloropropane	< 1 U
1,2,3-Trimethylbenzene	< 1 U
1,2,4-Trichlorobenzene	< 5 U
1,2,4-Trimethylbenzene	< 1 U
1,2-Dibromo-3-chloropropane	< 5 U
1,2-Dibromoethane	< 1 U
1,2-Dichlorobenzene	< 1 U
1,2-Dichloroethane	< 1 U
1,2-Dichloropropane	< 1 U
1,3,5-Trimethylbenzene	< 1 U
1,3-Dichlorobenzene	< 1 U
1,4-Dichlorobenzene	< 1 U
2-Butanone	< 25 U
2-Methylnaphthalene	< 5 U
4-Methyl-2-pentanone	< 50 U
Acetone	< 50 U
Acrylonitrile	< 2 U
Benzene	< 1 U
Bromobenzene	< 1 U
Bromodichloromethane	< 1 U
Bromoform	< 1 U
Bromomethane	< 5 U
Carbon Disulfide	< 5 U
Carbon Tetrachloride	< 1 U

Table 2
2023 Summary of Groundwater Analytical Results
RACER Trust Pontiac North Campus
Former Fiero Properties
Pontiac, Michigan



Location ID:	UNKNOWN-1
Date Collected:	6/7/2023
Sample Name:	UNKNOWN-01_GW-060723
CFC-11	< 1 U
CFC-12	< 5 U
Chlorobenzene	< 1 U
Chlorodibromomethane	< 5 U
Chlorobromomethane	< 1 U
Chloroethane	< 5 U
Chloroform	< 1 U
Chloromethane	< 5 U
cis-1,2-Dichloroethene	< 1 U
cis-1,3-Dichloropropene	< 1 U
Dibromomethane	< 5 U
Ethyl ether	< 10 U
Ethylbenzene	< 1 U
Hexachloroethane	< 5 U
Iodomethane	< 1 U
Isopropyl benzene	< 5 U
m&p-Xylene	< 2 U
Methyl N-Butyl Ketone	< 50 U
Methyl tert-butyl ether	< 5 U
Methylene chloride	< 5 U
Naphthalene	< 5 U
N-Butylbenzene	< 1 U
N-Propylbenzene	< 1 U
o-Xylene	< 1 U
p-Isopropyltoluene	< 5 U
sec-Butylbenzene	< 1 U
Styrene	< 1 U
tert-Butylbenzene	< 1 U
Tetrachloroethene	29
Tetrahydrofuran	< 90 U
Toluene	< 1 U
trans-1,2-Dichloroethene	< 1 U
trans-1,3-Dichloropropene	< 1 U
trans-1,4-Dichloro-2-butene	< 1 U
Trichloroethene	< 1 U
Vinyl Chloride	< 1 U

Table 2
2023 Summary of Groundwater Analytical Results
RACER Trust Pontiac North Campus
Former Fiero Properties
Pontiac, Michigan

Notes:

- 1) Criteria listed are from the EGLE Former Fiero Assembly Site-Specific Criteria Evaluation dated April 21, 2020.
- 2) Values in bold italics denotes exceedance and/or equal to Residential Site-Specific Volatilization to Indoor Air Criteria.
- 3) Values in red type denotes exceedance and/or equal to Non-Residential Site-Specific Volatilization to Indoor Air Criteria.
- 4) Duplicate analyses are presented in brackets.
- 5) Samples were analyzed by EPA Method SW5030C/8260C

Abbreviations:

µg/L	Micrograms per liter
BASE	Basement scenario
E	Concentration exceeds calibration range
NR	Non-Residential
Res	Residential
SOG	Slab-On-Grade scenario
SSVIAC	Site-Specific Volatilization to Indoor Air Criteria
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

Table 3
2023 Summary of Soil Gas Analytical Results
RACER Trust Pontiac North Campus
Former Fiero Properties
Pontiac, Michigan



Location ID: Sample Depth (ft. bgs): Date Collected:	Fiero SSVIAC Soil Gas Residential SOG Criteria	Fiero SSVIAC Soil Gas Residential Basement Criteria	Units	SV-01-21 14-14.5 3/20/2023	SV-01-21 14-14.5 6/5/2023	SV-02-21 23.25-23.75 3/20/2023	SV-02-21 23.25-23.75 6/5/2023	SV-03-21 11.5-12 3/20/2023	SV-03-21 11.5-12 6/6/2023	SV-04-21 22.5-23 3/20/2023	SV-04-21 22.5-23 6/6/2023	SV-05-21 11.5-12 3/20/2023	SV-05-21 11.5-12 6/5/2023	SV-06-21 22.5-23 3/20/2023	SV-06-21 22.5-23 6/5/2023
Analyte															
1,1-Dichloroethene	7,000	7,000	ug/m ³	< 4.0 U	< 3.9 U	< 4.0 U (<4.0 U)	< 4.2 U (< 4.3 U)	< 4.1 U	< 4.1 U	< 4.1 U	< 4.4 U	< 4.1 U	< 4.4 U	< 4.2 U	< 4.2 U
cis-1,2-Dichloroethene	280	280	ug/m ³	< 4.0 U	< 3.9 U	< 4.0 U (<4.0 U)	< 4.2 U (< 4.3 U)	< 4.1 U	< 4.1 U	< 4.1 U	< 4.4 U	< 4.1 U	< 4.4 U	< 4.2 U	< 4.2 U
trans-1,2-Dichloroethene	2,800	2,800	ug/m ³	< 4.0 U	< 3.9 U	< 4.0 U (<4.0 U)	< 4.2 U (< 4.3 U)	< 4.1 U	< 4.1 U	< 4.1 U	< 4.4 U	< 4.1 U	< 4.4 U	< 4.2 U	< 4.2 U
Tetrachloroethene	1,400	1,400	ug/m ³	< 6.8 U	7.5	7.6 (8.4)	8.8 (8.1)	< 7.0 U	< 7.0 U	< 7.0 U	< 7.5 U	< 7.0 U	< 7.5 U	< 7.2 U	< 7.2 U
Trichloroethene	67	67	ug/m ³	8.0	9.3	61.0 (68.0)	50.0 (54.0)	< 5.6 U	< 5.6 U	18	17	< 5.5 U	< 5.9 U	48	15
Vinyl Chloride	54	54	ug/m ³	< 2.6 U	< 2.5 U	< 2.6 U (<2.6 U)	< 2.7 U (< 2.8 U)	< 2.6 U	< 2.6 U	< 2.6 U	< 2.8 U	< 2.6 U	< 2.8 U	< 2.7 U	< 2.7 U

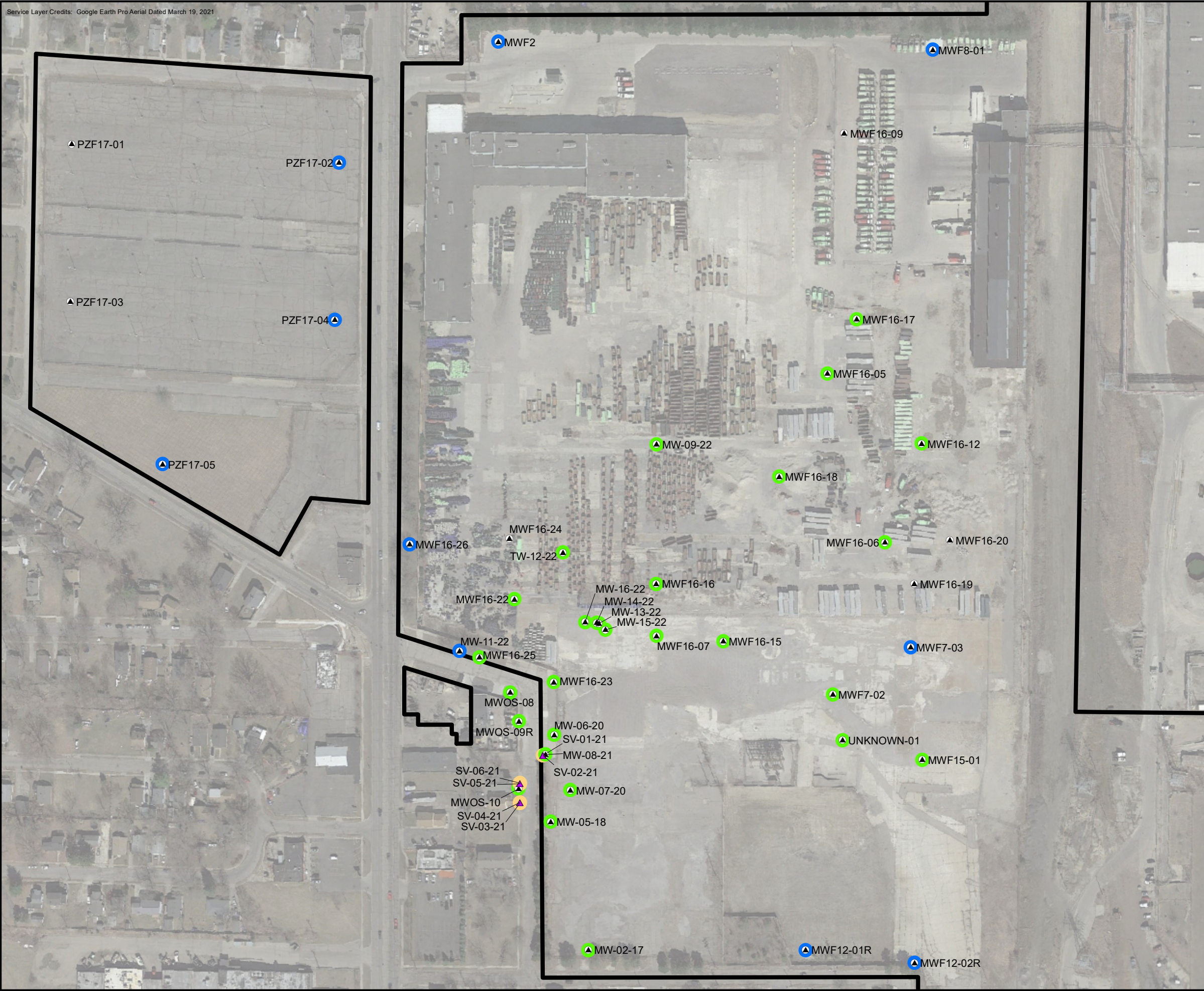
NOTES:

- 1) Criteria listed are from the EGLE Former Fiero Assembly Site-Specific Criteria Evaluation dated April 21, 2020.
- 2) Values in bold denote exceedance and/or equal to Residential Site-Specific Volatilization to Indoor Air soil gas SOG criteria.
- 3) Values in red type denote exceedance and/or equal to Residential Site-Specific Volatilization to Indoor Air soil gas basement criteria.
- 4) Duplicate analyses are presented in parenthesis
- 5) Samples analyzed by USEPA TO-15 Methods

Abbreviations:

µg/m³ - Micrograms per cubic meter.
< - Not detected
ft. bgs - feet below ground surface
U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value.
SOG - Slab-On-Grade
SSVIAC - Site-Specific Volatilization to Indoor Air Criteria

FIGURES



LEGEND

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

NOTE: MWF16-24 WAS COVERED DURING THE ENTIRETY OF THE EVENT AND COULD NOT BE GAUGED AS PLANNED.

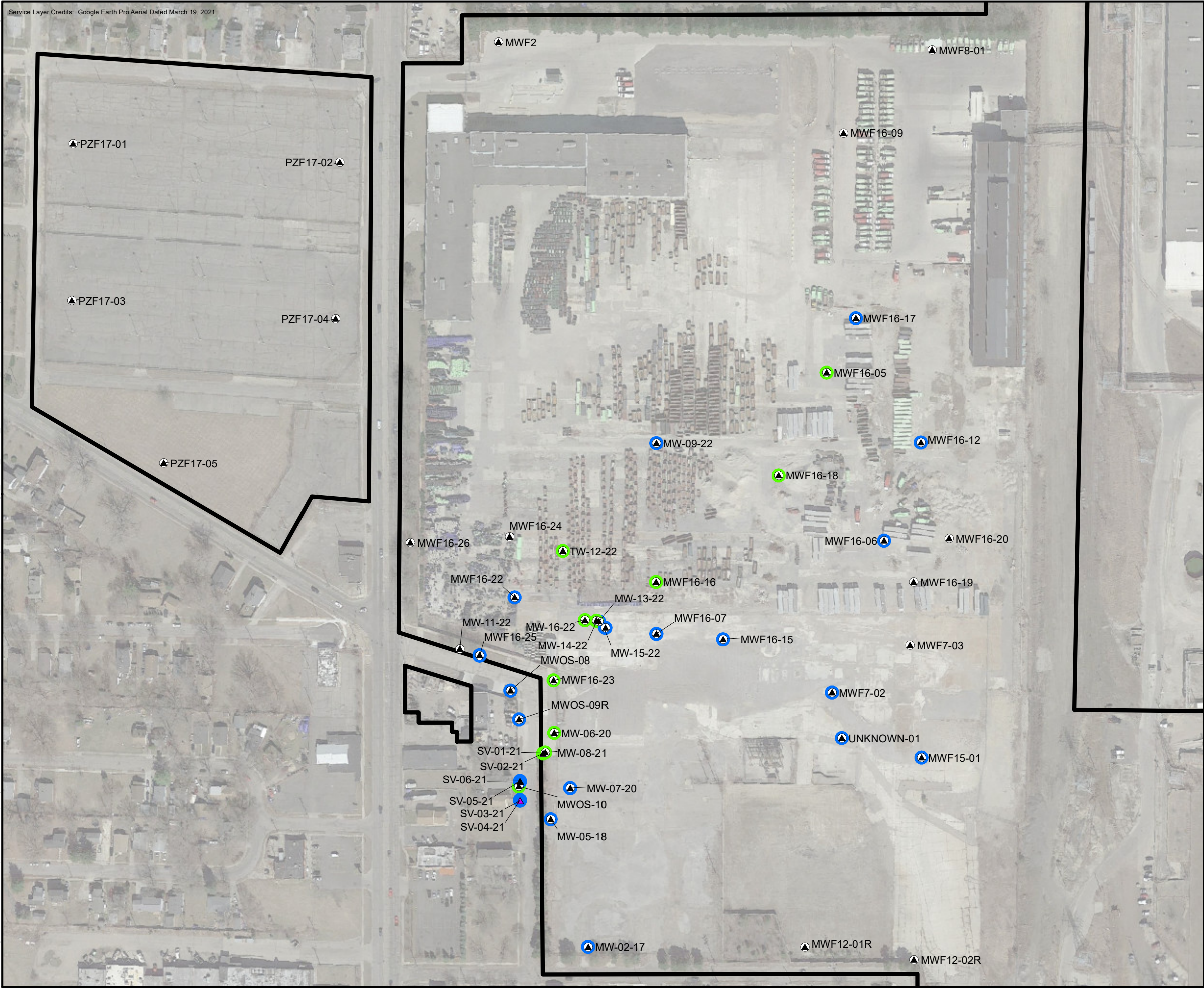


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PONTIAC, MICHIGAN

**2023 FIERO TEMPORARY MONITORING
PLAN - 2Q MONITORING LOCATIONS**

ARCADIS

FIGURE
1



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

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



RACER TRUST
PONTIAC NORTH CAMPUS
PONTIAC, MICHIGAN

**SUMMARY OF GROUNDWATER AND
SOIL GAS RESULTS JUNE 2023**

Attachment 1

Analytical Reports



Analytical Laboratory Report

Report ID: S49704.01(01)
Generated on 06/16/2023

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): S49704.01-S49704.13
Project: 30167840.00005 / RACER PNC
Collected Date(s): 06/07/2023 - 06/09/2023
Submitted Date/Time: 06/13/2023 14:35
Sampled by: Samantha Szpaichler
P.O. #: 30167840.00005

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, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

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

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

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

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

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

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

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

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

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

Report Narrative

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 (13 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S49704.01	MWF7-02_GW-060723	Groundwater	06/07/23 14:11
S49704.02	MWF7-02_GW-060723 MS	Groundwater	06/07/23 14:11
S49704.03	MWF7-02_GW-060723 MSD	Groundwater	06/07/23 14:11
S49704.04	MWF16-15_GW-060723	Groundwater	06/07/23 12:57
S49704.05	UNKNOWN-01_GW-060723	Groundwater	06/07/23 15:20
S49704.06	MWF15-01_GW-060723	Groundwater	06/07/23 16:58
S49704.07	MW-08-21_GW-060823	Groundwater	06/08/23 10:50
S49704.08	MWF16-25_GW-060823	Groundwater	06/08/23 12:55
S49704.09	MWF16-17_GW-060823	Groundwater	06/08/23 14:33
S49704.10	MWF16-12_GW-060823	Groundwater	06/08/23 15:58
S49704.11	MWF16-06_GW-060923	Groundwater	06/09/23 12:27
S49704.12	TW-12-22_GW-060823	Groundwater	06/08/23 17:35
S49704.13	Trip Blank	Water	06/08/23 00:01



Analytical Laboratory Report

Lab Sample ID: S49704.01

Sample Tag: MWF7-02_GW-060723

Collected Date/Time: 06/07/2023 14:11

Matrix: Groundwater

COC Reference: 156518

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:22	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/23 19:33, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	8	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	15	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	2	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	81	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	4	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	84	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.01 (continued)

Sample Tag: MWF7-02_GW-060723

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/23 19:33, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.02

Sample Tag: MWF7-02_GW-060723 MS

Collected Date/Time: 06/07/2023 14:11

Matrix: Groundwater

COC Reference: 156518

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:22	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/23 21:10, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	48	10		ug/L	1	60-29-7	1
Acetone	Not detected	50		ug/L	1	67-64-1	1
Methyl iodide	52	1		ug/L	1	74-88-4	1
Carbon disulfide	47	5		ug/L	1	75-15-0	1
tert-Methyl butyl ether (MTBE)	55	5		ug/L	1	1634-04-4	1
Acrylonitrile	45	2		ug/L	1	107-13-1	1
2-Butanone (MEK)	51	25		ug/L	1	78-93-3	1
Dichlorodifluoromethane	36	5		ug/L	1	75-71-8	1
Chloromethane	48	5		ug/L	1	74-87-3	1
Vinyl chloride	47	1		ug/L	1	75-01-4	1
Bromomethane	45	5		ug/L	1	74-83-9	1
Chloroethane	45	5		ug/L	1	75-00-3	1
Trichlorofluoromethane	38	1		ug/L	1	75-69-4	1
1,1-Dichloroethene	50	1		ug/L	1	75-35-4	1
Methylene chloride	48	5		ug/L	1	75-09-2	1
trans-1,2-Dichloroethene	46	1		ug/L	1	156-60-5	1
1,1-Dichloroethane	60	1		ug/L	1	75-34-3	1
cis-1,2-Dichloroethene	51	1		ug/L	1	156-59-2	1
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	1
Chloroform	49	1		ug/L	1	67-66-3	1
Bromochloromethane	51	1		ug/L	1	74-97-5	1
1,1,1-Trichloroethane	121	1		ug/L	1	71-55-6	1
4-Methyl-2-pentanone (MIBK)	51	50		ug/L	1	108-10-1	1
2-Hexanone	51	50		ug/L	1	591-78-6	1
Carbon tetrachloride	48	1		ug/L	1	56-23-5	1
Benzene	52	1		ug/L	1	71-43-2	1
1,2-Dichloroethane	48	1		ug/L	1	107-06-2	1
Trichloroethene	55	1		ug/L	1	79-01-6	1
1,2-Dichloropropane	51	1		ug/L	1	78-87-5	1
Bromodichloromethane	51	1		ug/L	1	75-27-4	1
Dibromomethane	56	5		ug/L	1	74-95-3	1
cis-1,3-Dichloropropene	52	1		ug/L	1	10061-01-5	1
Toluene	52	1		ug/L	1	108-88-3	1
trans-1,3-Dichloropropene	54	1		ug/L	1	10061-02-6	1
1,1,2-Trichloroethane	53	1		ug/L	1	79-00-5	1
Tetrachloroethene	138	1		ug/L	1	127-18-4	1

1-Spiked at 50 ug/L



Analytical Laboratory Report

Lab Sample ID: S49704.02 (continued)

Sample Tag: MWVF7-02_GW-060723 MS

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/23 21:10, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
trans-1,4-Dichloro-2-butene	50	1		ug/L	1	110-57-6	1
Dibromochloromethane	55	5		ug/L	1	124-48-1	1
1,2-Dibromoethane	56	1		ug/L	1	106-93-4	1
Chlorobenzene	55	1		ug/L	1	108-90-7	1
1,1,1,2-Tetrachloroethane	57	1		ug/L	1	630-20-6	1
Ethylbenzene	55	1		ug/L	1	100-41-4	1
p,m-Xylene*	112	2		ug/L	1		1
o-Xylene	55	1		ug/L	1	95-47-6	1
Styrene	55	1		ug/L	1	100-42-5	1
Isopropylbenzene	56	5		ug/L	1	98-82-8	1
Bromoform	59	1		ug/L	1	75-25-2	1
1,1,2,2-Tetrachloroethane	54	1		ug/L	1	79-34-5	1
1,2,3-Trichloropropane	53	1		ug/L	1	96-18-4	1
n-Propylbenzene	55	1		ug/L	1	103-65-1	1
Bromobenzene	58	1		ug/L	1	108-86-1	1
1,3,5-Trimethylbenzene	57	1		ug/L	1	108-67-8	1
tert-Butylbenzene	53	1		ug/L	1	98-06-6	1
1,2,4-Trimethylbenzene	57	1		ug/L	1	95-63-6	1
sec-Butylbenzene	50	1		ug/L	1	135-98-8	1
p-Isopropyltoluene	50	5		ug/L	1	99-87-6	1
1,3-Dichlorobenzene	52	1		ug/L	1	541-73-1	1
1,4-Dichlorobenzene	52	1		ug/L	1	106-46-7	1
1,2-Dichlorobenzene	54	1		ug/L	1	95-50-1	1
1,2,3-Trimethylbenzene	53	1		ug/L	1	526-73-8	1
n-Butylbenzene	50	1		ug/L	1	104-51-8	1
Hexachloroethane	58	5		ug/L	1	67-72-1	1
1,2-Dibromo-3-chloropropane	52	5		ug/L	1	96-12-8	1
1,2,4-Trichlorobenzene	53	5		ug/L	1	120-82-1	1
1,2,3-Trichlorobenzene	54	5		ug/L	1	87-61-6	1
Naphthalene	53	5		ug/L	1	91-20-3	1
2-Methylnaphthalene	47	5		ug/L	1	91-57-6	1

1-Spiked at 50 ug/L



Analytical Laboratory Report

Lab Sample ID: S49704.03

Sample Tag: MWF7-02_GW-060723 MSD

Collected Date/Time: 06/07/2023 14:11

Matrix: Groundwater

COC Reference: 156518

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:22	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/23 21:29, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	45	10		ug/L	1	60-29-7	1
Acetone	50	50		ug/L	1	67-64-1	1
Methyl iodide	51	1		ug/L	1	74-88-4	1
Carbon disulfide	45	5		ug/L	1	75-15-0	1
tert-Methyl butyl ether (MTBE)	54	5		ug/L	1	1634-04-4	1
Acrylonitrile	45	2		ug/L	1	107-13-1	1
2-Butanone (MEK)	50	25		ug/L	1	78-93-3	1
Dichlorodifluoromethane	34	5		ug/L	1	75-71-8	1
Chloromethane	47	5		ug/L	1	74-87-3	1
Vinyl chloride	47	1		ug/L	1	75-01-4	1
Bromomethane	43	5		ug/L	1	74-83-9	1
Chloroethane	43	5		ug/L	1	75-00-3	1
Trichlorofluoromethane	36	1		ug/L	1	75-69-4	1
1,1-Dichloroethene	49	1		ug/L	1	75-35-4	1
Methylene chloride	46	5		ug/L	1	75-09-2	1
trans-1,2-Dichloroethene	45	1		ug/L	1	156-60-5	1
1,1-Dichloroethane	58	1		ug/L	1	75-34-3	1
cis-1,2-Dichloroethene	50	1		ug/L	1	156-59-2	1
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	1
Chloroform	47	1		ug/L	1	67-66-3	1
Bromochloromethane	50	1		ug/L	1	74-97-5	1
1,1,1-Trichloroethane	117	1		ug/L	1	71-55-6	1
4-Methyl-2-pentanone (MIBK)	53	50		ug/L	1	108-10-1	1
2-Hexanone	52	50		ug/L	1	591-78-6	1
Carbon tetrachloride	47	1		ug/L	1	56-23-5	1
Benzene	51	1		ug/L	1	71-43-2	1
1,2-Dichloroethane	46	1		ug/L	1	107-06-2	1
Trichloroethene	55	1		ug/L	1	79-01-6	1
1,2-Dichloropropane	50	1		ug/L	1	78-87-5	1
Bromodichloromethane	49	1		ug/L	1	75-27-4	1
Dibromomethane	55	5		ug/L	1	74-95-3	1
cis-1,3-Dichloropropene	51	1		ug/L	1	10061-01-5	1
Toluene	50	1		ug/L	1	108-88-3	1
trans-1,3-Dichloropropene	53	1		ug/L	1	10061-02-6	1
1,1,2-Trichloroethane	52	1		ug/L	1	79-00-5	1
Tetrachloroethene	135	1		ug/L	1	127-18-4	1

1-Spiked at 50 ug/L



Analytical Laboratory Report

Lab Sample ID: S49704.03 (continued)

Sample Tag: MWF7-02_GW-060723 MSD

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/23 21:29, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
trans-1,4-Dichloro-2-butene	50	1		ug/L	1	110-57-6	1
Dibromochloromethane	54	5		ug/L	1	124-48-1	1
1,2-Dibromoethane	55	1		ug/L	1	106-93-4	1
Chlorobenzene	54	1		ug/L	1	108-90-7	1
1,1,1,2-Tetrachloroethane	56	1		ug/L	1	630-20-6	1
Ethylbenzene	55	1		ug/L	1	100-41-4	1
p,m-Xylene*	111	2		ug/L	1		1
o-Xylene	53	1		ug/L	1	95-47-6	1
Styrene	54	1		ug/L	1	100-42-5	1
Isopropylbenzene	56	5		ug/L	1	98-82-8	1
Bromoform	58	1		ug/L	1	75-25-2	1
1,1,2,2-Tetrachloroethane	56	1		ug/L	1	79-34-5	1
1,2,3-Trichloropropane	54	1		ug/L	1	96-18-4	1
n-Propylbenzene	55	1		ug/L	1	103-65-1	1
Bromobenzene	57	1		ug/L	1	108-86-1	1
1,3,5-Trimethylbenzene	57	1		ug/L	1	108-67-8	1
tert-Butylbenzene	52	1		ug/L	1	98-06-6	1
1,2,4-Trimethylbenzene	57	1		ug/L	1	95-63-6	1
sec-Butylbenzene	51	1		ug/L	1	135-98-8	1
p-Isopropyltoluene	52	5		ug/L	1	99-87-6	1
1,3-Dichlorobenzene	52	1		ug/L	1	541-73-1	1
1,4-Dichlorobenzene	52	1		ug/L	1	106-46-7	1
1,2-Dichlorobenzene	54	1		ug/L	1	95-50-1	1
1,2,3-Trimethylbenzene	54	1		ug/L	1	526-73-8	1
n-Butylbenzene	51	1		ug/L	1	104-51-8	1
Hexachloroethane	59	5		ug/L	1	67-72-1	1
1,2-Dibromo-3-chloropropane	57	5		ug/L	1	96-12-8	1
1,2,4-Trichlorobenzene	55	5		ug/L	1	120-82-1	1
1,2,3-Trichlorobenzene	56	5		ug/L	1	87-61-6	1
Naphthalene	56	5		ug/L	1	91-20-3	1
2-Methylnaphthalene	51	5		ug/L	1	91-57-6	1

1-Spiked at 50 ug/L



Analytical Laboratory Report

Lab Sample ID: S49704.04

Sample Tag: MWF16-15_GW-060723

Collected Date/Time: 06/07/2023 12:57

Matrix: Groundwater

COC Reference: 156518

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 01:03, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	2	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	9	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	11	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	4	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.04 (continued)
Sample Tag: MWF16-15_GW-060723

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 01:03, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.05

Sample Tag: UNKNOWN-01_GW-060723

Collected Date/Time: 06/07/2023 15:20

Matrix: Groundwater

COC Reference: 156518

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	>2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 01:23, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	5	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	47	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	29	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.05 (continued)
Sample Tag: UNKNOWN-01_GW-060723

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 01:23, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.06

Sample Tag: MWF15-01_GW-060723

Collected Date/Time: 06/07/2023 16:58

Matrix: Groundwater

COC Reference: 156518

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 01:43, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	4	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.06 (continued)

Sample Tag: MWF15-01_GW-060723

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 01:43, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.07

Sample Tag: MW-08-21_GW-060823

Collected Date/Time: 06/08/2023 10:50

Matrix: Groundwater

COC Reference: 156518

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 02:02, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	4	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	4	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	3	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	11	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.07 (continued)

Sample Tag: MW-08-21_GW-060823

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 02:02, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.08

Sample Tag: MWF16-25_GW-060823

Collected Date/Time: 06/08/2023 12:55

Matrix: Groundwater

COC Reference: 156518

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 02:21, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	3	1		ug/L	1	156-60-5	
1,1-Dichloroethane	3	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	40	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	3	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	4	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	1	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.08 (continued)
Sample Tag: MWF16-25_GW-060823

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 02:21, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.09

Sample Tag: MWF16-17_GW-060823

Collected Date/Time: 06/08/2023 14:33

Matrix: Groundwater

COC Reference: 156518

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 02:40, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	2	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	1	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.09 (continued)

Sample Tag: MWF16-17_GW-060823

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 02:40, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.10

Sample Tag: MWF16-12_GW-060823

Collected Date/Time: 06/08/2023 15:58

Matrix: Groundwater

COC Reference: 156518

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 03:00, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	25	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.10 (continued)
Sample Tag: MWF16-12_GW-060823

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 03:00, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.11

Sample Tag: MWF16-06_GW-060923

Collected Date/Time: 06/09/2023 12:27

Matrix: Groundwater

COC Reference: 156518

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 03:20, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	5	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	52	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	18	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	9	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	93	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	7	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	5	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	36	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.11 (continued)

Sample Tag: MWF16-06_GW-060923

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 03:20, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.12

Sample Tag: TW-12-22_GW-060823

Collected Date/Time: 06/08/2023 17:35

Matrix: Groundwater

COC Reference: 156518

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 03:39, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	2	1		ug/L	1	156-60-5	
1,1-Dichloroethane	7	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	48	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	10	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	11	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	2	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	13	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	4	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.12 (continued)

Sample Tag: TW-12-22_GW-060823

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 03:39, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.13

Sample Tag: Trip Blank

Collected Date/Time: 06/08/2023 00:01

Matrix: Water

COC Reference: 156518

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 00:25, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49704.13 (continued)

Sample Tag: Trip Blank

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 00:25, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Merit Laboratories Login Checklist

Lab Set ID:S49704

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

Project: 30167840.00005 / RACER PNC

Submitted:06/13/2023 14:35 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. ☒ Yes ☐ No ☐ N/A	Samples are received at 4C +/- 2C Thermometer #	IR 2.4
02. ☒ Yes ☐ No ☐ N/A	Received on ice/ cooling process begun	
03. ☐ Yes ☒ No ☐ N/A	Samples shipped	
04. ☐ Yes ☒ No ☐ N/A	Samples left in 24 hr. drop box	
05. ☐ Yes ☐ No ☒ N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody		
06. ☒ Yes ☐ No ☐ N/A	COC adequately filled out	
07. ☒ Yes ☐ No ☐ N/A	COC signed and relinquished to the lab	
08. ☒ Yes ☐ No ☐ N/A	Sample tag on bottles match COC	
09. ☐ Yes ☒ No ☐ N/A	Subcontracting needed? Subcontacted to:	
Preservation		
10. ☒ Yes ☐ No ☐ N/A	Do sample have correct chemical preservation	
11. ☐ Yes ☐ No ☒ N/A	Completed pH checks on preserved samples? (no VOAs)	
12. ☐ Yes ☒ No ☐ N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions		
13. ☒ Yes ☐ No ☐ N/A	All bottles intact	
14. ☒ Yes ☐ No ☐ N/A	Appropriate analytical bottles are used	
15. ☒ Yes ☐ No ☐ N/A	Merit bottles used	
16. ☒ Yes ☐ No ☐ N/A	Sufficient sample volume received	
17. ☐ Yes ☒ No ☐ N/A	Samples require laboratory filtration	
18. ☒ Yes ☐ No ☐ N/A	Samples submitted within holding time	
19. ☐ Yes ☒ No ☐ 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 _____ 156518

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME		Alexis cnsp	
COMPANY		Arcadis	
ADDRESS		28550 Cabot Dr #500	
CITY	NOVI	STATE	MI
PHONE NO.		ZIP CODE	48377
E-MAIL ADDRESS	kiffany.iinder@arcadis.com		P.O. NO.
	alexis.cnsp@arcadis.com		30167840.00005
	CELL NO.	QUOTE NO.	

CONTACT NAME		Accounts Payable	
COMPANY		Arcadis	
ADDRESS		630 Plaza Dr #600	
CITY	Highlands Ranch	STATE	CO
PHONE NO.		ZIP CODE	80129
E-MAIL ADDRESS	accounts.payable.administration@arcadis.co		
	~~accounts.payable~~		

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME	30167840.00005 / Racer Pvc	SAMPLER(S) - PLEASE PRINT/SIGN NAME	Samantha Sepachier / Samt Sep
TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER			
DELIVERABLES REQUIRED ☒ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER			

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

Containers & Preservatives

MERIT LAB NO. FOR LAB USE ONLY	COLLECTION DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	FULL 8200 VOC's	Certifications	Project Locations	Special Instructions
01/02/03	6/1/23	1411	MWF7-02-GW-060723	GW	9								X	☐ OHIO VAP ☐ Drinking Water		Run ms/MSD
49704.04	6/17/23	1257	MWF16-15-GW-060723	GW	3								X	☐ DoD ☐ NPDES		
05	6/17/23	1520	UNKNOWN-01-GW-060723	GW	3								X	☐ Detroit ☐ New York		
06	6/17/23	1658	MWF15-01-GW-060723	GW	3								X	☐ Other		
07	6/18/23	1050	MW-08-21-GW-060923	GW	3								X	Special Instructions		
08	6/18/23	1255	MWF16-25-GW-060823	GW	3								X			
09	6/18/23	1433	MWF16-17-GW-060823	GW	3								X			
10	6/18/23	1558	MWF16-12-GW-060823	GW	3								X			
11	6/19/23	1227	MWF16-06-GW-060923	GW	3								X			
12	6/18/23	1735	TW-12-22-GW-060823	GW	3								X			
	6/19/23		~~MWF16-16-GW-060923~~	~~GW~~	~~3~~								~~X~~			
13	-	-	TRIP Blank	N	1								X			

RELINQUISHED BY:	Samantha Sepachier	DATE	6/9/23	TIME	1701
SIGNATURE/ORGANIZATION	NOVI Cold Storage / Arcadis	DATE	6/13/23	TIME	1701
RECEIVED BY:	Kegan Reg	DATE	6/13/23	TIME	1335
SIGNATURE/ORGANIZATION		DATE	6/13/23	TIME	1335

RELINQUISHED BY:		DATE	6/13/23	TIME	1435
SIGNATURE/ORGANIZATION		DATE	6/13/23	TIME	1435
SEAL NO.	SEAL INTACT	INITIALS	NOTES:	TEMP. ON ARRIVAL	2.4
	YES ☐ NO ☐				
SEAL NO.	SEAL INTACT	INITIALS			
	YES ☐ NO ☐				

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



Analytical Laboratory Report

Report ID: S49707.01(01)
Generated on 06/16/2023

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): S49707.01-S49707.07
Project: 30167840.00005 / RACER PNC
Collected Date(s): 06/08/2023 - 06/09/2023
Submitted Date/Time: 06/13/2023 14:35
Sampled by: Sierra Sider
P.O. #: 30167840.00005

Table of Contents

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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, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

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

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

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

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

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

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

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

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

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

Report Narrative

There is no additional narrative for this analytical 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 (7 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S49707.01	MWOS-09R_GW-060823	Groundwater	06/08/23 11:10
S49707.02	DUP-03_GW-060823	Groundwater	06/08/23 00:01
S49707.03	MWOS-08_GW-060823	Groundwater	06/08/23 12:20
S49707.04	MWF16-05_GW-060823	Groundwater	06/08/23 14:15
S49707.05	MWF16-18_GW-060823	Groundwater	06/08/23 15:25
S49707.06	MW-09-22_GW-060823	Groundwater	06/08/23 16:30
S49707.07	Trip Blank	Water	06/09/23 00:01



Analytical Laboratory Report

Lab Sample ID: S49707.01

Sample Tag: MWOS-09R_GW-060823

Collected Date/Time: 06/08/2023 11:10

Matrix: Groundwater

COC Reference: 156519

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 03:59, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	2	1		ug/L	1	156-60-5	
1,1-Dichloroethane	3	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	22	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	4	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	3	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	11	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49707.01 (continued)

Sample Tag: MWOS-09R_GW-060823

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 03:59, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49707.02

Sample Tag: DUP-03_GW-060823

Collected Date/Time: 06/08/2023 00:01

Matrix: Groundwater

COC Reference: 156519

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 04:19, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	2	1		ug/L	1	156-60-5	
1,1-Dichloroethane	3	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	21	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	4	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	3	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	12	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49707.02 (continued)

Sample Tag: DUP-03_GW-060823

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 04:19, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49707.03

Sample Tag: MWOS-08_GW-060823

Collected Date/Time: 06/08/2023 12:20

Matrix: Groundwater

COC Reference: 156519

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 04:39, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	1	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	2	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	1	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	4	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49707.03 (continued)

Sample Tag: MWOS-08_GW-060823

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 04:39, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49707.04

Sample Tag: MWF16-05_GW-060823

Collected Date/Time: 06/08/2023 14:15

Matrix: Groundwater

COC Reference: 156519

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 06:36, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	200		ug/L	20	60-29-7	Y
Acetone	Not detected	1,000		ug/L	20	67-64-1	Y
Methyl iodide	Not detected	20		ug/L	20	74-88-4	Y
Carbon disulfide	Not detected	100		ug/L	20	75-15-0	Y
tert-Methyl butyl ether (MTBE)	Not detected	100		ug/L	20	1634-04-4	Y
Acrylonitrile	Not detected	40		ug/L	20	107-13-1	Y
2-Butanone (MEK)	Not detected	500		ug/L	20	78-93-3	Y
Dichlorodifluoromethane	Not detected	100		ug/L	20	75-71-8	Y
Chloromethane	Not detected	100		ug/L	20	74-87-3	Y
Vinyl chloride	Not detected	20		ug/L	20	75-01-4	Y
Bromomethane	Not detected	100		ug/L	20	74-83-9	Y
Chloroethane	Not detected	100		ug/L	20	75-00-3	Y
Trichlorofluoromethane	Not detected	20		ug/L	20	75-69-4	Y
1,1-Dichloroethene	Not detected	20		ug/L	20	75-35-4	Y
Methylene chloride	Not detected	100		ug/L	20	75-09-2	Y
trans-1,2-Dichloroethene	Not detected	20		ug/L	20	156-60-5	Y
1,1-Dichloroethane	Not detected	20		ug/L	20	75-34-3	Y
cis-1,2-Dichloroethene	Not detected	20		ug/L	20	156-59-2	Y
Tetrahydrofuran*	Not detected	1,800		ug/L	20	109-99-9	Y
Chloroform	Not detected	20		ug/L	20	67-66-3	Y
Bromochloromethane	Not detected	20		ug/L	20	74-97-5	Y
1,1,1-Trichloroethane	Not detected	20		ug/L	20	71-55-6	Y
4-Methyl-2-pentanone (MIBK)	Not detected	1,000		ug/L	20	108-10-1	Y
2-Hexanone	Not detected	1,000		ug/L	20	591-78-6	Y
Carbon tetrachloride	Not detected	20		ug/L	20	56-23-5	Y
Benzene	Not detected	20		ug/L	20	71-43-2	Y
1,2-Dichloroethane	Not detected	20		ug/L	20	107-06-2	Y
Trichloroethene	Not detected	20		ug/L	20	79-01-6	Y
1,2-Dichloropropane	Not detected	20		ug/L	20	78-87-5	Y
Bromodichloromethane	Not detected	20		ug/L	20	75-27-4	Y
Dibromomethane	Not detected	100		ug/L	20	74-95-3	Y
cis-1,3-Dichloropropene	Not detected	20		ug/L	20	10061-01-5	Y
Toluene	Not detected	20		ug/L	20	108-88-3	Y
trans-1,3-Dichloropropene	Not detected	20		ug/L	20	10061-02-6	Y
1,1,2-Trichloroethane	Not detected	20		ug/L	20	79-00-5	Y
Tetrachloroethene	500	20		ug/L	20	127-18-4	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S49707.04 (continued)

Sample Tag: MWF16-05_GW-060823

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 06:36, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
trans-1,4-Dichloro-2-butene	Not detected	20		ug/L	20	110-57-6	Y
Dibromochloromethane	Not detected	100		ug/L	20	124-48-1	Y
1,2-Dibromoethane	Not detected	20		ug/L	20	106-93-4	Y
Chlorobenzene	Not detected	20		ug/L	20	108-90-7	Y
1,1,1,2-Tetrachloroethane	Not detected	20		ug/L	20	630-20-6	Y
Ethylbenzene	Not detected	20		ug/L	20	100-41-4	Y
p,m-Xylene*	Not detected	40		ug/L	20		Y
o-Xylene	Not detected	20		ug/L	20	95-47-6	Y
Styrene	Not detected	20		ug/L	20	100-42-5	Y
Isopropylbenzene	Not detected	100		ug/L	20	98-82-8	Y
Bromoform	Not detected	20		ug/L	20	75-25-2	Y
1,1,2,2-Tetrachloroethane	Not detected	20		ug/L	20	79-34-5	Y
1,2,3-Trichloropropane	Not detected	20		ug/L	20	96-18-4	Y
n-Propylbenzene	Not detected	20		ug/L	20	103-65-1	Y
Bromobenzene	Not detected	20		ug/L	20	108-86-1	Y
1,3,5-Trimethylbenzene	Not detected	20		ug/L	20	108-67-8	Y
tert-Butylbenzene	Not detected	20		ug/L	20	98-06-6	Y
1,2,4-Trimethylbenzene	Not detected	20		ug/L	20	95-63-6	Y
sec-Butylbenzene	Not detected	20		ug/L	20	135-98-8	Y
p-Isopropyltoluene	Not detected	100		ug/L	20	99-87-6	Y
1,3-Dichlorobenzene	Not detected	20		ug/L	20	541-73-1	Y
1,4-Dichlorobenzene	Not detected	20		ug/L	20	106-46-7	Y
1,2-Dichlorobenzene	Not detected	20		ug/L	20	95-50-1	Y
1,2,3-Trimethylbenzene	Not detected	20		ug/L	20	526-73-8	Y
n-Butylbenzene	Not detected	20		ug/L	20	104-51-8	Y
Hexachloroethane	Not detected	100		ug/L	20	67-72-1	Y
1,2-Dibromo-3-chloropropane	Not detected	100		ug/L	20	96-12-8	Y
1,2,4-Trichlorobenzene	Not detected	100		ug/L	20	120-82-1	Y
1,2,3-Trichlorobenzene	Not detected	100		ug/L	20	87-61-6	Y
Naphthalene	Not detected	100		ug/L	20	91-20-3	Y
2-Methylnaphthalene	Not detected	100		ug/L	20	91-57-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S49707.05

Sample Tag: MWF16-18_GW-060823

Collected Date/Time: 06/08/2023 15:25

Matrix: Groundwater

COC Reference: 156519

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 05:57, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	100		ug/L	10	60-29-7	Y
Acetone	Not detected	500		ug/L	10	67-64-1	Y
Methyl iodide	Not detected	10		ug/L	10	74-88-4	Y
Carbon disulfide	Not detected	50		ug/L	10	75-15-0	Y
tert-Methyl butyl ether (MTBE)	Not detected	50		ug/L	10	1634-04-4	Y
Acrylonitrile	Not detected	20		ug/L	10	107-13-1	Y
2-Butanone (MEK)	Not detected	250		ug/L	10	78-93-3	Y
Dichlorodifluoromethane	Not detected	50		ug/L	10	75-71-8	Y
Chloromethane	Not detected	50		ug/L	10	74-87-3	Y
Vinyl chloride	Not detected	10		ug/L	10	75-01-4	Y
Bromomethane	Not detected	50		ug/L	10	74-83-9	Y
Chloroethane	Not detected	50		ug/L	10	75-00-3	Y
Trichlorofluoromethane	Not detected	10		ug/L	10	75-69-4	Y
1,1-Dichloroethene	Not detected	10		ug/L	10	75-35-4	Y
Methylene chloride	Not detected	50		ug/L	10	75-09-2	Y
trans-1,2-Dichloroethene	Not detected	10		ug/L	10	156-60-5	Y
1,1-Dichloroethane	Not detected	10		ug/L	10	75-34-3	Y
cis-1,2-Dichloroethene	110	10		ug/L	10	156-59-2	Y
Tetrahydrofuran*	Not detected	900		ug/L	10	109-99-9	Y
Chloroform	Not detected	10		ug/L	10	67-66-3	Y
Bromochloromethane	Not detected	10		ug/L	10	74-97-5	Y
1,1,1-Trichloroethane	Not detected	10		ug/L	10	71-55-6	Y
4-Methyl-2-pentanone (MIBK)	Not detected	500		ug/L	10	108-10-1	Y
2-Hexanone	Not detected	500		ug/L	10	591-78-6	Y
Carbon tetrachloride	Not detected	10		ug/L	10	56-23-5	Y
Benzene	Not detected	10		ug/L	10	71-43-2	Y
1,2-Dichloroethane	Not detected	10		ug/L	10	107-06-2	Y
Trichloroethene	20	10		ug/L	10	79-01-6	Y
1,2-Dichloropropane	Not detected	10		ug/L	10	78-87-5	Y
Bromodichloromethane	Not detected	10		ug/L	10	75-27-4	Y
Dibromomethane	Not detected	50		ug/L	10	74-95-3	Y
cis-1,3-Dichloropropene	Not detected	10		ug/L	10	10061-01-5	Y
Toluene	Not detected	10		ug/L	10	108-88-3	Y
trans-1,3-Dichloropropene	Not detected	10		ug/L	10	10061-02-6	Y
1,1,2-Trichloroethane	Not detected	10		ug/L	10	79-00-5	Y
Tetrachloroethene	1,040	10		ug/L	10	127-18-4	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S49707.05 (continued)

Sample Tag: MWF16-18_GW-060823

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 05:57, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
trans-1,4-Dichloro-2-butene	Not detected	10		ug/L	10	110-57-6	Y
Dibromochloromethane	Not detected	50		ug/L	10	124-48-1	Y
1,2-Dibromoethane	Not detected	10		ug/L	10	106-93-4	Y
Chlorobenzene	Not detected	10		ug/L	10	108-90-7	Y
1,1,1,2-Tetrachloroethane	Not detected	10		ug/L	10	630-20-6	Y
Ethylbenzene	Not detected	10		ug/L	10	100-41-4	Y
p,m-Xylene*	Not detected	20		ug/L	10		Y
o-Xylene	Not detected	10		ug/L	10	95-47-6	Y
Styrene	Not detected	10		ug/L	10	100-42-5	Y
Isopropylbenzene	Not detected	50		ug/L	10	98-82-8	Y
Bromoform	Not detected	10		ug/L	10	75-25-2	Y
1,1,2,2-Tetrachloroethane	Not detected	10		ug/L	10	79-34-5	Y
1,2,3-Trichloropropane	Not detected	10		ug/L	10	96-18-4	Y
n-Propylbenzene	Not detected	10		ug/L	10	103-65-1	Y
Bromobenzene	Not detected	10		ug/L	10	108-86-1	Y
1,3,5-Trimethylbenzene	Not detected	10		ug/L	10	108-67-8	Y
tert-Butylbenzene	Not detected	10		ug/L	10	98-06-6	Y
1,2,4-Trimethylbenzene	Not detected	10		ug/L	10	95-63-6	Y
sec-Butylbenzene	Not detected	10		ug/L	10	135-98-8	Y
p-Isopropyltoluene	Not detected	50		ug/L	10	99-87-6	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
1,2-Dichlorobenzene	Not detected	10		ug/L	10	95-50-1	Y
1,2,3-Trimethylbenzene	Not detected	10		ug/L	10	526-73-8	Y
n-Butylbenzene	Not detected	10		ug/L	10	104-51-8	Y
Hexachloroethane	Not detected	50		ug/L	10	67-72-1	Y
1,2-Dibromo-3-chloropropane	Not detected	50		ug/L	10	96-12-8	Y
1,2,4-Trichlorobenzene	Not detected	50		ug/L	10	120-82-1	Y
1,2,3-Trichlorobenzene	Not detected	50		ug/L	10	87-61-6	Y
Naphthalene	Not detected	50		ug/L	10	91-20-3	Y
2-Methylnaphthalene	Not detected	50		ug/L	10	91-57-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S49707.06

Sample Tag: MW-09-22_GW-060823

Collected Date/Time: 06/08/2023 16:30

Matrix: Groundwater

COC Reference: 156519

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 04:58, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	1	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	4	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	122	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49707.06 (continued)

Sample Tag: MW-09-22_GW-060823

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 04:58, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49707.07

Sample Tag: Trip Blank

Collected Date/Time: 06/09/2023 00:01

Matrix: Water

COC Reference: 156519

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 00:44, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49707.07 (continued)

Sample Tag: Trip Blank

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 00:44, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Merit Laboratories Login Checklist

Lab Set ID:S49707

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

Project: 30167840.00005 / RACER PNC

Submitted:06/13/2023 14:35 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.	☒ Yes ☐ No ☐ N/A	Samples are received at 4C +/- 2C Thermometer # IR 2.4
02.	☒ Yes ☐ No ☐ N/A	Received on ice/ cooling process begun
03.	☐ Yes ☒ No ☐ N/A	Samples shipped
04.	☐ Yes ☒ No ☐ N/A	Samples left in 24 hr. drop box
05.	☐ Yes ☐ No ☒ N/A	Are there custody seals/tape or is the drop box locked
Chain of Custody		
06.	☒ Yes ☐ No ☐ N/A	COC adequately filled out
07.	☒ Yes ☐ No ☐ N/A	COC signed and relinquished to the lab
08.	☒ Yes ☐ No ☐ N/A	Sample tag on bottles match COC
09.	☐ Yes ☒ No ☐ N/A	Subcontracting needed? Subcontacted to:
Preservation		
10.	☒ Yes ☐ No ☐ N/A	Do sample have correct chemical preservation
11.	☐ Yes ☐ No ☒ N/A	Completed pH checks on preserved samples? (no VOAs)
12.	☐ Yes ☒ No ☐ N/A	Did any samples need to be preserved in the lab?
Bottle Conditions		
13.	☒ Yes ☐ No ☐ N/A	All bottles intact
14.	☒ Yes ☐ No ☐ N/A	Appropriate analytical bottles are used
15.	☒ Yes ☐ No ☐ N/A	Merit bottles used
16.	☒ Yes ☐ No ☐ N/A	Sufficient sample volume received
17.	☐ Yes ☒ No ☐ N/A	Samples require laboratory filtration
18.	☒ Yes ☐ No ☐ N/A	Samples submitted within holding time
19.	☐ Yes ☒ No ☐ 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

CONTACT NAME				Alexis Crisp			
COMPANY				Arcadis			
ADDRESS				28550 Cabot Dr. #500			
CITY			STATE		ZIP CODE		
Novi			MI		48377		
PHONE NO.		CELL NO.		P.O. NO.		30169840.00005	
E-MAIL ADDRESS				QUOTE NO.			
Tiffany.Linder@arcadis.com Alexis.Crisp@arcadis.com							

CHAIN OF CUSTODY RECORD

CONTACT NAME		Accounts Payable		☐ SAME	
COMPANY		Arcadis			
ADDRESS		630 Plaza Dr. # 600			
CITY		Highlands Ranch		STATE	CO 80129
PHONE NO.		E-MAIL ADDRESS accountspayable.administration@arcadis.co			

INVOICE TO

PROJECT NO./NAME 30167840.00005/RACER PNC	SAMPLER(S) - PLEASE PRINT/SIGN NAME Sierra Sider / <i>[Signature]</i>
TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER _____	
DELIVERABLES REQUIRED ☒ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER _____	

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

Containers & Preservatives

MERIT LAB NO. FOR LAB USE ONLY	COLLECTION		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES
	DATE	TIME			
49707.01	6/08/2023	1110	HW05-09R - GW-060823	GW	3
.02	6/08/2023	N/A	DUP-03 - GW-060823	GW	3
.03	6/08/2023	1220	MW05-08 - GW-060823	GW	3
.04	6/08/2023	1415	MWF16-05 - GW-060823	GW	3
.05	6/08/2023	1525	MWF16-18 - GW-060823	GW	3
.06	6/08/2023	1630	MW-09-22 - GW-060823	GW	3
.07 ~~06~~	6/9/23	—	TRIP BLANK	W	1
(mc)					

$$F_v = 9260 \text{ VDC}$$

Certifications

☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations

☐ Detroit ☐ New York☐ Other _____

Special Instructions

RELINQUISHED BY:	Sierra Sider	☒ Sampler	DATE	TIME
SIGNATURE/ORGANIZATION			6/8/23	1700
RECEIVED BY:	Samantha Sider		DATE	TIME
SIGNATURE/ORGANIZATION			6/8/23	1700
RELINQUISHED BY:	Samantha Sider		DATE	TIME
SIGNATURE/ORGANIZATION			6/9/23	1701
RECEIVED BY:	NOV. cold storage / Arcadis		DATE	TIME
SIGNATURE/ORGANIZATION			6/9/23	1701

RELINQUISHED BY:		DATE		TIME	
SIGNATURE/ORGANIZATION		6/13/23		1335	
RECEIVED BY:		DATE		TIME	
SIGNATURE/ORGANIZATION		6/13/23		1335	
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES:	TEMP. ON ARRIVAL	
		1335	1335	2.4	
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES:		
		1335	6/13/23 1435		

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

Rev. 1.26.25



Analytical Laboratory Report

Report ID: S49708.01(01)
Generated on 06/16/2023

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): S49708.01
Project: 30167840.00005 / RACER PNC
Collected Date(s): 06/09/2023
Submitted Date/Time: 06/13/2023 14:35
Sampled by: Unknown
P.O. #: 30167840.00005

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- Sample Summary (Page 5)

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, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

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

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

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

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

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

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

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

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

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

Report Narrative

There is no additional narrative for this analytical 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 (1 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S49708.01	MWF16-16_GW-060923	Groundwater	06/09/23 13:32



Analytical Laboratory Report

Lab Sample ID: S49708.01

Sample Tag: MWF16-16_GW-060923

Collected Date/Time: 06/09/2023 13:32

Matrix: Groundwater

COC Reference: 156520

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 06:16, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	100		ug/L	10	60-29-7	Y
Acetone	Not detected	500		ug/L	10	67-64-1	Y
Methyl iodide	Not detected	10		ug/L	10	74-88-4	Y
Carbon disulfide	Not detected	50		ug/L	10	75-15-0	Y
tert-Methyl butyl ether (MTBE)	Not detected	50		ug/L	10	1634-04-4	Y
Acrylonitrile	Not detected	20		ug/L	10	107-13-1	Y
2-Butanone (MEK)	Not detected	250		ug/L	10	78-93-3	Y
Dichlorodifluoromethane	Not detected	50		ug/L	10	75-71-8	Y
Chloromethane	Not detected	50		ug/L	10	74-87-3	Y
Vinyl chloride	Not detected	10		ug/L	10	75-01-4	Y
Bromomethane	Not detected	50		ug/L	10	74-83-9	Y
Chloroethane	Not detected	50		ug/L	10	75-00-3	Y
Trichlorofluoromethane	Not detected	10		ug/L	10	75-69-4	Y
1,1-Dichloroethene	Not detected	10		ug/L	10	75-35-4	Y
Methylene chloride	Not detected	50		ug/L	10	75-09-2	Y
trans-1,2-Dichloroethene	Not detected	10		ug/L	10	156-60-5	Y
1,1-Dichloroethane	Not detected	10		ug/L	10	75-34-3	Y
cis-1,2-Dichloroethene	20	10		ug/L	10	156-59-2	Y
Tetrahydrofuran*	Not detected	900		ug/L	10	109-99-9	Y
Chloroform	Not detected	10		ug/L	10	67-66-3	Y
Bromochloromethane	Not detected	10		ug/L	10	74-97-5	Y
1,1,1-Trichloroethane	Not detected	10		ug/L	10	71-55-6	Y
4-Methyl-2-pentanone (MIBK)	Not detected	500		ug/L	10	108-10-1	Y
2-Hexanone	Not detected	500		ug/L	10	591-78-6	Y
Carbon tetrachloride	Not detected	10		ug/L	10	56-23-5	Y
Benzene	Not detected	10		ug/L	10	71-43-2	Y
1,2-Dichloroethane	Not detected	10		ug/L	10	107-06-2	Y
Trichloroethene	10	10		ug/L	10	79-01-6	Y
1,2-Dichloropropane	Not detected	10		ug/L	10	78-87-5	Y
Bromodichloromethane	Not detected	10		ug/L	10	75-27-4	Y
Dibromomethane	Not detected	50		ug/L	10	74-95-3	Y
cis-1,3-Dichloropropene	Not detected	10		ug/L	10	10061-01-5	Y
Toluene	Not detected	10		ug/L	10	108-88-3	Y
trans-1,3-Dichloropropene	Not detected	10		ug/L	10	10061-02-6	Y
1,1,2-Trichloroethane	Not detected	10		ug/L	10	79-00-5	Y
Tetrachloroethene	400	10		ug/L	10	127-18-4	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S49708.01 (continued)

Sample Tag: MWF16-16_GW-060923

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 06:16, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
trans-1,4-Dichloro-2-butene	Not detected	10		ug/L	10	110-57-6	Y
Dibromochloromethane	Not detected	50		ug/L	10	124-48-1	Y
1,2-Dibromoethane	Not detected	10		ug/L	10	106-93-4	Y
Chlorobenzene	Not detected	10		ug/L	10	108-90-7	Y
1,1,1,2-Tetrachloroethane	Not detected	10		ug/L	10	630-20-6	Y
Ethylbenzene	Not detected	10		ug/L	10	100-41-4	Y
p,m-Xylene*	Not detected	20		ug/L	10		Y
o-Xylene	Not detected	10		ug/L	10	95-47-6	Y
Styrene	Not detected	10		ug/L	10	100-42-5	Y
Isopropylbenzene	Not detected	50		ug/L	10	98-82-8	Y
Bromoform	Not detected	10		ug/L	10	75-25-2	Y
1,1,2,2-Tetrachloroethane	Not detected	10		ug/L	10	79-34-5	Y
1,2,3-Trichloropropane	Not detected	10		ug/L	10	96-18-4	Y
n-Propylbenzene	Not detected	10		ug/L	10	103-65-1	Y
Bromobenzene	Not detected	10		ug/L	10	108-86-1	Y
1,3,5-Trimethylbenzene	Not detected	10		ug/L	10	108-67-8	Y
tert-Butylbenzene	Not detected	10		ug/L	10	98-06-6	Y
1,2,4-Trimethylbenzene	Not detected	10		ug/L	10	95-63-6	Y
sec-Butylbenzene	Not detected	10		ug/L	10	135-98-8	Y
p-Isopropyltoluene	Not detected	50		ug/L	10	99-87-6	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
1,2-Dichlorobenzene	Not detected	10		ug/L	10	95-50-1	Y
1,2,3-Trimethylbenzene	Not detected	10		ug/L	10	526-73-8	Y
n-Butylbenzene	Not detected	10		ug/L	10	104-51-8	Y
Hexachloroethane	Not detected	50		ug/L	10	67-72-1	Y
1,2-Dibromo-3-chloropropane	Not detected	50		ug/L	10	96-12-8	Y
1,2,4-Trichlorobenzene	Not detected	50		ug/L	10	120-82-1	Y
1,2,3-Trichlorobenzene	Not detected	50		ug/L	10	87-61-6	Y
Naphthalene	Not detected	50		ug/L	10	91-20-3	Y
2-Methylnaphthalene	Not detected	50		ug/L	10	91-57-6	Y

Y-Elevated reporting limit due to high target concentration

Merit Laboratories Login Checklist

Lab Set ID:S49708

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

Project: 30167840.00005 / RACER PNC

Submitted:06/13/2023 14:35 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.	☒ Yes ☐ No ☐ N/A	Samples are received at 4C +/- 2C Thermometer # IR 2.4
02.	☒ Yes ☐ No ☐ N/A	Received on ice/ cooling process begun
03.	☐ Yes ☒ No ☐ N/A	Samples shipped
04.	☐ Yes ☒ No ☐ N/A	Samples left in 24 hr. drop box
05.	☐ Yes ☐ No ☒ N/A	Are there custody seals/tape or is the drop box locked
Chain of Custody		
06.	☒ Yes ☐ No ☐ N/A	COC adequately filled out
07.	☒ Yes ☐ No ☐ N/A	COC signed and relinquished to the lab
08.	☒ Yes ☐ No ☐ N/A	Sample tag on bottles match COC
09.	☐ Yes ☒ No ☐ N/A	Subcontracting needed? Subcontacted to:
Preservation		
10.	☒ Yes ☐ No ☐ N/A	Do sample have correct chemical preservation
11.	☐ Yes ☐ No ☒ N/A	Completed pH checks on preserved samples? (no VOAs)
12.	☐ Yes ☒ No ☐ N/A	Did any samples need to be preserved in the lab?
Bottle Conditions		
13.	☒ Yes ☐ No ☐ N/A	All bottles intact
14.	☒ Yes ☐ No ☐ N/A	Appropriate analytical bottles are used
15.	☒ Yes ☐ No ☐ N/A	Merit bottles used
16.	☒ Yes ☐ No ☐ N/A	Sufficient sample volume received
17.	☐ Yes ☒ No ☐ N/A	Samples require laboratory filtration
18.	☒ Yes ☐ No ☐ N/A	Samples submitted within holding time
19.	☐ Yes ☒ No ☐ 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

CONTACT NAME Alexis Crisp			
COMPANY Arcadis			
ADDRESS 28550 Cabot Dr #500			
CITY NOVI		STATE MI	ZIP CODE 48377
PHONE NO.		CELL NO.	B.O. NO. 30167840.00003
E-MAIL ADDRESS tiffany.under@arcadis.com alexis.crisp@arcadis.com		QUOTE NO.	

CHAIN OF CUSTODY RECORD

CONTACT NAME Accounts Payable		☐ SAME	
COMPANY Arcadi's			
ADDRESS 630 Plaza Dr #600			
CITY Highlands Ranch		STATE CO	ZIP CODE 80129
PHONE NO.		E-MAIL ADDRESS accounts payable . administration @	

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME 30167840.00005 / Racer PXC	SAMPLER(S) - PLEASE PRINT/SIGN NAME
TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER _____	
DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☒ EDD ☐ OTHER _____	

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

Containers & Preservatives

[illegible]

Certifications

☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations

☐ Detroit ☐ New York
☐ Other _____

Special Instructions

RELINQUISHED BY:	<i>Samanta Spaiden</i>	<i>Arctidis</i>	DATE	TIME
SIGNATURE/ORGANIZATION			<i>6/11/23</i>	<i>1701</i>
RECEIVED BY:	<i>Novi cold storage</i>	<i>Arctidis</i>	DATE	TIME
SIGNATURE/ORGANIZATION			<i>6/11/23</i>	<i>1701</i>
RELINQUISHED BY:	<i>Ulligon Lee</i>		DATE	TIME
SIGNATURE/ORGANIZATION			<i>6/13/23</i>	<i>1330</i>
RECEIVED BY:	<i>[Signature]</i>	<i>6/13/23</i>	DATE	TIME
SIGNATURE/ORGANIZATION				<i>1335</i>

RELINQUISHED BY:			DATE		TIME	
SIGNATURE/ORGANIZATION			6/13/23		1435	
RECEIVED BY:			DATE		TIME	
SIGNATURE/ORGANIZATION			6/13/23		1435	
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES:	TEMP. ON ARRIVAL		
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	2.4			



Analytical Laboratory Report

Report ID: S49709.01(01)
Generated on 06/16/2023

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): S49709.01
Project: 30167840.00005 / RACER PNC
Collected Date(s): 06/09/2023
Submitted Date/Time: 06/13/2023 14:35
Sampled by: Samantha Szpaichler
P.O. #: 30167840.00005

Table of Contents

- Cover Page (Page 1)
- General Report Notes (Page 2)
- Report Narrative (Page 2)
- Laboratory Certifications (Page 3)
- Qualifier Descriptions (Page 3)
- Glossary of Abbreviations (Page 3)
- Method Summary (Page 4)
- Sample Summary (Page 5)

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, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

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

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

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

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

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

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

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

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

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

Report Narrative

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 (1 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S49709.01	MWF16-22_GW-060923	Groundwater	06/09/23 14:38



Analytical Laboratory Report

Lab Sample ID: S49709.01

Sample Tag: MWF16-22_GW-060923

Collected Date/Time: 06/09/2023 14:38

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 05:17, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	2	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	14	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	1	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	3	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	77	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49709.01 (continued)

Sample Tag: MWF16-22_GW-060923

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 05:17, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Merit Laboratories Login Checklist

Lab Set ID:S49709

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

Project: 30167840.00005 / RACER PNC

Submitted:06/13/2023 14:35 Login User: MMC

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Address: Arcadis US, Inc.
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Novi, MI 48377

Phone: 810-225-1909 FAX:

Email: Alexis.Crisp@arcadis.com

Selection	Description	Note
Sample Receiving		
01.	☒ Yes ☐ No ☐ N/A	Samples are received at 4C +/- 2C Thermometer # IR 2.4
02.	☒ Yes ☐ No ☐ N/A	Received on ice/ cooling process begun
03.	☐ Yes ☒ No ☐ N/A	Samples shipped
04.	☐ Yes ☒ No ☐ N/A	Samples left in 24 hr. drop box
05.	☐ Yes ☐ No ☒ N/A	Are there custody seals/tape or is the drop box locked
Chain of Custody		
06.	☒ Yes ☐ No ☐ N/A	COC adequately filled out
07.	☒ Yes ☐ No ☐ N/A	COC signed and relinquished to the lab
08.	☒ Yes ☐ No ☐ N/A	Sample tag on bottles match COC
09.	☐ Yes ☒ No ☐ N/A	Subcontracting needed? Subcontacted to:
Preservation		
10.	☒ Yes ☐ No ☐ N/A	Do sample have correct chemical preservation
11.	☐ Yes ☐ No ☒ N/A	Completed pH checks on preserved samples? (no VOAs)
12.	☐ Yes ☒ No ☐ N/A	Did any samples need to be preserved in the lab?
Bottle Conditions		
13.	☒ Yes ☐ No ☐ N/A	All bottles intact
14.	☒ Yes ☐ No ☐ N/A	Appropriate analytical bottles are used
15.	☒ Yes ☐ No ☐ N/A	Merit bottles used
16.	☒ Yes ☐ No ☐ N/A	Sufficient sample volume received
17.	☐ Yes ☒ No ☐ N/A	Samples require laboratory filtration
18.	☒ Yes ☐ No ☐ N/A	Samples submitted within holding time
19.	☐ Yes ☒ No ☐ 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: _____

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page ____ of ____

Lab Work Order #

[illegible]



Analytical Laboratory Report

Report ID: S49710.01(01)
Generated on 06/16/2023

Report to

Attention: Alexis Crisp
Arcadis US, Inc.
28550 Cabot Drive
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Report Summary

Lab Sample ID(s): S49710.01
Project: 30167840.00005 / RACER PNC
Collected Date(s): 06/12/2023
Submitted Date/Time: 06/13/2023 14:35
Sampled by: Samantha Szpaichler
P.O. #: 30167840.00005

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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 and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

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

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

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

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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

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 (1 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S49710.01	MWOS-10_GW-061223	Groundwater	06/12/23 12:33



Analytical Laboratory Report

Lab Sample ID: S49710.01

Sample Tag: MWOS-10_GW-061223

Collected Date/Time: 06/12/2023 12:33

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/16/23 10:27	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 05:37, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	1	1		ug/L	1	156-60-5	
1,1-Dichloroethane	5	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	7	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	4	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	12	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49710.01 (continued)

Sample Tag: MWOS-10_GW-061223

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/16/23 05:37, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Merit Laboratories Login Checklist

Lab Set ID:S49710

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

Project: 30167840.00005 / RACER PNC

Submitted:06/13/2023 14:35 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. ☒ Yes ☐ No ☐ N/A	Samples are received at 4C +/- 2C Thermometer #	IR 2.4
02. ☒ Yes ☐ No ☐ N/A	Received on ice/ cooling process begun	
03. ☐ Yes ☒ No ☐ N/A	Samples shipped	
04. ☐ Yes ☒ No ☐ N/A	Samples left in 24 hr. drop box	
05. ☐ Yes ☐ No ☒ N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody		
06. ☒ Yes ☐ No ☐ N/A	COC adequately filled out	
07. ☒ Yes ☐ No ☐ N/A	COC signed and relinquished to the lab	
08. ☒ Yes ☐ No ☐ N/A	Sample tag on bottles match COC	
09. ☐ Yes ☒ No ☐ N/A	Subcontracting needed? Subcontacted to:	
Preservation		
10. ☒ Yes ☐ No ☐ N/A	Do sample have correct chemical preservation	
11. ☐ Yes ☐ No ☒ N/A	Completed pH checks on preserved samples? (no VOAs)	
12. ☐ Yes ☒ No ☐ N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions		
13. ☒ Yes ☐ No ☐ N/A	All bottles intact	
14. ☒ Yes ☐ No ☐ N/A	Appropriate analytical bottles are used	
15. ☒ Yes ☐ No ☐ N/A	Merit bottles used	
16. ☒ Yes ☐ No ☐ N/A	Sufficient sample volume received	
17. ☐ Yes ☒ No ☐ N/A	Samples require laboratory filtration	
18. ☒ Yes ☐ No ☐ N/A	Samples submitted within holding time	
19. ☐ Yes ☒ No ☐ 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: S49444.01(01)
Generated on 06/12/2023

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

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Report produced by

Merit Laboratories, Inc.
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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): S49444.01-S49444.08
Project: RACER PNC / 30167840.00005
Collected Date(s): 06/06/2023 - 06/07/2023
Submitted Date/Time: 06/07/2023 15:10
Sampled by: Samantha Szpaichler
P.O. #: 30167840.00005

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Maya Murshak
Technical Director



Analytical Laboratory Report

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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.

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Report Narrative

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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
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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
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x	Preserved from bulk sample

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Abbreviation	Description
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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
S49444.01	MW-02-17_GW-060623	Groundwater	06/06/23 10:50
S49444.02	MW-07-20_GW-060623	Groundwater	06/06/23 11:45
S49444.03	MW-05-18_GW-060623	Groundwater	06/06/23 12:45
S49444.04	MW-06-20_GW-060623	Groundwater	06/06/23 14:48
S49444.05	DUP-01_GW-060623	Groundwater	06/06/23 00:01
S49444.06	MWF16-23_GW-060623	Groundwater	06/06/23 15:58
S49444.07	MWF16-07_GW-060723	Groundwater	06/07/23 11:45
S49444.08	Trip Blank	Water	06/07/23 00:01



Analytical Laboratory Report

Lab Sample ID: S49444.01

Sample Tag: MW-02-17_GW-060623

Collected Date/Time: 06/06/2023 10:50

Matrix: Groundwater

COC Reference: 156521

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/09/23 10:05	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 05:18, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	1	1		ug/L	1	156-60-5	
1,1-Dichloroethane	1	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	1	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	2	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	5	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	5	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49444.01 (continued)

Sample Tag: MW-02-17_GW-060623

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 05:18, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49444.02

Sample Tag: MW-07-20_GW-060623

Collected Date/Time: 06/06/2023 11:45

Matrix: Groundwater

COC Reference: 156521

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/09/23 10:05	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 18:11, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	6	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	7	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	4	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	2	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49444.02 (continued)

Sample Tag: MW-07-20_GW-060623

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 18:11, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49444.03

Sample Tag: MW-05-18_GW-060623

Collected Date/Time: 06/06/2023 12:45

Matrix: Groundwater

COC Reference: 156521

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/09/23 10:05	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 05:37, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	6	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	11	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	8	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	2	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49444.03 (continued)

Sample Tag: MW-05-18_GW-060623

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 05:37, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49444.04

Sample Tag: MW-06-20_GW-060623

Collected Date/Time: 06/06/2023 14:48

Matrix: Groundwater

COC Reference: 156521

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/09/23 10:05	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 05:57, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	5	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	6	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	3	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	12	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49444.04 (continued)

Sample Tag: MW-06-20_GW-060623

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 05:57, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49444.05

Sample Tag: DUP-01_GW-060623

Collected Date/Time: 06/06/2023 00:01

Matrix: Groundwater

COC Reference: 156521

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/09/23 10:05	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 06:16, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	5	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	6	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	3	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	12	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49444.05 (continued)

Sample Tag: DUP-01_GW-060623

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 06:16, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49444.06

Sample Tag: MWF16-23_GW-060623

Collected Date/Time: 06/06/2023 15:58

Matrix: Groundwater

COC Reference: 156521

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/09/23 10:05	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 06:35, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	3	1		ug/L	1	156-60-5	
1,1-Dichloroethane	7	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	8	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	13	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	21	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49444.06 (continued)
Sample Tag: MWF16-23_GW-060623

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 06:35, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49444.07

Sample Tag: MWF16-07_GW-060723

Collected Date/Time: 06/07/2023 11:45

Matrix: Groundwater

COC Reference: 156521

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/09/23 10:05	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 06:55, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49444.07 (continued)

Sample Tag: MWF16-07_GW-060723

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 06:55, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49444.08

Sample Tag: Trip Blank

Collected Date/Time: 06/07/2023 00:01

Matrix: Water

COC Reference: 156521

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/09/23 10:05	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 01:45, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49444.08 (continued)

Sample Tag: Trip Blank

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 01:45, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Merit Laboratories Login Checklist

Lab Set ID:S49444

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

Project: RACER PNC / 30167840.00005

Submitted:06/07/2023 15:10 Login User: PFD

Attention: Alexis Crisp

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

Phone: 810-225-1909 FAX:

Email: Alexis.Crisp@arcadis.com

Selection	Description	Note
Sample Receiving		
01.	☒ Yes ☐ No ☐ N/A	Samples are received at 4C +/- 2C Thermometer # IR 2.8
02.	☒ Yes ☐ No ☐ N/A	Received on ice/ cooling process begun
03.	☐ Yes ☒ No ☐ N/A	Samples shipped
04.	☐ Yes ☒ No ☐ N/A	Samples left in 24 hr. drop box
05.	☐ Yes ☐ No ☒ N/A	Are there custody seals/tape or is the drop box locked
Chain of Custody		
06.	☒ Yes ☐ No ☐ N/A	COC adequately filled out
07.	☒ Yes ☐ No ☐ N/A	COC signed and relinquished to the lab
08.	☒ Yes ☐ No ☐ N/A	Sample tag on bottles match COC
09.	☐ Yes ☒ No ☐ N/A	Subcontracting needed? Subcontacted to:
Preservation		
10.	☒ Yes ☐ No ☐ N/A	Do sample have correct chemical preservation
11.	☐ Yes ☐ No ☒ N/A	Completed pH checks on preserved samples? (no VOAs)
12.	☐ Yes ☒ No ☐ N/A	Did any samples need to be preserved in the lab?
Bottle Conditions		
13.	☒ Yes ☐ No ☐ N/A	All bottles intact
14.	☒ Yes ☐ No ☐ N/A	Appropriate analytical bottles are used
15.	☒ Yes ☐ No ☐ N/A	Merit bottles used
16.	☒ Yes ☐ No ☐ N/A	Sufficient sample volume received
17.	☐ Yes ☒ No ☐ N/A	Samples require laboratory filtration
18.	☒ Yes ☐ No ☐ N/A	Samples submitted within holding time
19.	☐ Yes ☒ No ☐ 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 _____

156521

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME		Alexis Crisp	
COMPANY		Arcadis	
ADDRESS		28550 Cabot Dr #500	
CITY	NOVI	STATE	MI
PHONE NO.	1	CELL NO.	
E-MAIL ADDRESS	tiffany.linder@arcadis.com alexis.crisp@arcadis.com		

CONTACT NAME		Accounts payable	
COMPANY		Arcadis	
ADDRESS		630 Plaza Dr #600	
CITY	Highlands Ranch	STATE	CO
PHONE NO.		ZIP CODE	80129
E-MAIL ADDRESS		accounts.payable.administration@arcadis.com	

PROJECT NO./NAME	Racer PNE / F100 30167840.00005
TURNAROUND TIME REQUIRED	☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER
DELIVERABLES REQUIRED	☐ STD ☐ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER

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

Containers & Preservatives

MERIT LAB NO. FOR LAB USE ONLY	COLLECTION		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER
	DATE	TIME										
	6/5/23		MW-02-17-060523	GW	6							
49444.01	6/6/23	1050	MW-02-17-GW-060623	GW	3							
.02	6/6/23	1145	MW-07-20-GW-060623	GW	3							
.03	6/6/23	1245	MW-05-18-GW-060623	GW	3							
.04	6/6/23	1448	MW-06-20-GW-060623	GW	3							
.05	6/6/23	-	DUP-01-GW-060623	GW	3							
.06	6/6/23	1558	MW-F16-23-GW-060623	GW	3							
.07	6/7/23	1145	MW-F16-07-GW-060723	GW	3							
	6/7/23		MW-F16-15-GW-060723	GW	3							
.08	6/7/23	-	TRIP BLANK	W	1							

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

RELINQUISHED BY:	Signature	DATE	TIME
SIGNATURE/ORGANIZATION	Samantha Supacher, Arcadis	6/7/23	1238
RECEIVED BY:	Signature	DATE	TIME
SIGNATURE/ORGANIZATION	Samuel A. Miller	6/7/23	1238
RELINQUISHED BY:	Signature	DATE	TIME
SIGNATURE/ORGANIZATION	Samuel A. Miller	6/7/23	15:11
RECEIVED BY:	Signature	DATE	TIME
SIGNATURE/ORGANIZATION	Patricia	6/7/23	1510

RELINQUISHED BY:	DATE	TIME
SIGNATURE/ORGANIZATION		
RECEIVED BY:	DATE	TIME
SIGNATURE/ORGANIZATION		
SEAL NO.	SEAL INTACT	INITIALS
	YES ☐ NO ☐	
SEAL NO.	SEAL INTACT	INITIALS
	YES ☐ NO ☐	
NOTES:		TEMP. ON ARRIVAL
		2.8

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



Analytical Laboratory Report

Report ID: S49450.01(01)
Generated on 06/13/2023

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): S49450.01-S49450.08
Project: 30167840.00005 / RACER PNC
Collected Date(s): 06/06/2023
Submitted Date/Time: 06/07/2023 15:10
Sampled by: Sommer Guy
P.O. #: 30167840.00005

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- Method Summary (Page 4)
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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, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

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

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

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

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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

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
S49450.01	Trip Blank	Water	06/06/23 00:01
S49450.02	MW-15-22_GW-060623	Groundwater	06/06/23 10:00
S49450.03	MW-13-22_GW-060623	Groundwater	06/06/23 13:45
S49450.04	MW-14-22_GW-060623	Groundwater	06/06/23 14:40
S49450.05	MW-14-22_GW-060623 MS	Groundwater	06/06/23 14:40
S49450.06	MW-14-22_GW-060623 MSD	Groundwater	06/06/23 14:40
S49450.07	MW-16-22_GW-060623	Groundwater	06/06/23 16:00
S49450.08	DUP-02_GW-060623	Groundwater	06/06/23 00:01



Analytical Laboratory Report

Lab Sample ID: S49450.01

Sample Tag: Trip Blank

Collected Date/Time: 06/06/2023 00:01

Matrix: Water

COC Reference: 150909

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/12/23 10:10	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 15:16, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49450.01 (continued)

Sample Tag: Trip Blank

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 15:16, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49450.02

Sample Tag: MW-15-22_GW-060623

Collected Date/Time: 06/06/2023 10:00

Matrix: Groundwater

COC Reference: 150909

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/12/23 10:10	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 19:28, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49450.02 (continued)

Sample Tag: MW-15-22_GW-060623

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 19:28, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49450.03

Sample Tag: MW-13-22_GW-060623

Collected Date/Time: 06/06/2023 13:45

Matrix: Groundwater

COC Reference: 150909

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/12/23 10:10	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 19:48, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49450.03 (continued)
Sample Tag: MW-13-22_GW-060623

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 19:48, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S49450.04

Sample Tag: MW-14-22_GW-060623

Collected Date/Time: 06/06/2023 14:40

Matrix: Groundwater

COC Reference: 150909

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/12/23 10:10	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 16:15, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	2	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	5	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	1	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	13	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	5	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	22	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	212	1		ug/L	1	127-18-4	E

E-Concentration exceeds calibration range

Lab Sample ID: S49450.04 (continued)

Sample Tag: MW-14-22_GW-060623

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 16:15, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Volatile Organics - DEQ List (Replicate 01), Method: SW5030C/8260C, Run Date: 06/12/23 14:58, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	50		ug/L	5	60-29-7	Y
Acetone	Not detected	250		ug/L	5	67-64-1	Y
Methyl iodide	Not detected	5		ug/L	5	74-88-4	Y
Carbon disulfide	Not detected	30		ug/L	5	75-15-0	Y
tert-Methyl butyl ether (MTBE)	Not detected	30		ug/L	5	1634-04-4	Y
Acrylonitrile	Not detected	10		ug/L	5	107-13-1	Y
2-Butanone (MEK)	Not detected	130		ug/L	5	78-93-3	Y
Dichlorodifluoromethane	Not detected	30		ug/L	5	75-71-8	Y
Chloromethane	Not detected	30		ug/L	5	74-87-3	Y
Vinyl chloride	Not detected	5		ug/L	5	75-01-4	Y
Bromomethane	Not detected	30		ug/L	5	74-83-9	Y
Chloroethane	Not detected	30		ug/L	5	75-00-3	Y
Trichlorofluoromethane	Not detected	5		ug/L	5	75-69-4	Y
1,1-Dichloroethene	Not detected	5		ug/L	5	75-35-4	Y
Methylene chloride	Not detected	30		ug/L	5	75-09-2	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S49450.04 (continued)

Sample Tag: MW-14-22_GW-060623

Volatile Organics - DEQ List (Replicate 01), Method: SW5030C/8260C, Run Date: 06/12/23 14:58, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
trans-1,2-Dichloroethene	Not detected	5		ug/L	5	156-60-5	Y
1,1-Dichloroethane	Not detected	5		ug/L	5	75-34-3	Y
cis-1,2-Dichloroethene	Not detected	5		ug/L	5	156-59-2	Y
Tetrahydrofuran*	Not detected	450		ug/L	5	109-99-9	Y
Chloroform	Not detected	5		ug/L	5	67-66-3	Y
Bromochloromethane	Not detected	5		ug/L	5	74-97-5	Y
1,1,1-Trichloroethane	12	5		ug/L	5	71-55-6	Y
4-Methyl-2-pentanone (MIBK)	Not detected	250		ug/L	5	108-10-1	Y
2-Hexanone	Not detected	250		ug/L	5	591-78-6	Y
Carbon tetrachloride	Not detected	5		ug/L	5	56-23-5	Y
Benzene	Not detected	5		ug/L	5	71-43-2	Y
1,2-Dichloroethane	Not detected	5		ug/L	5	107-06-2	Y
Trichloroethene	21	5		ug/L	5	79-01-6	Y
1,2-Dichloropropane	Not detected	5		ug/L	5	78-87-5	Y
Bromodichloromethane	Not detected	5		ug/L	5	75-27-4	Y
Dibromomethane	Not detected	30		ug/L	5	74-95-3	Y
cis-1,3-Dichloropropene	Not detected	5		ug/L	5	10061-01-5	Y
Toluene	Not detected	5		ug/L	5	108-88-3	Y
trans-1,3-Dichloropropene	Not detected	5		ug/L	5	10061-02-6	Y
1,1,2-Trichloroethane	Not detected	5		ug/L	5	79-00-5	Y
Tetrachloroethene	187	5		ug/L	5	127-18-4	Y
trans-1,4-Dichloro-2-butene	Not detected	5		ug/L	5	110-57-6	Y
Dibromochloromethane	Not detected	30		ug/L	5	124-48-1	Y
1,2-Dibromoethane	Not detected	5		ug/L	5	106-93-4	Y
Chlorobenzene	Not detected	5		ug/L	5	108-90-7	Y
1,1,1,2-Tetrachloroethane	Not detected	5		ug/L	5	630-20-6	Y
Ethylbenzene	Not detected	5		ug/L	5	100-41-4	Y
p,m-Xylene*	Not detected	10		ug/L	5		Y
o-Xylene	Not detected	5		ug/L	5	95-47-6	Y
Styrene	Not detected	5		ug/L	5	100-42-5	Y
Isopropylbenzene	Not detected	30		ug/L	5	98-82-8	Y
Bromoform	Not detected	5		ug/L	5	75-25-2	Y
1,1,2,2-Tetrachloroethane	Not detected	5		ug/L	5	79-34-5	Y
1,2,3-Trichloropropane	Not detected	5		ug/L	5	96-18-4	Y
n-Propylbenzene	Not detected	5		ug/L	5	103-65-1	Y
Bromobenzene	Not detected	5		ug/L	5	108-86-1	Y
1,3,5-Trimethylbenzene	Not detected	5		ug/L	5	108-67-8	Y
tert-Butylbenzene	Not detected	5		ug/L	5	98-06-6	Y
1,2,4-Trimethylbenzene	Not detected	5		ug/L	5	95-63-6	Y
sec-Butylbenzene	Not detected	5		ug/L	5	135-98-8	Y
p-Isopropyltoluene	Not detected	30		ug/L	5	99-87-6	Y
1,3-Dichlorobenzene	Not detected	5		ug/L	5	541-73-1	Y
1,4-Dichlorobenzene	Not detected	5		ug/L	5	106-46-7	Y
1,2-Dichlorobenzene	Not detected	5		ug/L	5	95-50-1	Y
1,2,3-Trimethylbenzene	Not detected	5		ug/L	5	526-73-8	Y
n-Butylbenzene	Not detected	5		ug/L	5	104-51-8	Y
Hexachloroethane	Not detected	30		ug/L	5	67-72-1	Y
1,2-Dibromo-3-chloropropane	Not detected	30		ug/L	5	96-12-8	Y
1,2,4-Trichlorobenzene	Not detected	30		ug/L	5	120-82-1	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S49450.04 (continued)
Sample Tag: MW-14-22_GW-060623

Volatile Organics - DEQ List (Replicate 01), Method: SW5030C/8260C, Run Date: 06/12/23 14:58, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2,3-Trichlorobenzene	Not detected	30		ug/L	5	87-61-6	Y
Naphthalene	Not detected	30		ug/L	5	91-20-3	Y
2-Methylnaphthalene	Not detected	30		ug/L	5	91-57-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S49450.05

Sample Tag: MW-14-22_GW-060623 MS

Collected Date/Time: 06/06/2023 14:40

Matrix: Groundwater

COC Reference: 150909

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/12/23 10:10	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 13:38, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	47	10		ug/L	1	60-29-7	1
Acetone	Not detected	50		ug/L	1	67-64-1	1
Methyl iodide	53	1		ug/L	1	74-88-4	1
Carbon disulfide	49	5		ug/L	1	75-15-0	1
tert-Methyl butyl ether (MTBE)	53	5		ug/L	1	1634-04-4	1
Acrylonitrile	44	2		ug/L	1	107-13-1	1
2-Butanone (MEK)	50	25		ug/L	1	78-93-3	1
Dichlorodifluoromethane	47	5		ug/L	1	75-71-8	1
Chloromethane	48	5		ug/L	1	74-87-3	1
Vinyl chloride	50	1		ug/L	1	75-01-4	1
Bromomethane	47	5		ug/L	1	74-83-9	1
Chloroethane	45	5		ug/L	1	75-00-3	1
Trichlorofluoromethane	45	1		ug/L	1	75-69-4	1
1,1-Dichloroethene	48	1		ug/L	1	75-35-4	1
Methylene chloride	47	5		ug/L	1	75-09-2	1
trans-1,2-Dichloroethene	48	1		ug/L	1	156-60-5	1
1,1-Dichloroethane	49	1		ug/L	1	75-34-3	1
cis-1,2-Dichloroethene	54	1		ug/L	1	156-59-2	1
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	1
Chloroform	49	1		ug/L	1	67-66-3	1
Bromochloromethane	50	1		ug/L	1	74-97-5	1
1,1,1-Trichloroethane	60	1		ug/L	1	71-55-6	1
4-Methyl-2-pentanone (MIBK)	50	50		ug/L	1	108-10-1	1
2-Hexanone	51	50		ug/L	1	591-78-6	1
Carbon tetrachloride	56	1		ug/L	1	56-23-5	1
Benzene	50	1		ug/L	1	71-43-2	1
1,2-Dichloroethane	47	1		ug/L	1	107-06-2	1
Trichloroethene	73	1		ug/L	1	79-01-6	1
1,2-Dichloropropane	49	1		ug/L	1	78-87-5	1
Bromodichloromethane	50	1		ug/L	1	75-27-4	1
Dibromomethane	54	5		ug/L	1	74-95-3	1
cis-1,3-Dichloropropene	51	1		ug/L	1	10061-01-5	1
Toluene	51	1		ug/L	1	108-88-3	1
trans-1,3-Dichloropropene	52	1		ug/L	1	10061-02-6	1
1,1,2-Trichloroethane	50	1		ug/L	1	79-00-5	1
Tetrachloroethene	260	1		ug/L	1	127-18-4	1E

1-Spiked at 50ug/L

E-Concentration exceeds calibration range



Analytical Laboratory Report

Lab Sample ID: S49450.05 (continued)

Sample Tag: MW-14-22_GW-060623 MS

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 13:38, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
trans-1,4-Dichloro-2-butene	49	1		ug/L	1	110-57-6	1
Dibromochloromethane	53	5		ug/L	1	124-48-1	1
1,2-Dibromoethane	54	1		ug/L	1	106-93-4	1
Chlorobenzene	53	1		ug/L	1	108-90-7	1
1,1,1,2-Tetrachloroethane	55	1		ug/L	1	630-20-6	1
Ethylbenzene	54	1		ug/L	1	100-41-4	1
p,m-Xylene*	109	2		ug/L	1		1
o-Xylene	53	1		ug/L	1	95-47-6	1
Styrene	53	1		ug/L	1	100-42-5	1
Isopropylbenzene	56	5		ug/L	1	98-82-8	1
Bromoform	56	1		ug/L	1	75-25-2	1
1,1,2,2-Tetrachloroethane	51	1		ug/L	1	79-34-5	1
1,2,3-Trichloropropane	53	1		ug/L	1	96-18-4	1
n-Propylbenzene	56	1		ug/L	1	103-65-1	1
Bromobenzene	56	1		ug/L	1	108-86-1	1
1,3,5-Trimethylbenzene	56	1		ug/L	1	108-67-8	1
tert-Butylbenzene	53	1		ug/L	1	98-06-6	1
1,2,4-Trimethylbenzene	57	1		ug/L	1	95-63-6	1
sec-Butylbenzene	50	1		ug/L	1	135-98-8	1
p-Isopropyltoluene	51	5		ug/L	1	99-87-6	1
1,3-Dichlorobenzene	50	1		ug/L	1	541-73-1	1
1,4-Dichlorobenzene	50	1		ug/L	1	106-46-7	1
1,2-Dichlorobenzene	51	1		ug/L	1	95-50-1	1
1,2,3-Trimethylbenzene	50	1		ug/L	1	526-73-8	1
n-Butylbenzene	51	1		ug/L	1	104-51-8	1
Hexachloroethane	55	5		ug/L	1	67-72-1	1
1,2-Dibromo-3-chloropropane	51	5		ug/L	1	96-12-8	1
1,2,4-Trichlorobenzene	53	5		ug/L	1	120-82-1	1
1,2,3-Trichlorobenzene	53	5		ug/L	1	87-61-6	1
Naphthalene	53	5		ug/L	1	91-20-3	1
2-Methylnaphthalene	50	5		ug/L	1	91-57-6	1

1-Spiked at 50ug/L



Analytical Laboratory Report

Lab Sample ID: S49450.06

Sample Tag: MW-14-22_GW-060623 MSD

Collected Date/Time: 06/06/2023 14:40

Matrix: Groundwater

COC Reference: 150909

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/12/23 10:10	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 13:57, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	49	10		ug/L	1	60-29-7	1
Acetone	Not detected	50		ug/L	1	67-64-1	1
Methyl iodide	54	1		ug/L	1	74-88-4	1
Carbon disulfide	48	5		ug/L	1	75-15-0	1
tert-Methyl butyl ether (MTBE)	54	5		ug/L	1	1634-04-4	1
Acrylonitrile	43	2		ug/L	1	107-13-1	1
2-Butanone (MEK)	48	25		ug/L	1	78-93-3	1
Dichlorodifluoromethane	35	5		ug/L	1	75-71-8	1
Chloromethane	48	5		ug/L	1	74-87-3	1
Vinyl chloride	46	1		ug/L	1	75-01-4	1
Bromomethane	46	5		ug/L	1	74-83-9	1
Chloroethane	44	5		ug/L	1	75-00-3	1
Trichlorofluoromethane	38	1		ug/L	1	75-69-4	1
1,1-Dichloroethene	45	1		ug/L	1	75-35-4	1
Methylene chloride	48	5		ug/L	1	75-09-2	1
trans-1,2-Dichloroethene	47	1		ug/L	1	156-60-5	1
1,1-Dichloroethane	49	1		ug/L	1	75-34-3	1
cis-1,2-Dichloroethene	55	1		ug/L	1	156-59-2	1
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	1
Chloroform	50	1		ug/L	1	67-66-3	1
Bromochloromethane	52	1		ug/L	1	74-97-5	1
1,1,1-Trichloroethane	59	1		ug/L	1	71-55-6	1
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	1
2-Hexanone	Not detected	50		ug/L	1	591-78-6	1
Carbon tetrachloride	53	1		ug/L	1	56-23-5	1
Benzene	51	1		ug/L	1	71-43-2	1
1,2-Dichloroethane	47	1		ug/L	1	107-06-2	1
Trichloroethene	72	1		ug/L	1	79-01-6	1
1,2-Dichloropropane	51	1		ug/L	1	78-87-5	1
Bromodichloromethane	51	1		ug/L	1	75-27-4	1
Dibromomethane	55	5		ug/L	1	74-95-3	1
cis-1,3-Dichloropropene	53	1		ug/L	1	10061-01-5	1
Toluene	51	1		ug/L	1	108-88-3	1
trans-1,3-Dichloropropene	53	1		ug/L	1	10061-02-6	1
1,1,2-Trichloroethane	51	1		ug/L	1	79-00-5	1
Tetrachloroethene	253	1		ug/L	1	127-18-4	1E

1-Spiked at 50ug/L

E-Concentration exceeds calibration range



Analytical Laboratory Report

Lab Sample ID: S49450.06 (continued)
Sample Tag: MW-14-22_GW-060623 MSD

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 13:57, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
trans-1,4-Dichloro-2-butene	49	1		ug/L	1	110-57-6	1
Dibromochloromethane	55	5		ug/L	1	124-48-1	1
1,2-Dibromoethane	55	1		ug/L	1	106-93-4	1
Chlorobenzene	54	1		ug/L	1	108-90-7	1
1,1,1,2-Tetrachloroethane	56	1		ug/L	1	630-20-6	1
Ethylbenzene	55	1		ug/L	1	100-41-4	1
p,m-Xylene*	111	2		ug/L	1		1
o-Xylene	54	1		ug/L	1	95-47-6	1
Styrene	55	1		ug/L	1	100-42-5	1
Isopropylbenzene	56	5		ug/L	1	98-82-8	1
Bromoform	57	1		ug/L	1	75-25-2	1
1,1,2,2-Tetrachloroethane	54	1		ug/L	1	79-34-5	1
1,2,3-Trichloropropane	53	1		ug/L	1	96-18-4	1
n-Propylbenzene	56	1		ug/L	1	103-65-1	1
Bromobenzene	57	1		ug/L	1	108-86-1	1
1,3,5-Trimethylbenzene	57	1		ug/L	1	108-67-8	1
tert-Butylbenzene	53	1		ug/L	1	98-06-6	1
1,2,4-Trimethylbenzene	58	1		ug/L	1	95-63-6	1
sec-Butylbenzene	51	1		ug/L	1	135-98-8	1
p-Isopropyltoluene	53	5		ug/L	1	99-87-6	1
1,3-Dichlorobenzene	53	1		ug/L	1	541-73-1	1
1,4-Dichlorobenzene	53	1		ug/L	1	106-46-7	1
1,2-Dichlorobenzene	54	1		ug/L	1	95-50-1	1
1,2,3-Trimethylbenzene	53	1		ug/L	1	526-73-8	1
n-Butylbenzene	52	1		ug/L	1	104-51-8	1
Hexachloroethane	57	5		ug/L	1	67-72-1	1
1,2-Dibromo-3-chloropropane	51	5		ug/L	1	96-12-8	1
1,2,4-Trichlorobenzene	55	5		ug/L	1	120-82-1	1
1,2,3-Trichlorobenzene	56	5		ug/L	1	87-61-6	1
Naphthalene	55	5		ug/L	1	91-20-3	1
2-Methylnaphthalene	51	5		ug/L	1	91-57-6	1

1-Spiked at 50ug/L



Analytical Laboratory Report

Lab Sample ID: S49450.07

Sample Tag: MW-16-22_GW-060623

Collected Date/Time: 06/06/2023 16:00

Matrix: Groundwater

COC Reference: 150909

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/12/23 10:10	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 21:06, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	100		ug/L	10	60-29-7	Y
Acetone	Not detected	500		ug/L	10	67-64-1	Y
Methyl iodide	Not detected	10		ug/L	10	74-88-4	Y
Carbon disulfide	Not detected	50		ug/L	10	75-15-0	Y
tert-Methyl butyl ether (MTBE)	Not detected	50		ug/L	10	1634-04-4	Y
Acrylonitrile	Not detected	20		ug/L	10	107-13-1	Y
2-Butanone (MEK)	Not detected	250		ug/L	10	78-93-3	Y
Dichlorodifluoromethane	Not detected	50		ug/L	10	75-71-8	Y
Chloromethane	Not detected	50		ug/L	10	74-87-3	Y
Vinyl chloride	Not detected	10		ug/L	10	75-01-4	Y
Bromomethane	Not detected	50		ug/L	10	74-83-9	Y
Chloroethane	Not detected	50		ug/L	10	75-00-3	Y
Trichlorofluoromethane	Not detected	10		ug/L	10	75-69-4	Y
1,1-Dichloroethene	Not detected	10		ug/L	10	75-35-4	Y
Methylene chloride	Not detected	50		ug/L	10	75-09-2	Y
trans-1,2-Dichloroethene	Not detected	10		ug/L	10	156-60-5	Y
1,1-Dichloroethane	Not detected	10		ug/L	10	75-34-3	Y
cis-1,2-Dichloroethene	10	10		ug/L	10	156-59-2	Y
Tetrahydrofuran*	Not detected	900		ug/L	10	109-99-9	Y
Chloroform	Not detected	10		ug/L	10	67-66-3	Y
Bromochloromethane	Not detected	10		ug/L	10	74-97-5	Y
1,1,1-Trichloroethane	Not detected	10		ug/L	10	71-55-6	Y
4-Methyl-2-pentanone (MIBK)	Not detected	500		ug/L	10	108-10-1	Y
2-Hexanone	Not detected	500		ug/L	10	591-78-6	Y
Carbon tetrachloride	Not detected	10		ug/L	10	56-23-5	Y
Benzene	Not detected	10		ug/L	10	71-43-2	Y
1,2-Dichloroethane	Not detected	10		ug/L	10	107-06-2	Y
Trichloroethene	10	10		ug/L	10	79-01-6	Y
1,2-Dichloropropane	Not detected	10		ug/L	10	78-87-5	Y
Bromodichloromethane	Not detected	10		ug/L	10	75-27-4	Y
Dibromomethane	Not detected	50		ug/L	10	74-95-3	Y
cis-1,3-Dichloropropene	Not detected	10		ug/L	10	10061-01-5	Y
Toluene	Not detected	10		ug/L	10	108-88-3	Y
trans-1,3-Dichloropropene	Not detected	10		ug/L	10	10061-02-6	Y
1,1,2-Trichloroethane	Not detected	10		ug/L	10	79-00-5	Y
Tetrachloroethene	180	10		ug/L	10	127-18-4	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S49450.07 (continued)

Sample Tag: MW-16-22_GW-060623

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 21:06, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
trans-1,4-Dichloro-2-butene	Not detected	10		ug/L	10	110-57-6	Y
Dibromochloromethane	Not detected	50		ug/L	10	124-48-1	Y
1,2-Dibromoethane	Not detected	10		ug/L	10	106-93-4	Y
Chlorobenzene	Not detected	10		ug/L	10	108-90-7	Y
1,1,1,2-Tetrachloroethane	Not detected	10		ug/L	10	630-20-6	Y
Ethylbenzene	Not detected	10		ug/L	10	100-41-4	Y
p,m-Xylene*	Not detected	20		ug/L	10		Y
o-Xylene	Not detected	10		ug/L	10	95-47-6	Y
Styrene	Not detected	10		ug/L	10	100-42-5	Y
Isopropylbenzene	Not detected	50		ug/L	10	98-82-8	Y
Bromoform	Not detected	10		ug/L	10	75-25-2	Y
1,1,2,2-Tetrachloroethane	Not detected	10		ug/L	10	79-34-5	Y
1,2,3-Trichloropropane	Not detected	10		ug/L	10	96-18-4	Y
n-Propylbenzene	Not detected	10		ug/L	10	103-65-1	Y
Bromobenzene	Not detected	10		ug/L	10	108-86-1	Y
1,3,5-Trimethylbenzene	Not detected	10		ug/L	10	108-67-8	Y
tert-Butylbenzene	Not detected	10		ug/L	10	98-06-6	Y
1,2,4-Trimethylbenzene	Not detected	10		ug/L	10	95-63-6	Y
sec-Butylbenzene	Not detected	10		ug/L	10	135-98-8	Y
p-Isopropyltoluene	Not detected	50		ug/L	10	99-87-6	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
1,2-Dichlorobenzene	Not detected	10		ug/L	10	95-50-1	Y
1,2,3-Trimethylbenzene	Not detected	10		ug/L	10	526-73-8	Y
n-Butylbenzene	Not detected	10		ug/L	10	104-51-8	Y
Hexachloroethane	Not detected	50		ug/L	10	67-72-1	Y
1,2-Dibromo-3-chloropropane	Not detected	50		ug/L	10	96-12-8	Y
1,2,4-Trichlorobenzene	Not detected	50		ug/L	10	120-82-1	Y
1,2,3-Trichlorobenzene	Not detected	50		ug/L	10	87-61-6	Y
Naphthalene	Not detected	50		ug/L	10	91-20-3	Y
2-Methylnaphthalene	Not detected	50		ug/L	10	91-57-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S49450.08

Sample Tag: DUP-02_GW-060623

Collected Date/Time: 06/06/2023 00:01

Matrix: Groundwater

COC Reference: 150909

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/12/23 10:10	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 20:08, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S49450.08 (continued)

Sample Tag: DUP-02_GW-060623

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/09/23 20:08, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Merit Laboratories Login Checklist

Lab Set ID:S49450

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

Project: 30167840.00005 / RACER PNC

Submitted:06/07/2023 15:10 Login User: PFD

Attention: Alexis Crisp

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

Phone: 810-225-1909 FAX:

Email: Alexis.Crisp@arcadis.com

Selection	Description	Note
Sample Receiving		
01.	☒ Yes ☐ No ☐ N/A	Samples are received at 4C +/- 2C Thermometer # IR 2.8
02.	☒ Yes ☐ No ☐ N/A	Received on ice/ cooling process begun
03.	☐ Yes ☒ No ☐ N/A	Samples shipped
04.	☐ Yes ☒ No ☐ N/A	Samples left in 24 hr. drop box
05.	☐ Yes ☐ No ☒ N/A	Are there custody seals/tape or is the drop box locked
Chain of Custody		
06.	☒ Yes ☐ No ☐ N/A	COC adequately filled out
07.	☒ Yes ☐ No ☐ N/A	COC signed and relinquished to the lab
08.	☒ Yes ☐ No ☐ N/A	Sample tag on bottles match COC
09.	☐ Yes ☒ No ☐ N/A	Subcontracting needed? Subcontacted to:
Preservation		
10.	☒ Yes ☐ No ☐ N/A	Do sample have correct chemical preservation
11.	☐ Yes ☐ No ☒ N/A	Completed pH checks on preserved samples? (no VOAs)
12.	☐ Yes ☒ No ☐ N/A	Did any samples need to be preserved in the lab?
Bottle Conditions		
13.	☒ Yes ☐ No ☐ N/A	All bottles intact
14.	☒ Yes ☐ No ☐ N/A	Appropriate analytical bottles are used
15.	☒ Yes ☐ No ☐ N/A	Merit bottles used
16.	☒ Yes ☐ No ☐ N/A	Sufficient sample volume received
17.	☐ Yes ☒ No ☐ N/A	Samples require laboratory filtration
18.	☒ Yes ☐ No ☐ N/A	Samples submitted within holding time
19.	☐ Yes ☒ No ☐ 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

CONTACT NAME		Alexis Crisp	
COMPANY		Arcadis	
ADDRESS			
28550 Cabot Dr #500			
CITY		STATE	ZIP CODE
NOVI		MI	48377
PHONE NO.		CELL NO.	P.O. NO.
			30167840.00005
E-MAIL ADDRESS			QUOTE NO.
tiffany.linder@arcadis.com Alexis.Crisp@arcadis.com			

CHAIN OF CUSTODY RECORD

CONTACT NAME	Accounts Payable		☐ SAME
COMPANY	Arcadis		
ADDRESS	630 Plaza Dr #600		
CITY	Highlands Ranch	STATE	CO 80129
PHONE NO.	E-MAIL ADDRESS accounts.payable.administration@arcadis.com		

INVOICE TO

PROJECT NO./NAME 30167840.00005 / Racer PNC	SAMPLER(S) - PLEASE PRINT/SIGN NAME Sommer Guy / Sommer Guy
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)

Certifications

☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations

☐ Detroit ☐ New York☐ Other _____

Special Instructions

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

Containers & Preservatives

[illegible]

RELINQUISHED BY:	<i>Summer Day</i>	☒ Sampler	DATE	TIME
SIGNATURE/ORGANIZATION			6/6/23	1630
RECEIVED BY:	<i>Summer Day</i>		DATE	TIME
SIGNATURE/ORGANIZATION			6/6/23	1630
RELINQUISHED BY:	<i>Summer Day</i>		DATE	TIME
SIGNATURE/ORGANIZATION			6/7/23	1230
RECEIVED BY:	<i>Summer Day</i>		DATE	TIME
SIGNATURE/ORGANIZATION			6/7/23	1830

RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE 6/12/23		TIME 15:50	
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE 6/12/23		TIME 19:00	
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES:	TEMP. ON ARRIVAL	
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS		2.8	

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

6/17/2023

Ms. Lexi Crisp

Arcadis U.S., Inc.

7575 Huntington Park Drive

Suite 130

Columbus OH 43235

Project Name: Racer PNC

Project #: 30167840

Workorder #: 2306190

Dear Ms. Lexi Crisp

The following report includes the data for the above referenced project for sample(s) received on 6/7/2023 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 #: 2306190

Work Order Summary

CLIENT:	Ms. Lexi Crisp Arcadis U.S., Inc. 7575 Huntington Park Drive Suite 130 Columbus, OH 43235	BILL TO:	Accounts Payable Arcadis U.S., Inc. 630 Plaza Drive Suite 600 Highlands Ranch, CO 80129
PHONE:		P.O. #	30167840.00004
FAX:		PROJECT #	30167840 Racer PNC
DATE RECEIVED:	06/07/2023	CONTACT:	Jade White
DATE COMPLETED:	06/17/2023		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SV-01-21_SG-060523	TO-15	4.7 "Hg	10 psi
02A	SV-02-21_SG-060523	TO-15	6.5 "Hg	10 psi
03A	SV-06-21_SG-060523	TO-15	6.3 "Hg	10 psi
04A	SV-05-21_SG-060523	TO-15	7.3 "Hg	9.9 psi
05A	SV-03-21_SG-060523	TO-15	5.9 "Hg	9.9 psi
06A	SV-04-21_SG-060523	TO-15	7.1 "Hg	10 psi
07A	DUP-01_SG-060523	TO-15	6.9 "Hg	10 psi
08A	Lab Blank	TO-15	NA	NA
09A	CCV	TO-15	NA	NA
10A	LCS	TO-15	NA	NA
10AA	LCSD	TO-15	NA	NA

CERTIFIED BY:



Technical Director

DATE: 06/17/23

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP – 209222, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP – T104704434-22-18, UT NELAP – CA009332022-14, VA NELAP - 12240, WA ELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-017

Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

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# 2306190

Seven 1 Liter Summa Canister samples were received on June 07, 2023. 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-01-21_SG-060523

Lab ID#: 2306190-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	1.0	1.7	5.3	9.3
Tetrachloroethene	1.0	1.1	6.7	7.5

Client Sample ID: SV-02-21_SG-060523

Lab ID#: 2306190-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	1.1	9.3	5.8	50
Tetrachloroethene	1.1	1.3	7.2	8.8

Client Sample ID: SV-06-21_SG-060523

Lab ID#: 2306190-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	1.1	2.7	5.7	15

Client Sample ID: SV-05-21_SG-060523

Lab ID#: 2306190-04A

No Detections Were Found.

Client Sample ID: SV-03-21_SG-060523

Lab ID#: 2306190-05A

No Detections Were Found.

Client Sample ID: SV-04-21_SG-060523

Lab ID#: 2306190-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	1.1	3.1	5.9	17

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

Client Sample ID: DUP-01_SG-060523

Lab ID#: 2306190-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	1.1	10	5.8	54
Tetrachloroethene	1.1	1.2	7.4	8.1

Client Sample ID: SV-01-21_SG-060523

Lab ID#: 2306190-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3061617	Date of Collection:	6/5/23 10:14:00 AM
Dil. Factor:	1.99	Date of Analysis:	6/16/23 08:25 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	1.7	5.3	9.3
trans-1,2-Dichloroethene	1.0	Not Detected	3.9	Not Detected
Tetrachloroethene	1.0	1.1	6.7	7.5

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	119	70-130
4-Bromofluorobenzene	115	70-130



Air Toxics

Client Sample ID: SV-02-21_SG-060523

Lab ID#: 2306190-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3061618	Date of Collection:	6/5/23 12:23:00 PM
Dil. Factor:	2.14	Date of Analysis:	6/16/23 08:54 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.7	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.2	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Trichloroethene	1.1	9.3	5.8	50
trans-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Tetrachloroethene	1.1	1.3	7.2	8.8

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	119	70-130
4-Bromofluorobenzene	117	70-130

Client Sample ID: SV-06-21_SG-060523

Lab ID#: 2306190-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3061619	Date of Collection: 6/5/23 12:53:00 PM
Dil. Factor:	2.13	Date of Analysis: 6/16/23 09:22 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.7	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.2	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Trichloroethene	1.1	2.7	5.7	15
trans-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Tetrachloroethene	1.1	Not Detected	7.2	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	122	70-130
4-Bromofluorobenzene	115	70-130



Air Toxics

Client Sample ID: SV-05-21_SG-060523

Lab ID#: 2306190-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3061620	Date of Collection:	6/5/23 1:14:00 PM
Dil. Factor:	2.21	Date of Analysis:	6/16/23 09:51 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.8	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Trichloroethene	1.1	Not Detected	5.9	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Tetrachloroethene	1.1	Not Detected	7.5	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	117	70-130
4-Bromofluorobenzene	116	70-130

Client Sample ID: SV-03-21_SG-060523

Lab ID#: 2306190-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3061621	Date of Collection: 6/5/23 12:26:00 PM
Dil. Factor:	2.08	Date of Analysis: 6/16/23 10:20 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	5.6	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	104	70-130
1,2-Dichloroethane-d4	116	70-130
4-Bromofluorobenzene	116	70-130



Air Toxics

Client Sample ID: SV-04-21_SG-060523

Lab ID#: 2306190-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3061622	Date of Collection:	6/5/23 12:44:00 PM
Dil. Factor:	2.20	Date of Analysis:	6/16/23 10:48 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.8	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Trichloroethene	1.1	3.1	5.9	17
trans-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Tetrachloroethene	1.1	Not Detected	7.5	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	122	70-130
4-Bromofluorobenzene	114	70-130

Client Sample ID: DUP-01_SG-060523

Lab ID#: 2306190-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3061623	Date of Collection:	6/5/23
Dil. Factor:	2.18	Date of Analysis:	6/16/23 11:17 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.8	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.3	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Trichloroethene	1.1	10	5.8	54
trans-1,2-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Tetrachloroethene	1.1	1.2	7.4	8.1

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	121	70-130
4-Bromofluorobenzene	114	70-130

Client Sample ID: Lab Blank

Lab ID#: 2306190-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3061606c	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/16/23 12:24 PM

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	95	70-130
1,2-Dichloroethane-d4	117	70-130
4-Bromofluorobenzene	114	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 2306190-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3061605	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/16/23 11:47 AM

Compound	%Recovery
----------	-----------

Vinyl Chloride	79
1,1-Dichloroethene	84
cis-1,2-Dichloroethene	89
Trichloroethene	88
trans-1,2-Dichloroethene	84
Tetrachloroethene	99

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
1,2-Dichloroethane-d4	113	70-130
4-Bromofluorobenzene	116	70-130

Client Sample ID: LCS

Lab ID#: 2306190-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3061603	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/16/23 10:48 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	79	70-130
1,1-Dichloroethene	81	70-130
cis-1,2-Dichloroethene	88	70-130
Trichloroethene	94	70-130
trans-1,2-Dichloroethene	84	70-130
Tetrachloroethene	103	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	118	70-130
4-Bromofluorobenzene	117	70-130

Client Sample ID: LCSD

Lab ID#: 2306190-10AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3061604	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/16/23 11:14 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	82	70-130
1,1-Dichloroethene	83	70-130
cis-1,2-Dichloroethene	88	70-130
Trichloroethene	90	70-130
trans-1,2-Dichloroethene	86	70-130
Tetrachloroethene	100	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	118	70-130
4-Bromofluorobenzene	115	70-130

Attachment 2

Groundwater Sampling Logs

Groundwater Sampling Form



Project Number	30167840	Well ID	MW-02-17	Date	06/06/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	60.8 degrees F and Cloudy. The wind is blowing N/NE at 8.1 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	25.84	Total Depth (ft-bmp)	29.71	Water Column (ft)	3.87
Purge Start	10:09	Pump Intake (ft-bmp)	27.21	Purge Method	Low-Flow
Purge End	10:51	Volumes Purged		Sample ID	MW-02-17_GW-060623
Sample Time	10:50	Gallons Purged		Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	0.63
				Purge Equipment	Peristaltic
				Sampled by	Samantha Hindle
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:11	0	0	150	25.85	--	7.09	1.27	18.4	2.24	17	-30.9	--	--
10:16	5	5	150	25.85	--	7.07	1.22	10.7	1.68	16.6	-37.4	--	--
10:21	5	10	150	25.85	--	7.03	1.17	0.87	0.83	16.3	-62.5	--	--
10:26	5	15	150	25.85	--	7.04	1.16	0.02	0.46	16.2	-73.2	--	--
10:31	5	20	150	25.85	--	7.07	1.16	0.02	0.39	16.3	-76.5	--	--
10:36	5	25	150	25.85	--	7.08	1.14	0.02	0.33	15.9	-75.7	--	--
10:41	5	30	150	25.85	--	7.09	1.13	0.02	0.36	16.1	-75.7	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: South fiero	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MW-05-18	Date	06/06/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	64.4 degrees F and Cloudy. The wind is blowing N/NE at 4.7 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	27.21	Total Depth (ft-bmp)	33.58	Water Column (ft)	6.37
Purge Start	12:11	Pump Intake (ft-bmp)	31.08	Purge Method	Low-Flow
Purge End	12:48	Volumes Purged		Sample ID	MW-05-18_GW-060623
Sample Time	12:45	Gallons Purged		Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	1.04
				Purge Equipment	Peristaltic
				Sampled by	Samantha Hindle
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:15	0	0	150	27.22	--	7.31	0.71	0.02	1.74	17.1	32	--	--
12:20	5	5	150	27.22	--	7.3	0.72	0.02	0.54	15.9	31.4	--	--
12:25	5	10	150	27.22	--	7.29	0.72	0.02	0.38	15.7	31.6	--	--
12:30	5	15	150	27.22	--	7.3	0.71	0.02	0.42	16.7	32	--	--
12:35	5	20	150	27.22	--	7.3	0.71	0.02	0.43	16.5	32.1	--	--
12:40	5	25	150	27.22	--	7.3	0.71	0.02	0.39	16.7	31.9	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: South Fiero	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MW-06-20	Date	06/06/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	69.8 degrees F and Cloudy. The wind is blowing N/NE at 11.4 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	26.05	Total Depth (ft-bmp)	29.22	Water Column (ft)	3.17
Purge Start	13:34	Pump Intake (ft-bmp)	26.72	Purge Method	Low-Flow
Purge End	13:36	Volumes Purged		Sample ID	MW-06-20_GW-060623
Sample Time	14:48	Gallons Purged	0.00	Replicate/ Code No.	DUP-01
				Well Casing Material	PVC
				Gallons in Well	0.52
				Purge Equipment	Peristaltic
				Sampled by	Samantha Hindle
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:38	0	0	150	26.05	--	7.36	0.99	0.02	3.83	17.6	69.4	--	--
13:43	5	5	150	26.05	--	7.3	0.99	0.02	3.92	16.8	69.9	--	--
13:48	5	10	150	26.05	--	7.31	1	0.02	3.09	17.2	70.3	--	--
13:53	5	15	150	26.05	--	7.31	1.01	0.02	2.54	17	69.8	--	--
13:58	5	20	150	26.05	--	7.31	1.01	0.02	2.33	17.9	70.3	--	--
14:03	5	25	150	26.05	--	7.31	1	0.02	1.87	18.2	69	--	--
14:08	5	30	150	26.05	--	7.32	1.01	0.02	1.6	18.5	68.9	--	--
14:13	5	35	150	26.05	--	7.32	1.02	0.02	1.52	18.9	68.8	--	--
14:18	5	40	150	26.05	--	7.32	1.02	0.02	1.48	19.4	69.3	--	--
14:23	5	45	150	26.05	--	7.32	1.02	0.02	1.46	19.4	69.7	--	--
14:28	5	50	150	26.05	--	7.32	1.03	0.02	1.65	18	70	--	--
14:33	5	55	150	26.05	--	7.32	1.02	0.02	1.49	17	70	--	--
14:38	5	60	150	26.05	--	7.33	1.02	0.02	1.52	17	70.1	--	--
14:43	5	65	150	26.05	--	7.33	1.01	0.02	1.46	17.3	70.2	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	6	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: Fiero South	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MW-07-20	Date	06/06/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	64.4 degrees F and Cloudy. The wind is blowing N/NE at 6.9 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	26.62	Total Depth (ft-bmp)	30.15	Water Column (ft)	3.53
Purge Start	11:14	Pump Intake (ft-bmp)	27.65	Purge Method	Low-Flow
Purge End	11:48	Volumes Purged		Sample ID	MW-07-20_GW-060623
Sample Time	11:45	Gallons Purged	0.00	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	0.57
				Purge Equipment	Peristaltic
				Sampled by	Samantha Hindle
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:15	0	0	150	26.64	--	7.53	0.8	0.02	5.03	17.3	17.3	--	--
11:20	5	5	150	26.63	--	7.47	0.81	0.02	3.4	16.4	23.3	--	--
11:25	5	10	150	26.63	--	7.47	0.81	0.02	3.21	16.9	26.5	--	--
11:30	5	15	150	26.63	--	7.47	0.83	0.02	2.62	16.7	31	--	--
11:35	5	20	150	26.63	--	7.46	0.84	0.02	2.6	16.6	33.2	--	--
11:40	5	25	150	26.63	--	7.46	0.85	0.02	2.51	16.6	35.4	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: South fiero	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MW-08-21	Date	06/08/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	53.6 degrees F and Haze. The wind is blowing NW at 3.4 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	26.84	Total Depth (ft-bmp)	30.28	Water Column (ft)	3.44
Purge Start	09:50	Pump Intake (ft-bmp)	27.78	Purge Method	Low-Flow
Purge End	10:52	Volumes Purged		Sample ID	MW-08-21_GW-060823
Sample Time	10:52	Gallons Purged	0.00	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	0.56
				Purge Equipment	Peristaltic
				Sampled by	Samantha Hindle
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:52	0	0	100	26.84	--	7.29	0.72	0.02	1.58	15.6	110.7	--	--
09:57	5	5	100	26.84	--	7.3	0.72	0.02	1.77	16.3	117.4	--	--
10:02	5	10	100	26.84	--	7.29	0.72	0.02	1.35	16.3	113.6	--	--
10:07	5	15	100	26.84	--	7.29	0.72	0.02	1.64	17.2	133.4	--	--
10:12	5	20	100	26.84	--	7.28	0.72	0.02	1.32	17.6	114.3	--	--
10:17	5	25	100	26.84	--	7.28	0.73	0.02	1.05	16.7	112.8	--	--
10:22	5	30	100	26.84	--	7.28	0.72	0.02	0.91	17.2	111.4	--	--
10:27	5	35	100	26.84	--	7.28	0.72	0.02	0.8	18.1	109.6	--	--
10:32	5	40	100	26.84	--	7.27	0.72	0.02	0.76	18.1	109.1	--	--
10:37	5	45	100	26.84	--	7.26	0.73	0.02	0.93	20	108.2	--	--
10:42	5	50	100	26.84	--	7.26	0.74	0.02	0.88	19.9	106	--	--
10:47	5	55	100	26.84	--	7.26	0.74	0.02	0.85	19.7	105.7	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: Fiero South	Well Locked at Arrival: no
Condition of Well: Broken thread tabs	Well Locked at Departure: no
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MW-09-22	Date	06/08/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	69.8 degrees F and Cloudy. The wind is blowing N at 6.9 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	21.23	Total Depth (ft-bmp)	32.83	Water Column (ft)	11.6
Purge Start	15:50	Pump Intake (ft-bmp)	30	Purge Method	Low-Flow
Purge End	16:34	Volumes Purged		Sample ID	MW-09-22_GW-060823
Sample Time	16:30	Gallons Purged		Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	1.88
				Purge Equipment	Peristaltic
				Sampled by	Sierra Sider
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:53	0	0	150	21.23	--	7.55	0.64	1.59	1.69	16.2	178.5	--	--
15:58	5	5	150	21.23	--	7.54	0.63	2.6	1.3	16.5	179.4	--	--
16:03	5	10	150	21.23	--	7.53	0.63	2.1	1.13	16.4	179.5	--	--
16:08	5	15	150	21.23	--	7.5	0.65	1.09	0.85	16.4	181.2	--	--
16:13	5	20	150	21.23	--	7.49	0.65	0.72	0.74	16.5	181.4	--	--
16:18	5	25	150	21.23	--	7.48	0.68	0.67	0.71	16.4	181.1	--	--
16:23	5	30	150	21.23	--	7.48	0.67	1.13	0.67	16.6	181.1	--	--
16:26	3	33	150	21.23	--	7.48	0.68	0.49	0.67	16.4	180.9	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	50 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: GFL	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MW-13-22	Date	06/06/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	66.2 degrees F and Cloudy. The wind is blowing NE at 8.1 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	21.95	Total Depth (ft-bmp)	26.72	Water Column (ft)	4.77
Purge Start	13:11	Pump Intake (ft-bmp)	24.2	Purge Method	Low-Flow
Purge End	13:47	Volumes Purged	3.85	Sample ID	MW-13-22_GW-060623
Sample Time	13:45	Gallons Purged	3.00	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	0.78
				Purge Equipment	Peristaltic
				Sampled by	Sommer Guy
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:13	0	0	150	22.13	--	6.73	0.94	1.24	0.76	15.2	-10.2	--	--
13:18	5	5	150	22.13	--	6.72	0.92	0.63	0.37	15.3	-48.3	--	--
13:23	5	10	150	22.13	--	6.72	0.93	0.7	0.4	15.2	-66.2	--	--
13:28	5	15	150	22.13	--	6.72	0.94	0.24	0.36	15.3	-75.6	--	--
13:33	5	20	150	22.13	--	6.72	0.94	0.58	0.29	15.1	-82.4	--	--
13:38	5	25	150	22.13	--	6.73	0.94	0.22	0.28	15.1	-85.3	--	--
13:43	5	30	150	22.13	--	6.73	0.94	0.98	0.29	15.1	-86.8	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: Fiero south	Well Locked at Arrival:
Condition of Well: Good condition	Well Locked at Departure:
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MW-14-22	Date	06/06/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	69.8 degrees F and Cloudy. The wind is blowing N/NE at 11.4 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	22.50	Total Depth (ft-bmp)	34.62	Water Column (ft)	12.12
Purge Start	14:03	Pump Intake (ft-bmp)	32.2	Purge Method	Low-Flow
Purge End	14:48	Volumes Purged		Sample ID	MW-14-22_GW-060623
Sample Time	14:40	Gallons Purged		Replicate/ Code No.	MW-14-22_GW-060623
				Well Casing Material	PVC
				Gallons in Well	1.97
				Purge Equipment	Peristaltic
				Sampled by	Sommer Guy
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:05	0	0	150	22.50	--	7.5	0.596	1.88	1.43	16.2	37.6	--	--
14:10	5	5	150	22.50	--	7.5	0.601	3.36	0.51	15.8	4.3	--	--
14:15	5	10	150	22.50	--	7.51	0.602	1.41	0.39	15.8	-13.3	--	--
14:20	5	15	150	22.50	--	7.5	0.61	1.91	0.44	15.7	-21.2	--	--
14:25	5	20	150	22.50	--	7.5	0.61	1.25	0.3	15.6	-27	--	--
14:30	5	25	150	22.50	--	7.5	0.62	1.11	0.28	15.7	-30.4	--	--
14:35	5	30	150	22.50	--	7.5	0.62	1.05	0.29	15.7	-32.4	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	9	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: Fiero south	Well Locked at Arrival:
Condition of Well: Good condition	Well Locked at Departure:
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MW-15-22	Date	06/06/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	60.8 degrees F and Haze. The wind is blowing N/NE at 8.1 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	22.63	Total Depth (ft-bmp)	35.93	Water Column (ft)	13.3
Purge Start	09:19	Pump Intake (ft-bmp)	33.4	Purge Method	Low-Flow
Purge End	10:05	Volumes Purged	1.39	Sample ID	MW-15-22_GW-060623
Sample Time	10:00	Gallons Purged	3.00	Replicate/ Code No.	DUP-02_GW-060623
				Well Casing Material	PVC
				Gallons in Well	2.16
				Purge Equipment	Peristaltic
				Sampled by	Sommer Guy
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:22	0	0	150	22.65	--	6.73	0.74	10.5	1.98	15.1	91	--	--
09:27	5	5	150	22.65	--	6.83	0.76	4.62	0.56	14.8	1.3	--	--
09:32	5	10	150	22.65	--	6.88	0.76	2.58	0.41	14.7	-32.9	--	--
09:37	5	15	150	22.65	--	6.88	0.77	1.67	0.4	14.7	-52.2	--	--
09:42	5	20	150	22.65	--	6.9	0.78	1.91	0.35	14.6	-64.2	--	--
09:47	5	25	150	22.65	--	6.92	0.78	1.79	0.3	14.5	-73.2	--	--
09:52	5	30	150	22.65	--	6.94	0.78	1.62	0.28	14.6	-76.6	--	--
09:57	5	35	150	22.65	--	6.95	0.78	1.74	0.28	14.6	-82	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	6	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: Fiero south	Well Locked at Arrival:
Condition of Well: Good condition	Well Locked at Departure:
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MW-16-22	Date	06/06/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	71.6 degrees F and Cloudy. The wind is blowing N at 11.4 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	26.59	Total Depth (ft-bmp)	34.52	Water Column (ft)	7.93
Purge Start	15:20	Pump Intake (ft-bmp)	32	Purge Method	Low-Flow
Purge End	16:02	Volumes Purged	2.33	Sample ID	MW-16-22_GW-060623
Sample Time	16:00	Gallons Purged	3.00	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	1.29
				Purge Equipment	Peristaltic
				Sampled by	Sommer Guy
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:22	0	0	150	26.59	--	7.26	0.68	9.01	1.84	16.8	130.6	--	--
15:27	5	5	150	26.59	--	7.24	0.68	10.6	0.72	16.6	112.2	--	--
15:32	5	10	150	26.59	--	7.23	0.68	11	0.39	19.2	93.9	--	--
15:37	5	15	150	26.59	--	7.22	0.69	7.33	0.43	16	86.6	--	--
15:42	5	20	150	26.59	--	7.23	0.68	7.24	0.57	16	77.2	--	--
15:47	5	25	150	26.59	--	7.23	0.68	6.87	0.6	16.1	69	--	--
15:52	5	30	150	26.59	--	7.23	0.68	6.07	0.62	16.2	62.3	--	--
15:57	5	35	150	26.59	--	7.24	0.68	6.41	0.59	16.1	60.2	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: Fiero south	Well Locked at Arrival: _____
Condition of Well: Good condition	Well Locked at Departure: _____
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MWF15-01	Date	06/07/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	71.6 degrees F and Partly Cloudy. The wind is blowing N/NE at 11.4 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	18.73	Total Depth (ft-bmp)	28.78	Water Column (ft)	10.05
Purge Start	15:56	Pump Intake (ft-bmp)	21.9	Purge Method	Low-Flow
Purge End	17:00	Volumes Purged		Sample ID	MWF15-01_GW-060723
Sample Time	16:58	Gallons Purged	0.00	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	1.63
				Purge Equipment	Peristaltic
				Sampled by	Samantha Hindle
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:57	0	0	150	18.73	--	7.15	1.11	95.2	1.17	17.5	58.3	--	--
16:02	5	5	150	18.77	--	7.16	1.1	82.2	0.71	18.6	57.5	--	--
16:07	5	10	150	18.73	--	7.16	1.1	54.6	0.53	18.4	57.6	--	--
16:12	5	15	150	18.73	--	7.16	1.12	52	0.4	18.2	58.1	--	--
16:17	5	20	150	18.73	--	7.16	1.1	49.5	0.24	17.9	58.3	--	--
16:22	5	25	150	18.73	--	7.16	1.08	42.8	0.31	18.7	57.4	--	--
16:27	5	30	150	18.73	--	7.17	1.08	36.8	0.3	18.6	56.4	--	--
16:32	5	35	150	18.73	--	7.18	1.01	33	0.32	18.2	56.6	--	--
16:37	5	40	150	18.73	--	7.18	1.01	32.6	0.31	18.3	55.6	--	--
16:42	5	45	150	18.73	--	7.19	0.96	28.5	0.25	17	55	--	--
16:47	5	50	150	18.73	--	7.19	0.96	26.6	0.3	17.6	53.8	--	--
16:52	5	55	150	18.73	--	7.2	0.93	25.3	0.29	17.7	54.1	--	--
16:57	5	60	150	18.73	--	7.2	0.93	23	0.31	17.4	54	Black	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments: Tubing stuck multiple times, very hard to lower down , tried to get to 26.28 but could only get to 21.9

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: Fiero South	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MWF16-05	Date	06/08/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	71.6 degrees F and Mostly Cloudy.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	20.57	Total Depth (ft-bmp)	22.81	Water Column (ft)	2.24
Purge Start	12:59	Pump Intake (ft-bmp)	21.3	Purge Method	Low-Flow
Purge End	14:20	Volumes Purged		Sample ID	MWF16-05
Sample Time	14:15	Gallons Purged		Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	0.36
				Purge Equipment	Peristaltic
				Sampled by	Sierra Sider
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:02	0	0	150	20.66	--	7.99	1.44	161	7.61	16	181.6	--	--
13:07	5	5	150	20.66	--	7.99	1.42	971	5.14	17.4	197	--	--
13:12	5	10	150	20.66	--	7.98	1.41	560	4.65	18.2	204.2	--	--
13:17	5	15	150	20.64	--	7.43	1.5		1.58	18.5	195.6	--	--
13:22	5	20	150	20.64	--	7.43	1.5	376	1.48	17	191	--	--
13:26	4	24	150	20.64	--	7.43	1.49	304	1.21	17.4	184.7	--	--
13:32	6	30	150	20.64	--	7.43	1.49	273	1.13	17.5	182.1	--	--
13:37	5	35	150	20.64	--	7.44	1.47	256	1.04	16.9	180.5	--	--
13:42	5	40	150	20.64	--	7.44	1.47	202	1.22	17.5	179.6	--	--
13:47	5	45	150	20.64	--	7.44	1.47	167	1.15	17.1	179.8	--	--
13:52	5	50	150	20.64	--	7.45	1.46	137	1.18	16.6	180.3	--	--
13:57	5	55	150	20.64	--	7.46	1.44	104	1.14	16.3	181.3	--	--
14:02	5	60	150	20.64	--	7.47	1.43	96.8	1.33	16.2	184.9	--	--
14:07	5	65	150	20.64	--	7.47	1.42	52.7	1.48	16.5	185.5	--	--
14:12	5	70	150	20.64	--	7.46	1.4	20.3	1.35	16.9	186.2	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	50 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: GFL

Well Locked at Arrival: no

Condition of Well: Missing bolts,Needs repairs

Well Locked at Departure: no

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Well Completion: Flush mount

Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MWF16-06	Date	06/09/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	66.2 degrees F and Clear. The wind is blowing N/NW at 5.8 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	14.64	Total Depth (ft-bmp)	28.85	Water Column (ft)	14.21
Purge Start	11:38	Pump Intake (ft-bmp)	26.35	Purge Method	Low-Flow
Purge End	12:29	Volumes Purged		Sample ID	MWF16-06_GW-060923
Sample Time		Gallons Purged	0.00	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	2.31
				Purge Equipment	Peristaltic
				Sampled by	Samantha Hindle
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:40	0	0	150	14.64	--	7.77	0.373	36	5.51	16.1	91.5	--	--
11:45	5	5	150	14.85	--	7.8	0.366	31.1	3.96	16.5	72.2	--	--
11:50	5	10	150	14.85	--	7.83	0.361	30.6	3.85	16	68.1	--	--
11:55	5	15	150	14.85	--	7.83	0.361	12.7	4.4	15.4	68.7	--	--
12:00	5	20	150	14.85	--	7.84	0.359	21.4	4.36	15.5	68.5	--	--
12:05	5	25	150	14.85	--	7.85	0.359	9.15	3.77	16.7	67.1	--	--
12:10	5	30	150	14.85	--	7.84	0.36	6.13	3.58	17.1	67.7	--	--
12:15	5	35	150	14.85	--	7.84	0.361	1.89	3.36	17.2	68	--	--
12:20	5	40	150	14.85	--	7.84	0.362	1.7	3.42	17	68.5	--	--
12:25	5	45	150	14.85	--	7.83	0.361	0.96	3.41	17.1	68.9	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: GFL fiero	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MWF16-07	Date	06/07/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	53.6 degrees F and Haze. The wind is blowing N/NW at 5.8 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	4.58	Total Depth (ft-bmp)	17.48	Water Column (ft)	12.9
Purge Start	10:49	Pump Intake (ft-bmp)	14.98	Purge Method	Low-Flow
Purge End	11:48	Volumes Purged		Sample ID	MWF16-07_GW-060723
Sample Time	11:45	Gallons Purged	0.00	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	2.1
				Purge Equipment	Peristaltic
				Sampled by	Samantha Hindle
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:51	0	0	150	4.58	--	6.21	1.01	15.5	1.42	14.4	30.8	--	--
10:56	5	5	150	5.22	--	6.21	1.01	14	0.85	14.6	11.2	--	--
11:01	5	10	150	5.22	--	6.2	1.01	16.8	0.21	14.3	-7.8	--	--
11:06	5	15	150	5.22	--	6.2	1	16.2	0.22	14.5	-9.9	--	--
11:11	5	20	150	5.22	--	6.2	1	8.52	0.24	15.3	-15.5	--	--
11:16	5	25	150	5.22	--	6.2	1	9.26	0.36	15.5	-19	--	--
11:21	5	30	150	5.22	--	6.2	1	9.5	0.41	15.6	-19.5	--	--
11:26	5	35	150	5.22	--	6.19	1	4.25	0.41	15.3	-20.2	--	--
11:31	5	40	150	5.22	--	6.19	0.99	0.02	0.38	16	-19.6	--	--
11:36	5	45	150	5.22	--	6.19	0.99	0.02	0.37	16	-19.7	--	--
11:41	5	50	150	5.22	--	6.19	0.99	0.02	0.4	15.6	-21.4	Yellow	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: South Fiero

Well Locked at Arrival: no

Condition of Well: Good condition,Missing bolts

Well Locked at Departure: no

Well Completion: Flush mount

Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MWF16-12	Date	06/08/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	71.6 degrees F and Mostly Cloudy.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	14.13	Total Depth (ft-bmp)	18.89	Water Column (ft)	4.76
Purge Start	14:54	Pump Intake (ft-bmp)	16.39	Purge Method	Low-Flow
Purge End	16:02	Volumes Purged		Sample ID	MWF16-12
Sample Time	15:58	Gallons Purged		Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	0.77
				Purge Equipment	Peristaltic
				Sampled by	Samantha Hindle
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:56	0	0	150	14.13	--	7.97	0.327	21	1.88	16.2	100.5	--	--
15:01	5	5	150	14.13	--	7.95	0.327	7.91	1.09	16.1	98.5	--	--
15:06	5	10	150	16.74	--	7.96	0.326	19.1	1.7	16.4	96.6	--	--
15:11	5	15	150	16.74	--	7.95	0.327	10	0.8	15	97.3	--	--
15:16	5	20	150	16.42	--	7.94	0.325	31.2	0.89	15.9	97.3	--	--
15:21	5	25	100	16.45	--	7.95	0.33	46.6	0.94	15.1	97.1	--	--
15:26	5	30	100	16.45	--	7.93	0.336	35.7	0.74	14.4	99	--	--
15:31	5	35	100	16.45	--	7.94	0.336	27.6	0.51	14.8	98.7	--	--
15:36	5	40	100	17.10	--	7.92	0.335	104	0.59	14.8	99.3	--	--
15:41	5	45	100	17.35	--	7.92	0.348	42.4	0.58	14.8	98.9	--	--
15:46	5	50	100	17.32	--	7.91	0.348	30.7	0.55	15.5	99.7	--	--
15:51	5	55	150	17.32	--	7.89	0.351	30.1	0.81	16.1	99.5	--	--
15:56	5	60	150	17.32	--	7.9	0.355	21.4	0.68	15.9	99	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments: Lowered tubing to 16.5 3:06 bc at 3:17 lowered I tubing to 16.6. At 3:21 lowered to 17.4

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: GFL fiero	Well Locked at Arrival: yes
Condition of Well: Missing bolts	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MWF16-15	Date	06/07/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	64.4 degrees F and Cloudy. The wind is blowing N at 10.3 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	21.98	Total Depth (ft-bmp)	35.48	Water Column (ft)	13.5
Purge Start	12:04	Pump Intake (ft-bmp)	32.98	Purge Method	Low-Flow
Purge End	13:01	Volumes Purged		Sample ID	MWF16-15_GW-060723
Sample Time	12:57	Gallons Purged	0.00	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	2.19
				Purge Equipment	Peristaltic
				Sampled by	Samantha Hindle
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:07	0	0	150	21.98	--	7.18	0.587	0.02	1.08	16.1	-30.5	--	--
12:12	5	5	150	21.98	--	7.2	0.6	0.02	0.5	16.5	-32.7	--	--
12:17	5	10	150	21.98	--	7.2	0.61	0.02	0.38	16.3	-33.4	--	--
12:22	5	15	150	21.98	--	7.16	0.68	0.02	0.43	16.4	-30	--	--
12:27	5	20	150	21.98	--	7.17	0.68	0.02	0.37	16.4	-30	--	--
12:32	5	25	150	21.98	--	7.15	0.75	0.02	0.37	16.2	-27.1	--	--
12:42	10	35	150	21.98	--	7.15	0.79	0.02	0.44	16.7	-20.3	--	--
12:47	5	40	150	21.98	--	7.15	0.79	0.02	0.44	16.8	-19.3	--	--
12:52	5	45	150	21.98	--	7.15	0.8	0.02	0.4	16.4	-17.4	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments: Merit lab courier picked up samples at 12:38

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: South fiero	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MWF16-16	Date	06/09/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	69.8 degrees F and Mostly Clear. The wind is blowing N/NW at 10.3 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	22.60	Total Depth (ft-bmp)	31.28	Water Column (ft)	8.68
Purge Start	12:56	Pump Intake (ft-bmp)	28.78	Purge Method	Low-Flow
Purge End	13:36	Volumes Purged		Sample ID	MWF16-16_GW-060923
Sample Time	13:32	Gallons Purged		Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	1.41
				Purge Equipment	Peristaltic
				Sampled by	Samantha Hindle
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:57	0	0	150	22.60	--	7.43	0.571	7.63	2.93	18.1	92.8	--	--
13:02	5	5	150	22.60	--	7.41	0.573	5.73	1.61	17	87.5	--	--
13:07	5	10	150	22.60	--	7.41	0.573	5.5	1.6	17	87.2	--	--
13:12	5	15	150	22.60	--	7.42	0.575	3.9	1.88	17	84.8	--	--
13:17	5	20	150	22.60	--	7.42	0.577	2.17	1.48	17.1	82.9	--	--
13:22	5	25	150	22.60	--	7.41	0.577	2.2	1.46	17	82.3	--	--
13:27	5	30	150	22.60	--	7.41	0.578	2.29	1.36	17.3	79.7	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: GFL fiero	Well Locked at Arrival: yes
Condition of Well: Missing bolts	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MWF16-17	Date	06/08/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	69.8 degrees F and Mostly Cloudy. The wind is blowing N at 3.4 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	20.16	Total Depth (ft-bmp)	31.81	Water Column (ft)	11.65
Purge Start	13:38	Pump Intake (ft-bmp)	29.31	Purge Method	Low-Flow
Purge End	14:35	Volumes Purged		Sample ID	MWF16-17
Sample Time	14:33	Gallons Purged	0.00	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	1.89
				Purge Equipment	Peristaltic
				Sampled by	Samantha Hindle
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:39	0	0	100	20.16	--	7.05	1.14	13	1.72	15.5	105	--	--
13:44	5	5	100	20.16	--	7.07	1.14	16	1.5	15.7	103.5	--	--
13:49	5	10	100	20.16	--	7.09	1.14	16.4	1.48	15.8	102.4	--	--
13:54	5	15	100	20.16	--	7.09	1.15	12.2	1.06	14.9	103.3	--	--
13:59	5	20	100	20.16	--	7.09	1.15	10.3	1	14.5	103.2	--	--
14:04	5	25	100	20.16	--	7.1	1.16	9.24	0.99	14.6	103.4	--	--
14:09	5	30	100	20.16	--	7.1	1.15	5.11	1.05	14.6	103.4	--	--
14:14	5	35	100	20.16	--	7.1	1.15	3.77	1.71	14.7	103.2	--	--
14:19	5	40	100	20.16	--	7.1	1.15	1.73	1.7	14.8	103.1	--	--
14:24	5	45	100	20.16	--	7.1	1.16	1.14	1.68	14.9	103.5	--	--
14:29	5	50	100	20.16	--	7.11	1.15	1.55	1.67	15	102.7	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: GFL fiero	Well Locked at Arrival: yes
Condition of Well: Fair condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MWF16-18	Date	06/08/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	71.6 degrees F and Mostly Cloudy.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Well Casing Material	PVC				
Static Water Level (ft-bmp)	21.02	Total Depth (ft-bmp)	31.96	Water Column (ft)	10.94
Gallons in Well	1.78				
Purge Start	14:34	Pump Intake (ft-bmp)	29.4	Purge Method	Low-Flow
Purge Equipment	Peristaltic				
Purge End	15:28	Volumes Purged		Sample ID	MWF16-18_GW-060823
Sampled by	Sierra Sider				
Sample Time	15:25	Gallons Purged		Replicate/ Code No.	NA
Sample Type	Grab				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:38	0	0	150	21.02	--	7.22	0.87	4.45	1.57	16.9	183.4	--	--
14:43	5	5	150	21.02	--	7.22	0.86	2.02	1.52	17.8	182.9	--	--
14:48	5	10	150	21.02	--	7.2	0.86	0.46	1.6	18.5	184.4	--	--
14:53	5	15	150	21.02	--	7.2	0.86	0.65	1.13	15.5	185.5	--	--
14:58	5	20	150	21.02	--	7.2	0.86	0.85	1.08	15.5	184.1	--	--
15:03	5	25	150	21.02	--	7.19	0.85	1.17	1.3	15.4	183.1	--	--
15:08	5	30	150	21.02	--	7.19	0.86	0.78	1.25	15.2	182.6	--	--
15:13	5	35	150	21.02	--	7.19	0.86	1.11	0.88	15.1	181.7	--	--
15:18	5	40	150	21.02	--	7.19	0.86	0.56	0.85	15.3	181.1	--	--
15:22	4	44	150	21.02	--	7.19	0.85	0.41	0.86	15.4	181	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	50 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: GFL	Well Locked at Arrival: yes
Condition of Well: Cracked well pad	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MWF16-22	Date	06/09/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	69.8 degrees F and Partly Cloudy. The wind is blowing W/NW at 6.9 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	22.40	Total Depth (ft-bmp)	33.92	Water Column (ft)	11.52
Purge Start	14:05	Pump Intake (ft-bmp)	31.42	Purge Method	Low-Flow
Purge End	14:42	Volumes Purged		Sample ID	MWF16-16
Sample Time	14:38	Gallons Purged	0.00	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	1.87
				Purge Equipment	Peristaltic
				Sampled by	Samantha Hindle
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:06	0	0	150	22.40	--	7.29	0.487	14.7	1.85	18.9	84.5	--	--
14:11	5	5	150	22.40	--	7.28	0.493	7.41	1.62	18.4	82.3	--	--
14:16	5	10	130	23.40	--	7.32	0.496	6.52	0.48	17.7	77.7	--	--
14:21	5	15	130	23.40	--	7.33	0.495	20.1	0.42	17.2	77.7	--	--
14:26	5	20	130	23.40	--	7.34	0.494	4.28	0.36	17.1	77.1	--	--
14:31	5	25	130	23.40	--	7.34	0.493	4.16	0.34	17.4	76.8	--	--
14:36	5	30	130	23.40	--	7.34	0.496	3.3	0.34	17.5	76.5	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments: Broken plug and lock

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: GFL fiero	Well Locked at Arrival: no
Condition of Well: Missing bolts	Well Locked at Departure: no
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MWF16-23	Date	06/06/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	69.8 degrees F and Cloudy. The wind is blowing N/NE at 11.4 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	23.99	Total Depth (ft-bmp)	30.44	Water Column (ft)	6.45
Purge Start	15:24	Pump Intake (ft-bmp)	27.94	Purge Method	Low-Flow
Purge End	16:02	Volumes Purged		Sample ID	MWF16-23_GW-060623
Sample Time	15:58	Gallons Purged	0.00	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	1.05
				Purge Equipment	Peristaltic
				Sampled by	Samantha Hindle
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:26	0	0	150	23.99	--	7.12	0.99	4.62	1.71	18.1	58.6	--	--
15:31	5	5	150	23.99	--	7.12	0.99	2.37	0.62	17.1	58.8	--	--
15:36	5	10	150	23.99	--	7.13	0.98	1.47	0.39	17.2	57.6	--	--
15:41	5	15	150	23.99	--	7.14	0.97	1.2	0.33	16.8	57.6	--	--
15:46	5	20	150	23.99	--	7.14	0.97	0.02	0.26	16.8	57.1	--	--
15:51	5	25	150	23.99	--	7.15	0.96	0.02	0.26	16.8	56.6	--	--
15:56	5	30	150	23.99	--	7.16	0.95	0.02	0.28	16.8	56.6	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: South Fiero	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MWF16-25	Date	06/08/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	62.6 degrees F and Mostly Cloudy. The wind is blowing W at 5.8 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	26.10	Total Depth (ft-bmp)	37.19	Water Column (ft)	11.09
Purge Start	12:17	Pump Intake (ft-bmp)	34.69	Purge Method	Low-Flow
Purge End	12:58	Volumes Purged		Sample ID	MWF16-25
Sample Time	12:58	Gallons Purged		Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	1.8
				Purge Equipment	Peristaltic
				Sampled by	Samantha Hindle
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:20	0	0	100	26.10	--	7.28	0.487	22.7	3.5	18.4	77.2	--	--
12:25	5	5	100	26.10	--	7.31	0.485	8.61	3.72	18.2	76	--	--
12:30	5	10	100	26.10	--	7.32	0.485	8.12	2.81	17.9	74.9	--	--
12:35	5	15	100	26.10	--	7.31	0.484	8.1	3.51	16.4	77.4	--	--
12:40	5	20	100	26.10	--	7.32	0.489	0.02	3.24	16.5	77.7	--	--
12:45	5	25	100	26.10	--	7.32	0.491	0.02	2.94	16.2	78.4	--	--
12:50	5	30	100	26.10	--	7.31	0.494	0.02	2.96	16.4	79.2	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: Fiero South	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MWF7-02	Date	06/07/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	66.2 degrees F and Cloudy. The wind is blowing N/NW at 12.8 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	19.42	Total Depth (ft-bmp)	22.62	Water Column (ft)	3.2
Purge Start	13:23	Pump Intake (ft-bmp)	20.12	Purge Method	Low-Flow
Purge End	14:21	Volumes Purged		Sample ID	MWF7-02
Sample Time	14:11	Gallons Purged	0.00	Replicate/ Code No.	MS/MSD
				Well Casing Material	PVC
				Gallons in Well	0.52
				Purge Equipment	Peristaltic
				Sampled by	Samantha Hindle
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:26	0	0	150	19.42	--	7.28	0.66	0.02	3.3	16.5	6.7	--	--
13:31	5	5	150	19.42	--	7.23	0.75	0.02	2.58	16.2	11.7	--	--
13:36	5	10	150	19.42	--	7.25	0.75	0.02	2.61	16.5	13	--	--
13:41	5	15	150	19.42	--	7.25	0.75	0.02	3.03	16.5	16.1	--	--
13:46	5	20	150	19.42	--	7.25	0.76	0.02	2.87	16.6	17	--	--
13:51	5	25	150	19.42	--	7.24	0.76	0.02	2.66	15.3	20.8	--	--
13:56	5	30	150	19.42	--	7.25	0.75	0.02	2.41	15.6	22	--	--
14:01	5	35	150	19.42	--	7.24	0.76	0.02	2.39	15.8	25.6	--	--
14:06	5	40	150	19.42	--	7.24	0.77	0.02	2.35	15.4	27.1	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	9	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: Fiero South	Well Locked at Arrival: yes
Condition of Well: Missing bolts	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MWOS-08	Date	06/08/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	62.6 degrees F and Mostly Cloudy. The wind is blowing W at 5.8 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	26.07	Total Depth (ft-bmp)	28.8	Water Column (ft)	2.73
Purge Start	11:44	Pump Intake (ft-bmp)	26.3	Purge Method	Low-Flow
Purge End	12:29	Volumes Purged		Sample ID	MWOOS-08_GW-060823
Sample Time	12:20	Gallons Purged	0.00	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	0.44
				Purge Equipment	Peristaltic
				Sampled by	Sierra Sider
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:48	0	0	150	26.07	--	7.3	0.73	0.13	5.8	18	167.5	--	--
11:53	5	5	150	26.07	--	7.32	0.72	0.36	3.71	19.5	170.2	--	--
11:58	5	10	150	26.07	--	7.33	0.73	0.12	3.1	20.5	172.3	--	--
12:03	5	15	150	26.07	--	7.32	0.72	0.02	3.12	16.8	176.3	--	--
12:08	5	20	150	26.07	--	7.32	0.72	0.04	2.53	16.3	176.3	--	--
12:13	5	25	150	26.07	--	7.32	0.71	0.35	2.43	16.2	176.3	--	--
12:18	5	30	150	26.07	--	7.33	0.71	0.02	2.39	16.4	175.3	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	50 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: Kennett street	Well Locked at Arrival: yes
Condition of Well: Missing bolts	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MWOS-09R	Date	06/08/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	53.6 degrees F and Haze. The wind is blowing NW at 3.4 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	27.33	Total Depth (ft-bmp)	32.25	Water Column (ft)	4.92
Purge Start	10:17	Pump Intake (ft-bmp)	29.75	Purge Method	Low-Flow
Purge End	11:18	Volumes Purged		Sample ID	MWOS-09R_GW060823
Sample Time	11:10	Gallons Purged	0.00	Replicate/ Code No.	DUP-03_GW060823
				Well Casing Material	PVC
				Gallons in Well	0.8
				Purge Equipment	Peristaltic
				Sampled by	Sierra Sider
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:22	0	0	150	27.33	--	7.23	0.85	2.24	4.47	16.2	171.8	--	--
10:36	14	14	150	27.33	--	7.24	0.85	1.72	0.79	16	162.5	--	--
10:42	6	20	150	27.33	--	7.25	0.85	1.4	0.63	16	153.8	--	--
10:47	5	25	150	27.33	--	7.25	0.84	1.42	0.48	15.8	149.6	--	--
10:52	5	30	150	27.33	--	7.24	0.84	1.3	0.45	16.1	146.2	--	--
10:58	6	36	150	27.33	--	7.24	0.84	0.86	0.56	16.3	144.8	--	--
11:04	6	42	150	27.33	--	7.25	0.84	0.57	0.54	16.4	145	--	--
11:09	5	47	150	27.33	--	7.25	0.85	0.55	0.51	16.4	144.2	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	50 mL Glass	6	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: Kenneth street	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	MWOS-10	Date	06/12/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	53.6 degrees F and Cloudy. The wind is blowing NW at 11.4 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
Static Water Level (ft-bmp)	28.53	Total Depth (ft-bmp)	32.77	Water Column (ft)	4.24
Purge Start	11:31	Pump Intake (ft-bmp)	30.27	Purge Method	Low-Flow
Purge End	12:35	Volumes Purged		Sample ID	MWOS-10_GW-061223
Sample Time	12:33	Gallons Purged	0.00	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	0.69
				Purge Equipment	Submersible
				Sampled by	Samantha Hindle
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:32	0	0	300	28.58	--	7.24	0.72	1030	2.1	14.2	106	--	--
11:37	5	5	300	28.57	--	7.28	0.71	776	1.78	14.3	83.9	--	--
11:42	5	10	300	28.57	--	7.27	0.72	465	1.71	14.4	79.8	--	--
11:47	5	15	300	28.57	--	7.27	0.72	247	1.63	14.5	71.8	--	--
11:52	5	20	300	28.57	--	7.27	0.73	143	1.57	14.5	64.4	--	--
11:57	5	25	300	28.57	--	7.27	0.73	71.4	1.57	14.4	56.4	--	--
12:02	5	30	300	28.57	--	7.27	0.73	47.5	1.53	14.5	50.4	--	--
12:07	5	35	300	28.57	--	7.27	0.73	38.1	1.43	14.5	44.9	--	--
12:12	5	40	300	28.57	--	7.27	0.73	14.2	1.41	14.5	36.2	--	--
12:17	5	45	300	28.57	--	7.27	0.73	10.3	1.4	14.5	31.4	--	--
12:22	5	50	300	28.57	--	7.27	0.73	15.7	1.4	14.7	27.4	--	--
12:27	5	55	300	28.57	--	7.27	0.73	7.4	1.47	14.8	23.1	--	--
12:32	5	60	300	28.57	--	7.27	0.74	3.59	1.47	14.6	21.4	Orange	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: Fiero South	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	TW-12-22	Date	06/08/2023
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	71.6 degrees F and Mostly Cloudy. The wind is blowing N/NW at 12.8 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	1
Static Water Level (ft-bmp)	22.96	Total Depth (ft-bmp)	37.7	Water Column (ft)	14.74
Purge Start	16:31	Pump Intake (ft-bmp)	32.75	Purge Method	Low-Flow
Purge End	17:37	Volumes Purged		Sample ID	TW-12-22
Sample Time	17:35	Gallons Purged	0.00	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	0.6
				Purge Equipment	Peristaltic
				Sampled by	Samantha Hindle
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
16:32	0	0	150	23.11	--	7.67	0.405	362	0.01	18	-81.6	--	--
16:37	5	5	150	23.01	--	7.7	0.406	765	0.01	17.6	-98	--	--
16:42	5	10	150	23.01	--	7.71	0.405	327	0.4	16.4	-109.2	--	--
16:47	5	15	130	23.01	--	7.66	0.411	129	0.47	17.1	-102.7	--	--
16:52	5	20	130	23.01	--	7.6	0.418	73.4	1.1	17.3	-88.1	--	--
16:57	5	25	130	23.01	--	7.6	0.42	54.6	0.99	17.1	-87.5	--	--
17:02	5	30	130	23.01	--	7.58	0.423	48.5	0.91	16.9	-83.8	--	--
17:07	5	35	130	23.01	--	7.56	0.425	32.2	0.86	16.8	-80.6	--	--
17:12	5	40	130	23.01	--	7.56	0.425	30.8	0.85	17.1	-78.6	--	--
17:17	5	45	130	23.01	--	7.56	0.428	25.2	0.87	17.1	-76.3	--	--
17:22	5	50	130	23.01	--	7.54	0.427	22.7	0.8	17.2	-73.9	--	--
17:27	5	55	130	23.01	--	7.54	0.429	18.9	0.84	17.4	-72.8	--	--
17:32	5	60	130	23.01	--	7.54	0.428	20.4	0.8	17.6	-72.8	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments: Tubing stuck on screen would not lower more

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: GFL fiero	Well Locked at Arrival: no
Condition of Well: Fair condition	Well Locked at Departure: no
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30167840	Well ID	UNKNOWN-01	Date	06/07/2023		
Project Name/Location	RACER Pontiac North Campus 2023		Weather(°F)	69.8 degrees F and Mostly Cloudy. The wind is blowing NE at 10.3 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	18.57	Total Depth (ft-bmp)	24.06	Water Column (ft)	5.49	Gallons in Well	0.89
Purge Start	14:42	Pump Intake (ft-bmp)	21.56	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	15:23	Volumes Purged		Sample ID	UNKNOWN-01_GW-060723	Sampled by	Samantha Hindle
Sample Time	15:20	Gallons Purged	0.00	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:43	0	0	150	18.64	--	6.92	1.26	0.02	2.82	16	56.3	--	--
14:48	5	5	150	18.64	--	6.94	1.25	0.02	2.13	16.6	56.7	--	--
14:53	5	10	150	18.64	--	6.94	1.25	0.02	2.07	17.2	57.5	--	--
14:58	5	15	150	18.64	--	6.94	1.26	0.02	1.94	16.4	59.2	--	--
15:03	5	20	150	18.64	--	6.94	1.24	0.02	1.81	16.4	60	--	--
15:08	5	25	150	18.64	--	6.95	1.24	0.02	1.7	16.6	61	--	--
15:13	5	30	150	18.64	--	6.95	1.24	0.02	1.69	16.6	61.6	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: South fiero	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Attachment 3

Groundwater and Soil Vapor

Stability Analysis

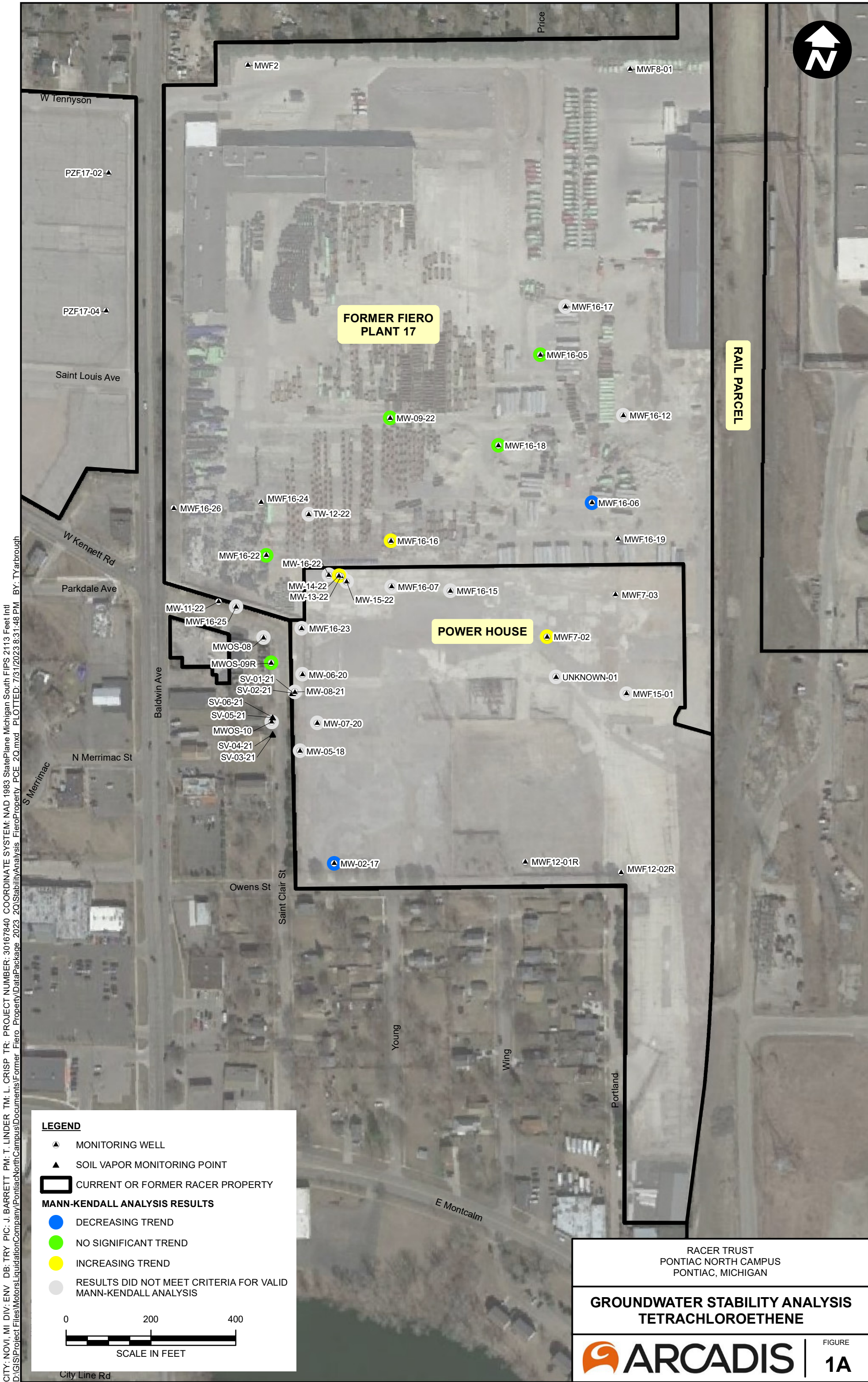
TABLE 3-1
Groundwater Summary Statistics and Trend Results
Racer Trust Pontiac North Campus
Pontiac, MI

Well ID	Analyte	Date Range	Figure	FOD	Detected Results Summary ¹				Mann-Kendall Test ²				Sen's Estimator of Slope ²			
					Range	Mean	Median	SD	Result ⁴	MK Result Note	P-Value	S Value	Result ⁴	Sen's Result Note	Slope (Units/Day)	95% CI (Units/Day)
MW-02-17	Tetrachloroethene	04/17 - 06/23	3-1	13 / 14	3 - 12	7	7	3.1	DWN	--	0.049	-31	NT	--	-0.00222	-0.00407 to 0
MW-02-17	Trichloroethene	04/17 - 06/23	3-2	13 / 14	1 - 7	3.2	2	1.8	UP	--	0.078	25	NT	--	0.000505	0 to 0.00182
MW-05-18	cis-1,2-Dichloroethene	10/18 - 06/23	3-3	12 / 12	3 - 15	9.7	11	3.3	NST	--	0.444	-3	NST	--	0	-0.00438 to 0.00448
MW-06-20	cis-1,2-Dichloroethene	09/20 - 06/23	3-4	12 / 12	4 - 10	6.8	7	1.5	NST	--	0.416	-4	NST	--	0	-0.00236 to 0.00352
MW-06-20	Trichloroethene	09/20 - 06/23	3-5	12 / 12	7 - 14	9.8	9	2.2	UP	--	0.010	34	UP	--	0.00385	0.000474 to 0.00756
MW-07-20	cis-1,2-Dichloroethene	08/20 - 06/23	3-6	9 / 9	7 - 15	11.4	12	2.8	NST	--	0.344	-5	NST	--	-0.00259	-0.00844 to 0.00535
MW-07-20	Trichloroethene	08/20 - 06/23	3-7	9 / 9	2 - 3	2.3	2	0.5	NST	--	0.381	-4	NT	--	0	-0.000454 to 0
MW-08-21	cis-1,2-Dichloroethene	06/21 - 06/23	3-8	8 / 9	3 - 12	8.4	10.5	3.7	NST	--	0.500	-1	NST	--	0	-0.0156 to 0.00722
MW-08-21	Trichloroethene	06/21 - 06/23	3-9	9 / 9	9 - 12	10.2	10	0.97	NST	--	0.238	8	NST	--	0.000679	-0.000772 to 0.00483
MW-09-22	Tetrachloroethene	01/22 - 06/23	3-10	7 / 7	48 - 195	116	122	53.6	NST	5a	0.386	3	NST	5a	0.133	-0.274 to 0.549
MW-09-22	Trichloroethene	01/22 - 06/23	3-11	6 / 7	1 - 4	3	3.5	1.3	NST	5a	0.155	8	NST	5a	0.00288	-0.00236 to 0.00912
MW-14-22	cis-1,2-Dichloroethene	03/22 - 06/23	3-12	6 / 6	5 - 14	10.3	11	3.4	NST	5a	0.235	-5	NST	5a	-0.0114	-0.0323 to 0.0103
MW-14-22	Tetrachloroethene	03/22 - 06/23	3-13	6 / 6	52 - 212	103	93.5	56.6	UP	5a	0.001	15	UP	5a	0.196	0.120 to 0.388
MW-14-22	Trichloroethene	03/22 - 06/23	3-14	6 / 6	12 - 22	17	17	3.5	NST	5a	0.136	7	NST	5a	0.0162	-0.0133 to 0.0264
MWF16-05	Tetrachloroethene	10/17 - 06/23	3-15	10 / 10	12 - 730	506	515	203	NST	--	0.108	15	NST	--	0.216	-0.0754 to 0.369
MWF16-05	Trichloroethene	10/17 - 06/23	3-16	8 / 10	3 - 40	25.8	30	10.9	NST	--	0.271	-8	NST	--	-0.000731	-0.0324 to 0.00913
MWF16-06	cis-1,2-Dichloroethene	04/17 - 06/23	3-17	11 / 11	12 - 150	47.2	28	43.4	NST	--	0.438	-3	NST	--	-0.00441	-0.0821 to 0.0118
MWF16-06	Tetrachloroethene	04/17 - 06/23	3-18	11 / 11	36 - 127	68.9	66	26.8	DWN	--	0.081	-19	NST	--	-0.0268	-0.0759 to 0.000817
MWF16-06	Trichloroethene	04/17 - 06/23	3-19	11 / 11	5 - 30	13.5	11	7.8	DWN	--	0.036	-24	DWN	--	-0.00395	-0.0173 to -0.000998
MWF16-15	cis-1,2-Dichloroethene	04/17 - 06/23	3-20	7 / 7	1 - 15	7.4	5	5.4	NST	5a	0.563	0	NST	5a	0	-0.00657 to 0.00552
MWF16-15	Trichloroethene	04/17 - 06/23	3-21	6 / 7	2 - 4	2.7	2.5	0.82	UP	5a	0.035	13	NT	5a	0.000896	0 to 0.00314
MWF16-16	cis-1,2-Dichloroethene	10/17 - 06/23	3-22	9 / 12	2 - 20	13.8	15	6.6	NST	--	0.444	3	NST	--	0	-0.00853 to 0.0104
MWF16-16	Tetrachloroethene	10/17 - 06/23	3-23	12 / 12	14 - 490	294	275	138	UP	--	0.064	23	NT	--	0.148	0 to 0.194
MWF16-16	Trichloroethene	10/17 - 06/23	3-24	7 / 12	4 - 20	11.1	10	6.1	NST	--	0.443	3	NST	--	0	-0.00359 to 0.00755
MWF16-18	cis-1,2-Dichloroethene	03/21 - 06/23	3-25	9 / 9	20 - 110	68.9	70	28.9	UP	--	0.002	27	UP	--	0.107	0.0563 to 0.113
MWF16-18	Tetrachloroethene	03/21 - 06/23	3-26	9 / 9	740 - 1350	1120	1150	195	NST	--	0.460	-2	NST	--	-0.133	-0.532 to 0.419
MWF16-18	Trichloroethene	03/21 - 06/23	3-27	9 / 9	10 - 20	18.9	20	3.3	NST	--	0.238	8	NT	--	0	0 to 0
MWF16-22	cis-1,2-Dichloroethene	09/20 - 06/23	3-28	7 / 7	5 - 14	8.7	9	3	UP	5a	0.052	12	UP	5a	0.00680	0.000135 to 0.0141
MWF16-22	Tetrachloroethene	09/20 - 06/23	3-29	7 / 7	69 - 82	75.9	76	4.1	NST	5a	0.334	4	NST	5a	0.00385	-0.00729 to 0.00775
MWF16-22	Trichloroethene	09/20 - 06/23	3-30	7 / 7	2 - 3	2.1	2	0.38	NST	5a	0.236	6	NT	5a	0	0 to 0
MWF16-23	cis-1,2-Dichloroethene	10/17 - 06/23	3-31	15 / 15	2 - 21	9.9	11	5.1	NST	--	0.167	-20	NT	--	-0.00330	-0.00928 to 0
MWF16-23	Trichloroethene	10/17 - 06/23	3-32	15 / 15	9 - 23	17.7	17	3.7	NST	--	0.500	-1	NST	--	0	-0.00545 to 0.00265
MWF16-25	cis-1,2-Dichloroethene	10/18 - 06/23	3-33	12 / 12	5 - 43	20.8	14	14.6	UP	--	<0.001	58	UP	--	0.0306	0.0205 to 0.0407
MWF7-02	cis-1,2-Dichloroethene	04/17 - 06/23	3-34	11 / 11	1 - 3	2.4	2	0.67	DWN	--	0.028	-23	NT	--	-0.000488	-0.00103 to 0
MWF7-02	Tetrachloroethene	04/17 - 06/23	3-35	11 / 11	26 - 115	69	77	30	UP	--	0.001	40	UP	--	0.0357	0.0241 to 0.0445
MWF7-02	Trichloroethene	04/17 - 06/23	3-36	11 / 11	3 - 5	3.6	4	0.67	UP	--	0.058	19	NT	--	0	0 to 0.000787
MWOS-08	cis-1,2-Dichloroethene	09/20 - 06/23	3-37	11 / 11	1 - 6	3.4	4	1.5	NST	--	0.286	-8	NST	--	0	-0.00381 to 0.00118
MWOS-09R	cis-1,2-Dichloroethene	11/21 - 06/23	3-38	8 / 8	20 - 28	24.5	24	3.2	NST	--	0.452	2	NST	--	0	-0.0145 to 0.0158
MWOS-09R	Tetrachloroethene	11/21 - 06/23	3-39	8 / 8	10 - 17	13	13	2.3	NST	--	0.360	4	NST	--	0.00278	-0.00807 to 0.0128
MWOS-09R	Trichloroethene	11/21 - 06/23	3-40	8 / 8	3 - 5	3.5	3	0.76	DWN	--	0.043	-15	NT	--	-0.00246	-0.00496 to 0
MWOS-10	cis-1,2-Dichloroethene	11/21 - 06/23	3-41	8 / 8	4 - 9	6.5	6.5	1.9	NST	--	0.452	-2	NST	--	0	-0.0120 to 0.00629
MWOS-10	Trichloroethene	11/21 - 06/23	3-42	8 / 8	7 - 12	9.1	8.5	2	NST	--	0.317	5	NST	--	0.00360	-0.0102 to 0.00914
TW-12-22	cis-1,2-Dichloroethene	01/22 - 06/23	3-43	6 / 6	32 - 85	56.7	54	18	NST	5a	0.360	-3	NST	5a	-0.0347	-0.0974 to 0.0968
TW-12-22	Trichloroethene	01/22 - 06/23	3-44	6 / 6	5 - 13	7.2	6	2.9	NST	5a	0.430	2	NST	5a	0	-0.00684 to 0.0152

Abbreviations:
-- Insufficient data for calculating statistics (n < 4) or not available
FOD = frequency of detection (# detects / # samples)
mean = arithmetic mean
SD = standard deviation
NST = no significant trend
NT = no trend
DWN = downward trend
UP = upward trend

- Notes:**
1. All analytical results are in micrograms per liter (µg/L).
P-values are reported to 3 decimal places.
2. Trend results are presented when: at least five samples are available and the frequency of detection is greater than or equal to 50%.
3. Non-detects were assigned a common value less than the minimum detected value, equal to half the minimum reporting limit (RL) in the dataset (USEPA, 2009).
If half the minimum RL was greater than the minimum detected value, then half the minimum detect was assigned.
4. Statistically significant trend defined as having p-value ≤ 0.10, or 90% confidence.
5a. MK and Sen's Trend results for datasets with fewer than 8 samples may not be reliable and should be treated with caution.

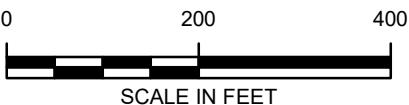
Reference:
USEPA. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities. Unified Guidance. EPA/530/R-09/007, 2009.



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LEGEND

- ▲ MONITORING WELL
- ▲ SOIL VAPOR MONITORING POINT
- ▭ CURRENT OR FORMER RACER PROPERTY
- MANN-KENDALL ANALYSIS RESULTS**
- DECREASING TREND
- NO SIGNIFICANT TREND
- INCREASING TREND
- RESULTS DID NOT MEET CRITERIA FOR VALID MANN-KENDALL ANALYSIS



SCALE IN FEET

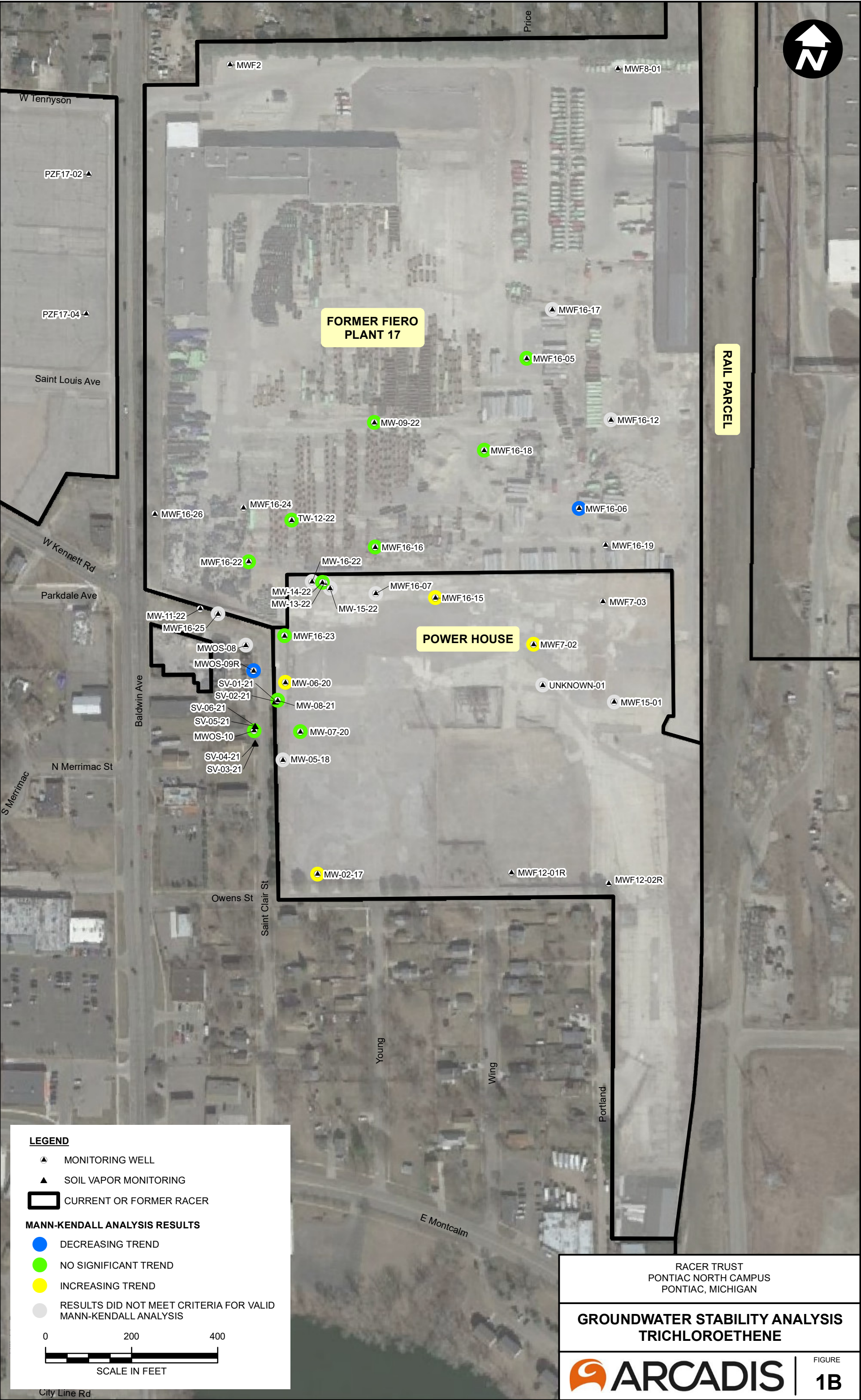
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PONTIAC NORTH CAMPUS
PONTIAC, MICHIGAN

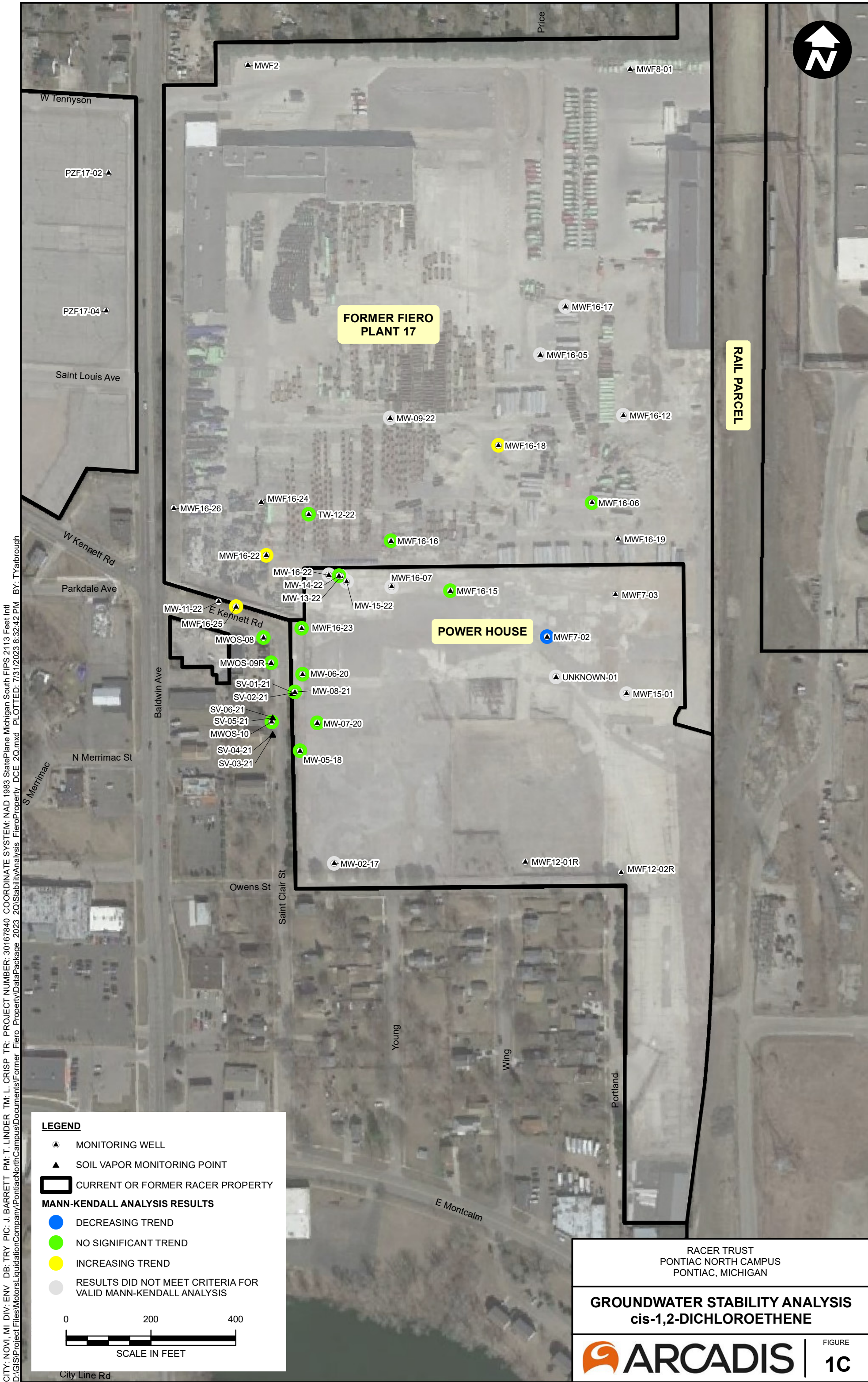
GROUNDWATER STABILITY ANALYSIS
TETRACHLOROETHENE



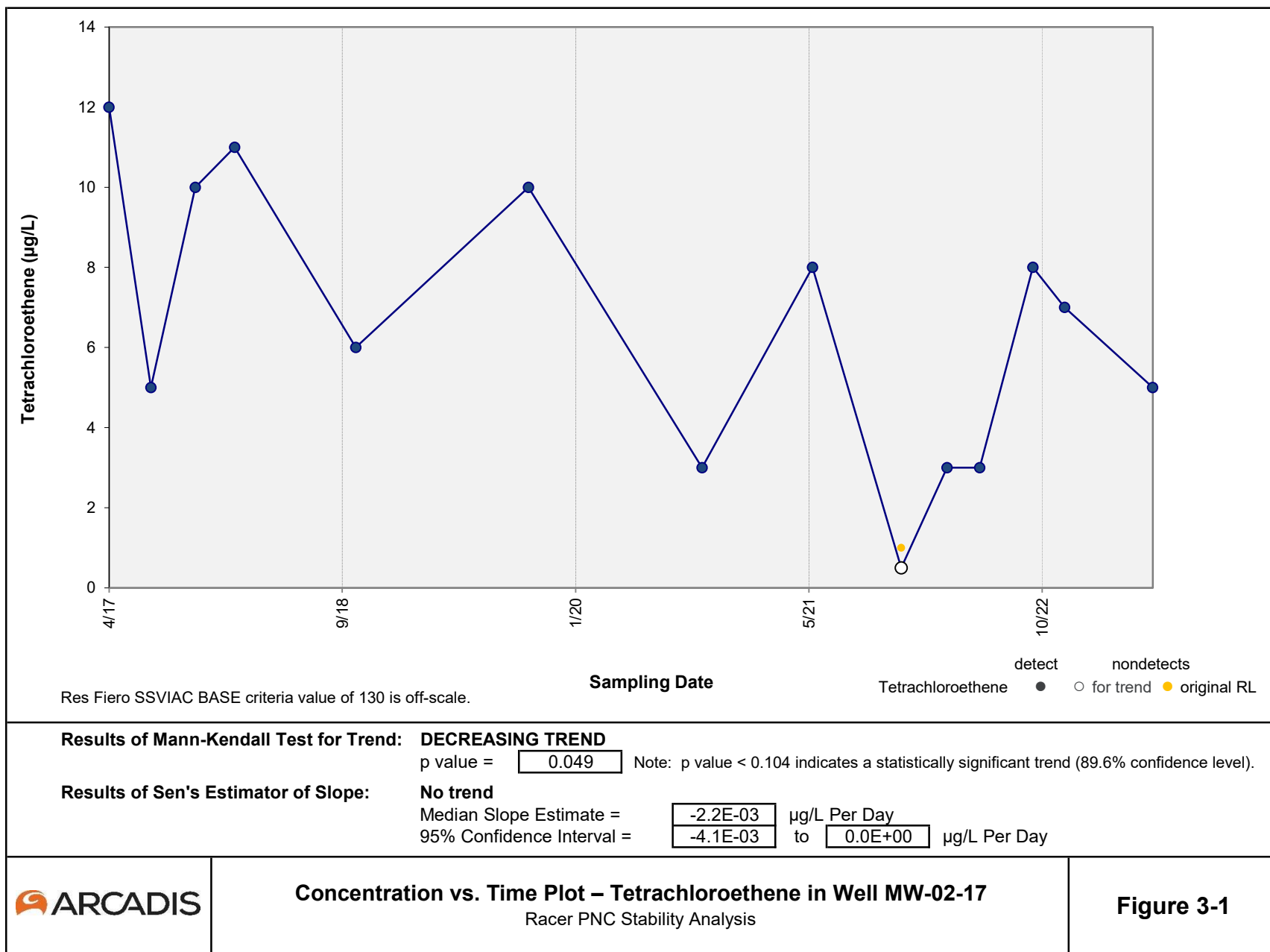
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1A

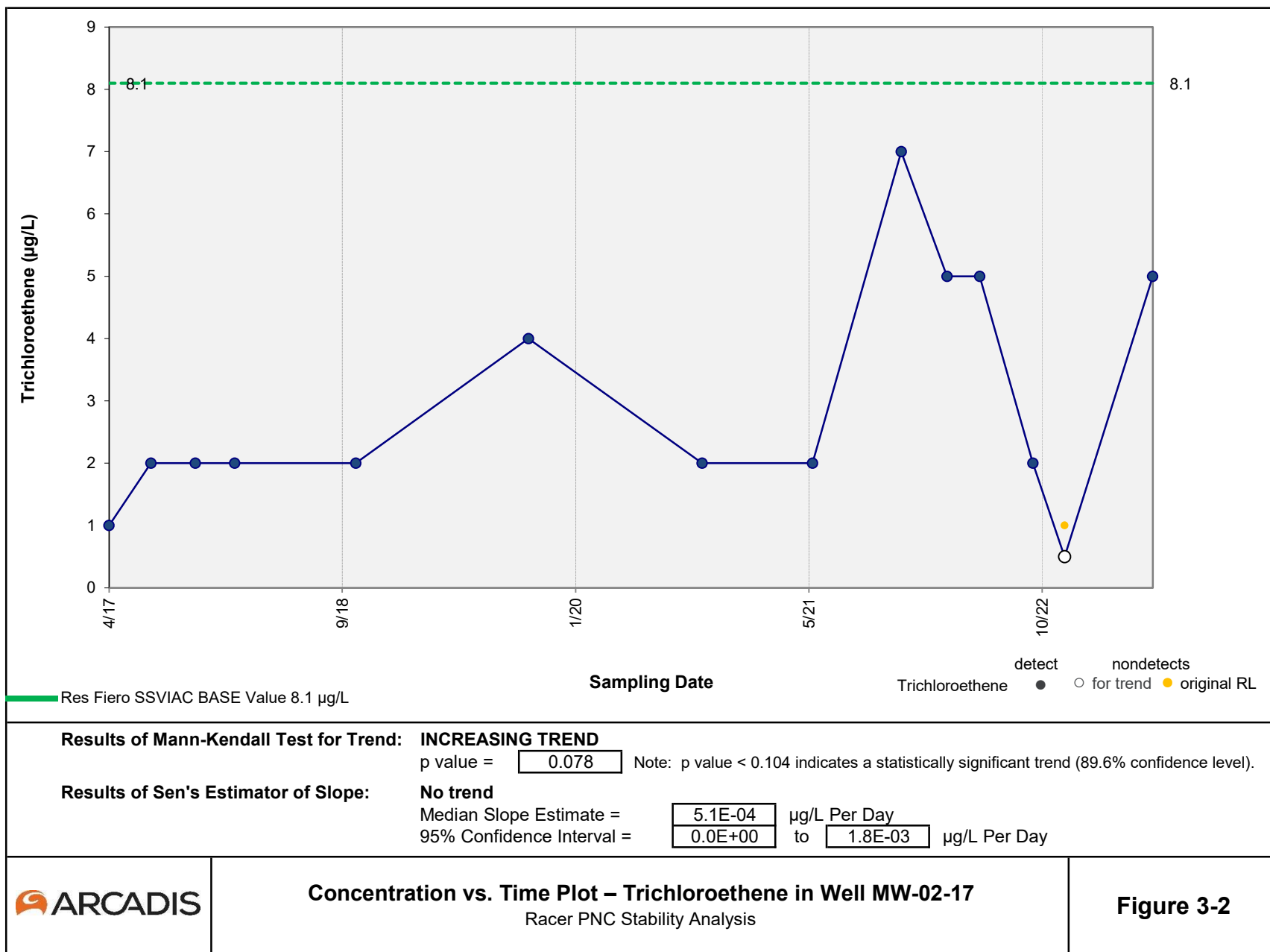
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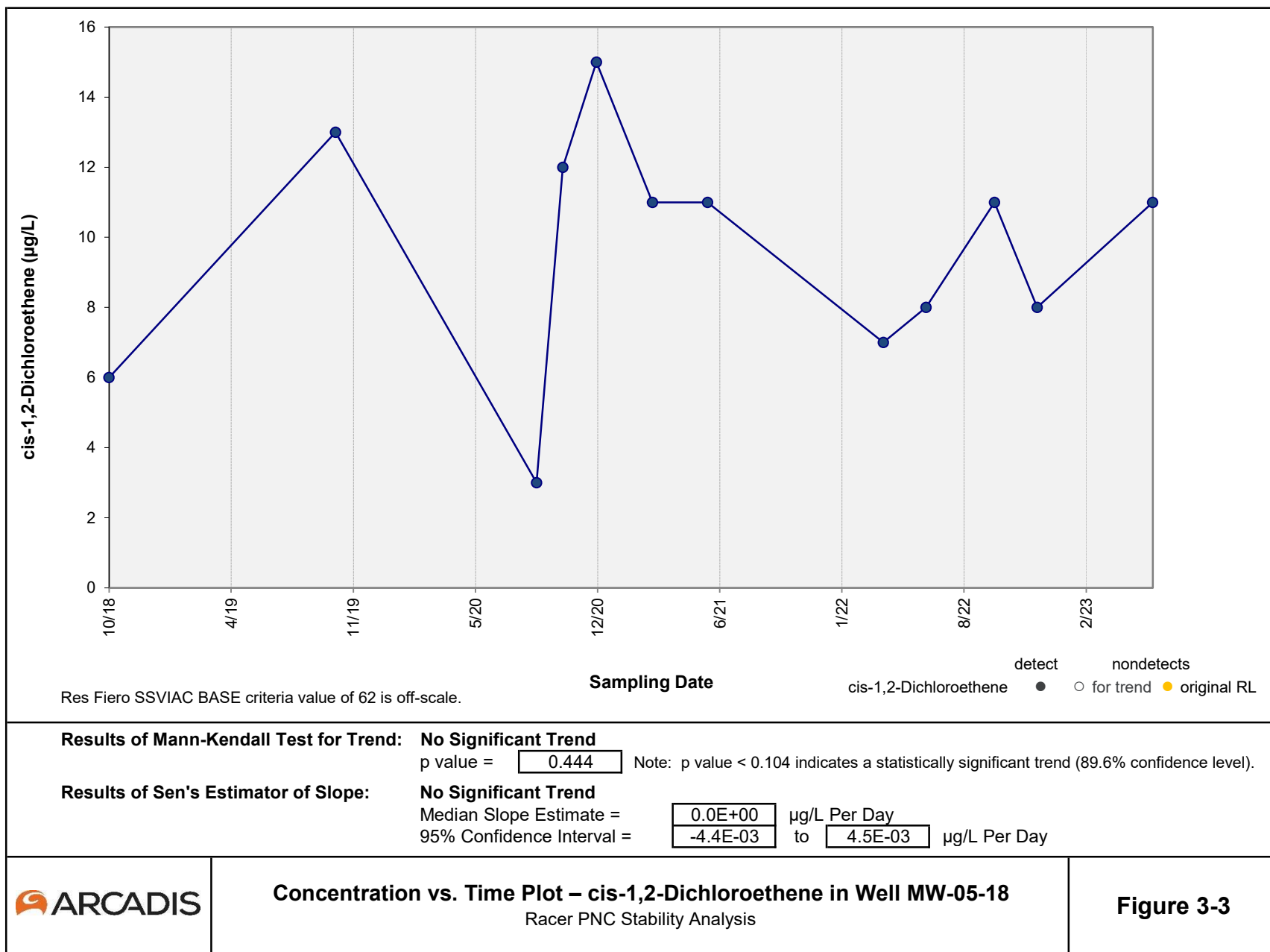


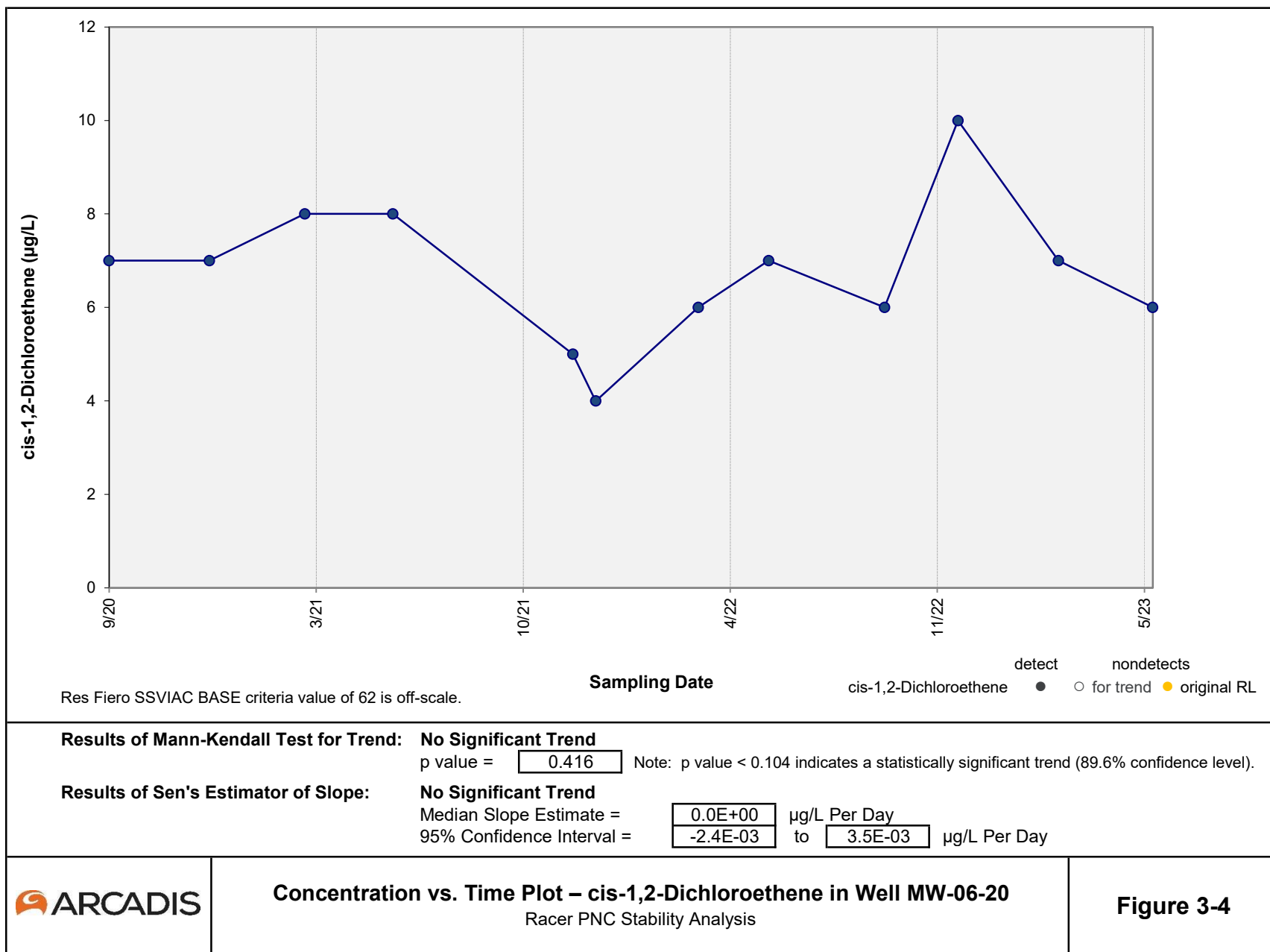


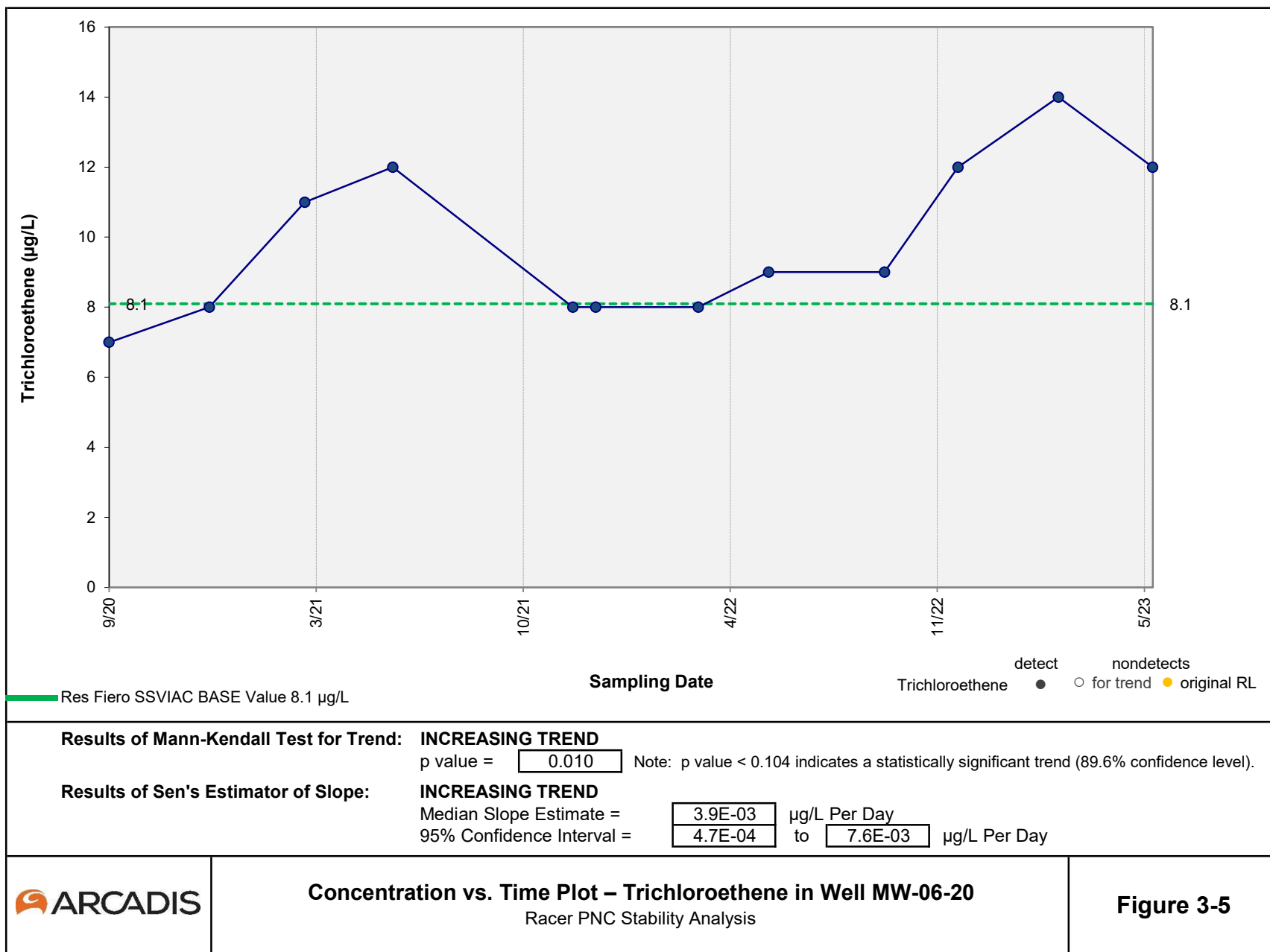
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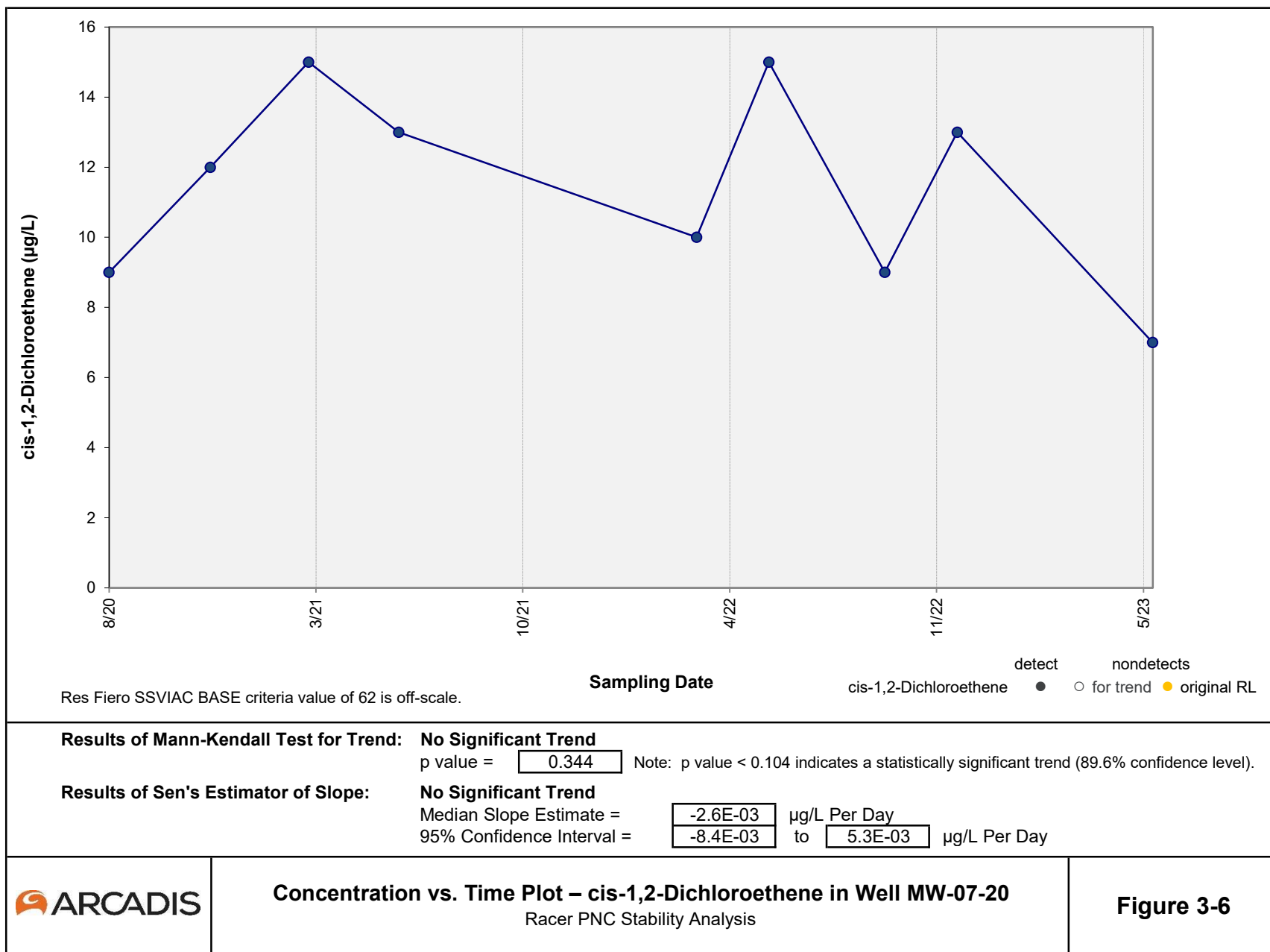


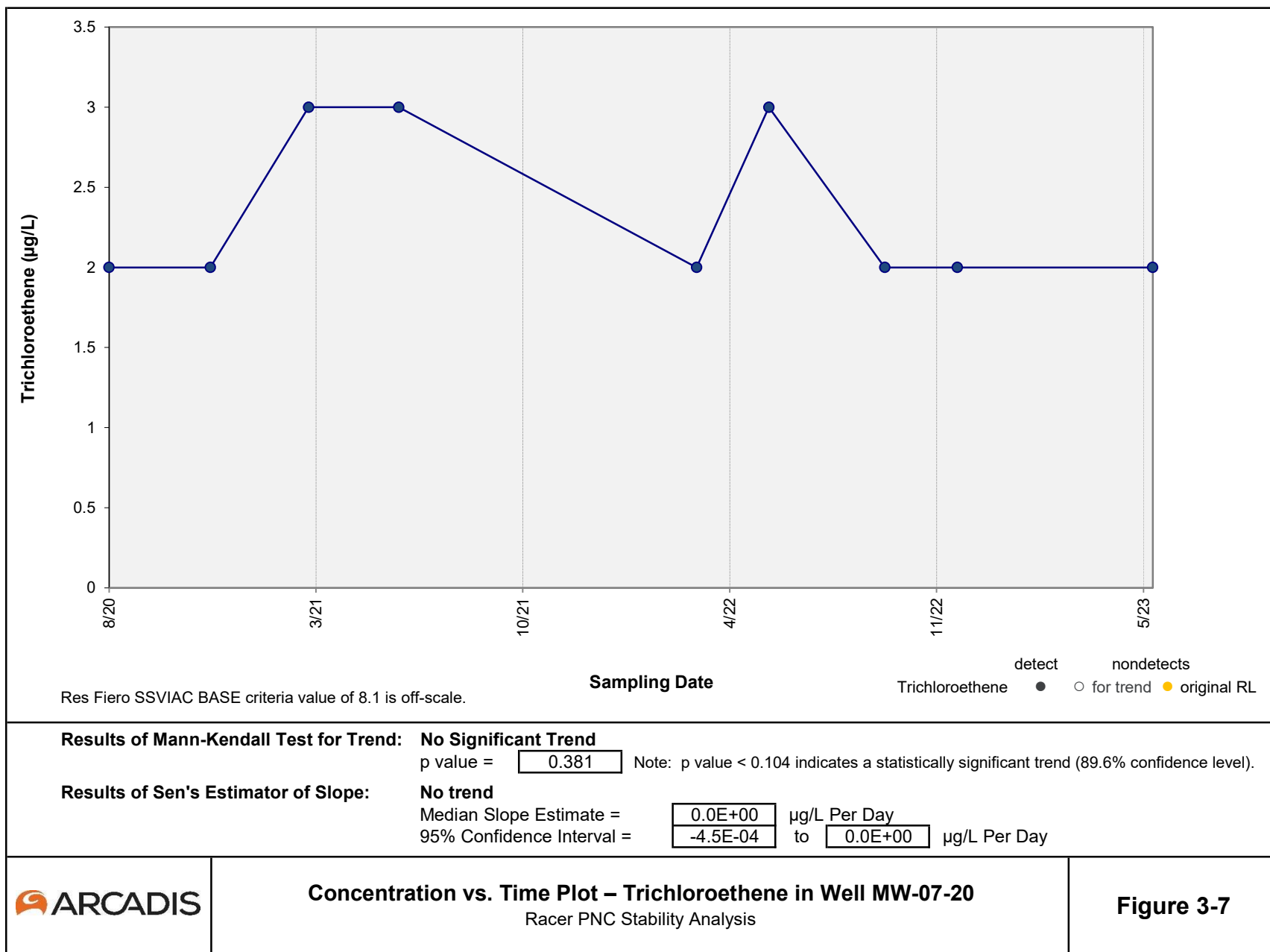


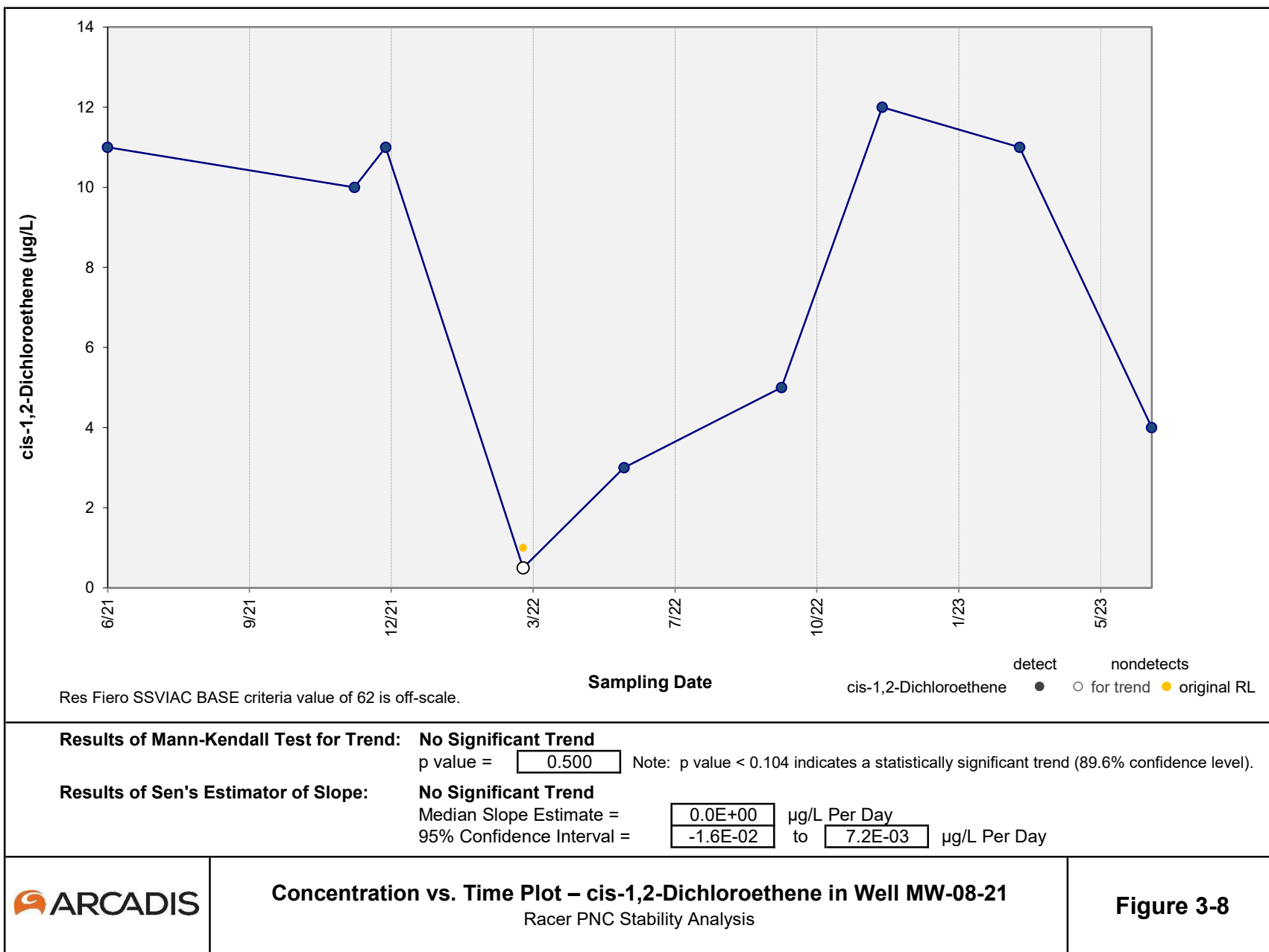


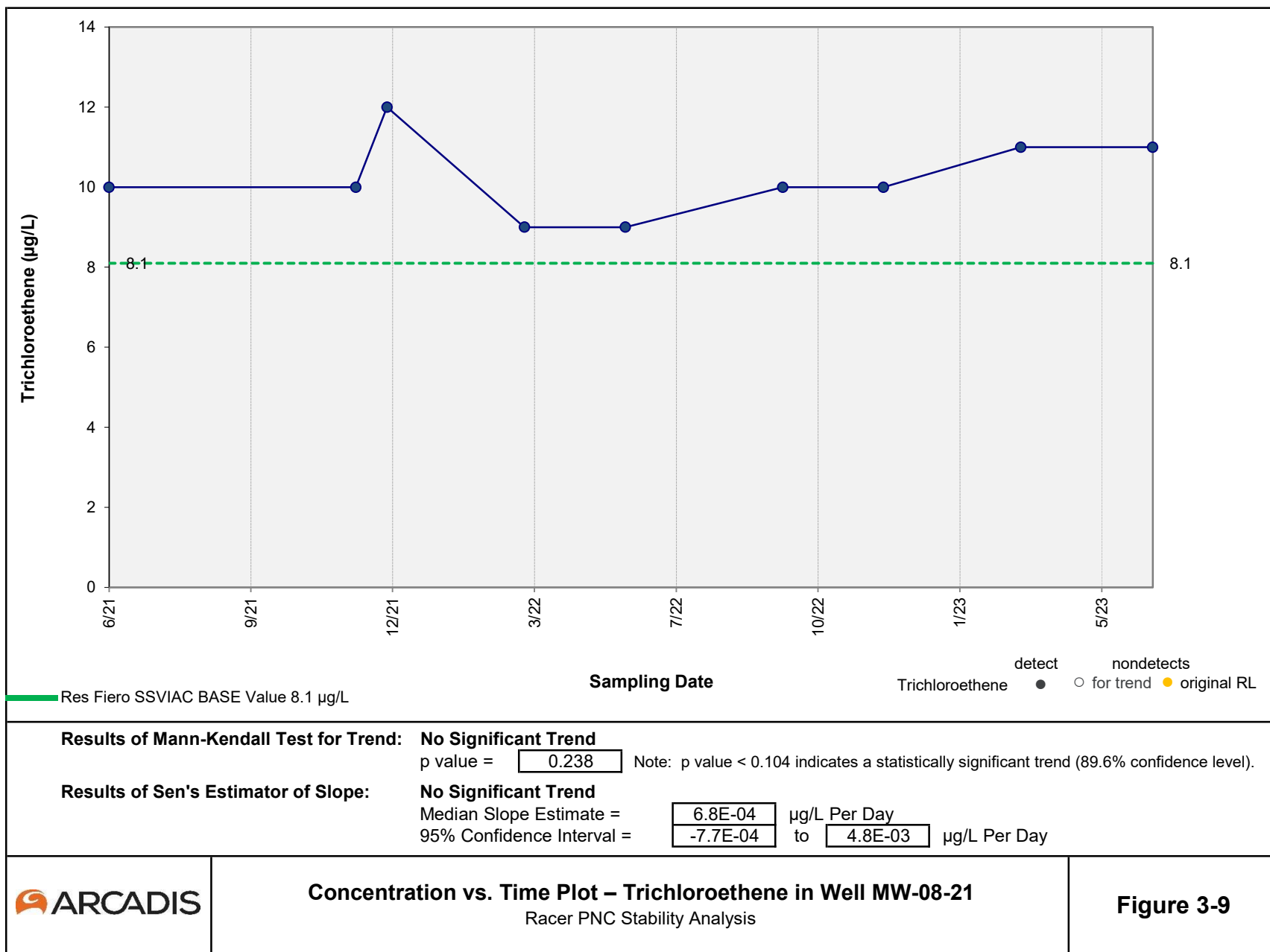


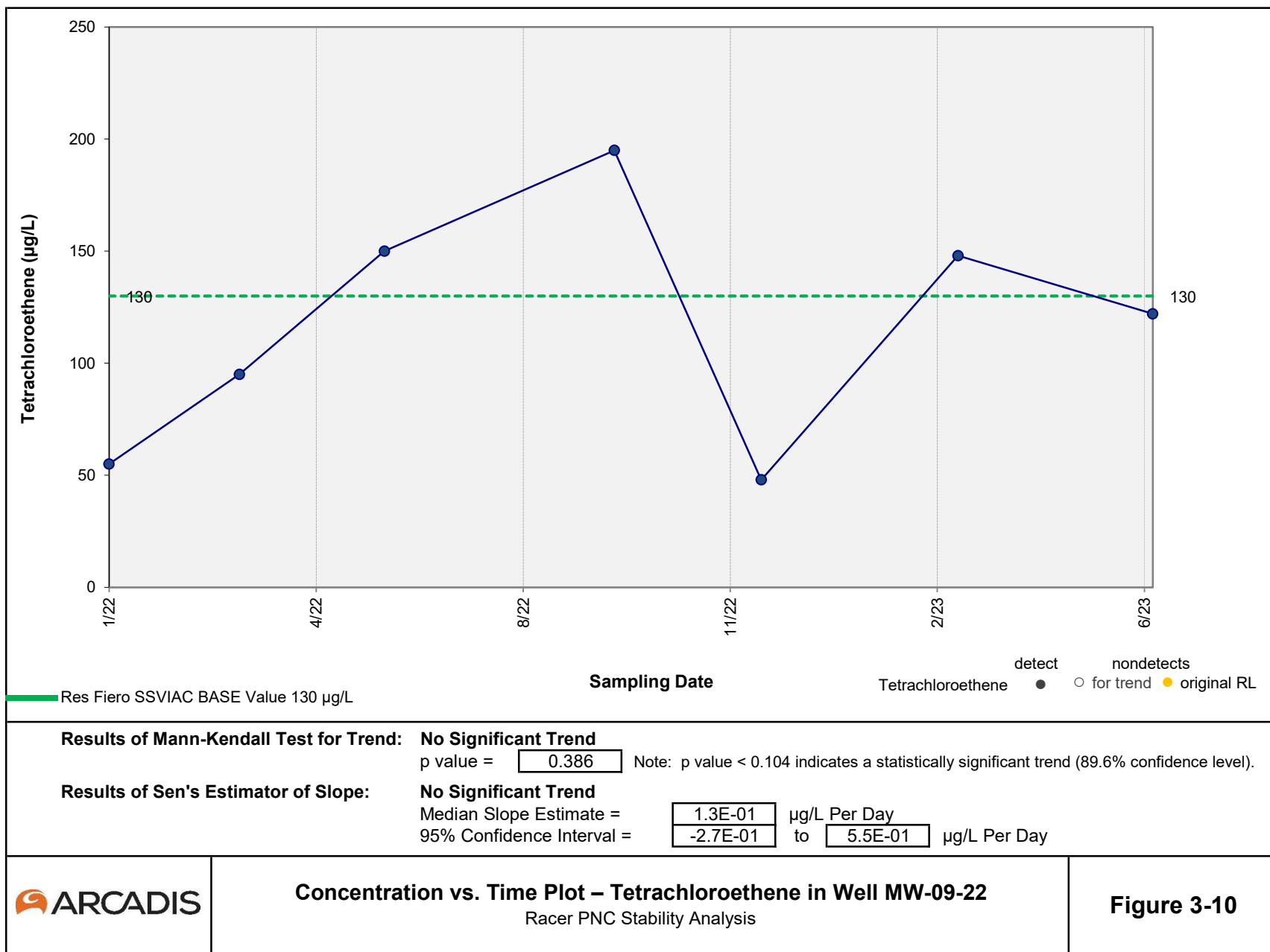


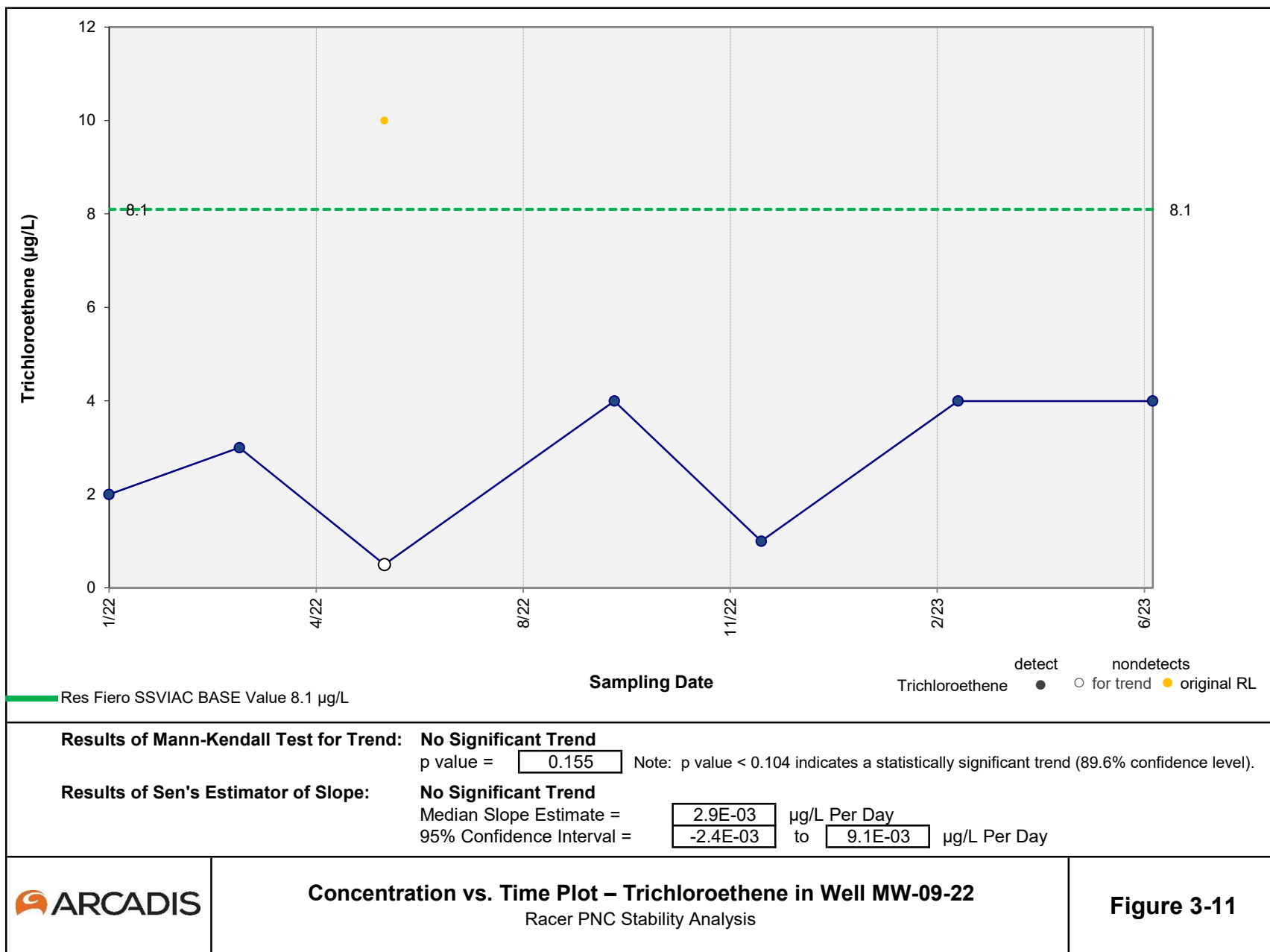


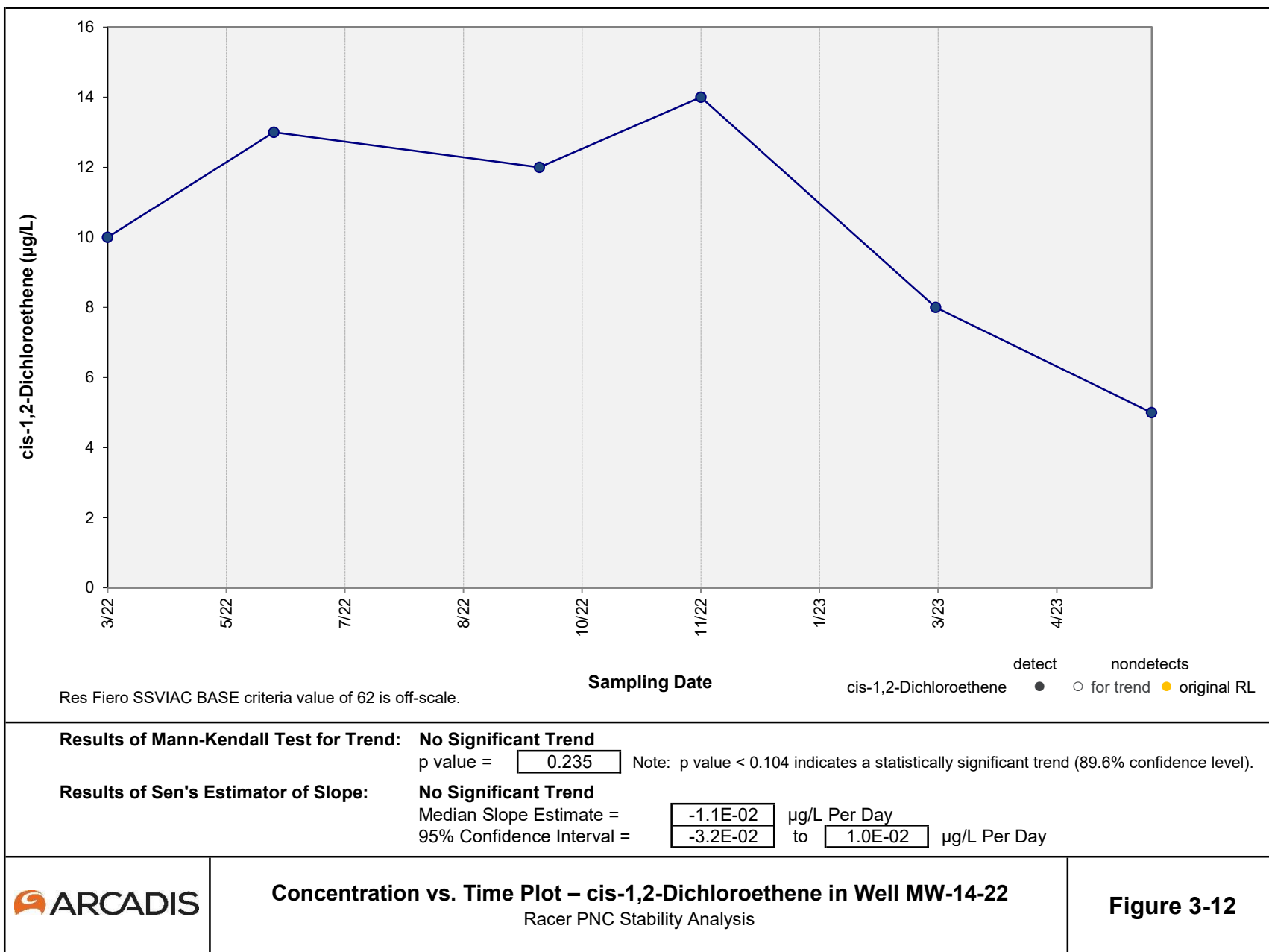


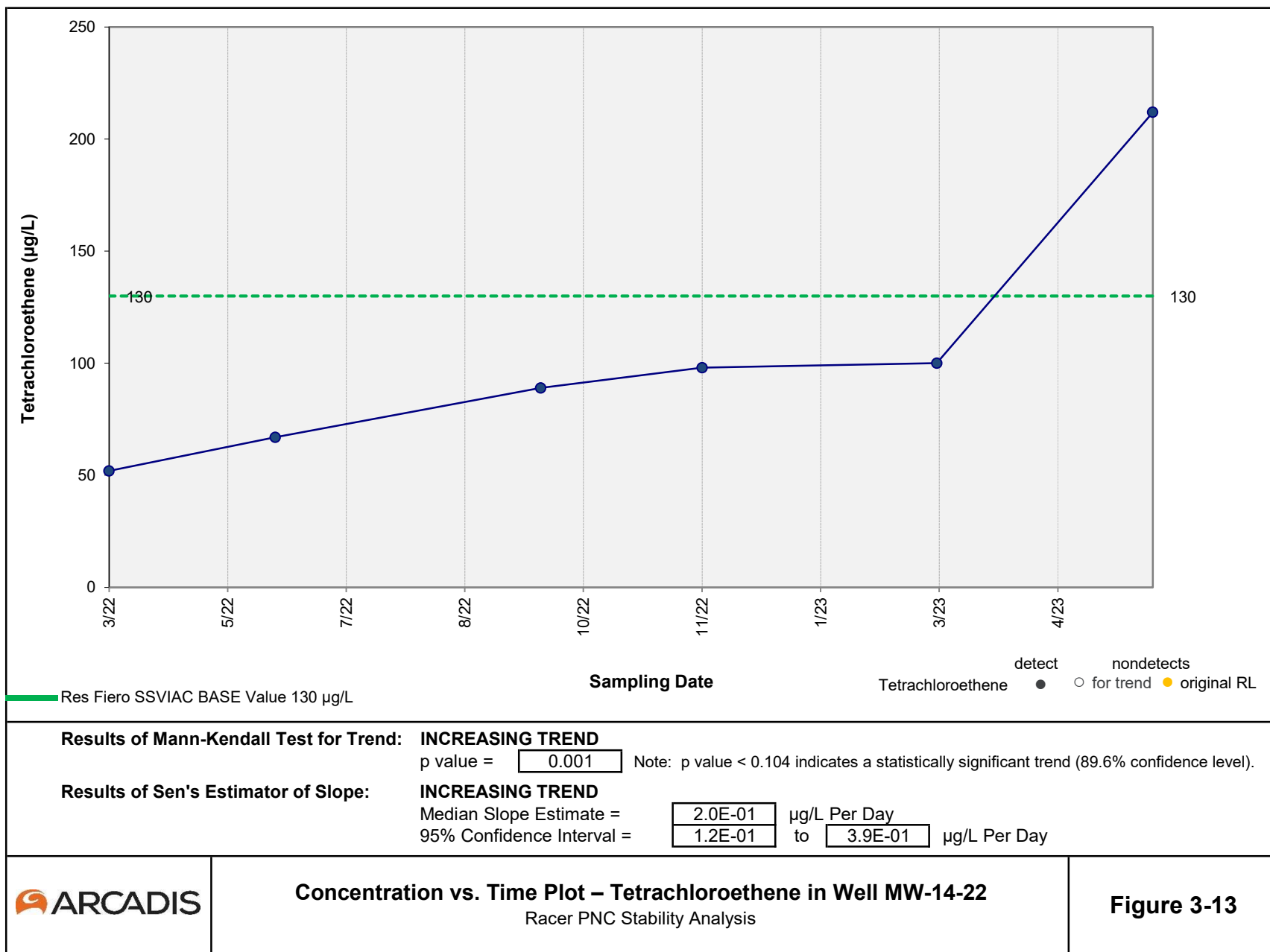


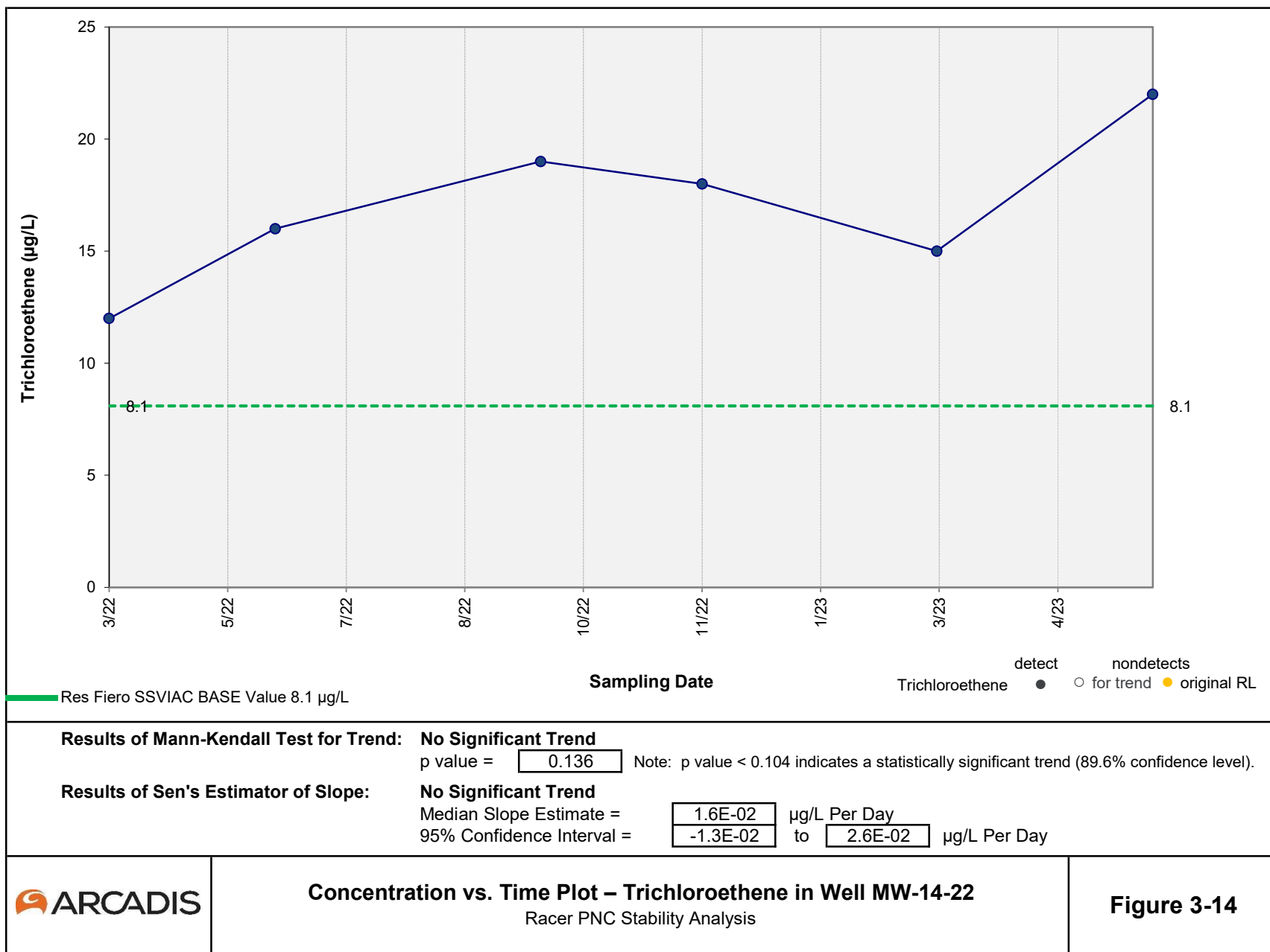


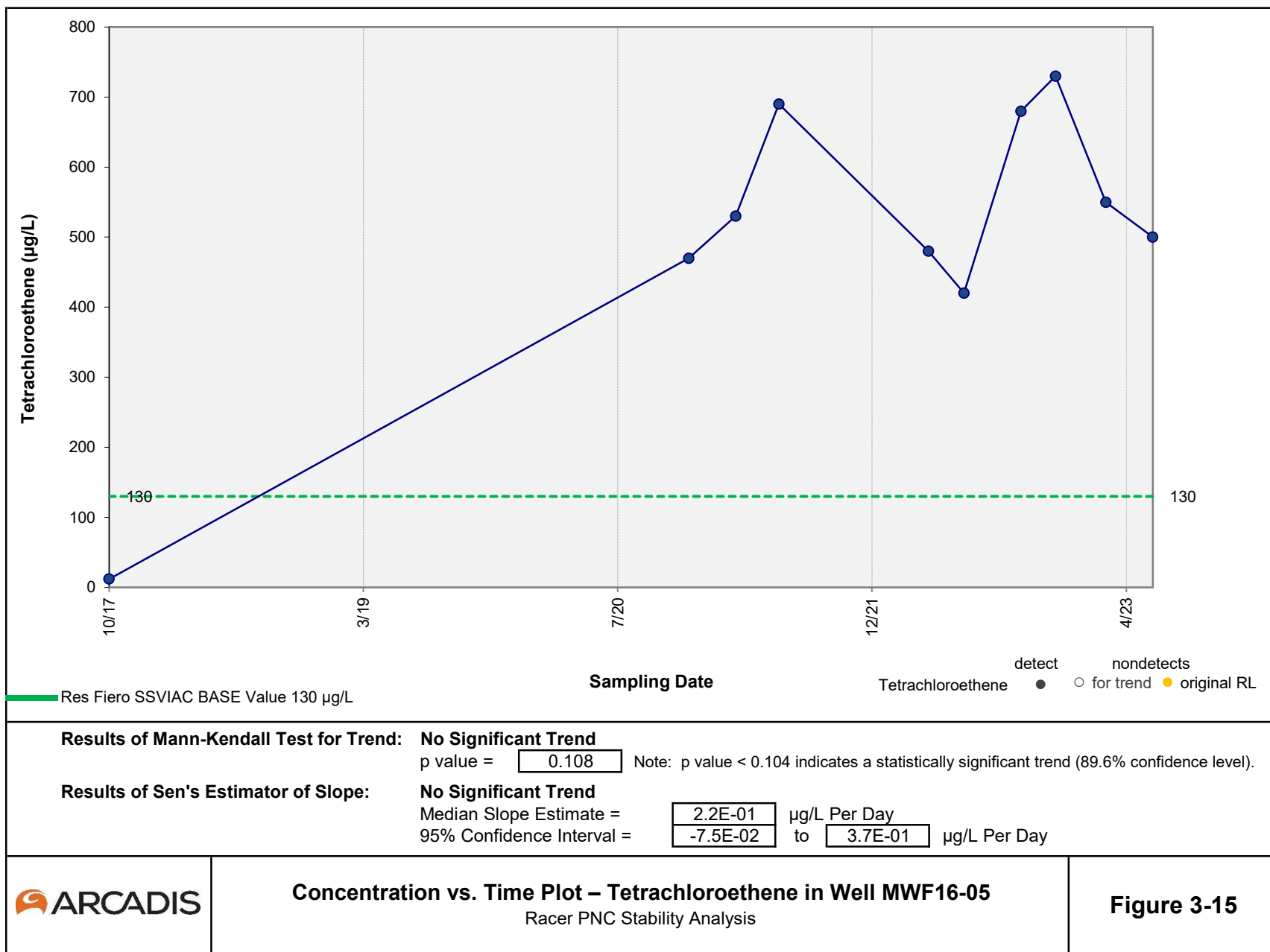


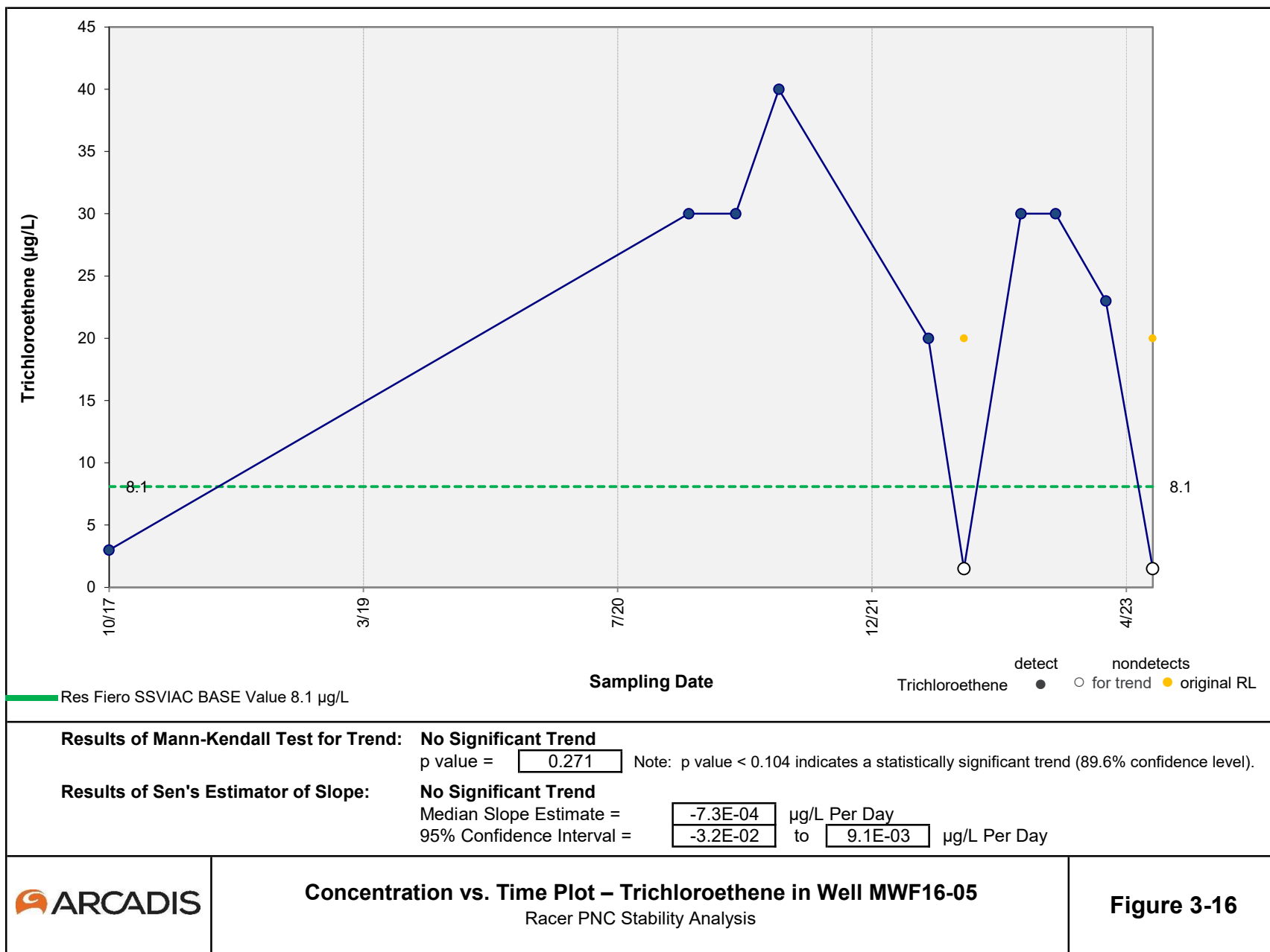


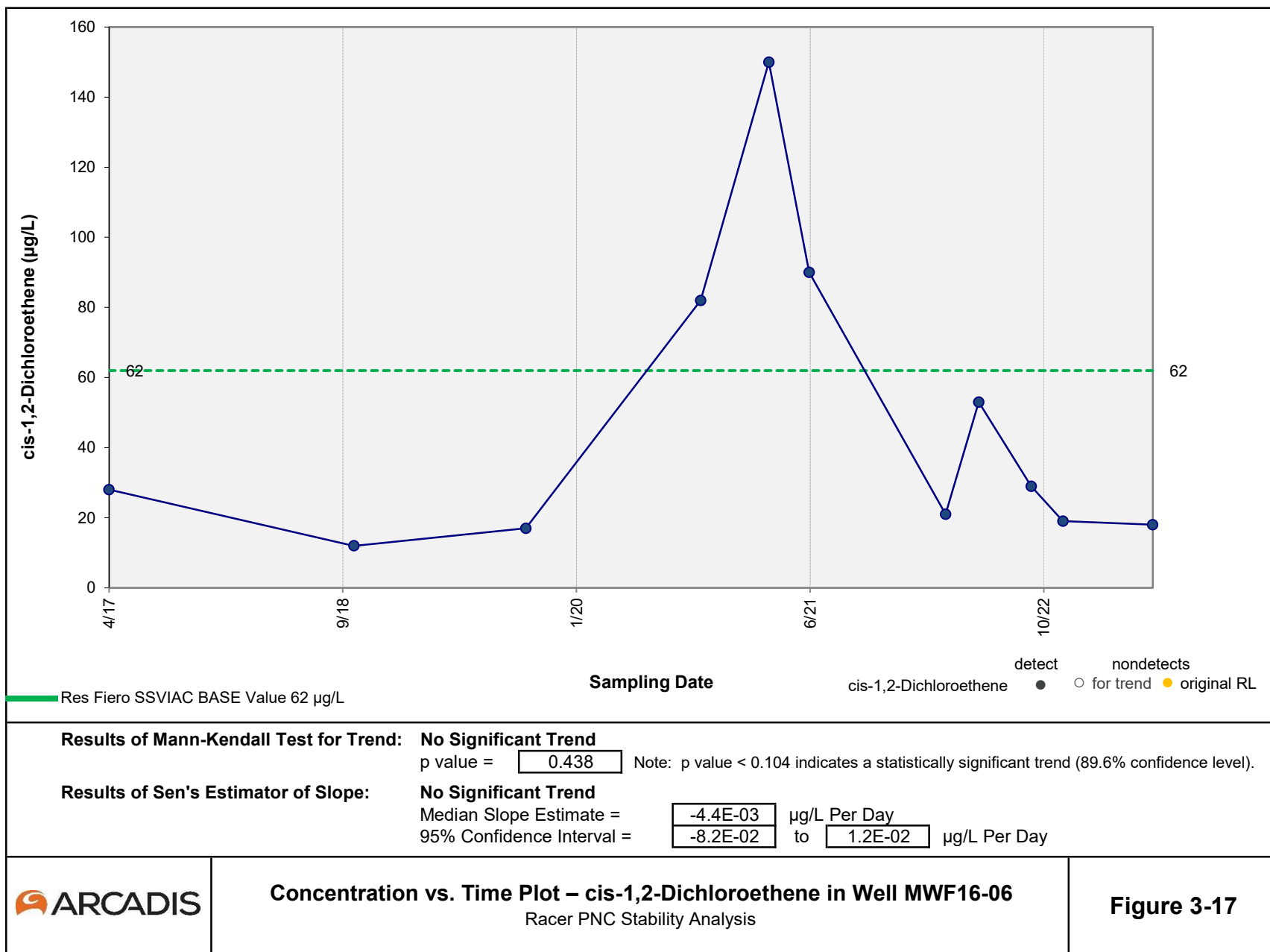


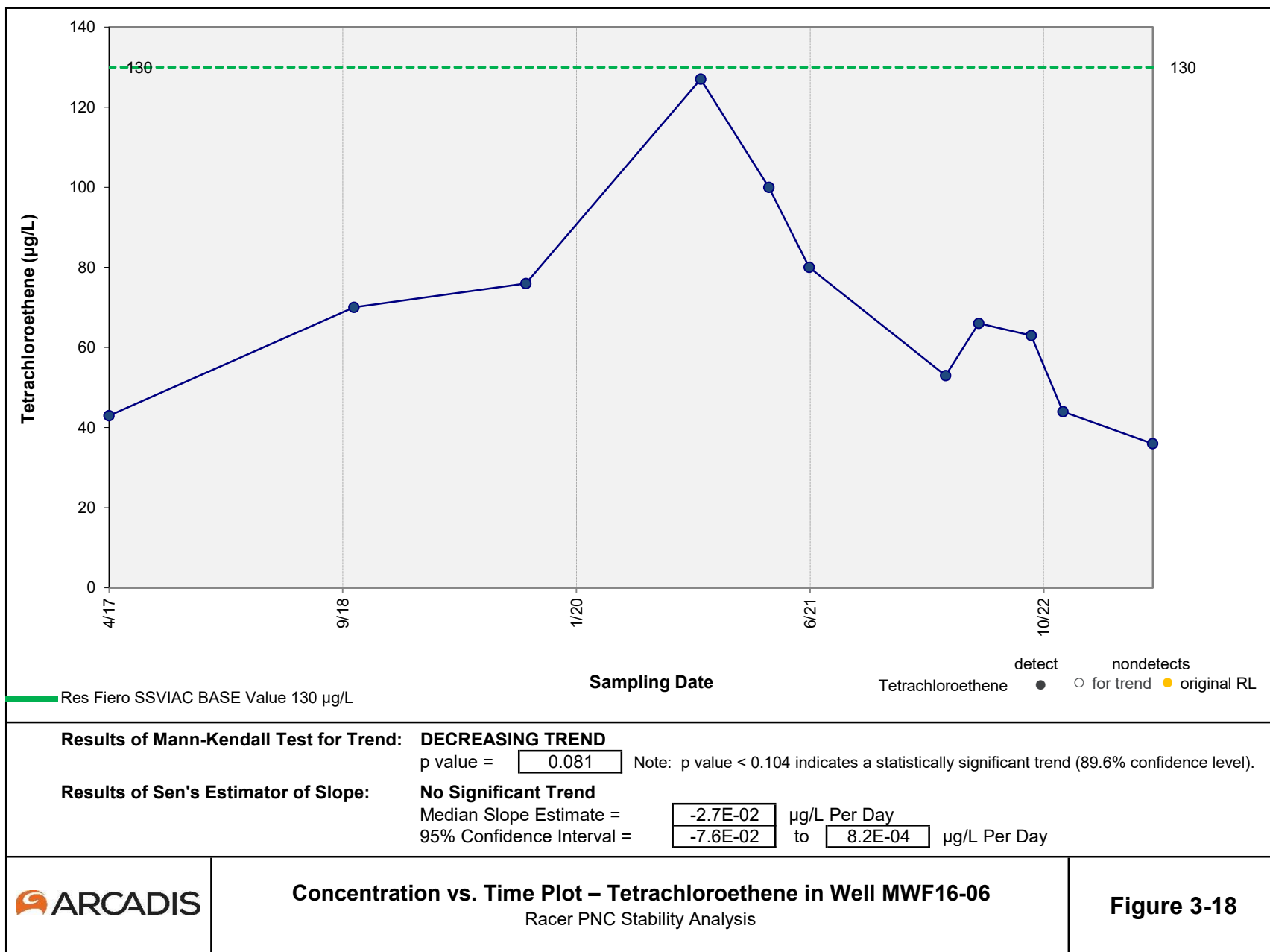


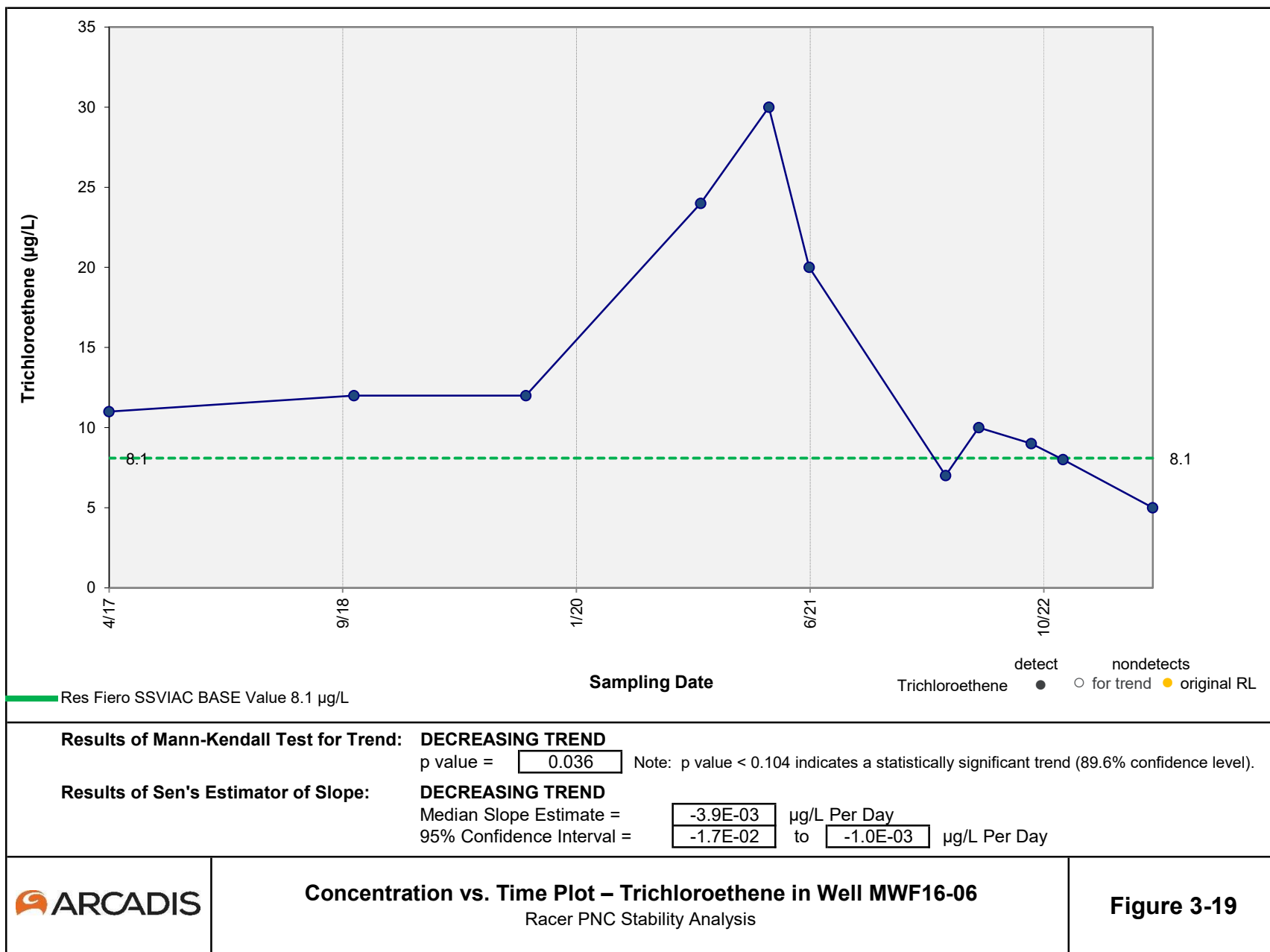


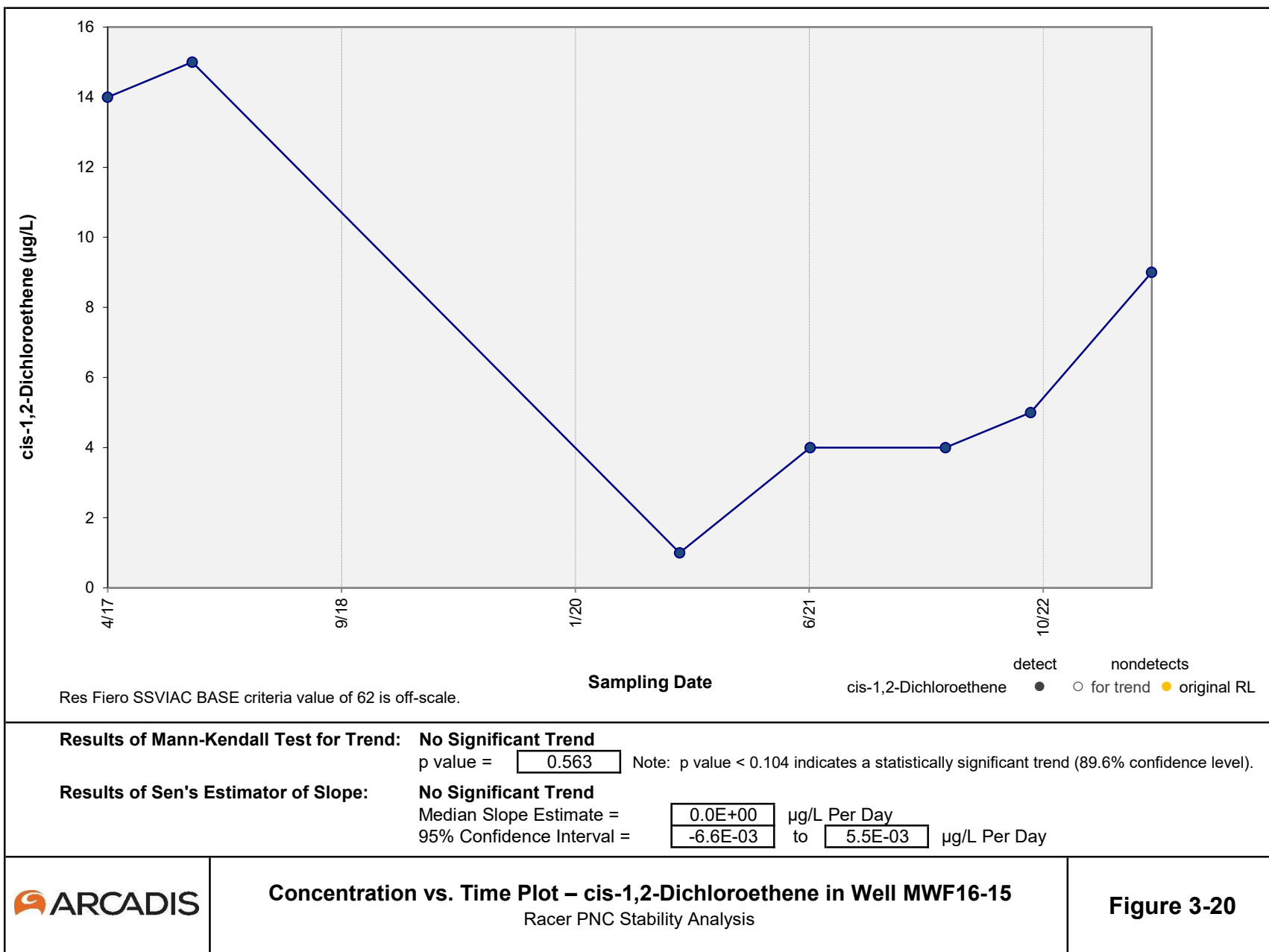


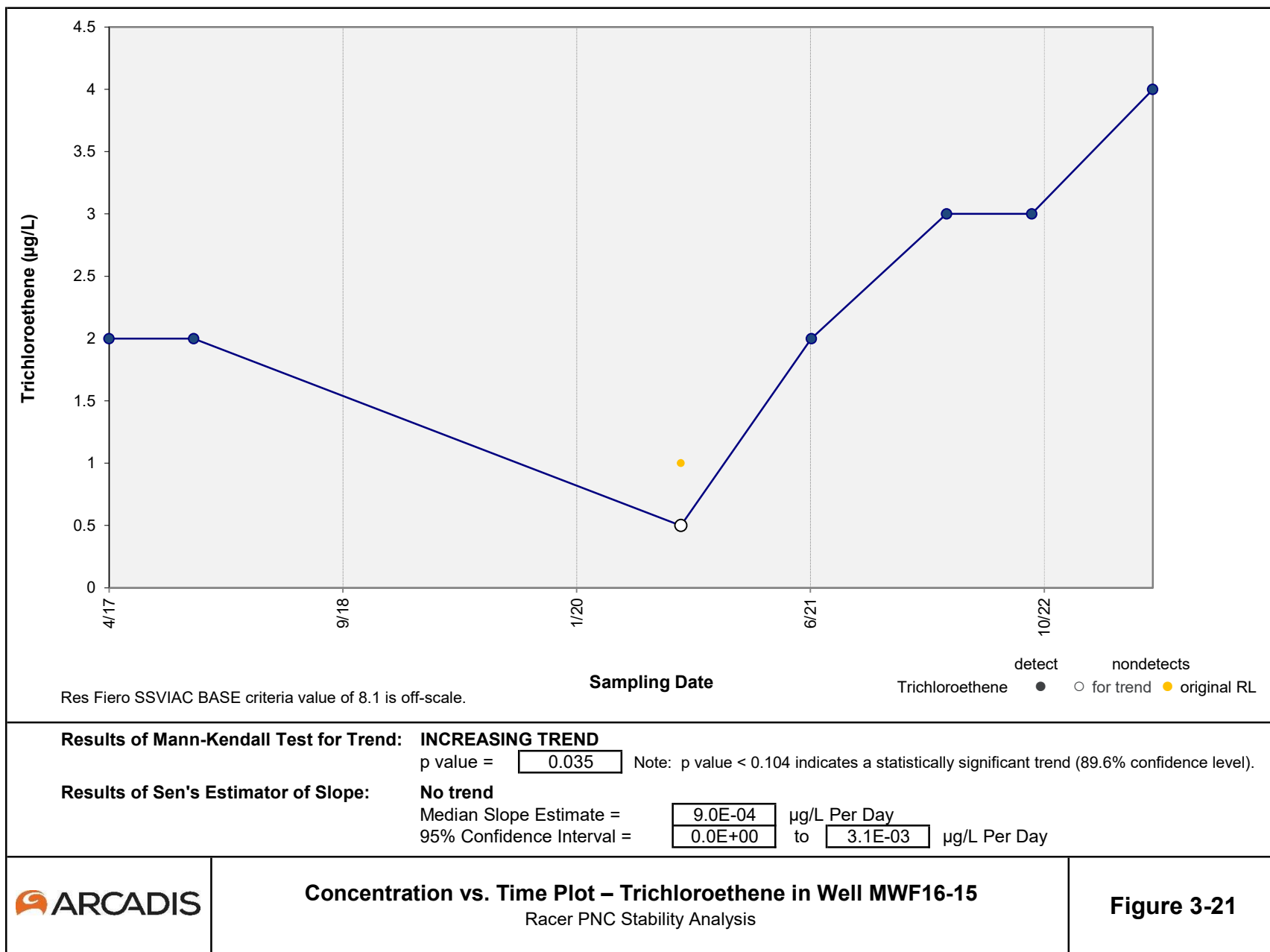


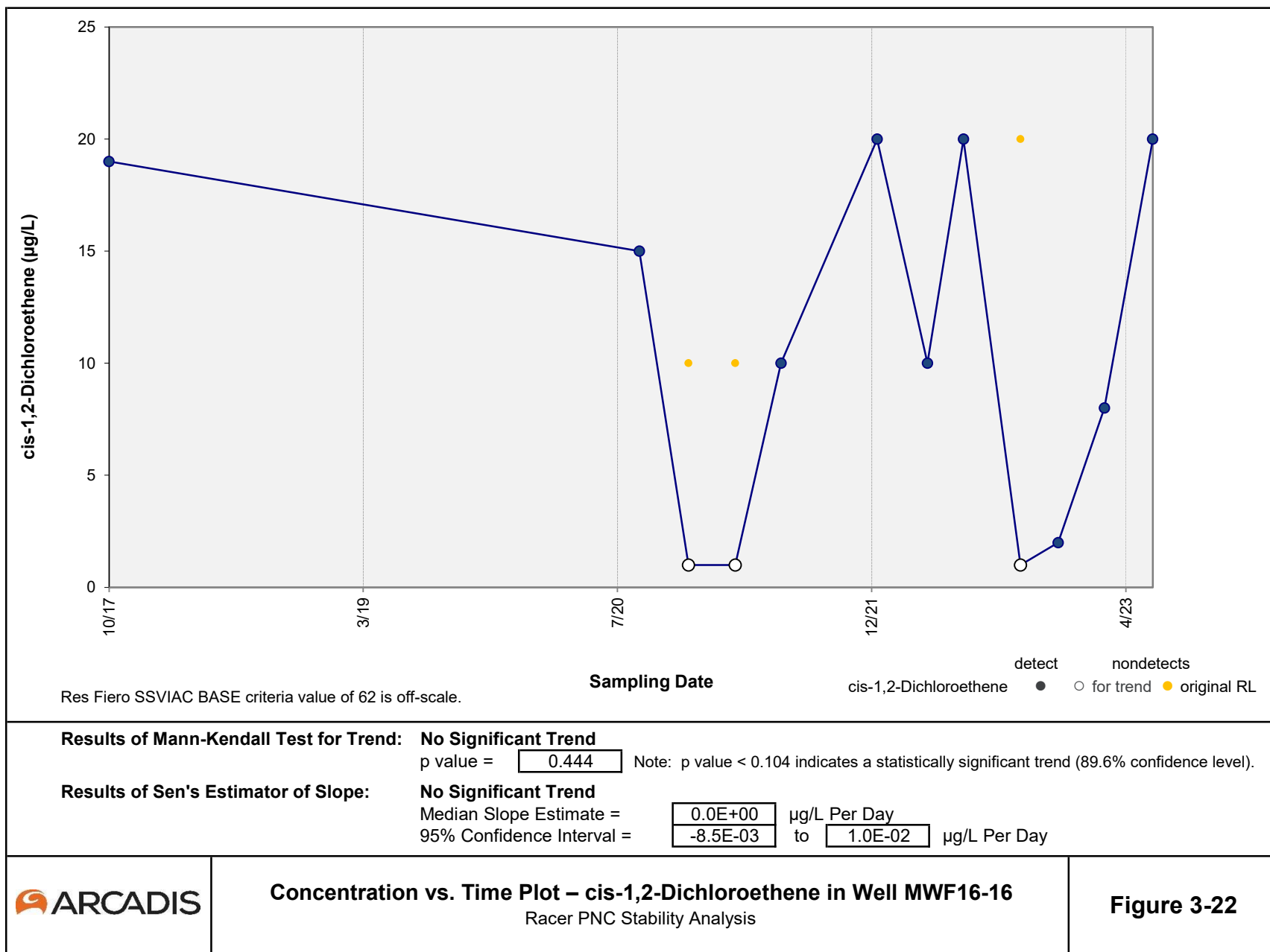


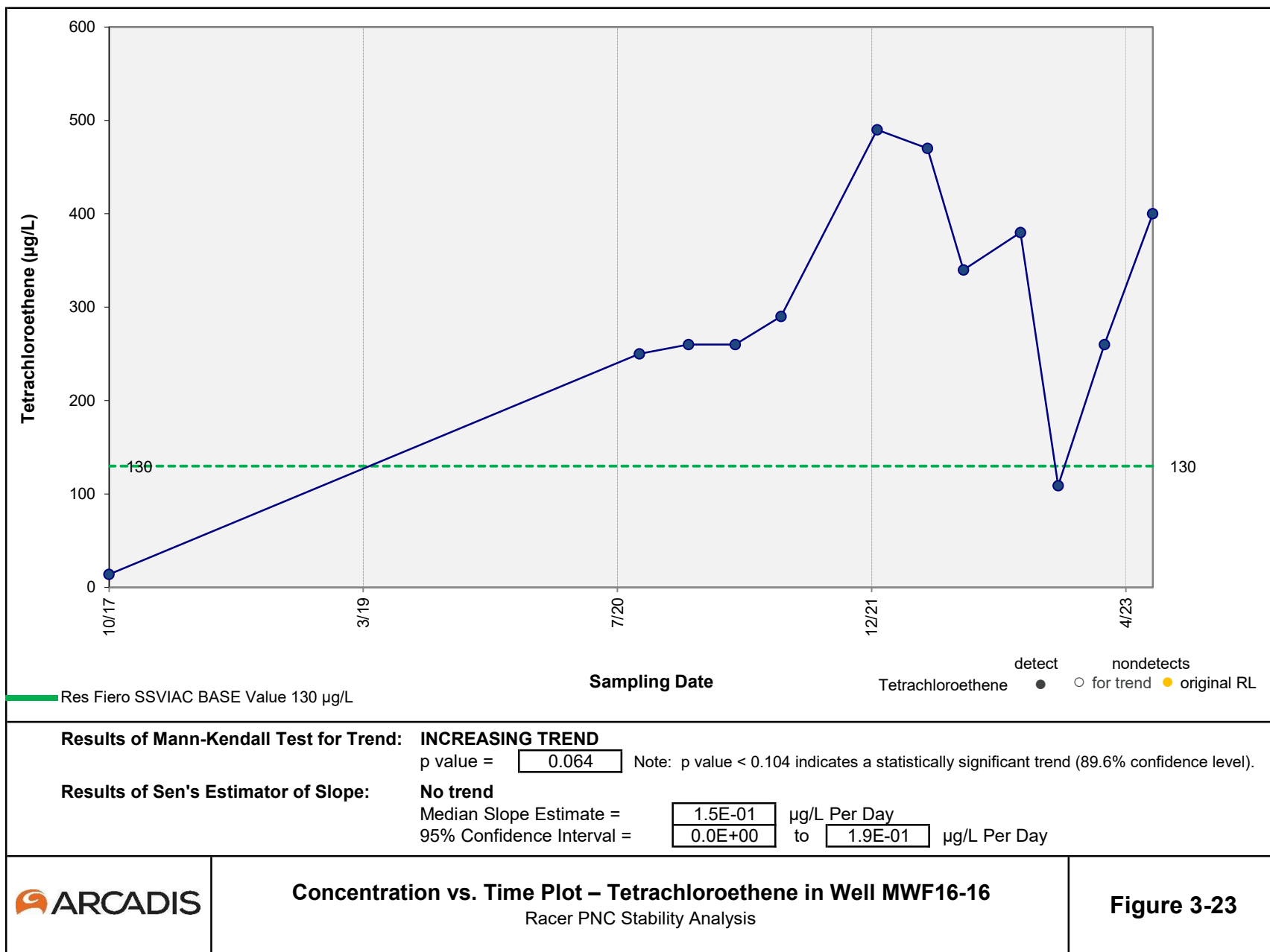


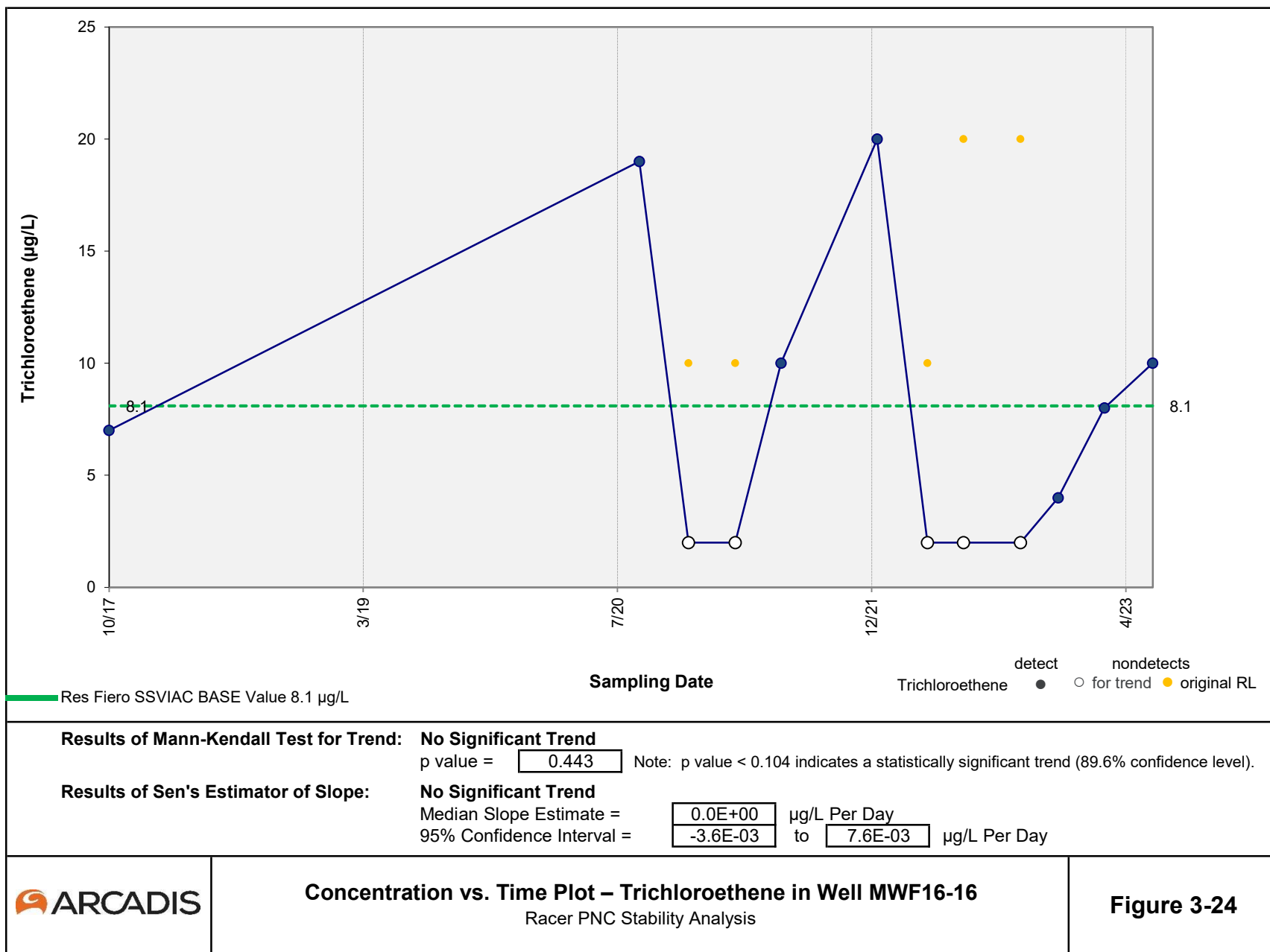


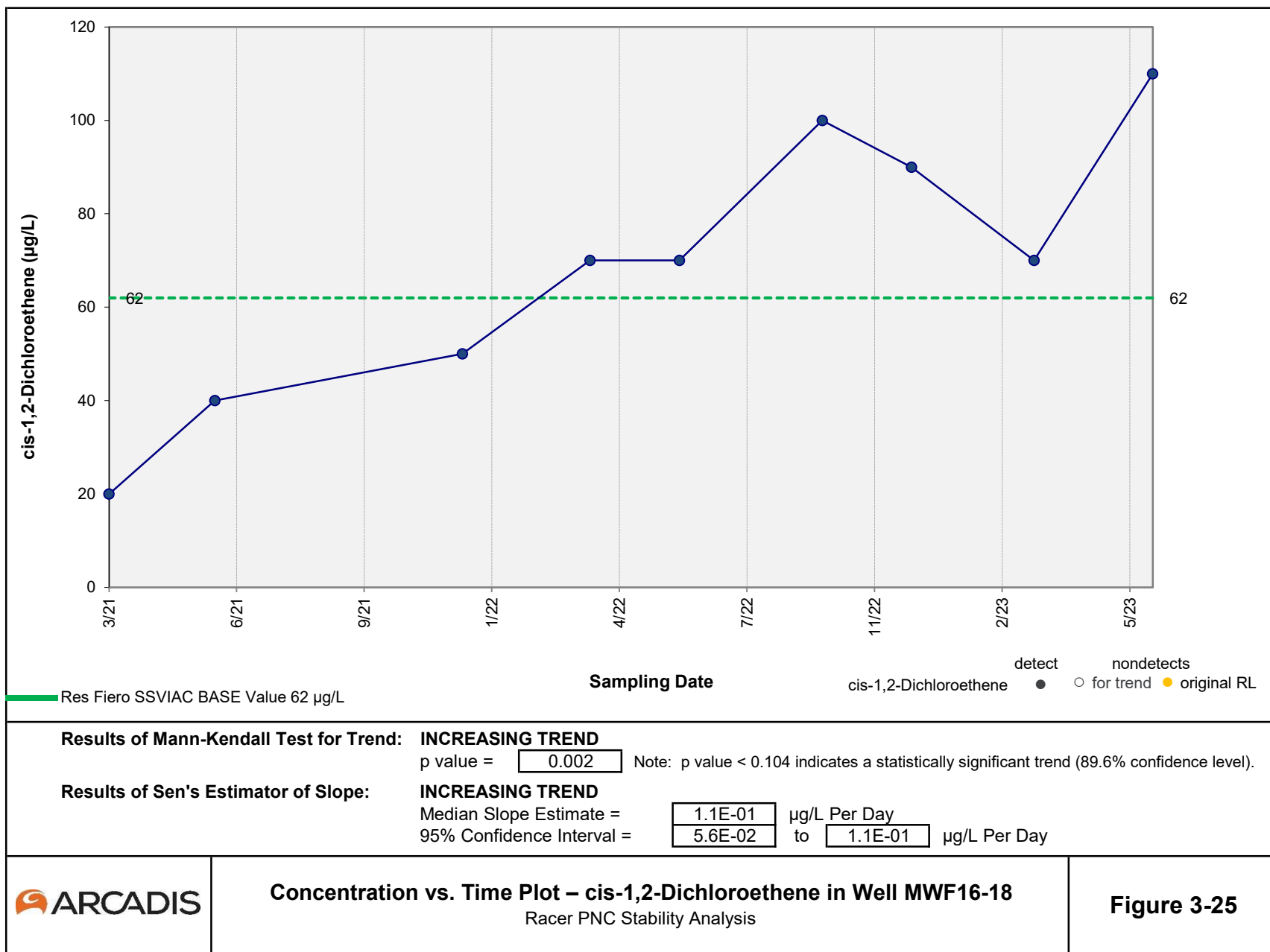


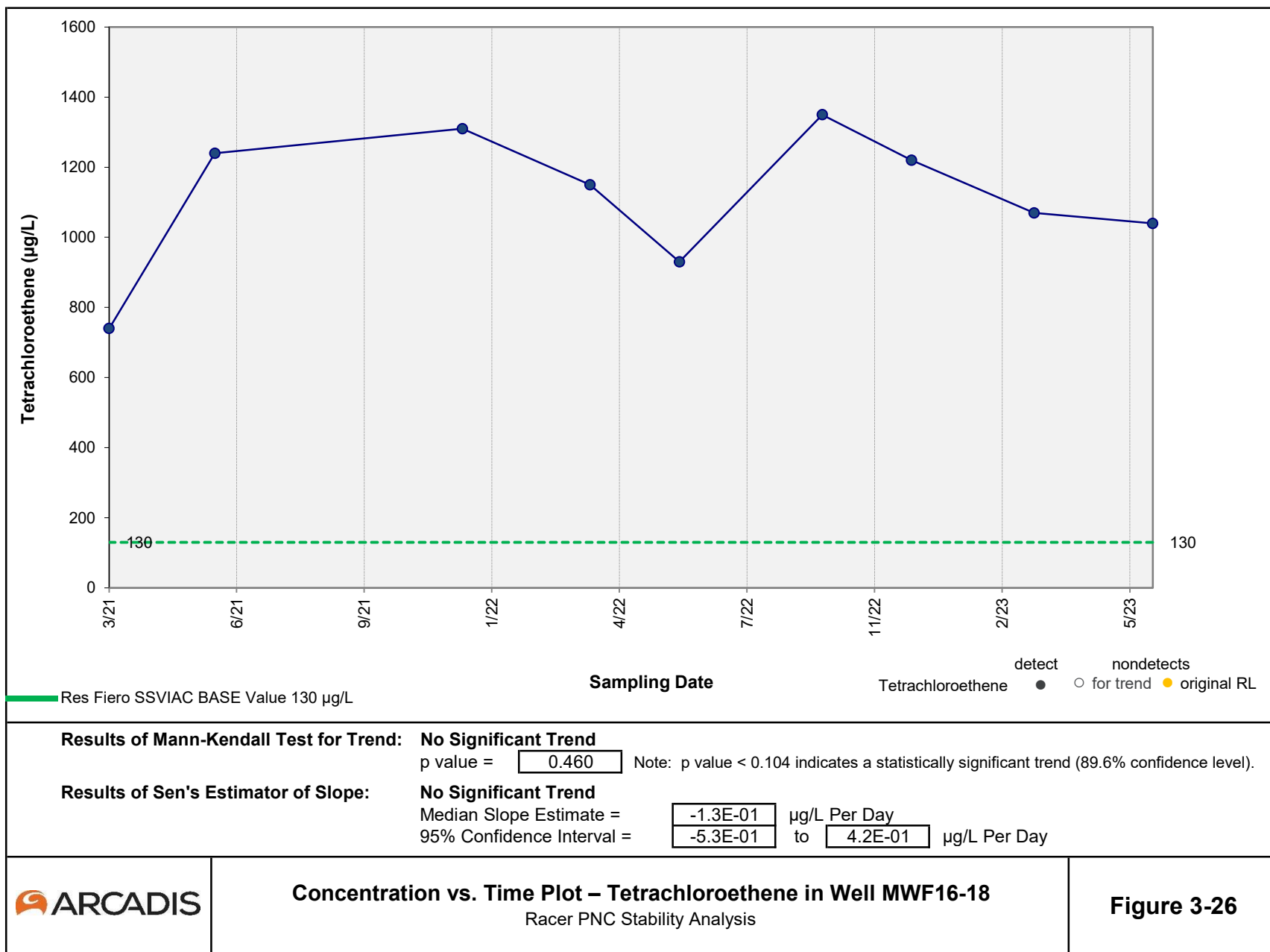


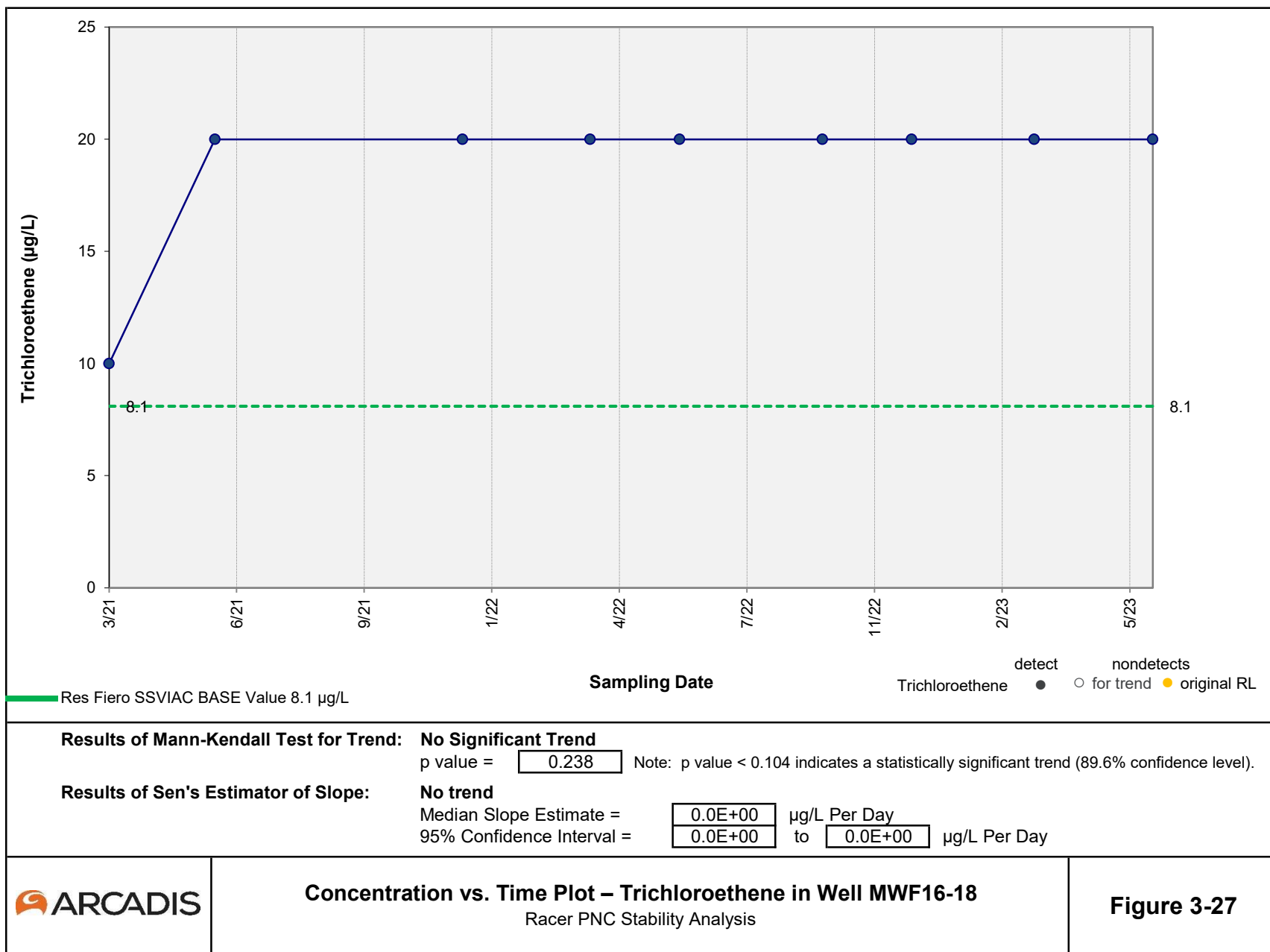


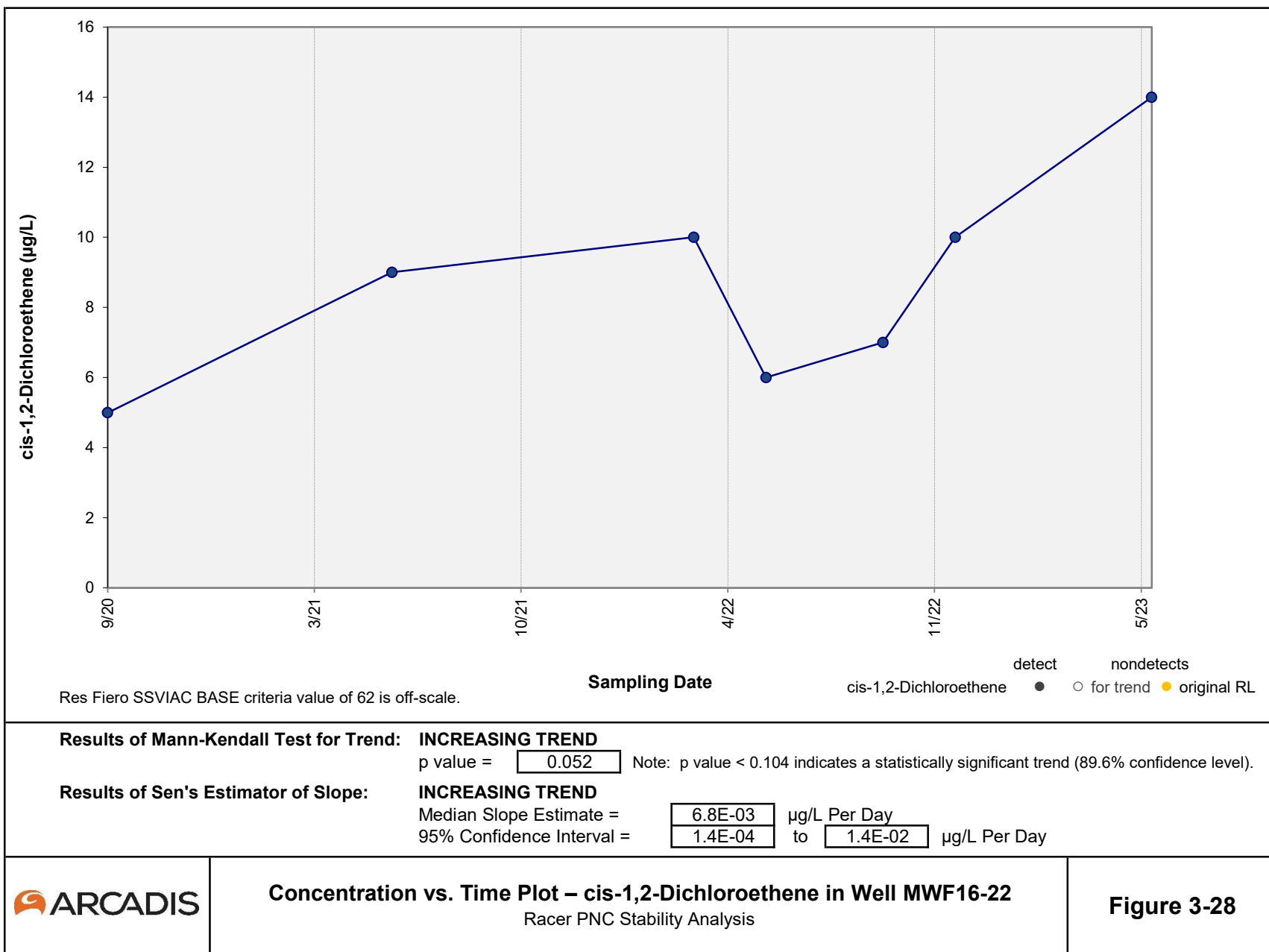


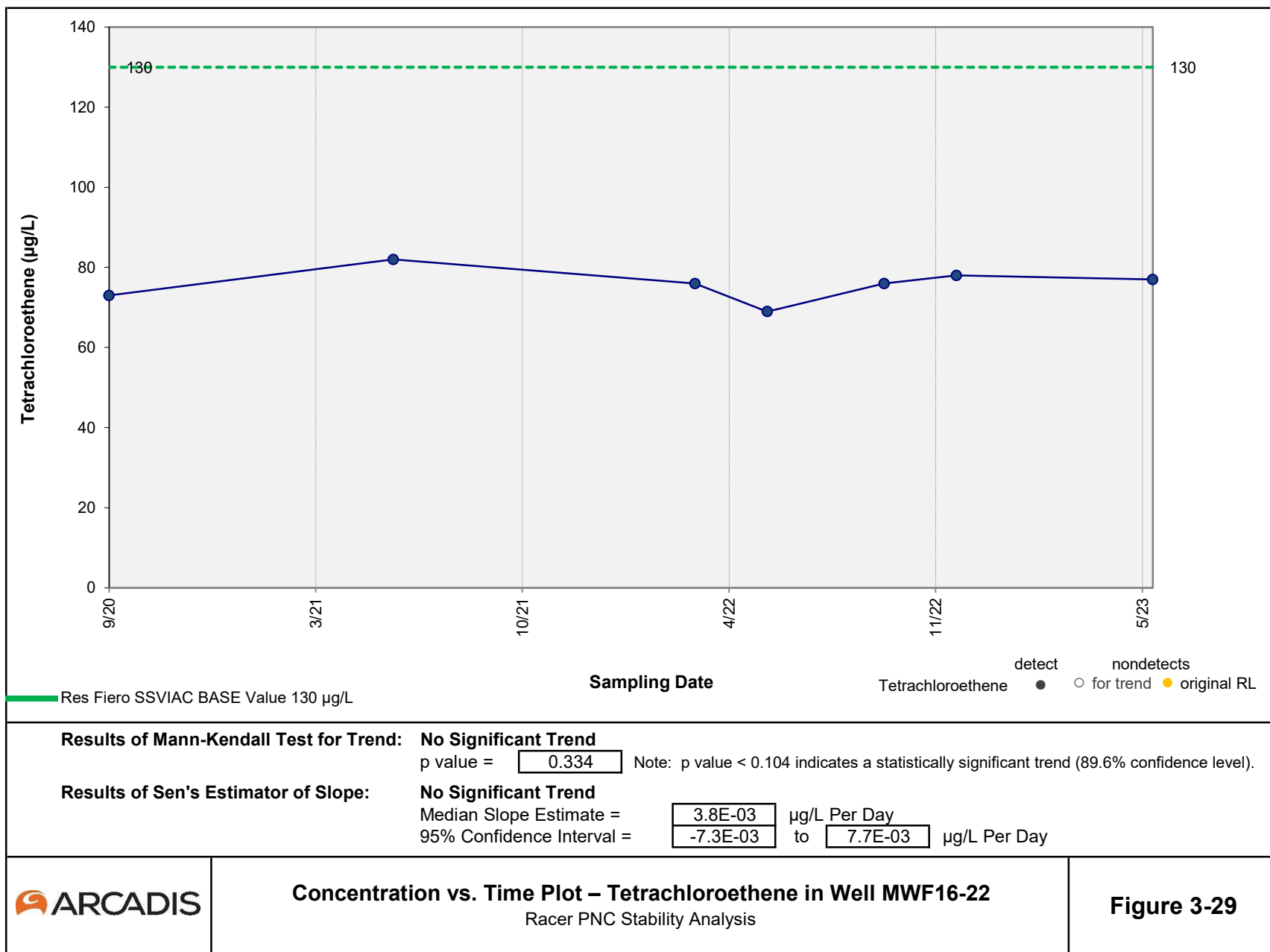


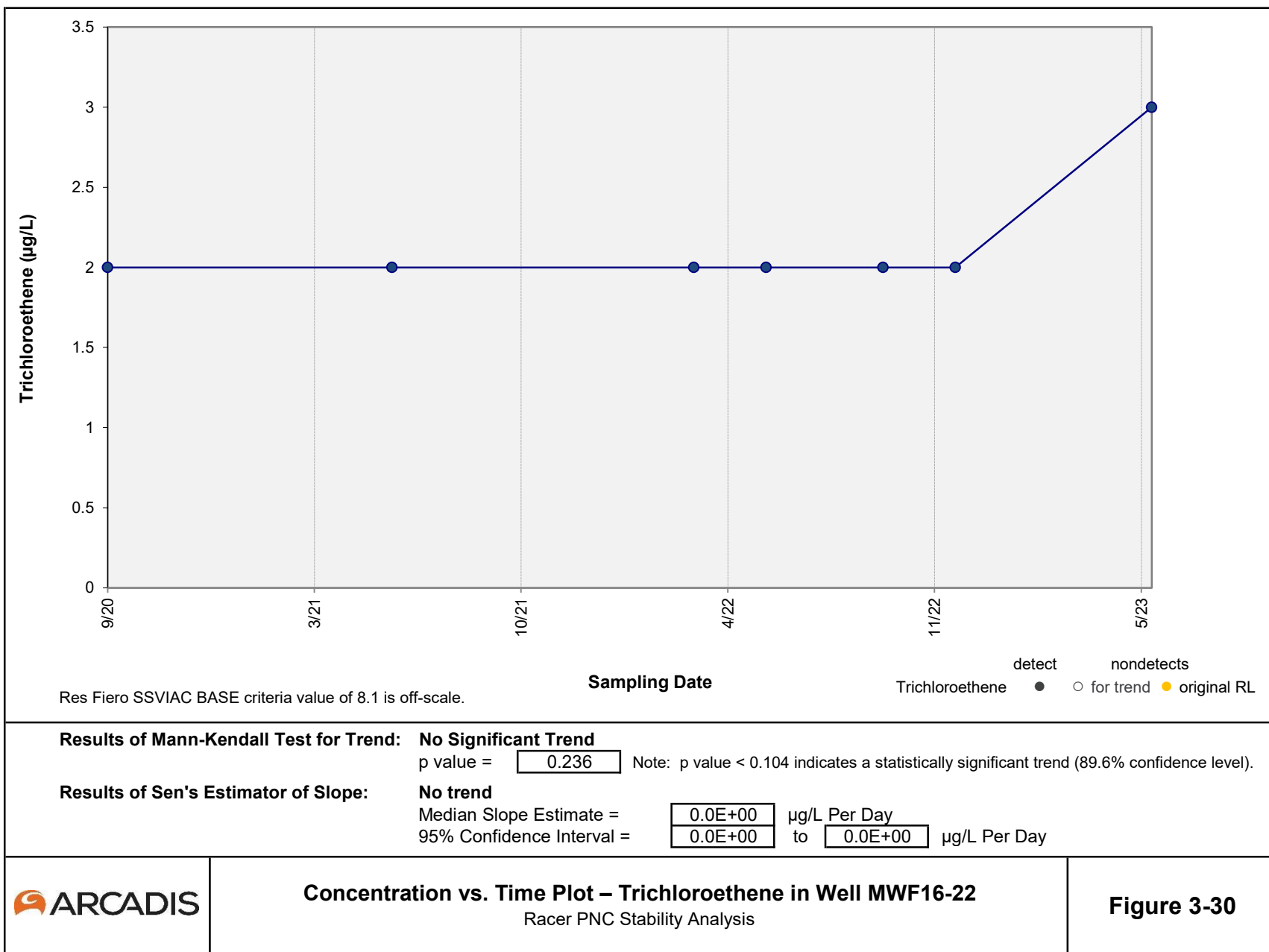


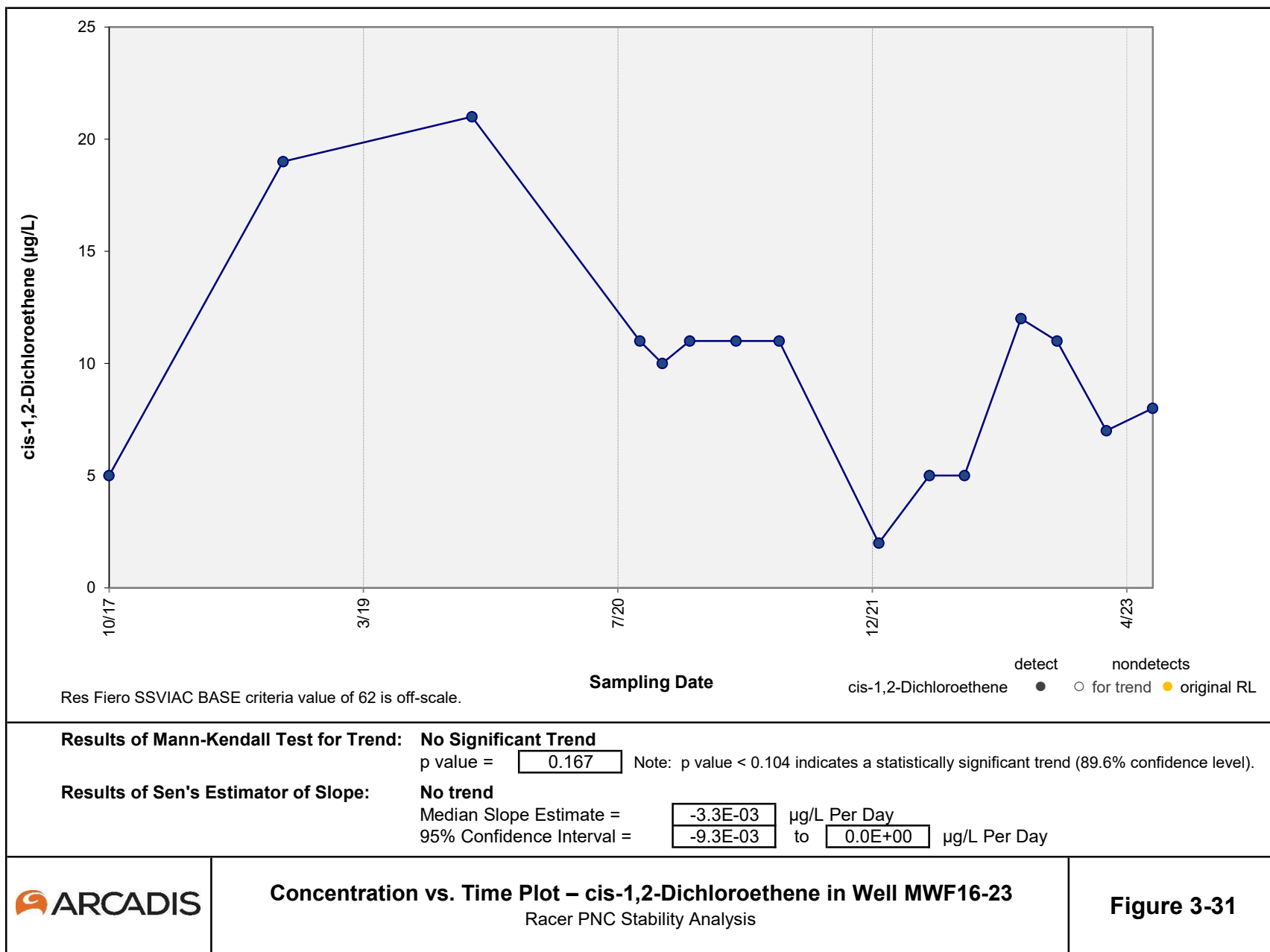


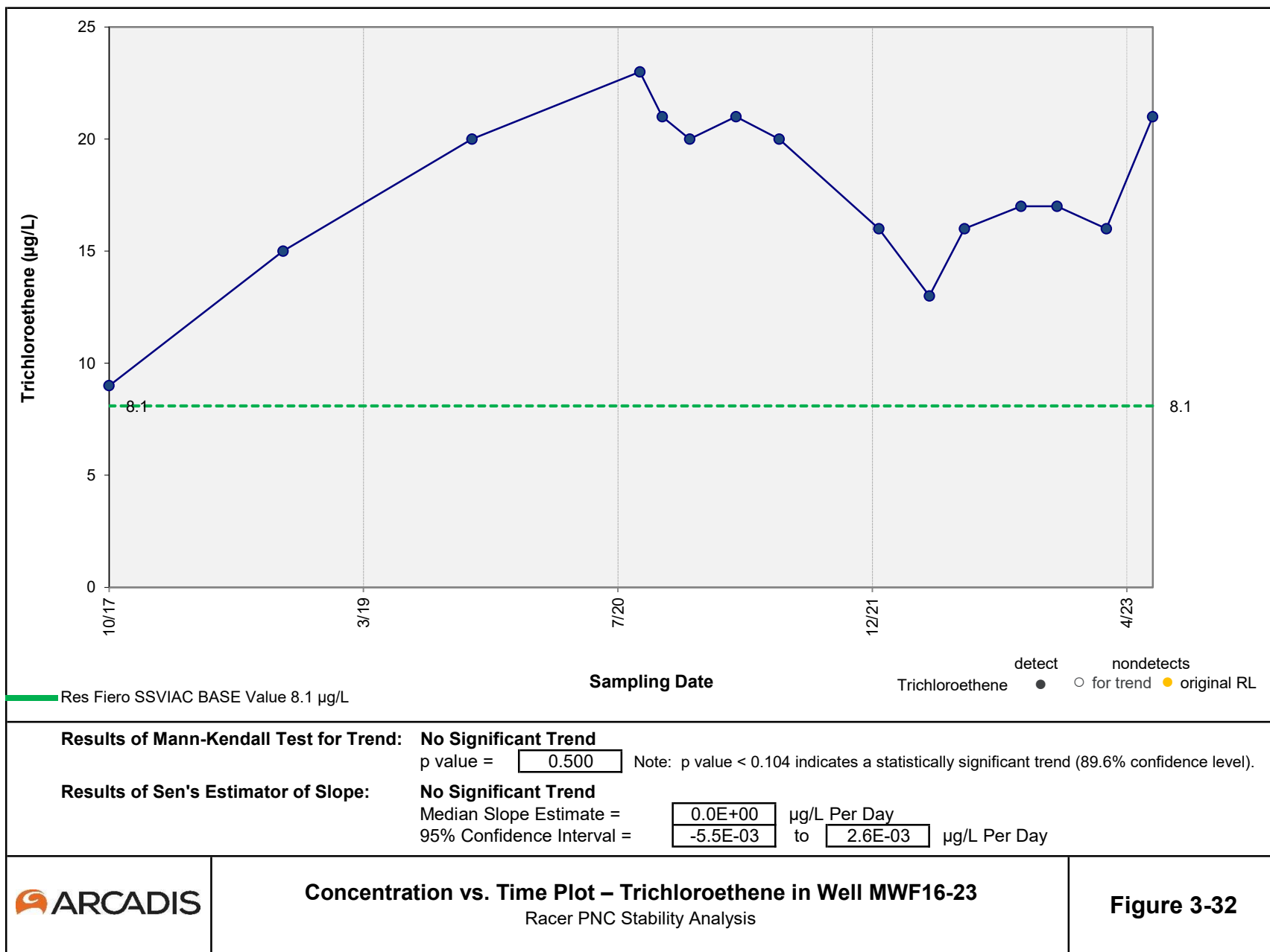


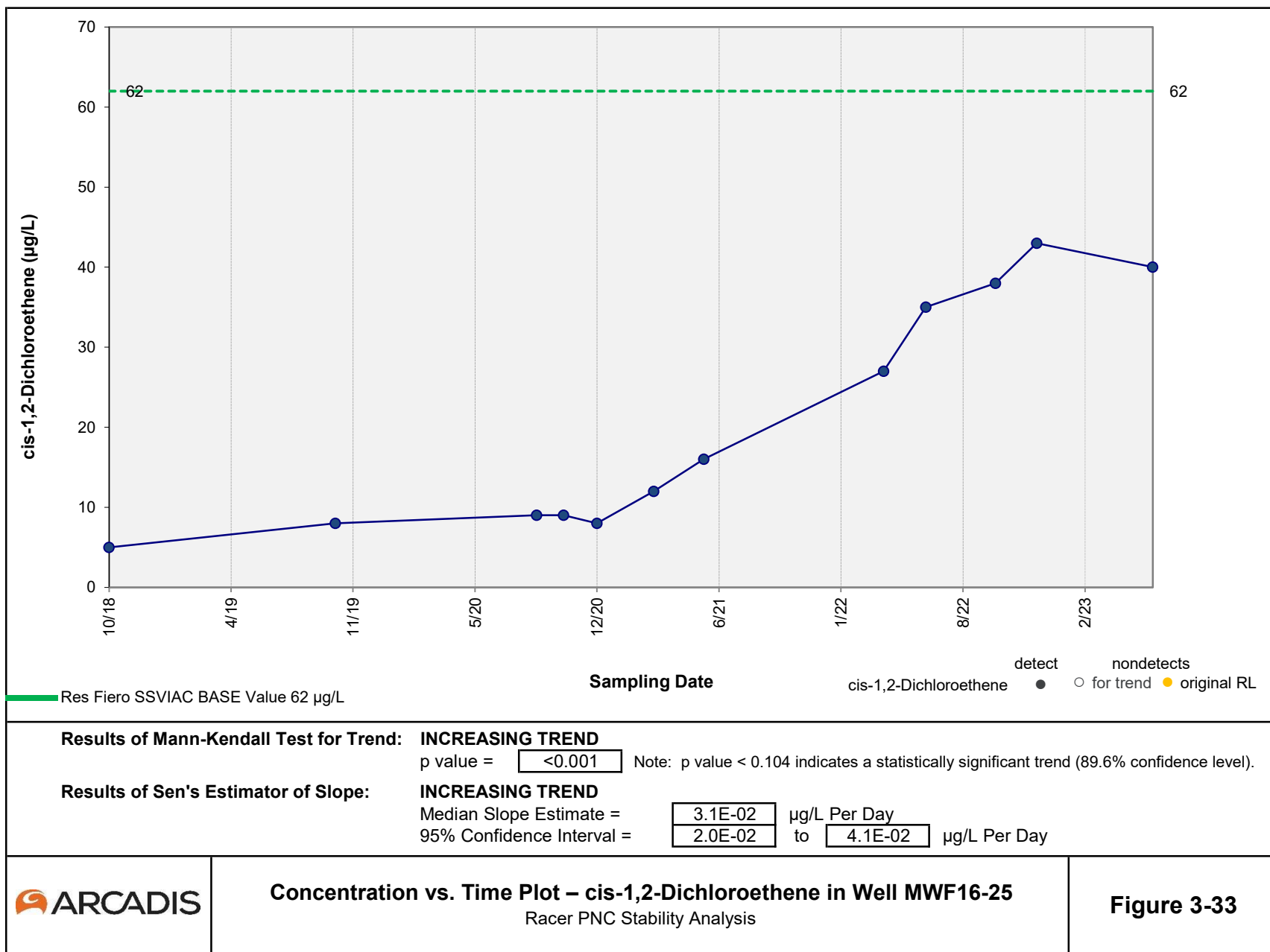


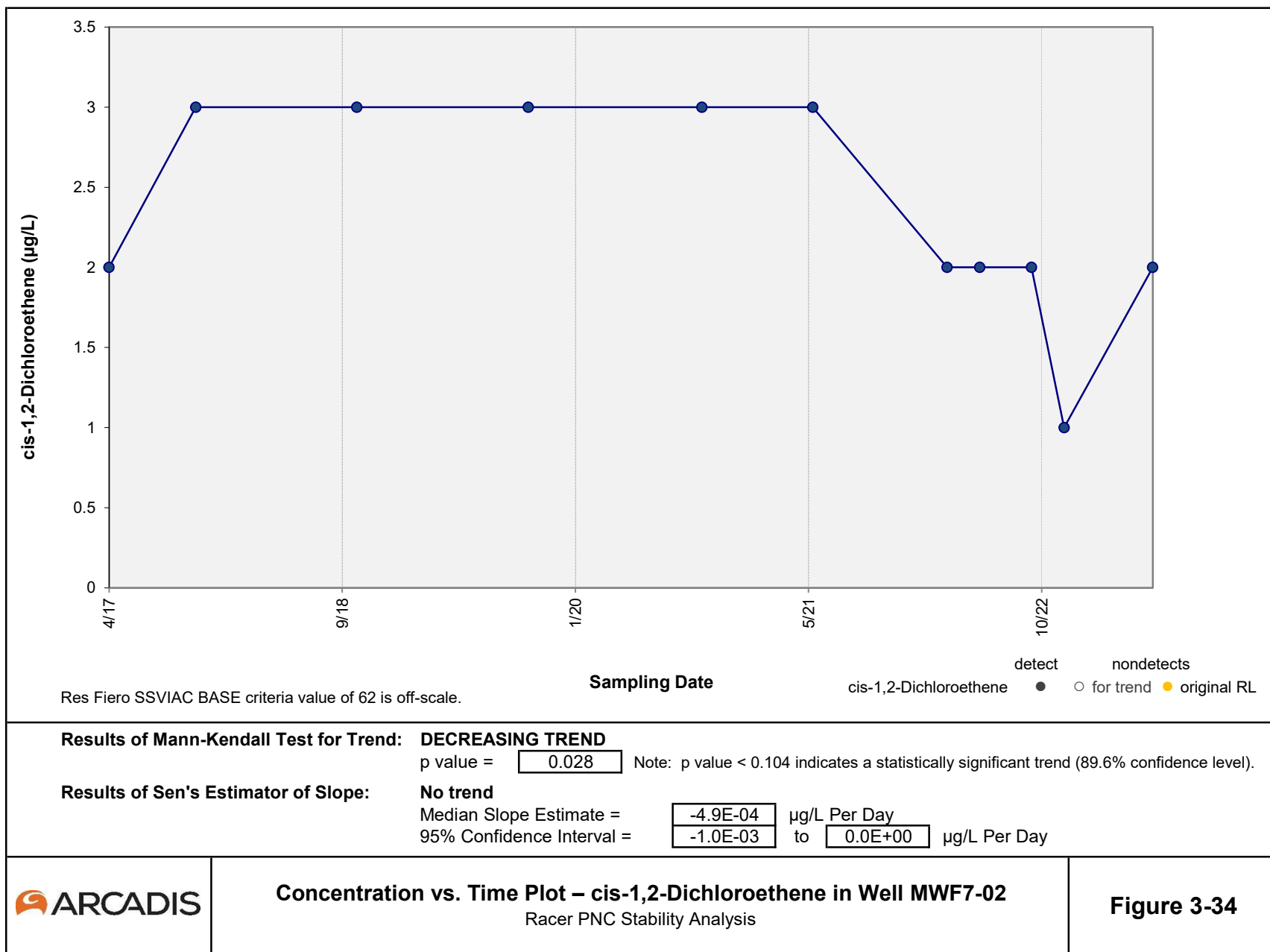


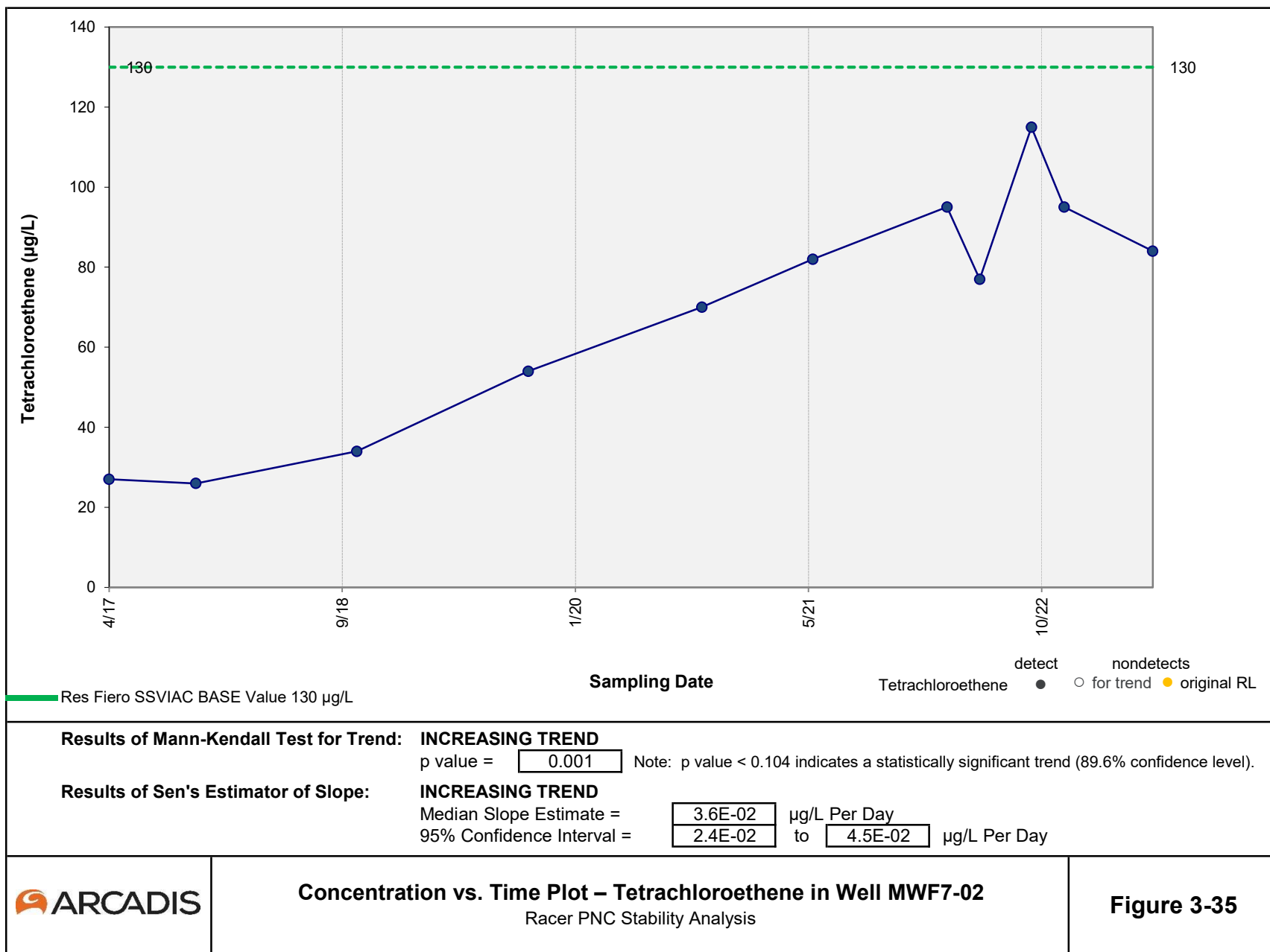


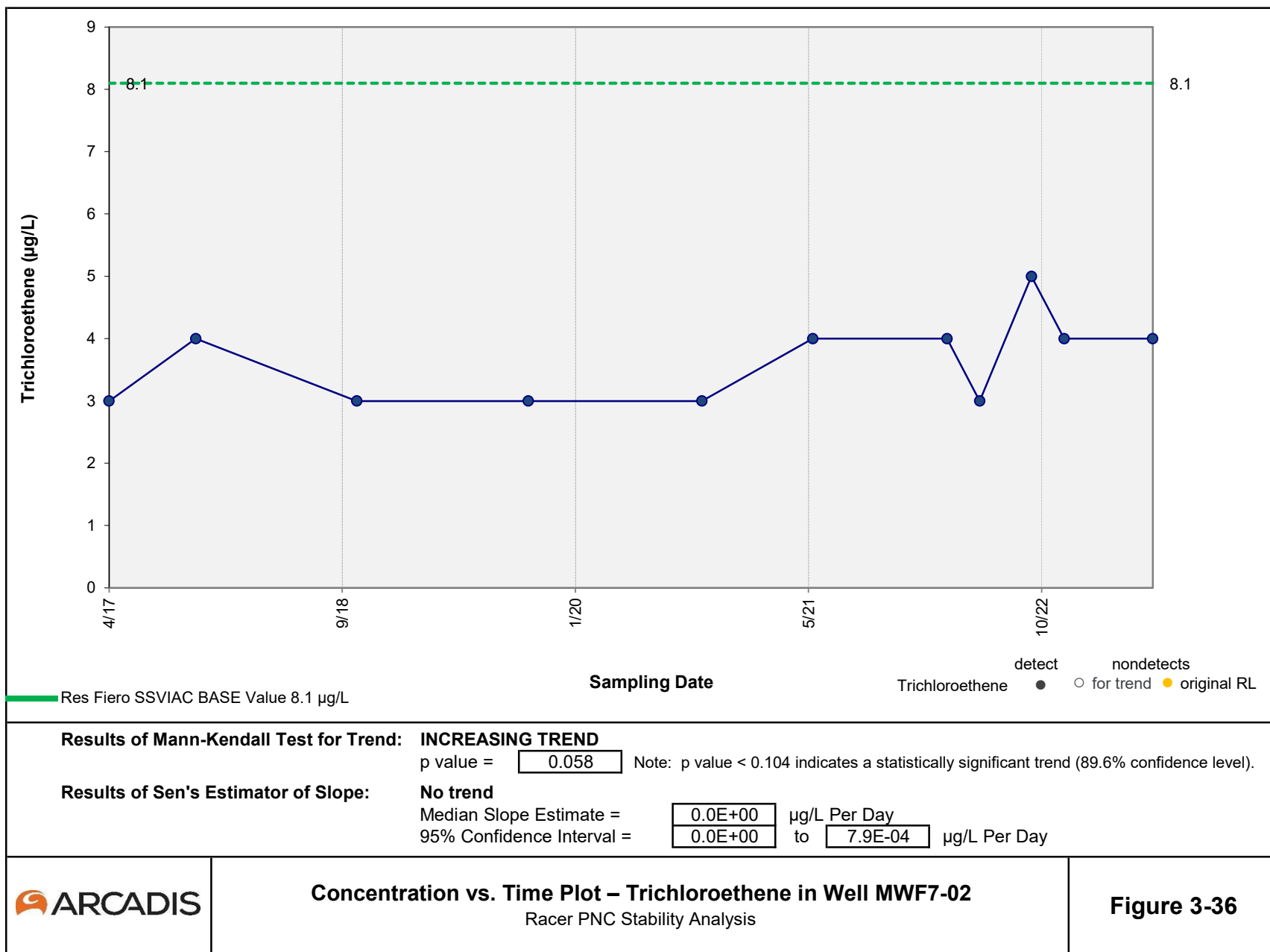


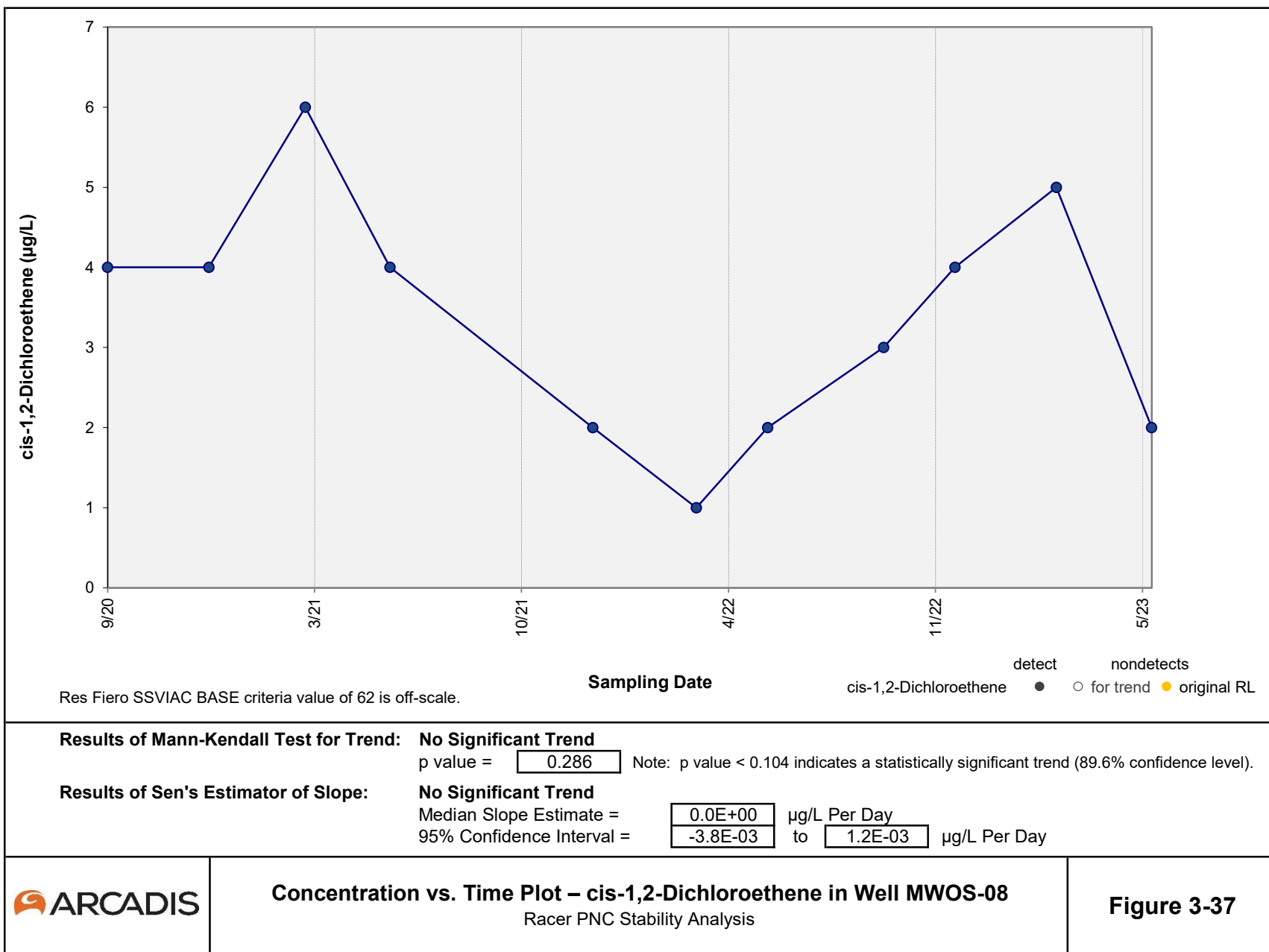


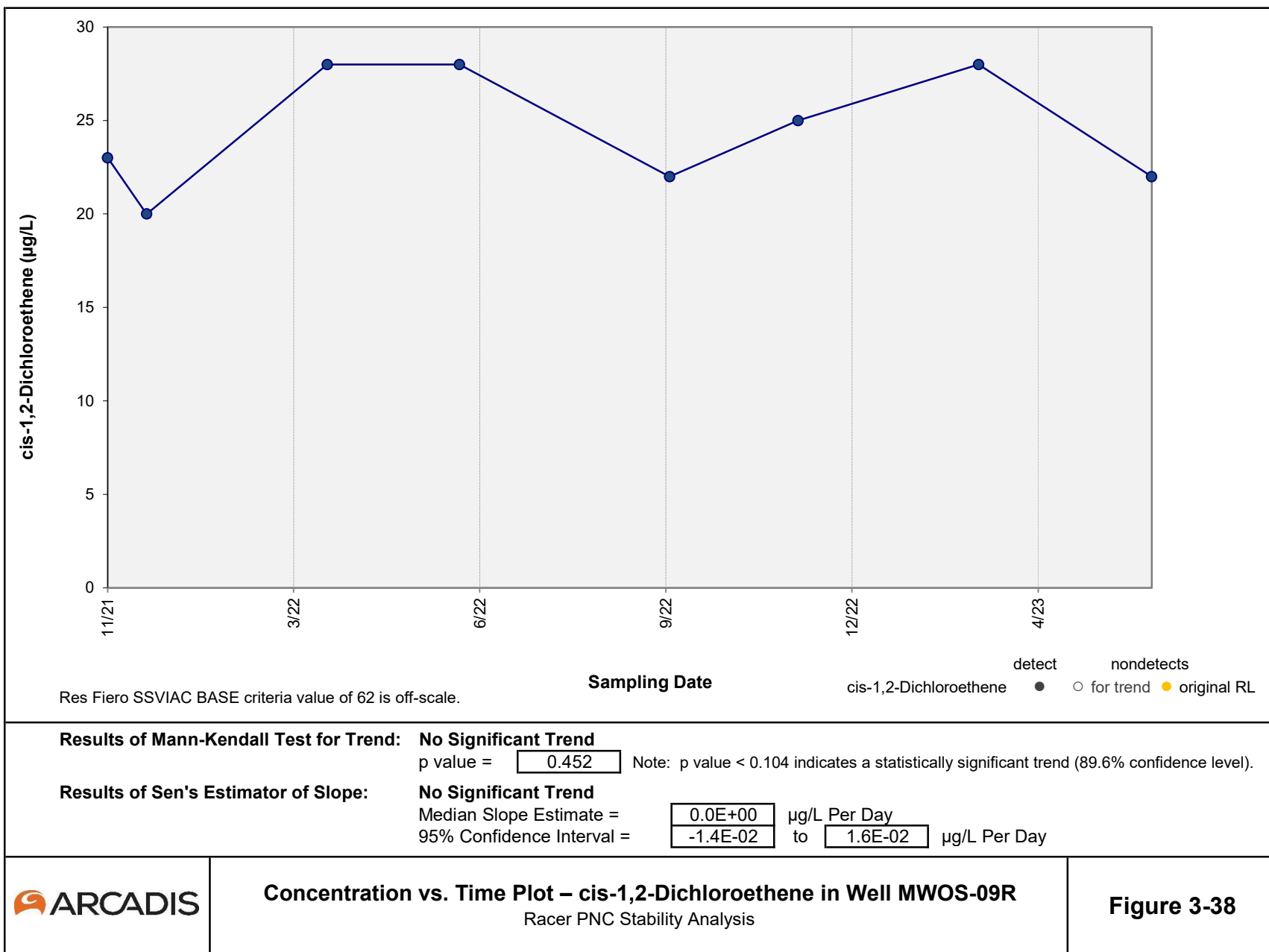


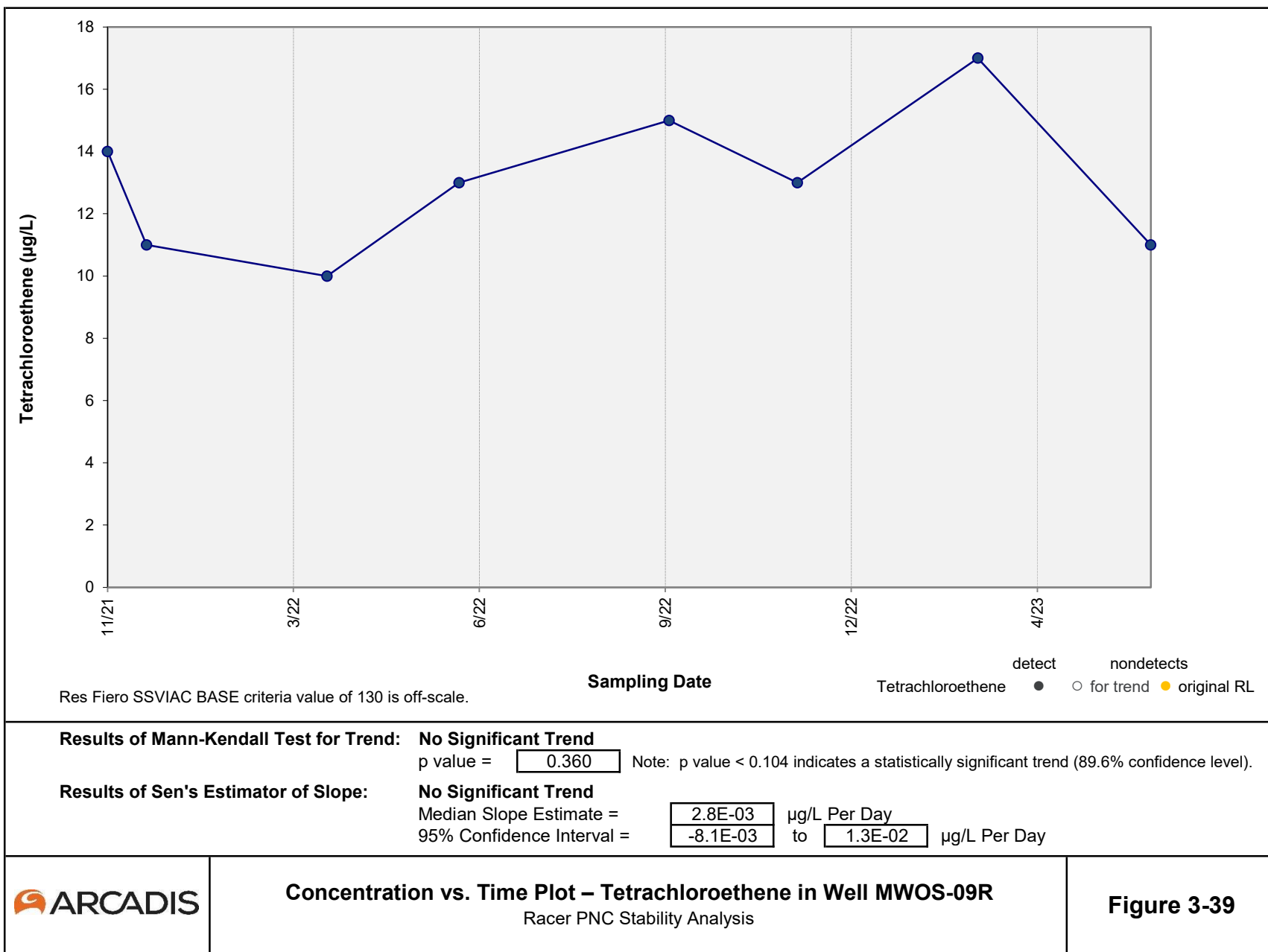


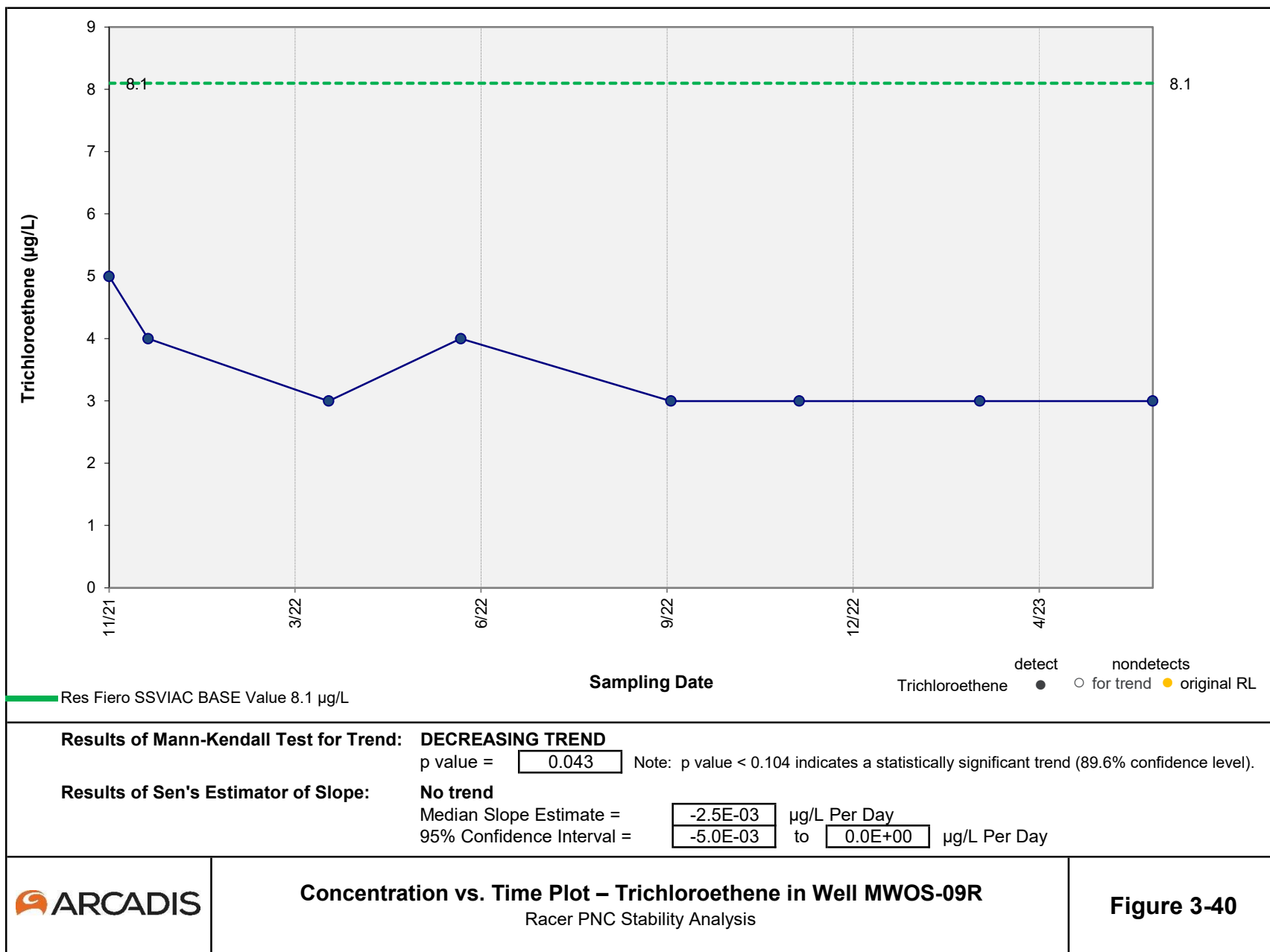


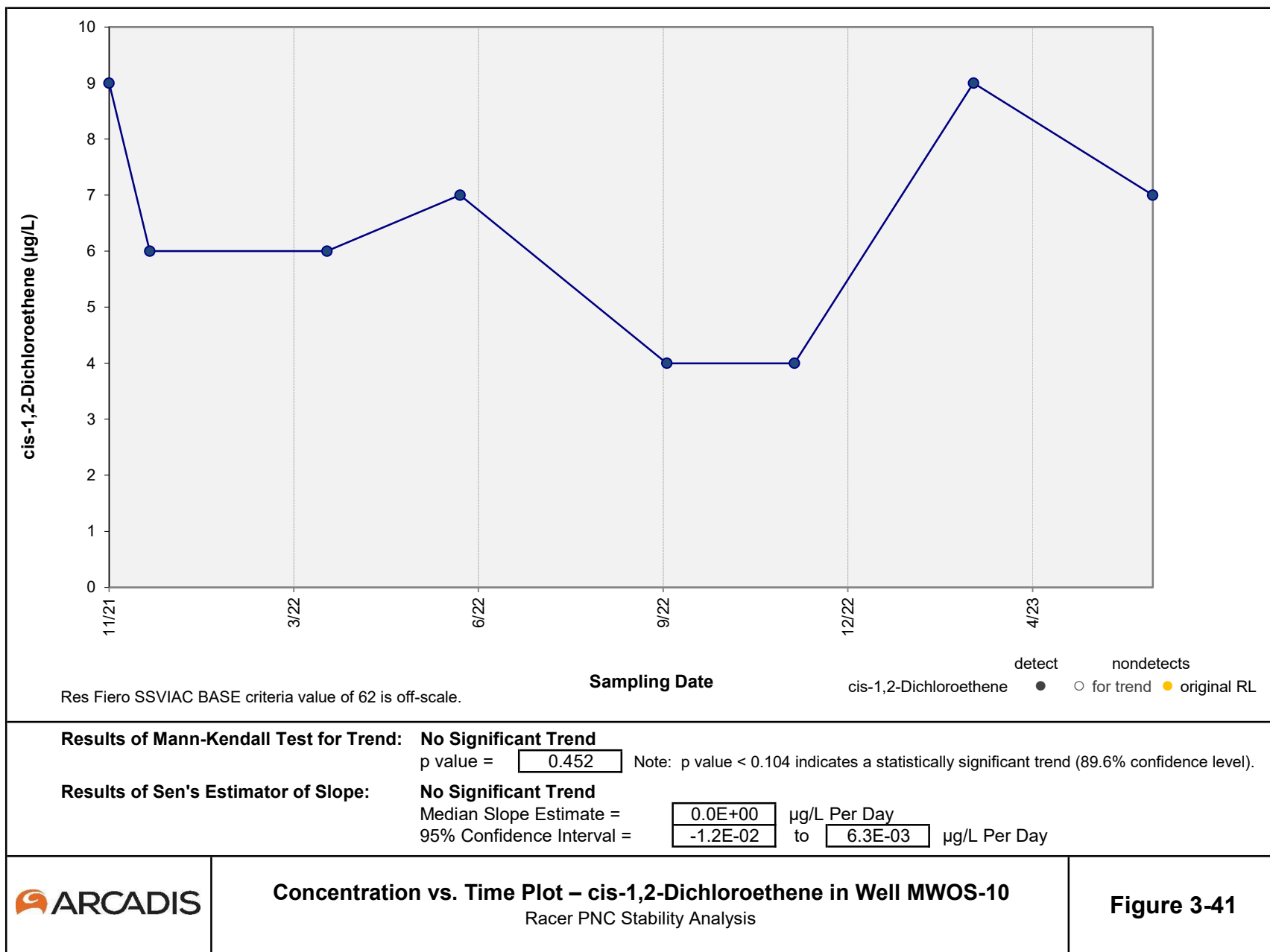


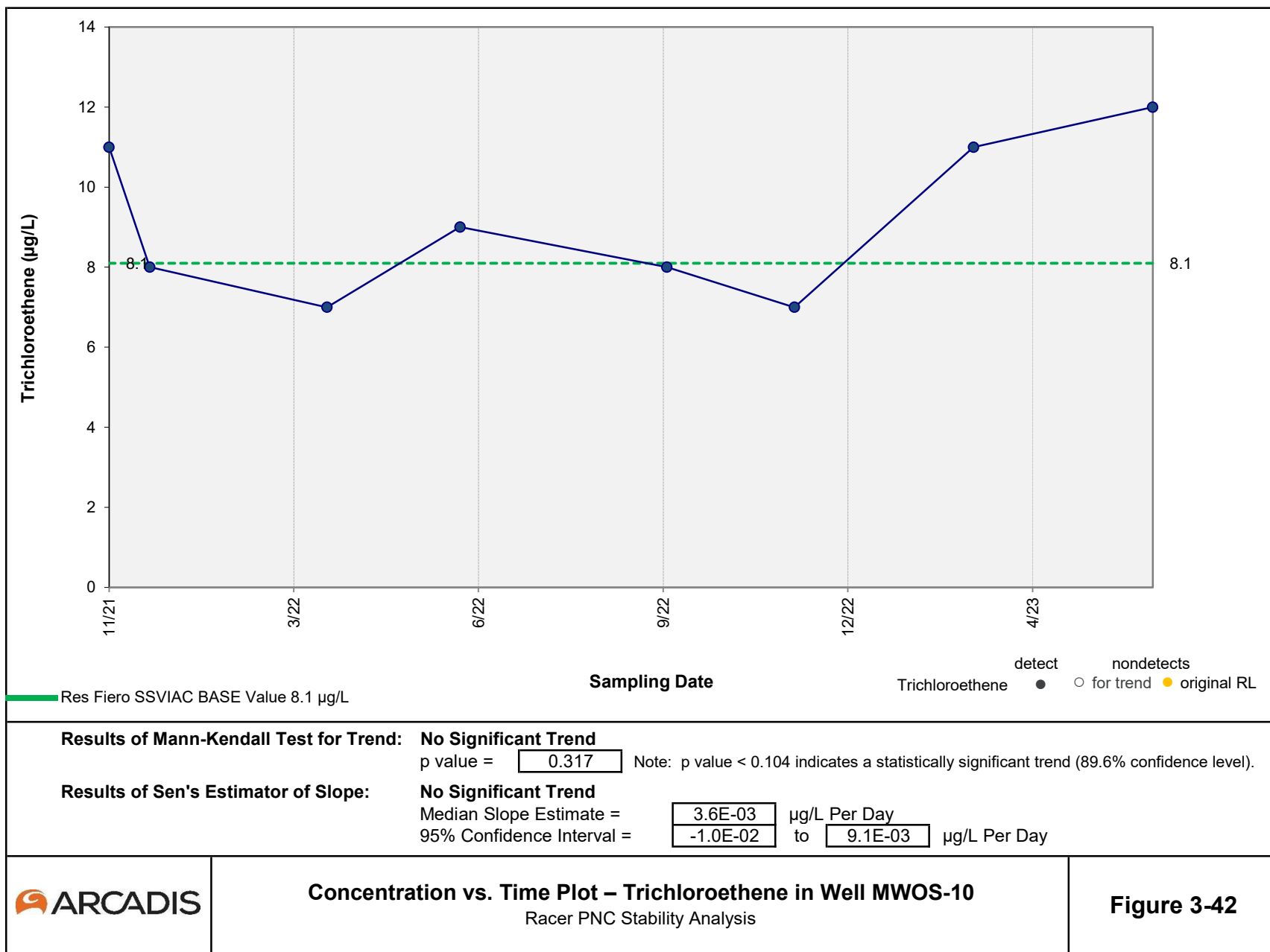


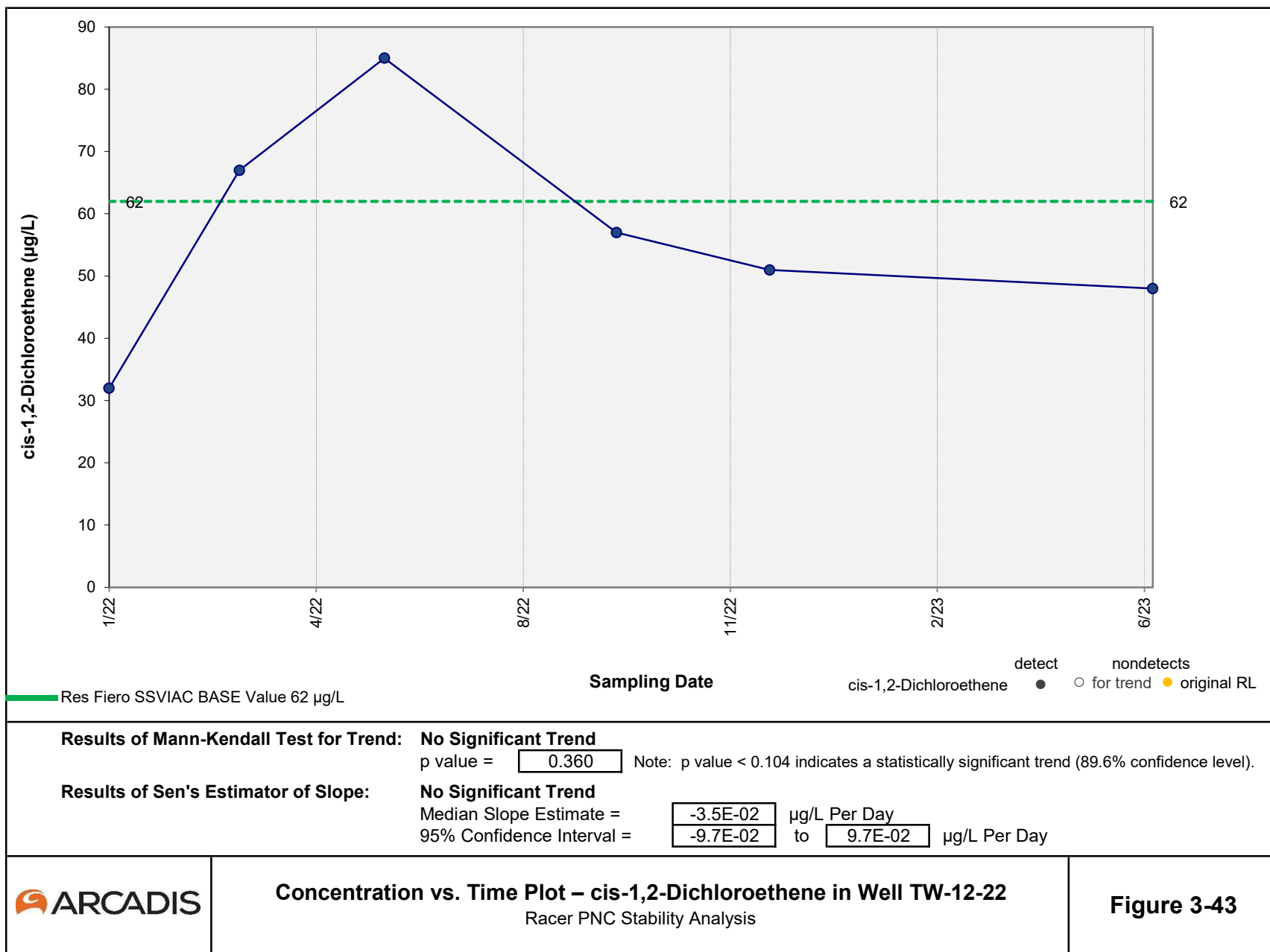


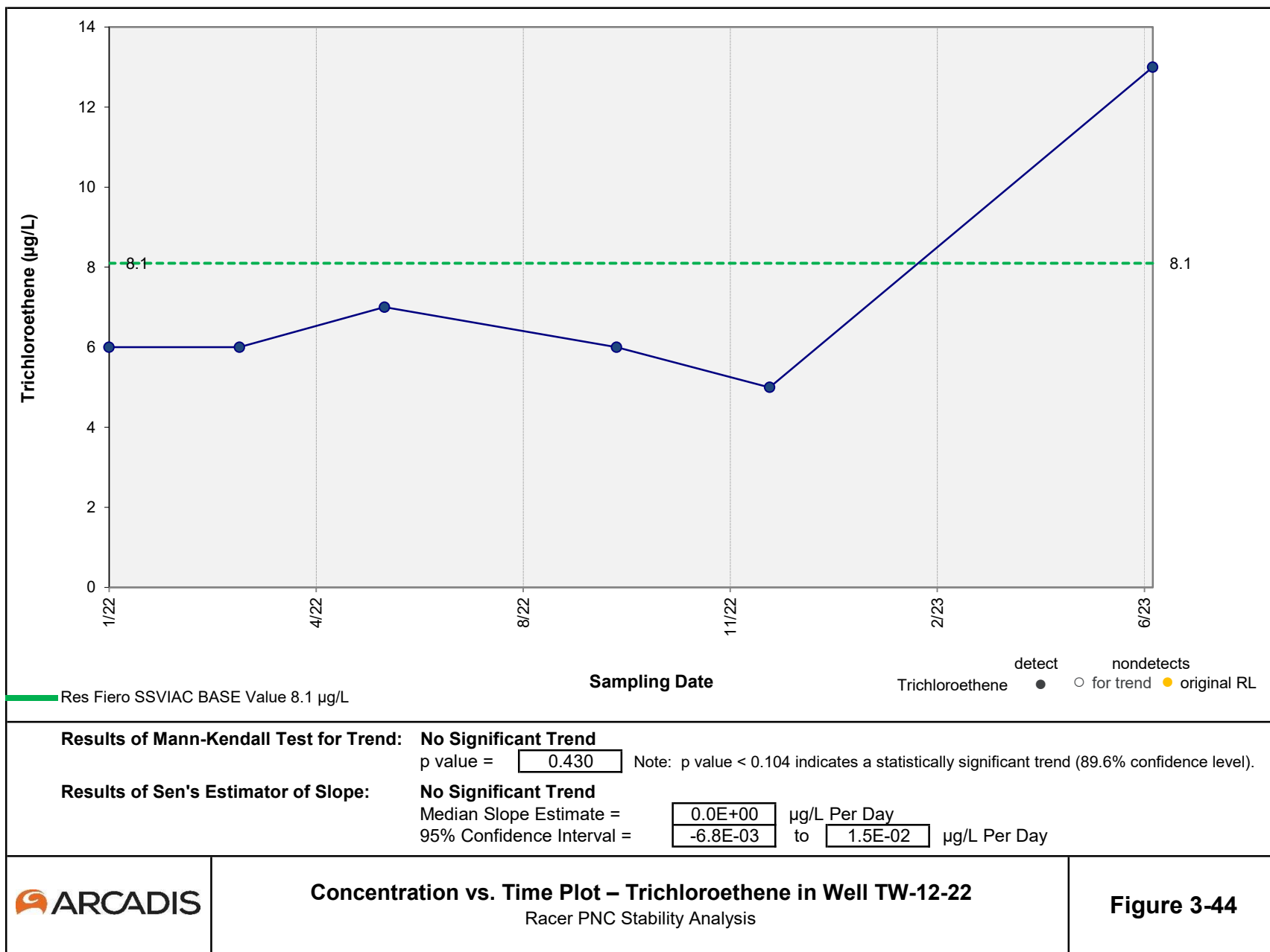




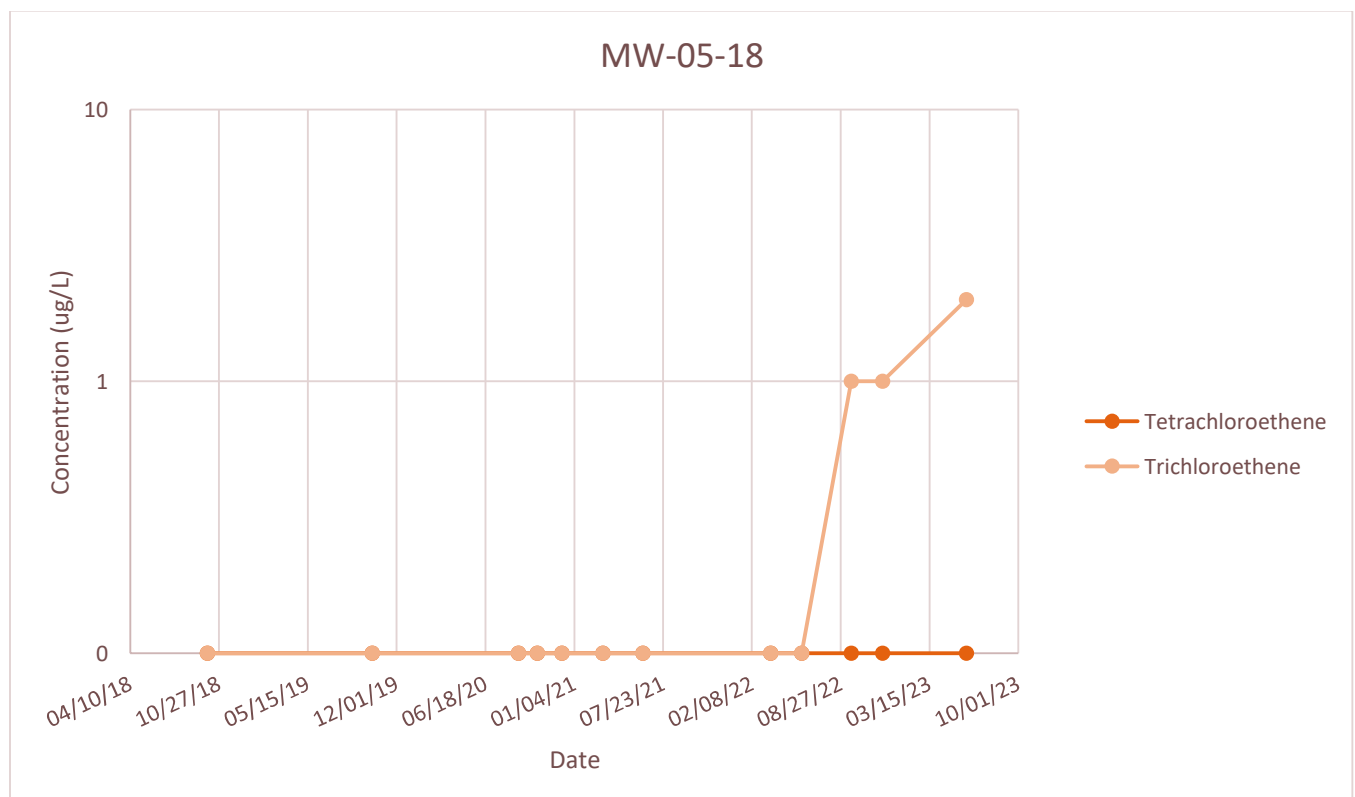
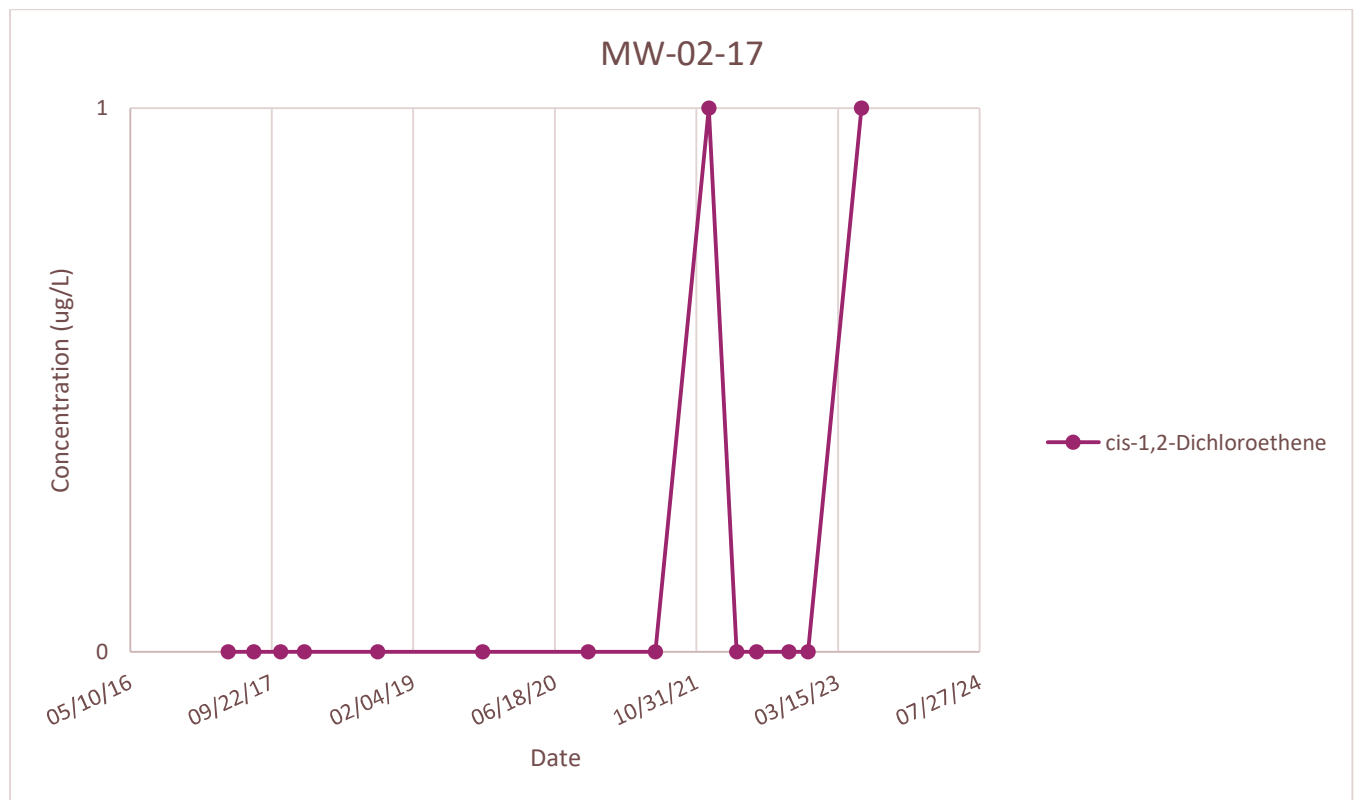


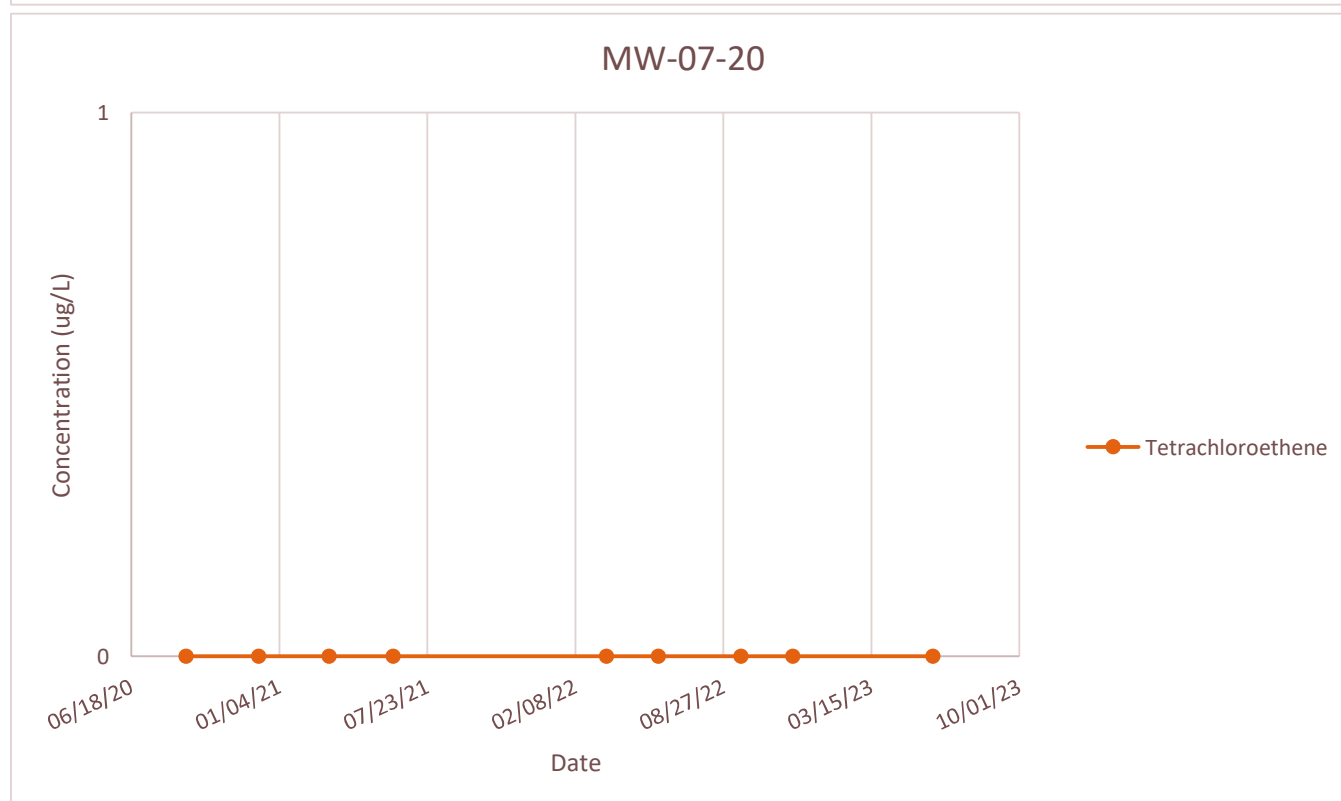
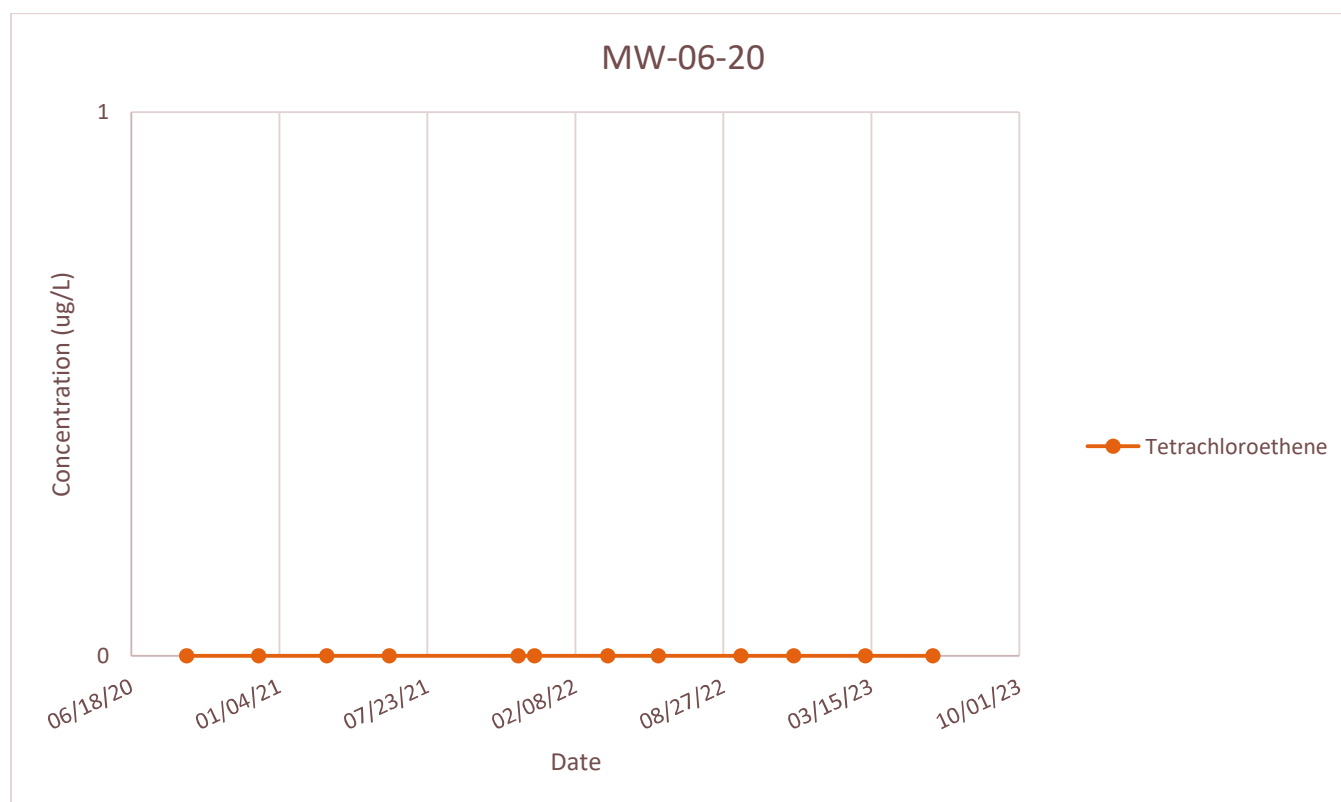




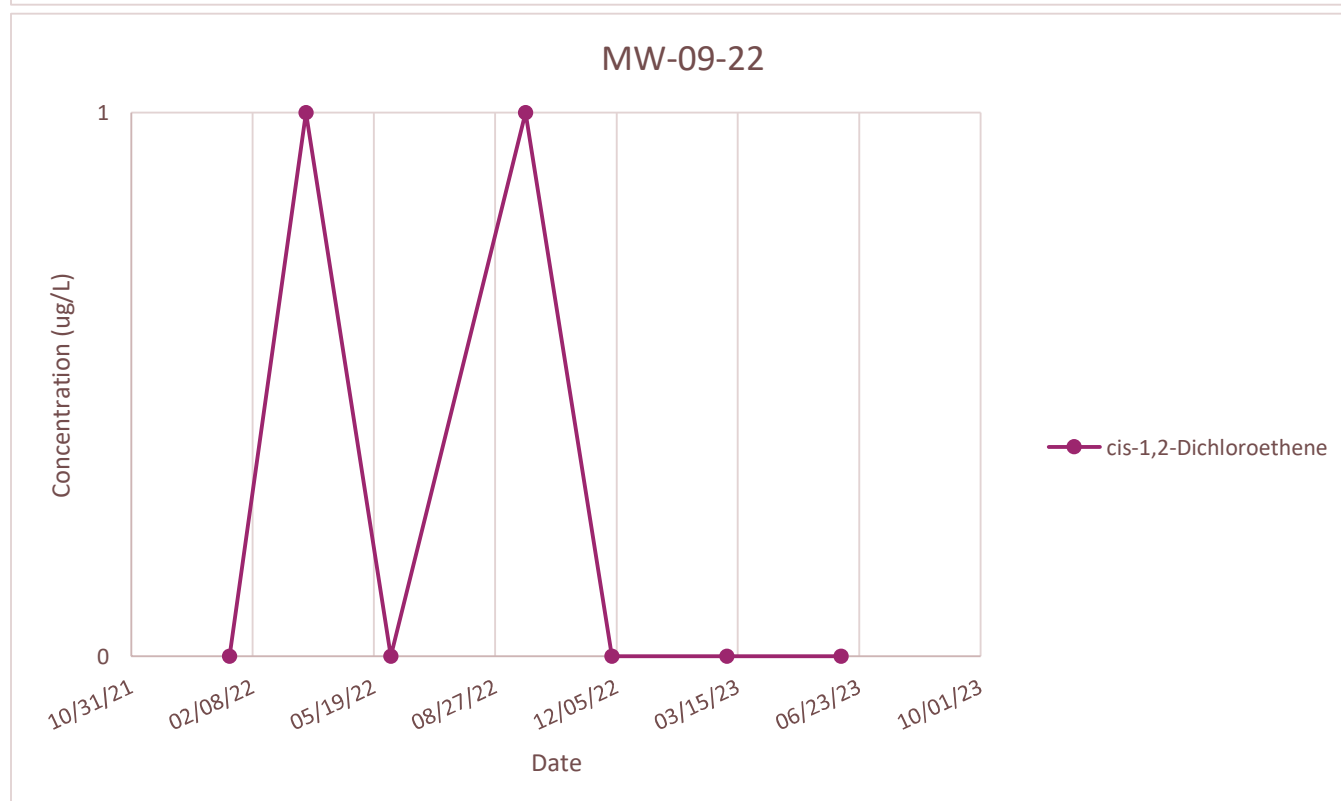
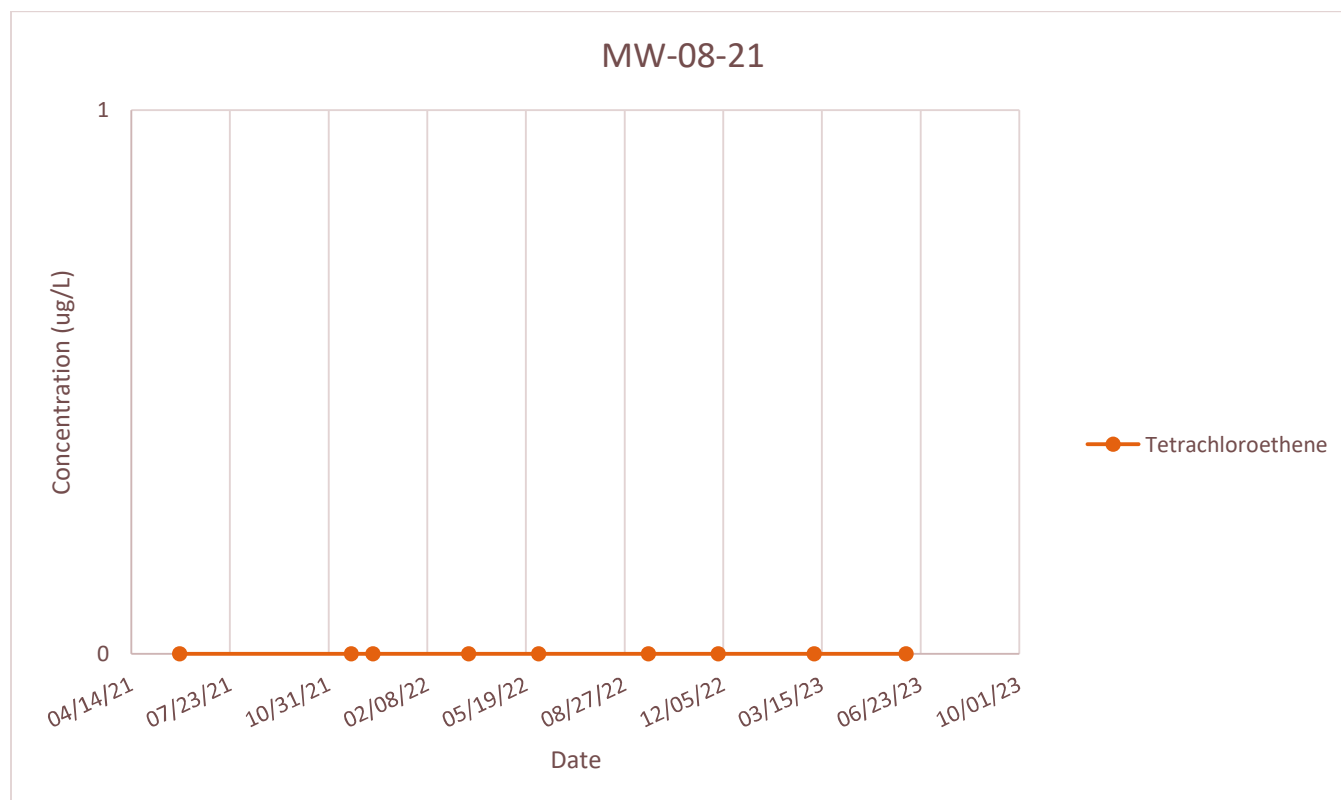


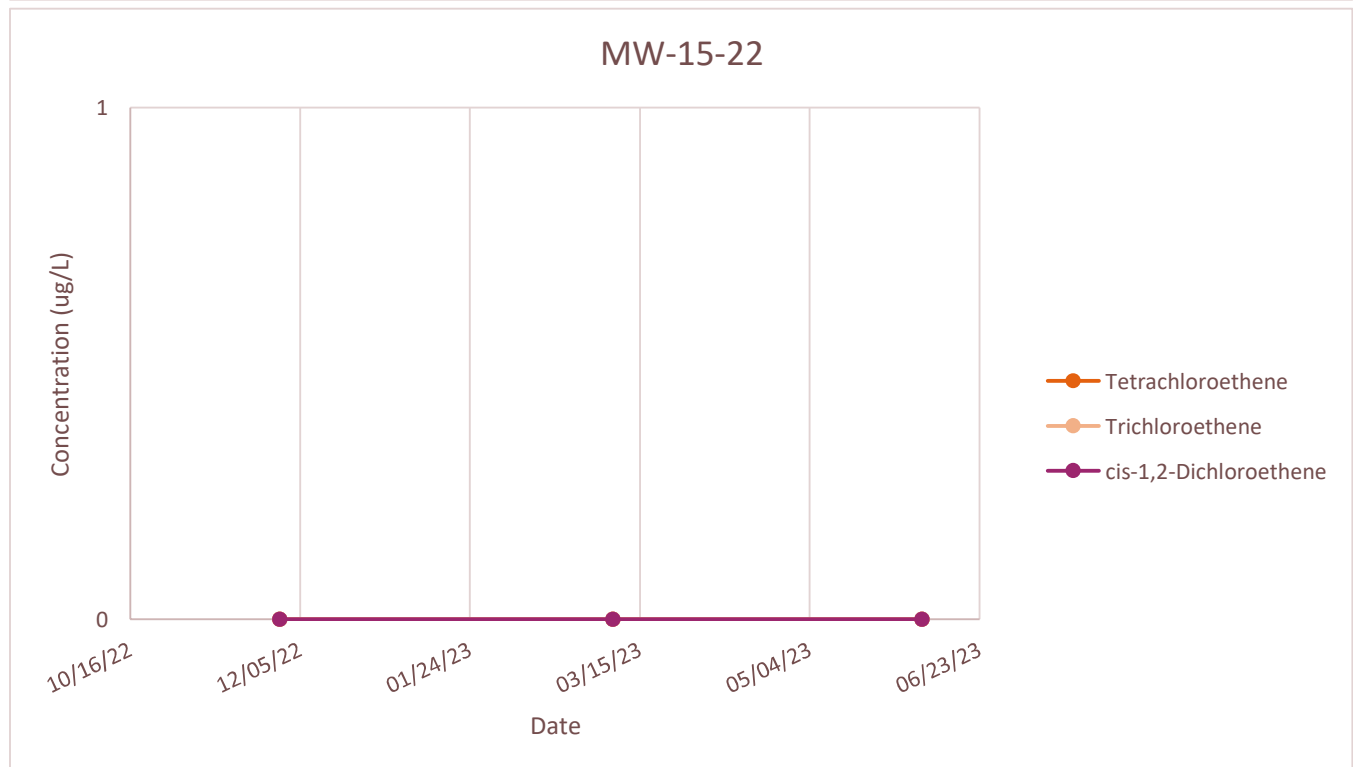
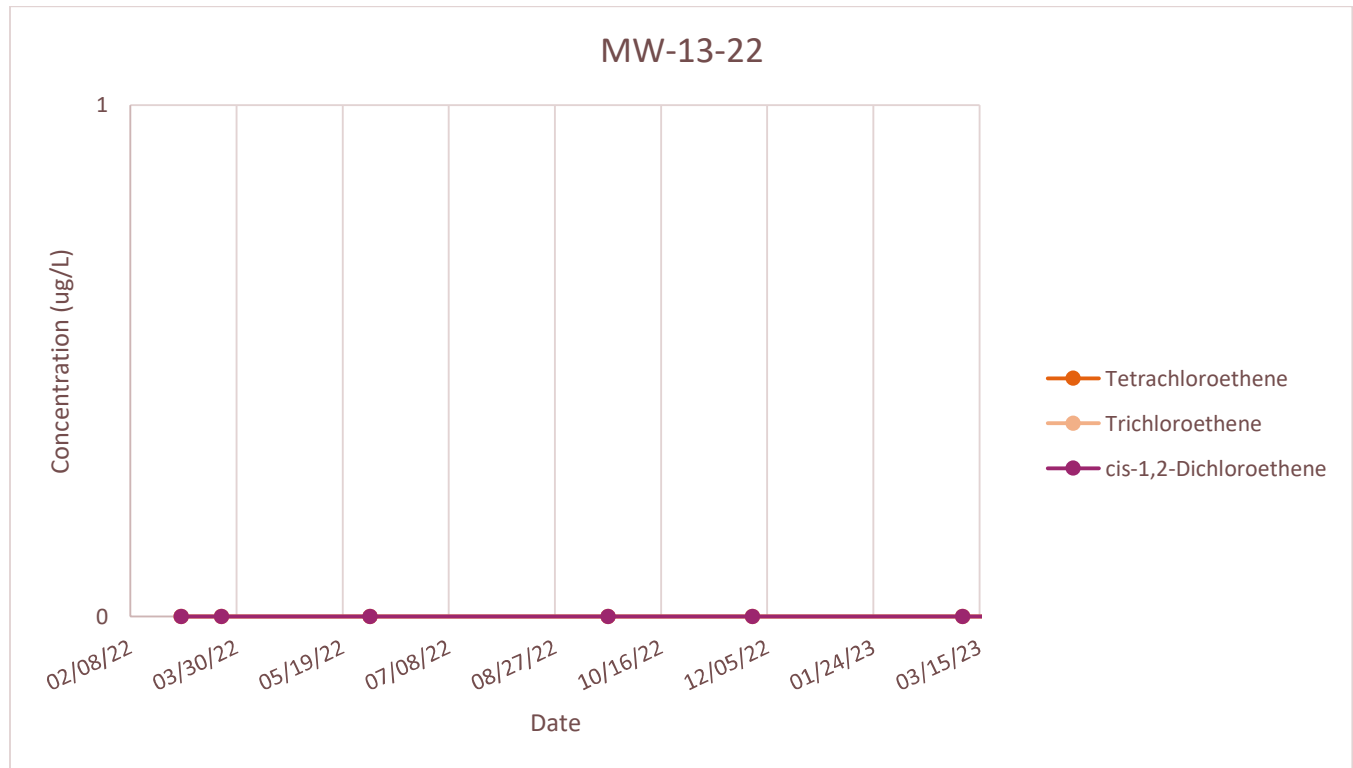
Attachment 3 -
Groundwater Trend Graphs

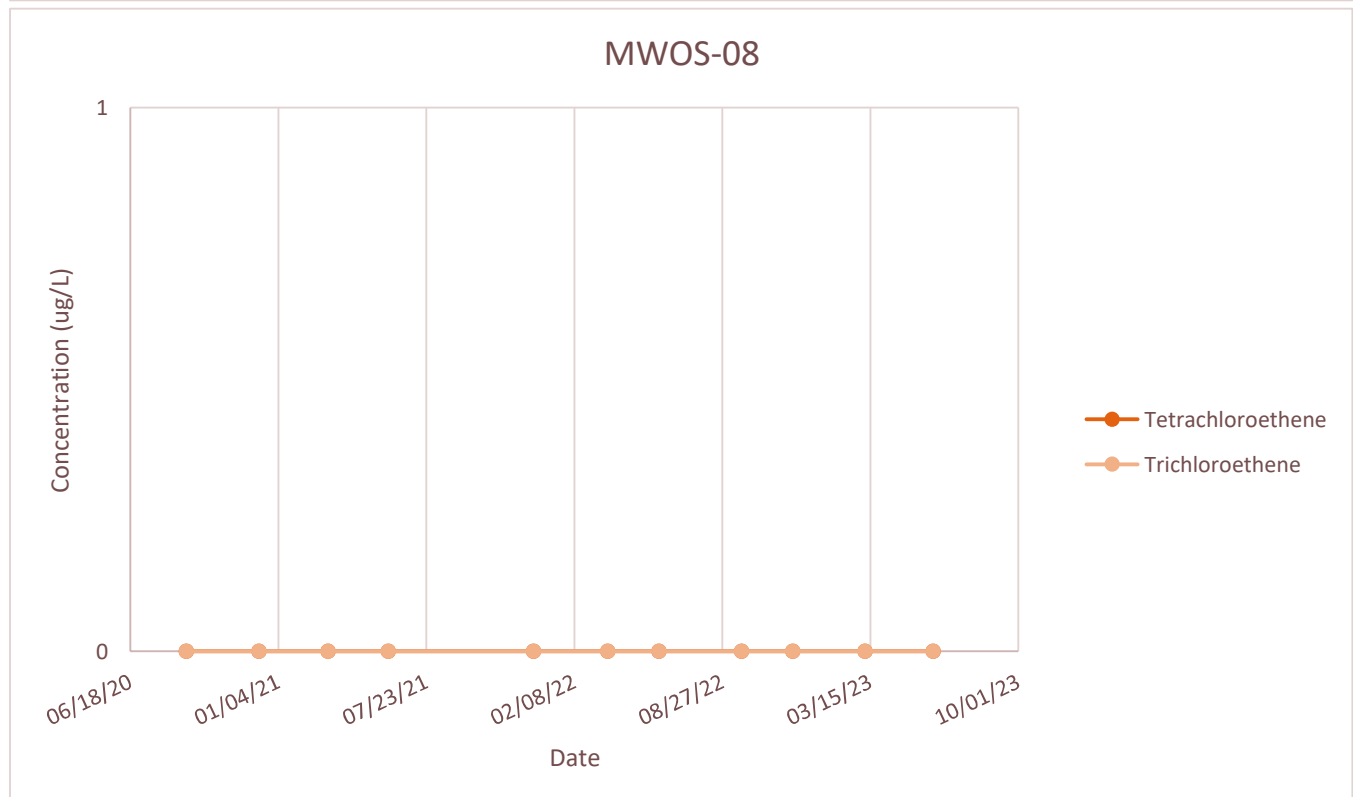
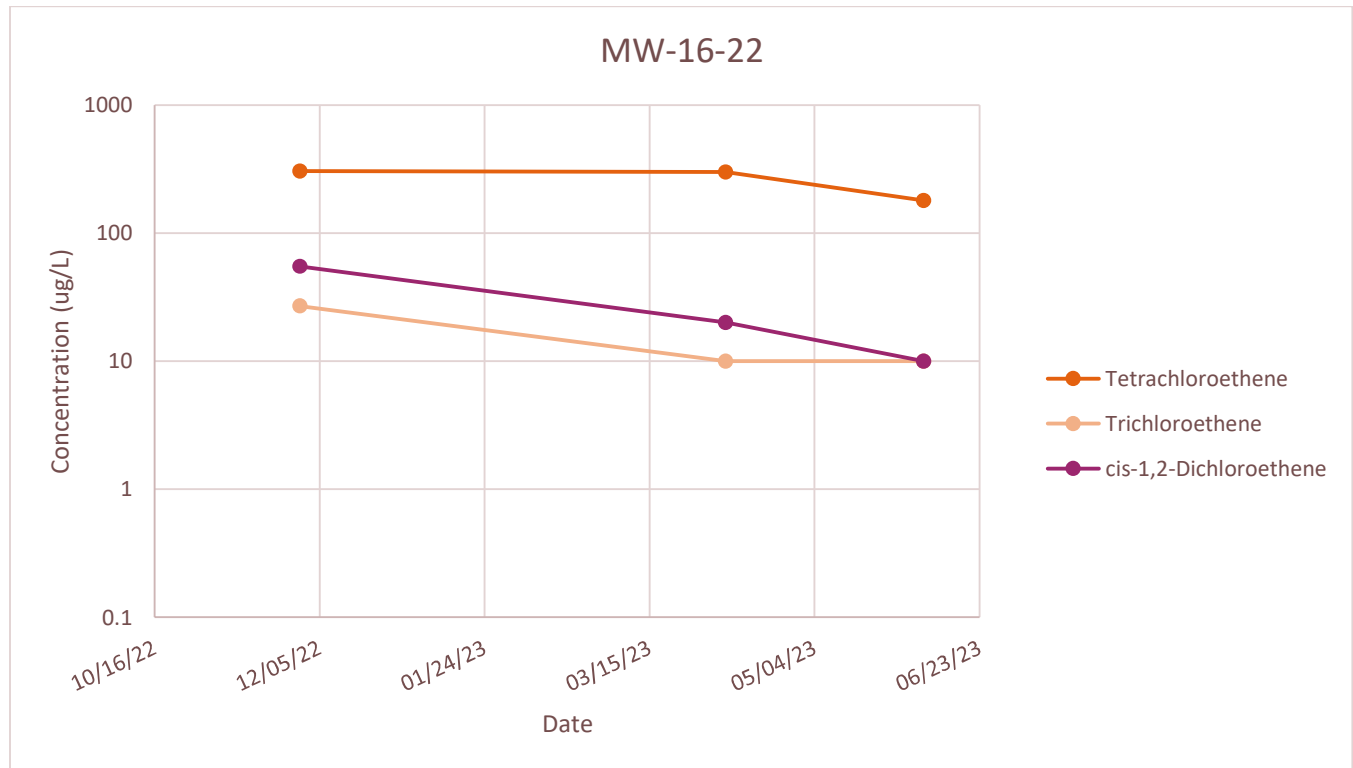




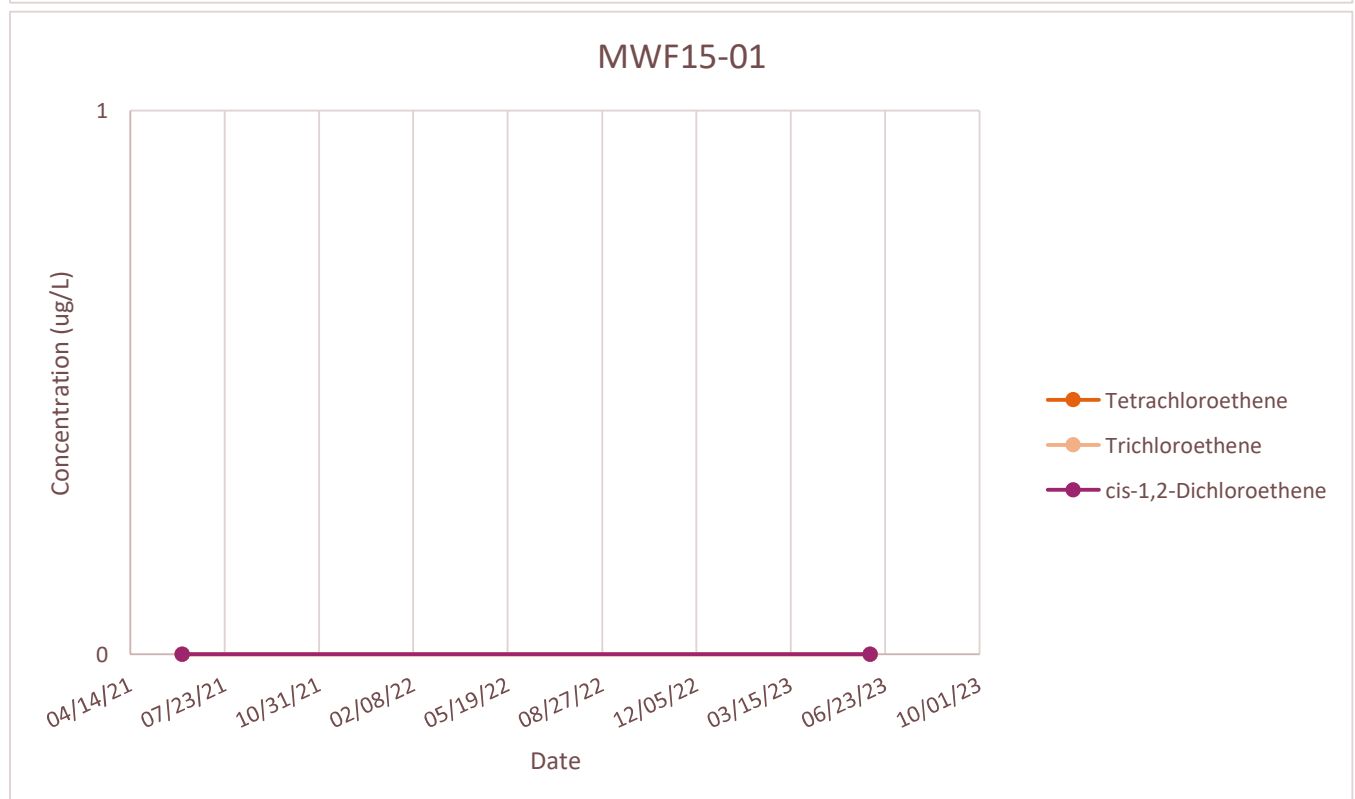
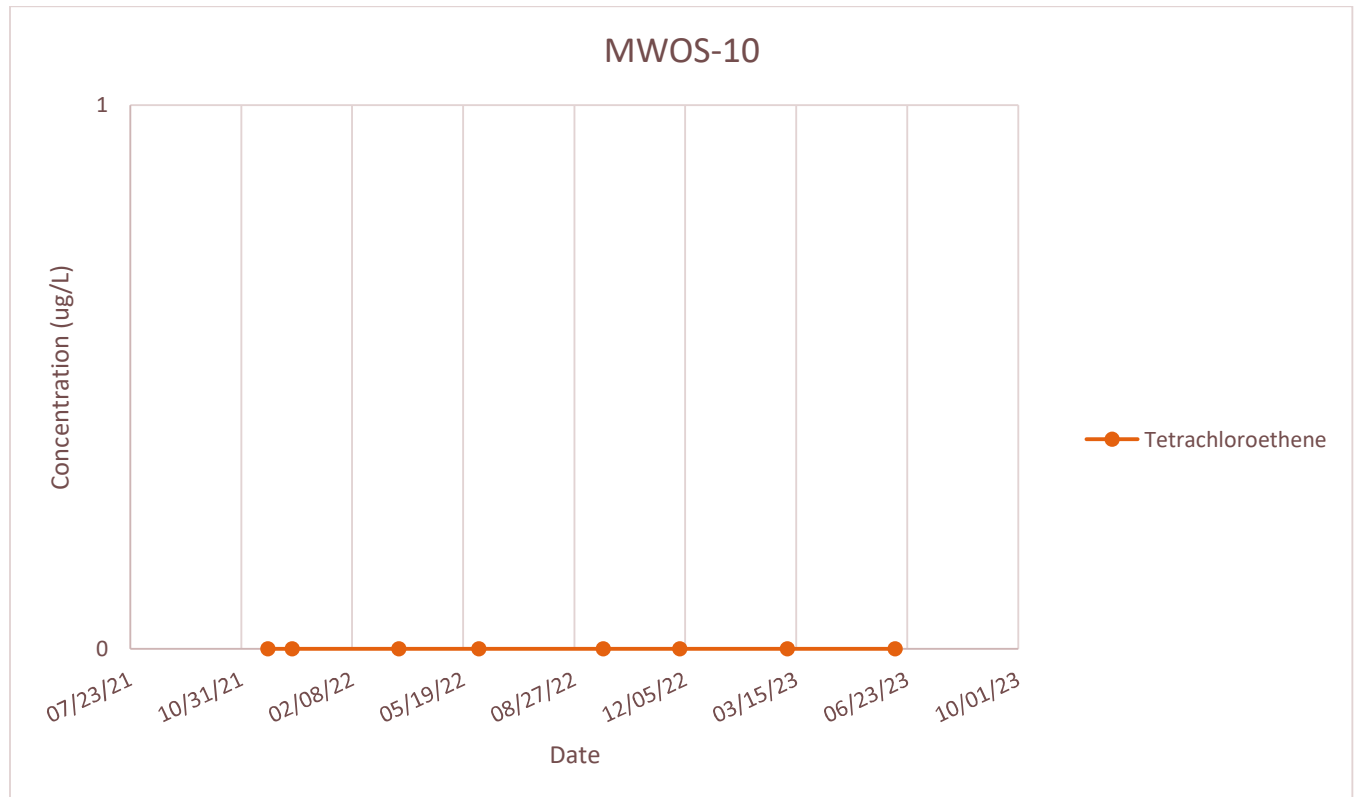
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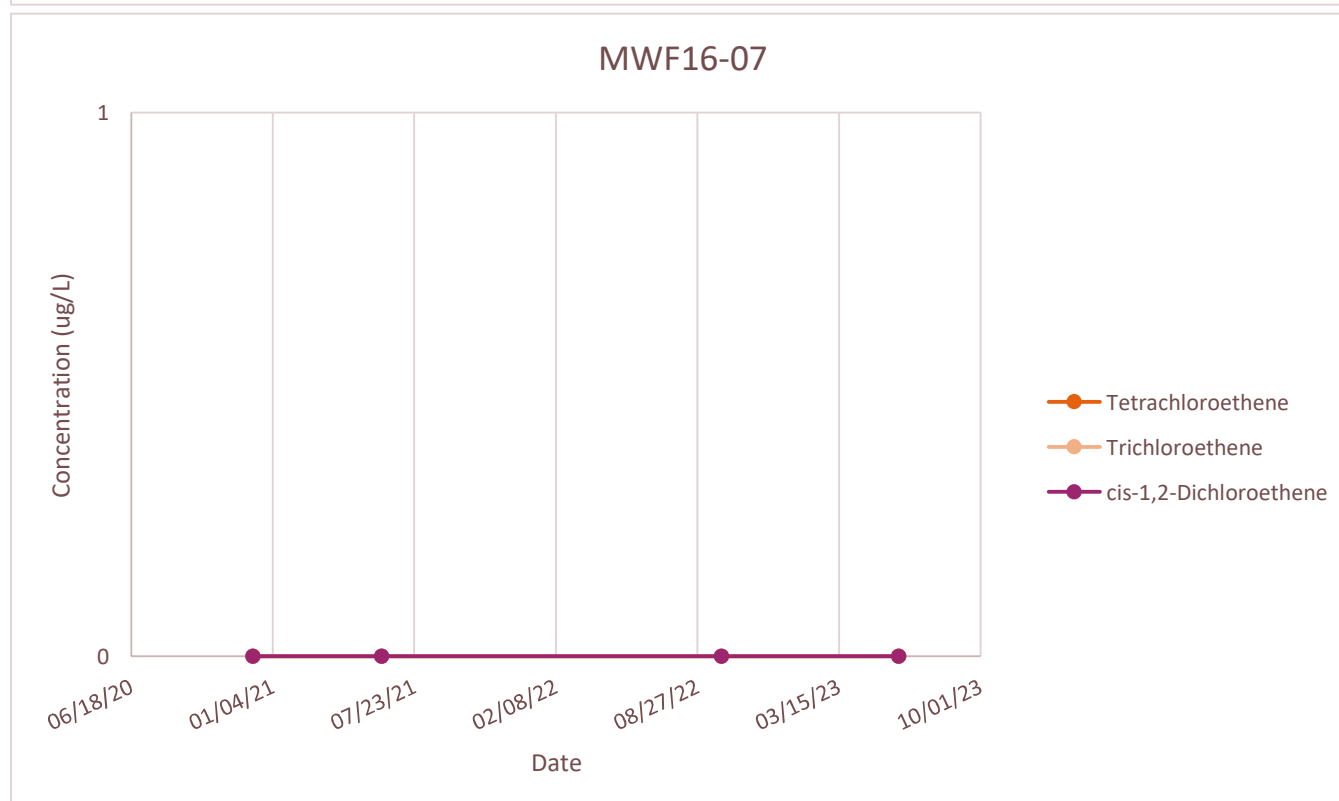
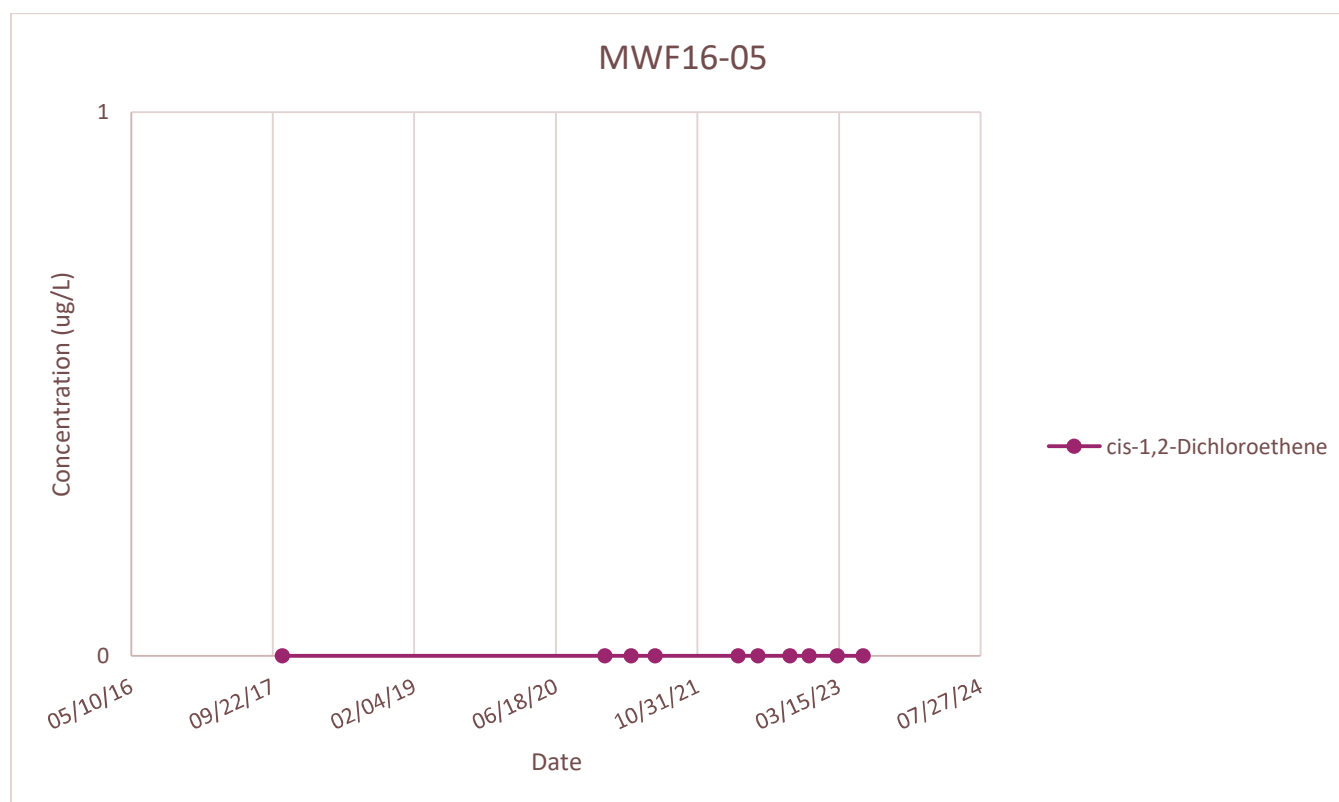




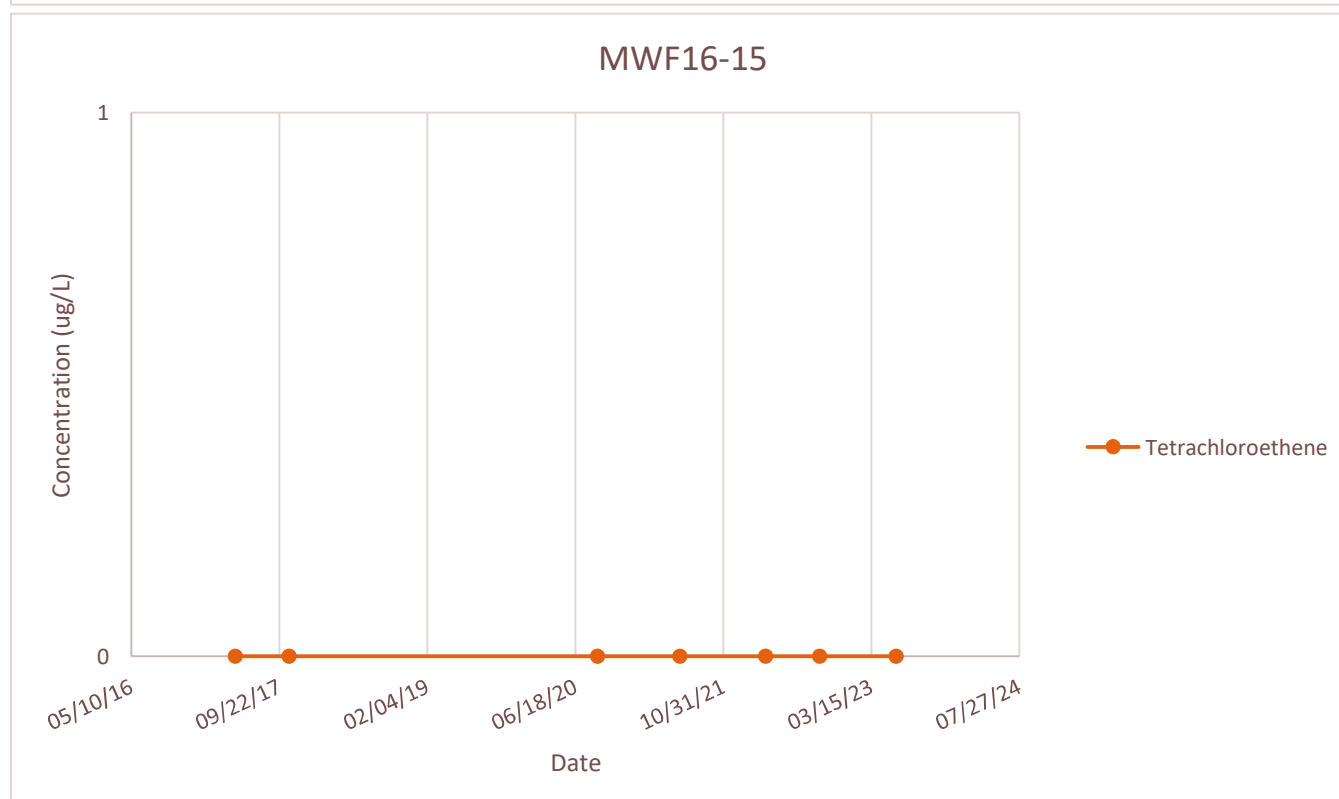
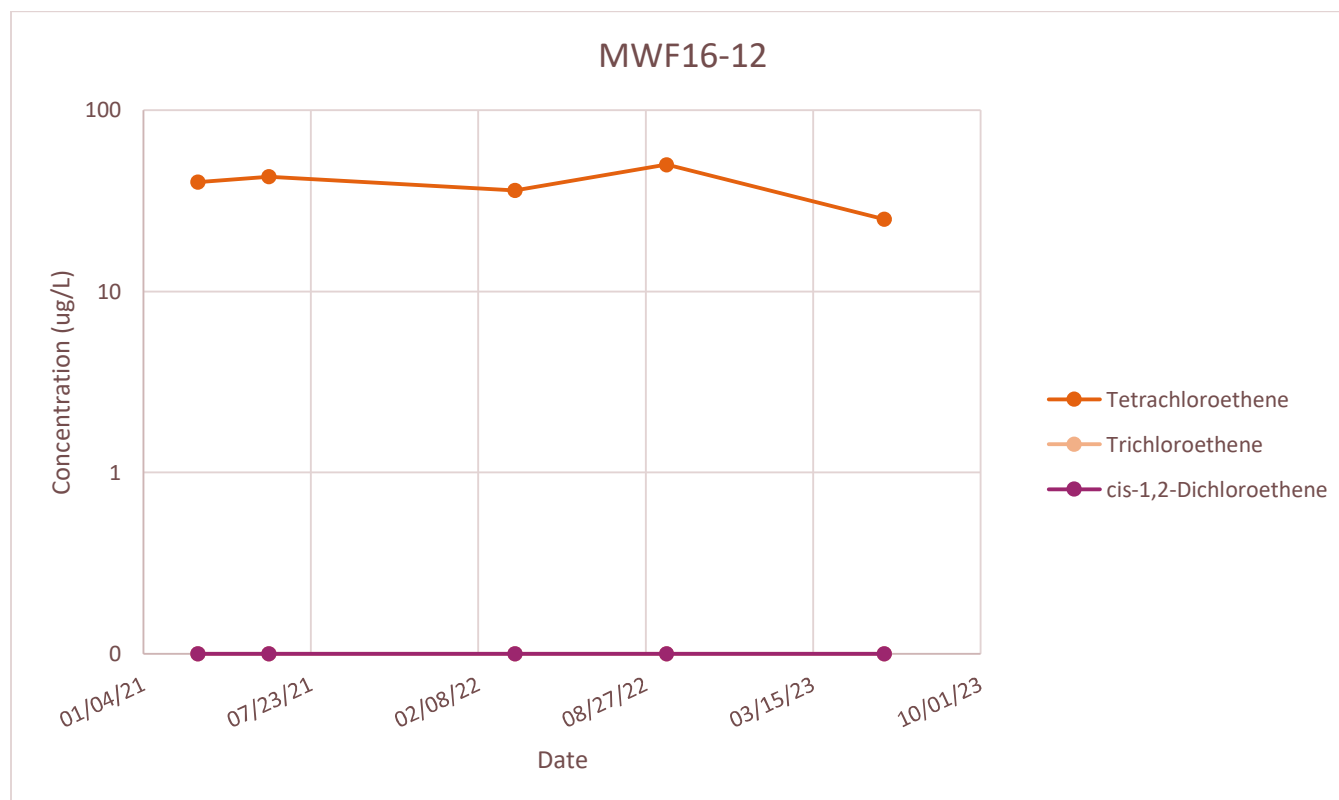
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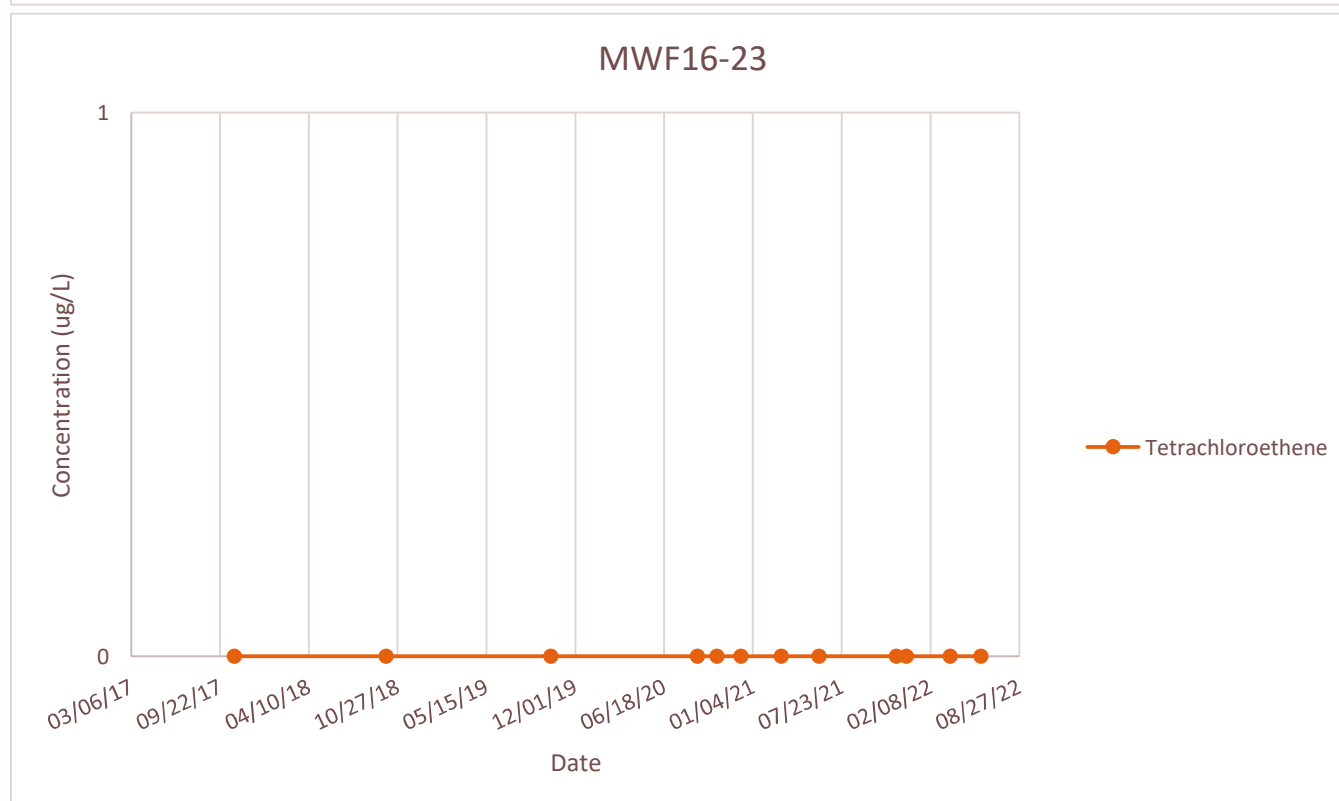
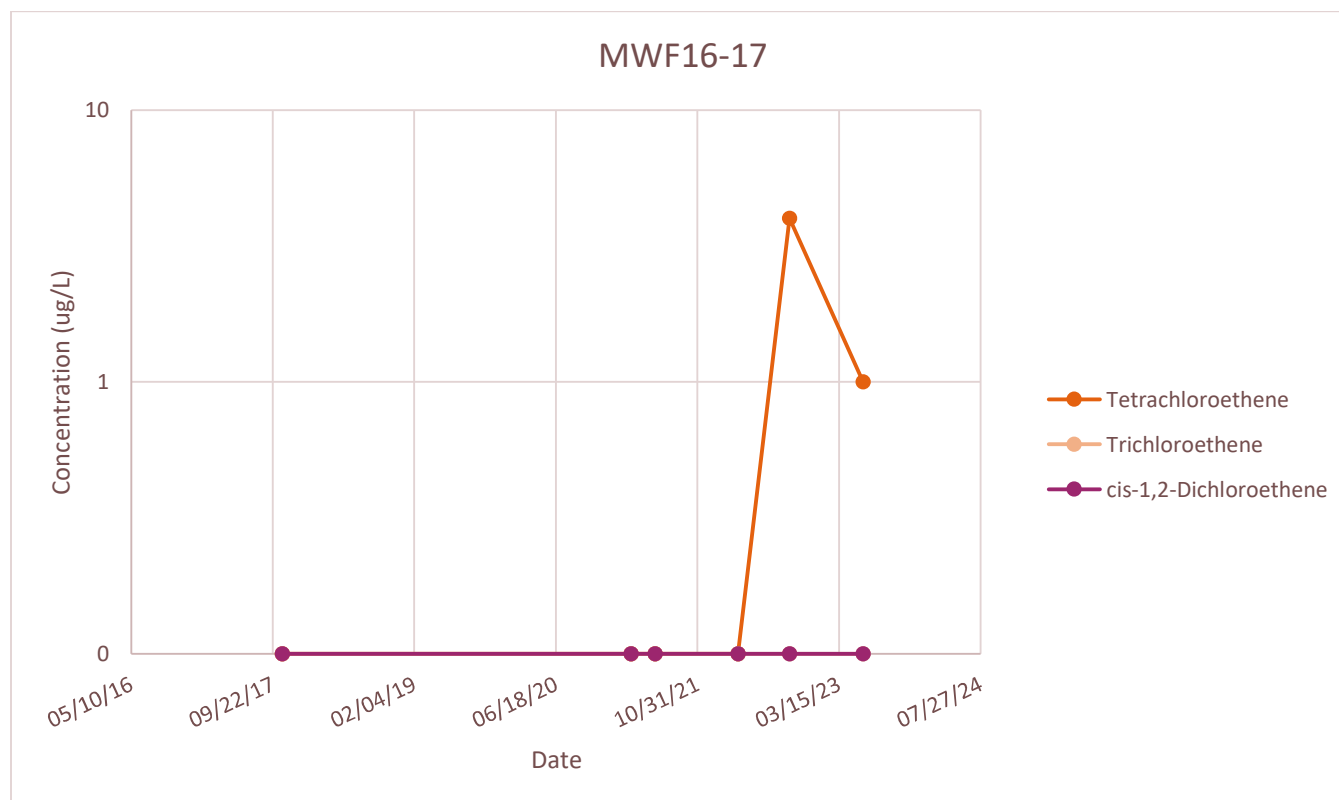
Groundwater Trend Graphs



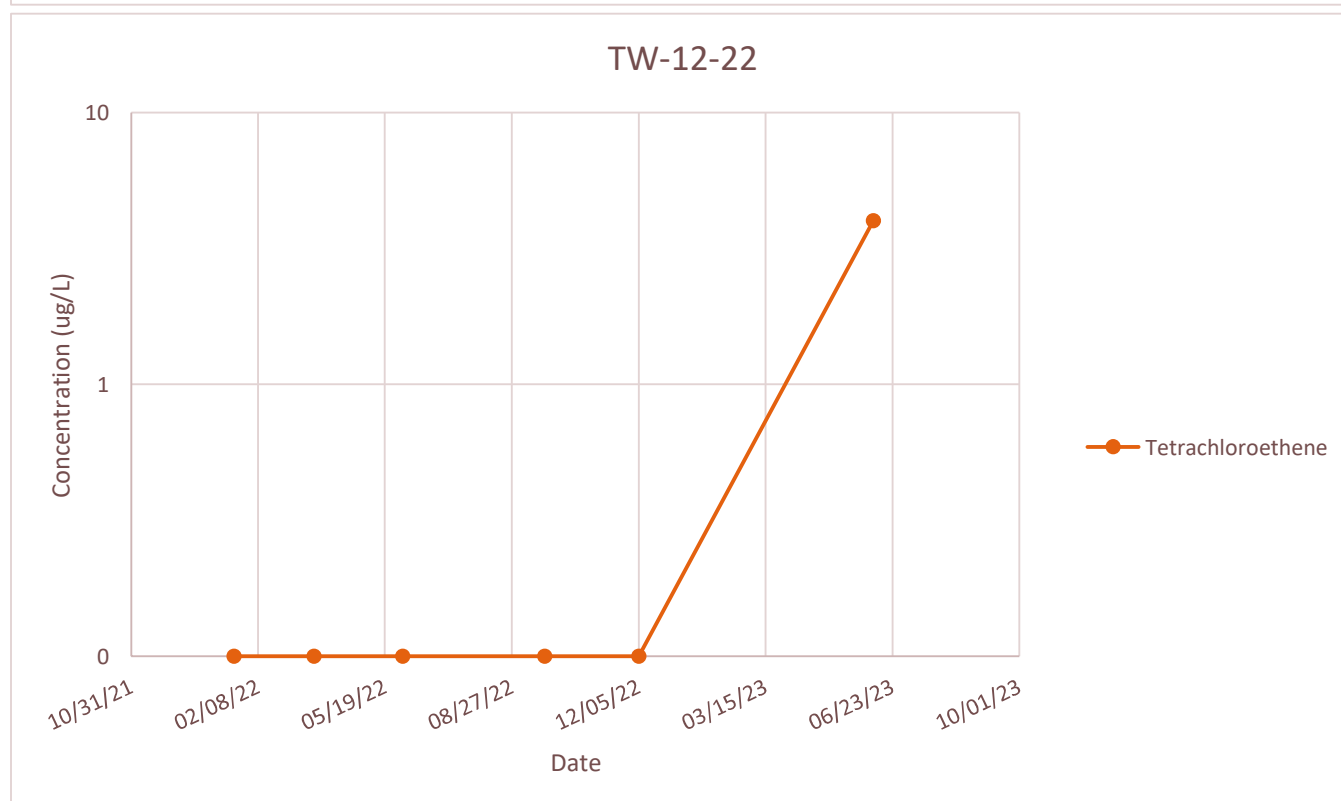
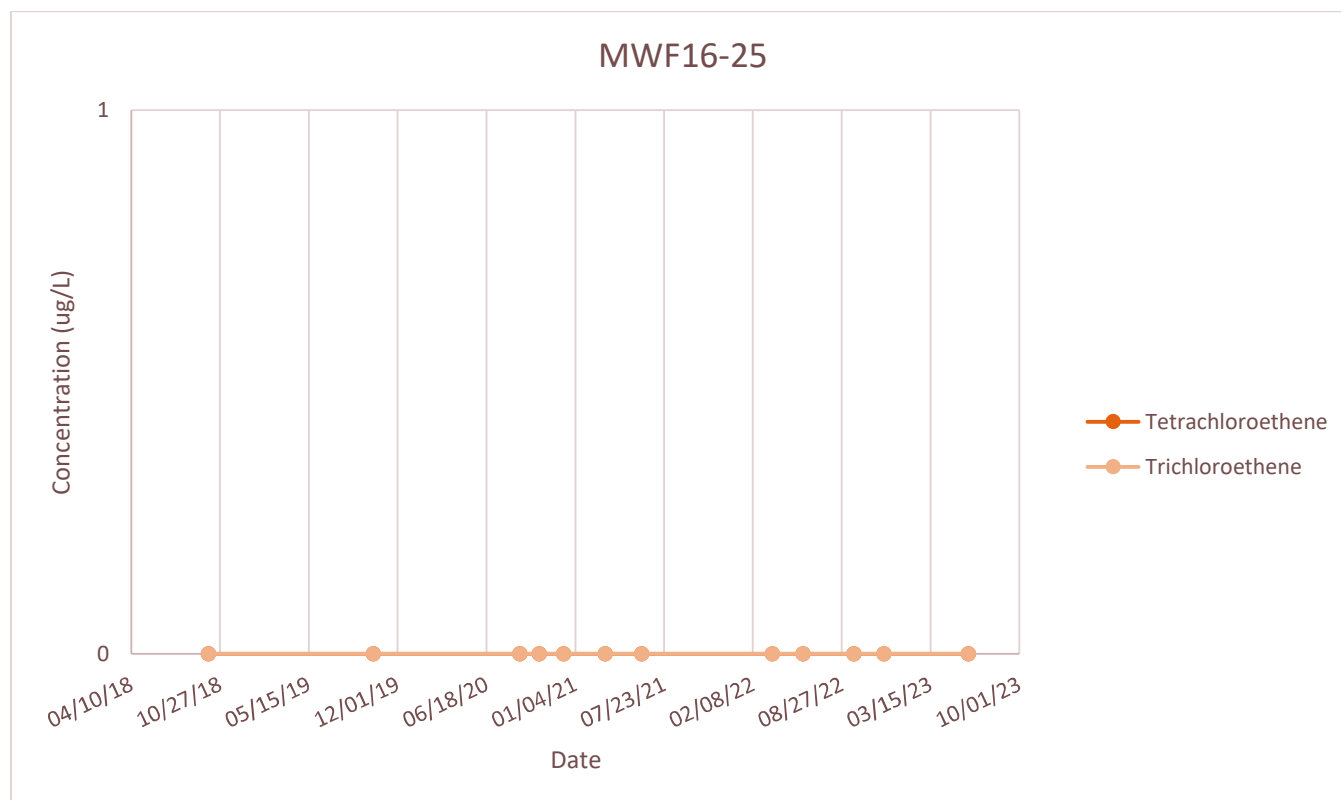
Attachment 3 -
Groundwater Trend Graphs



Groundwater Trend Graphs



Attachment 3 -
Groundwater Trend Graphs



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Groundwater Trend Graphs

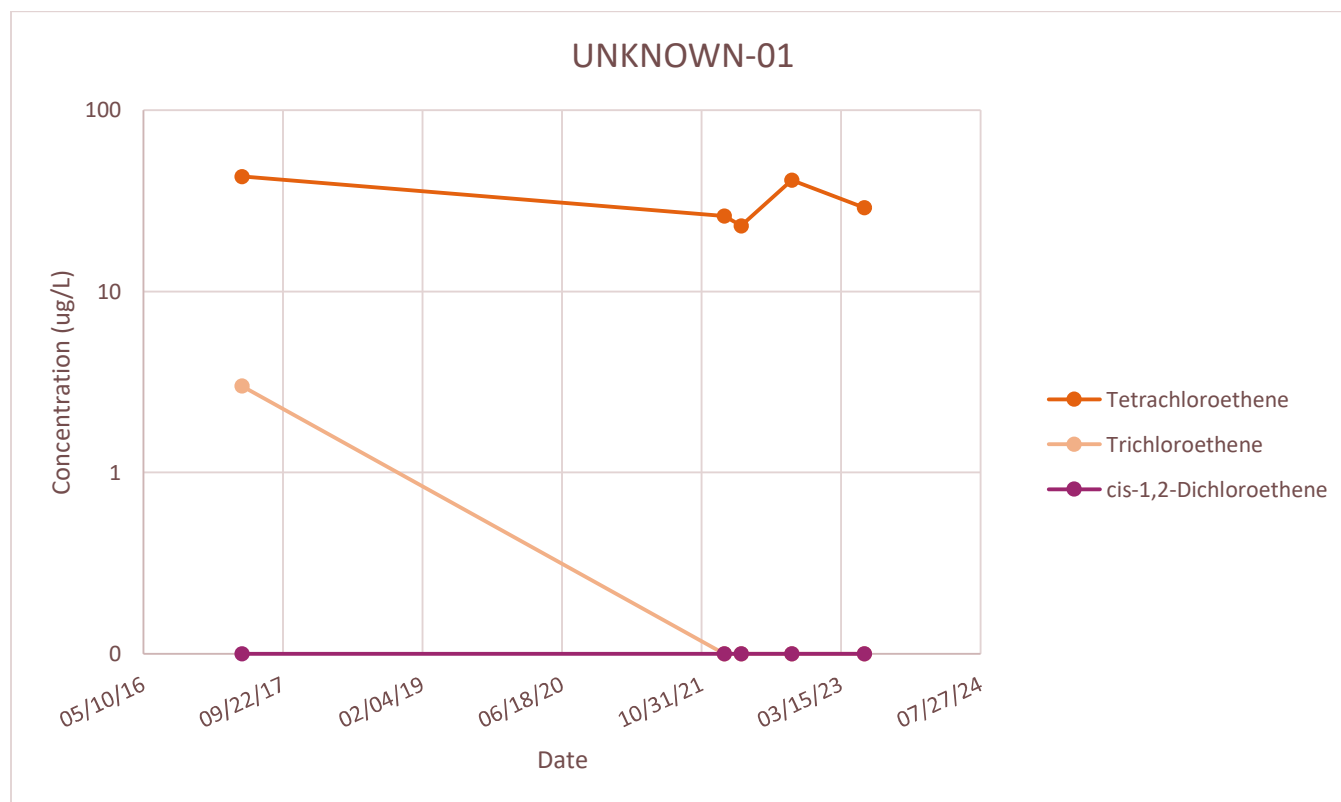


TABLE 3-1
Summary Statistics and Trend Results
Racer PNC Soil Vapor Extraction Analysis
Pontiac, MI

Well ID	Analyte	Date Range	Figure	FOD	Detected Results Summary ¹				Mann-Kendall Test ²				Sen's Estimator of Slope ²			
					Range	Mean	Median	SD	Result ⁴	MK Result Note	P-Value	S Value	Result ⁴	Sen's Result Note	Slope (Units/Day)	95% CI (Units/Day)
SV-01-21	Tetrachloroethylene	05/21 - 06/23	3-1	6 / 9	7.5 - 14	11.4	11.5	2.7	NST	--	0.130	-12	NT	--	-0.00814	-0.0222 to 0
SV-01-21	Trichloroethylene	05/21 - 06/23	3-2	8 / 9	8 - 23	13.5	11.5	5.5	DWN	--	0.075	-15	DWN	--	-0.0148	-0.0253 to -0.000255
SV-02-21	Tetrachloroethylene	05/21 - 06/23	3-3	7 / 9	7.5 - 11	8.7	8.3	1.2	NST	--	0.209	-9	NST	--	-0.00290	-0.0119 to 0.00151
SV-02-21	Trichloroethylene	05/21 - 06/23	3-4	9 / 9	50 - 83	61.6	55	11.9	DWN	--	0.049	-17	DWN	--	-0.0256	-0.0634 to -0.000585
SV-04-21	Trichloroethylene	10/21 - 06/23	3-5	7 / 8	11 - 18	15.4	17	3	NST	--	0.406	-3	NST	--	-0.000839	-0.0281 to 0.0137
SV-06-21	Trichloroethylene	03/22 - 06/23	3-6	5 / 6	13 - 48	21.2	15	15	NST	5a	0.235	5	NST	5a	0.0128	-0.0412 to 0.0901

Abbreviations:

-- insufficient data for calculating statistics (n < 4) or not available
FOD = frequency of detection (# detects / # samples)
mean = arithmetic mean
SD = standard deviation

NST = no significant trend
NT = no trend
DWN = downward trend
UP = upward trend

H₀ = null hypothesis: no significant trend (slope = 0)
H_a = alternative hypothesis: significant trend (slope ≠ 0)
90% CI = 90% confidence interval

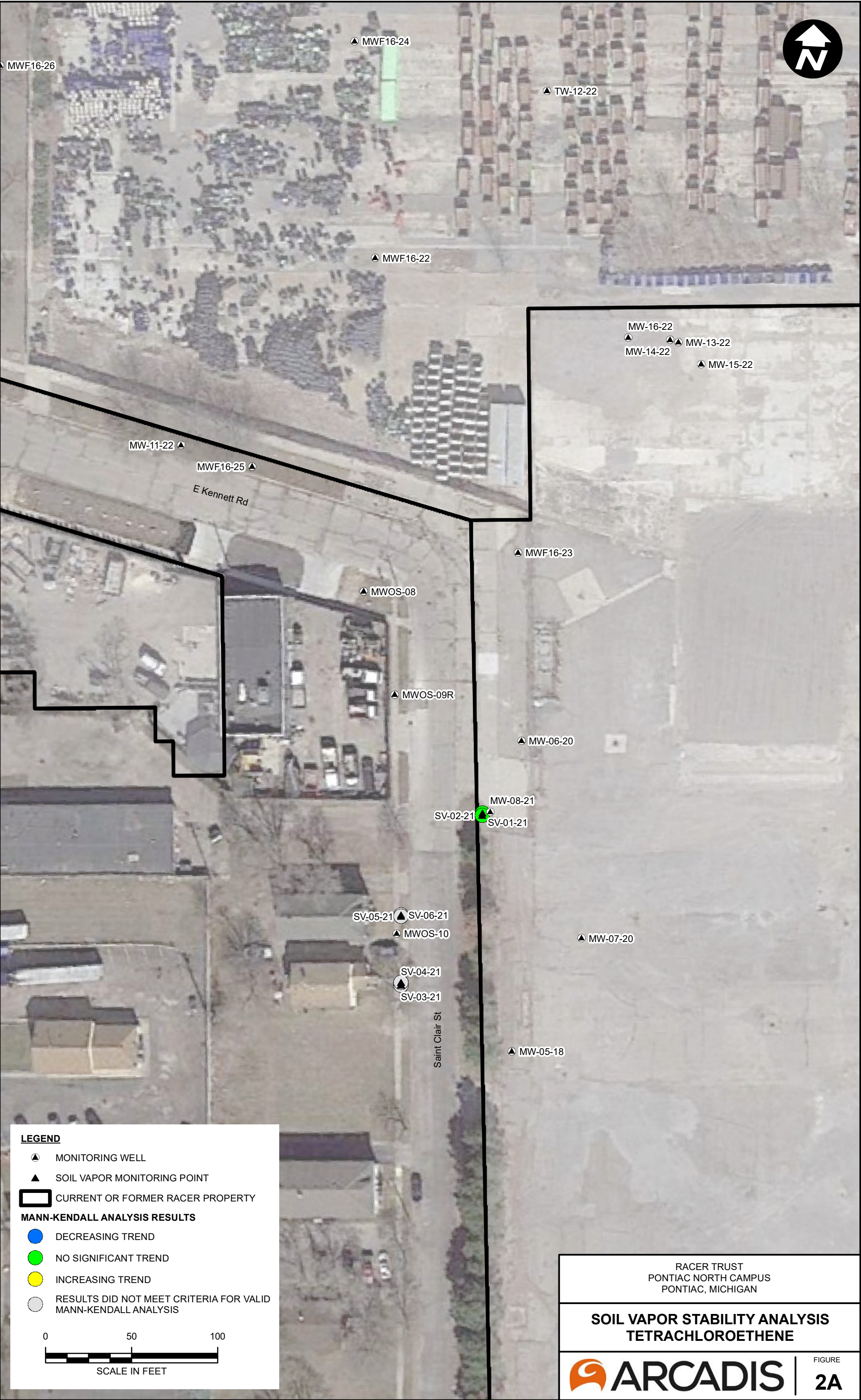
Notes:

1. All analytical results are in µg/m³.
2. Non-detects were assigned a common value less than the minimum detected value, equal to half the minimum reporting limit (RL) in the dataset (USEPA, 2009).
If half the minimum RL was greater than the minimum detected value, then half the minimum detect was assigned.
3. Statistically significant trend defined as having p-value ≤ 0.10, or 90% confidence.
- 5a. MK and Sen's Trend results for datasets with fewer than 8 samples may not be reliable and should be treated with caution.

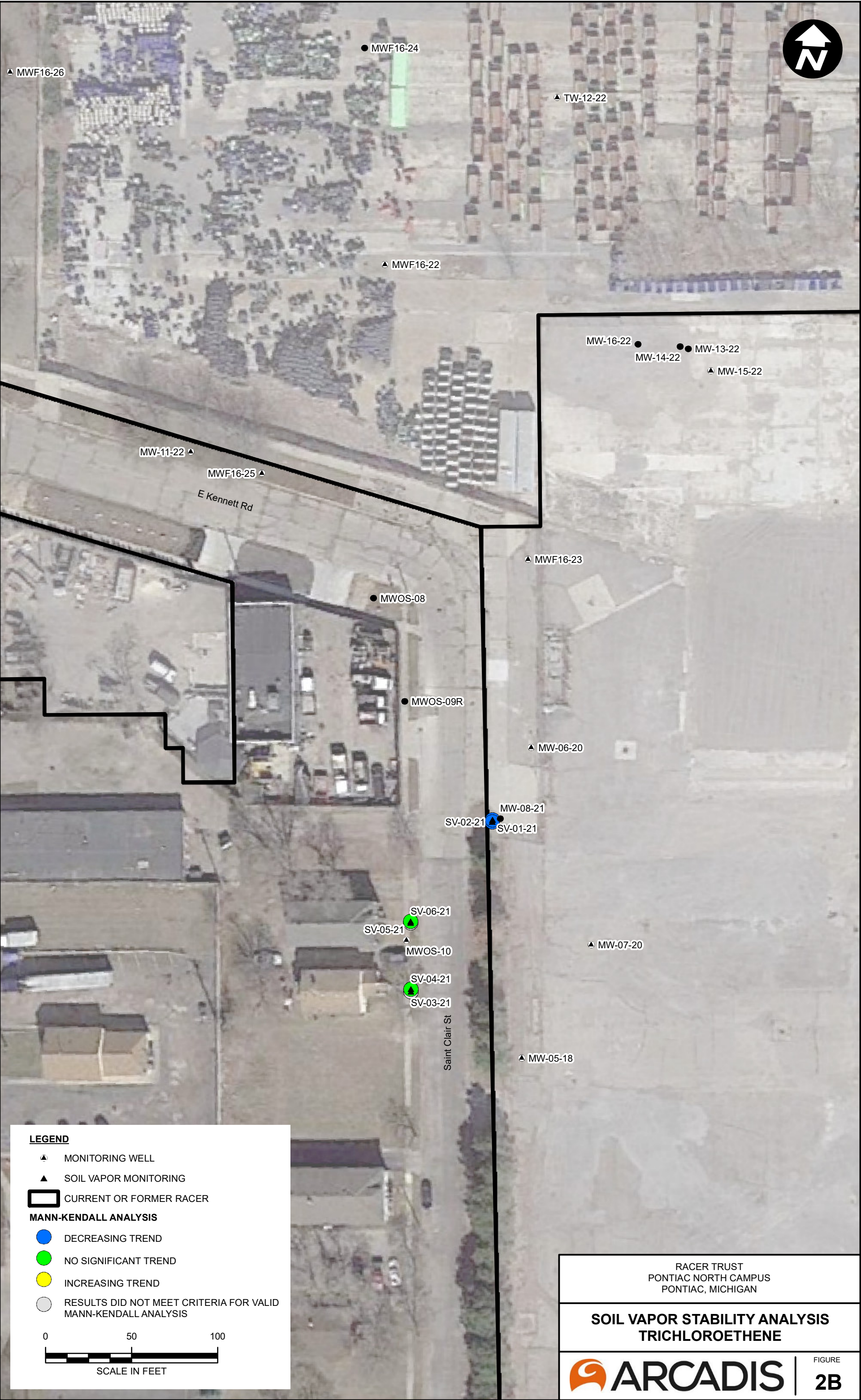
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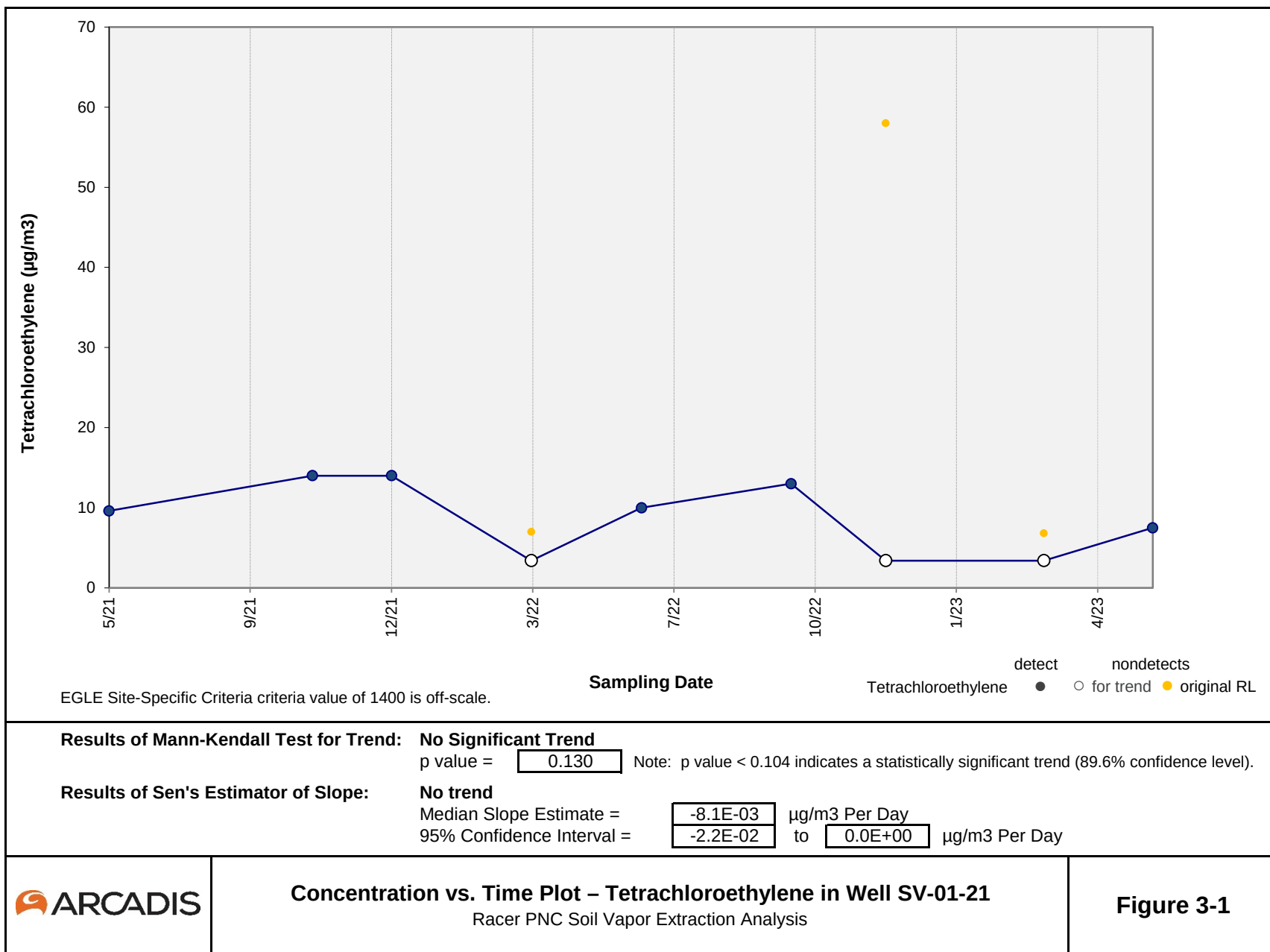
USEPA. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities. Unified Guidance. EPA/530/R-09/007, 2009.

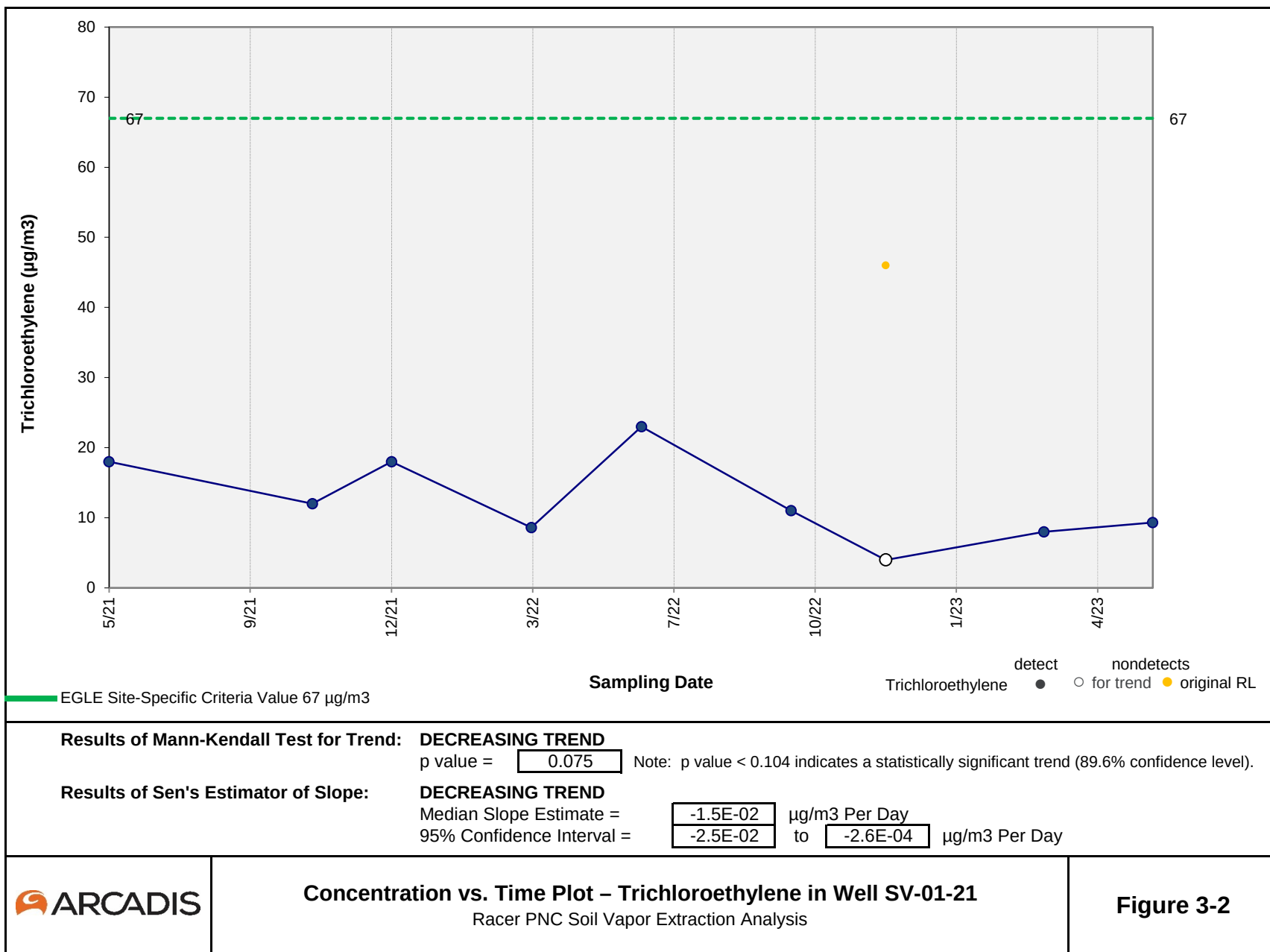
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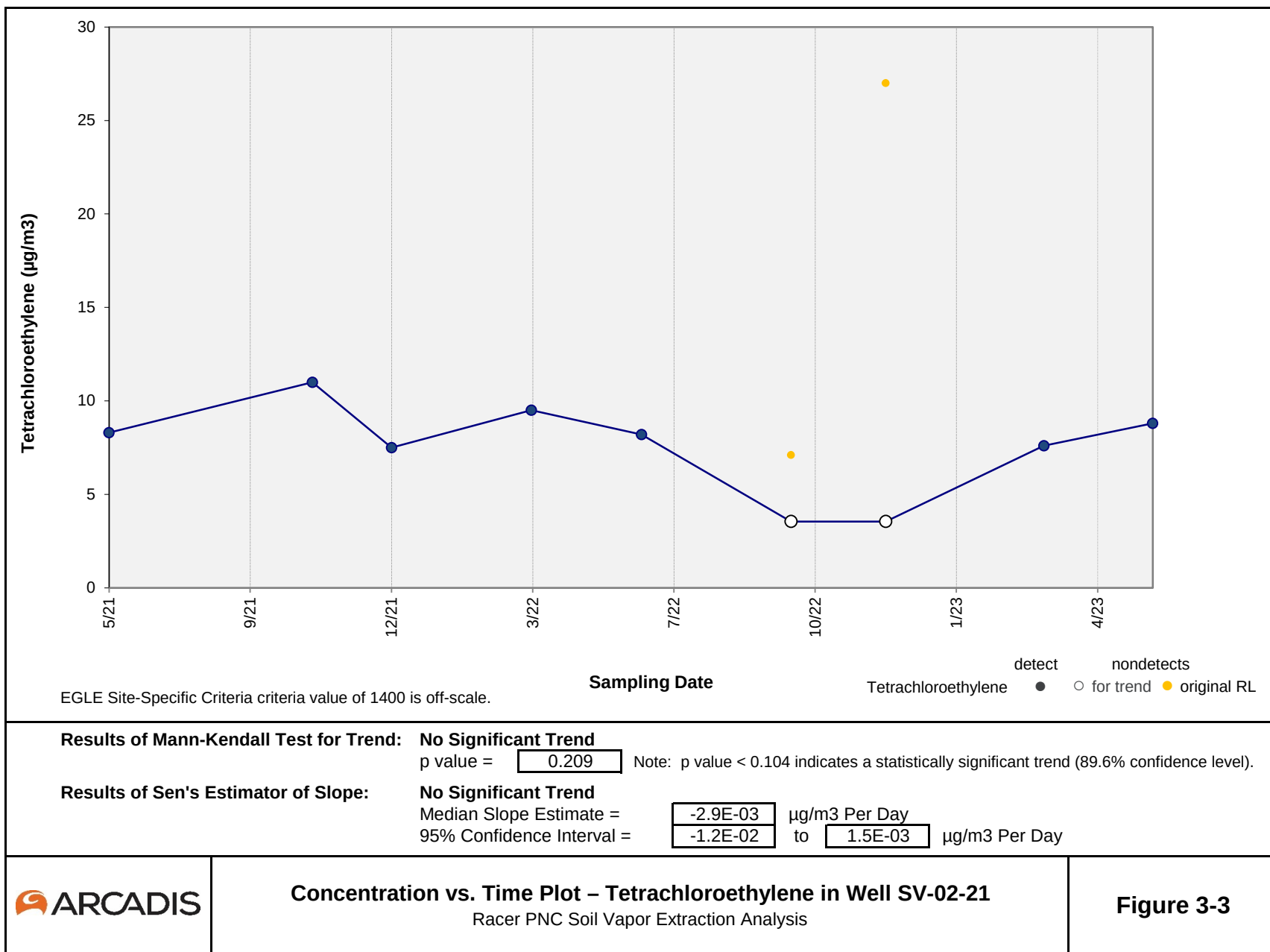


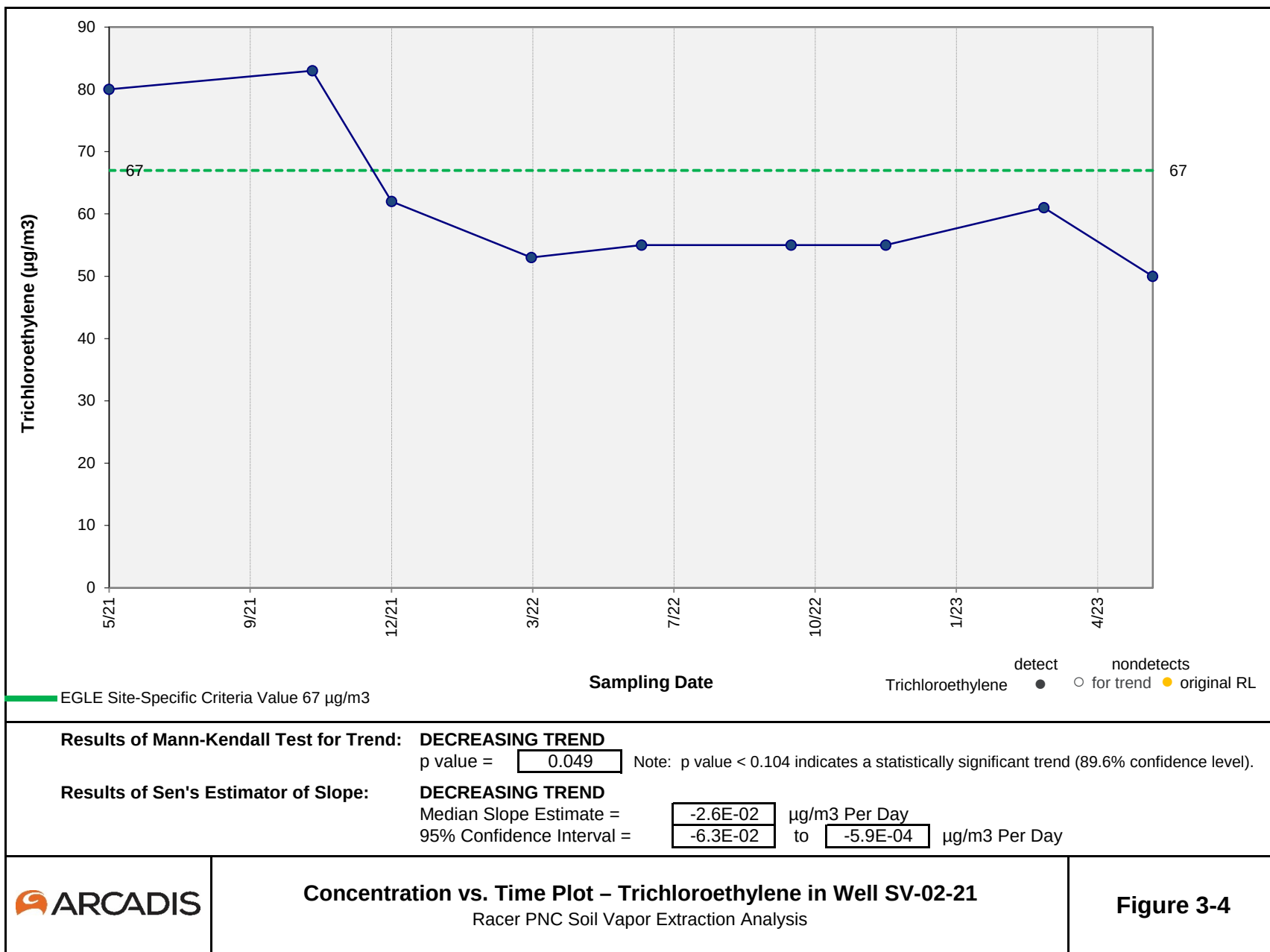
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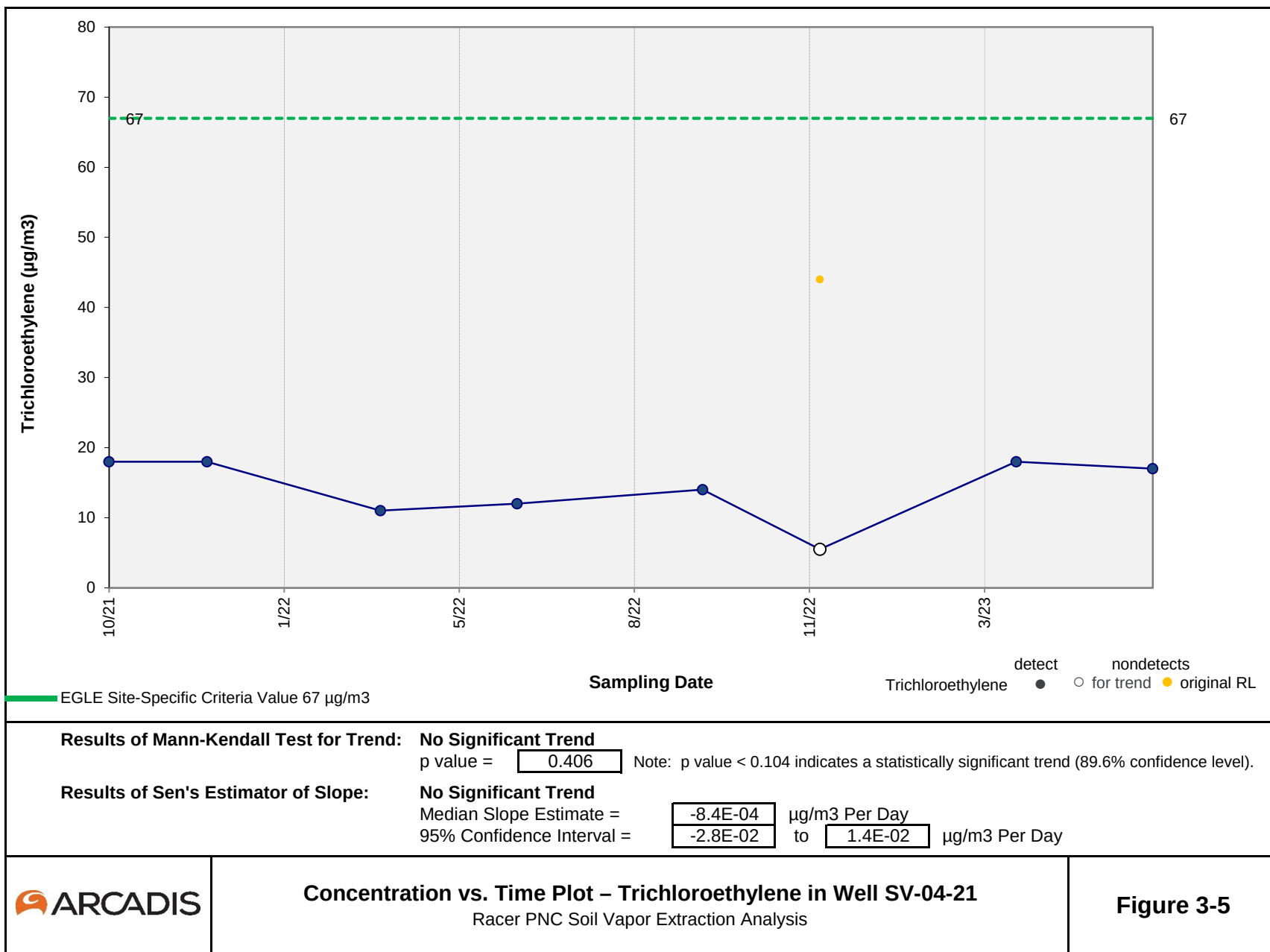


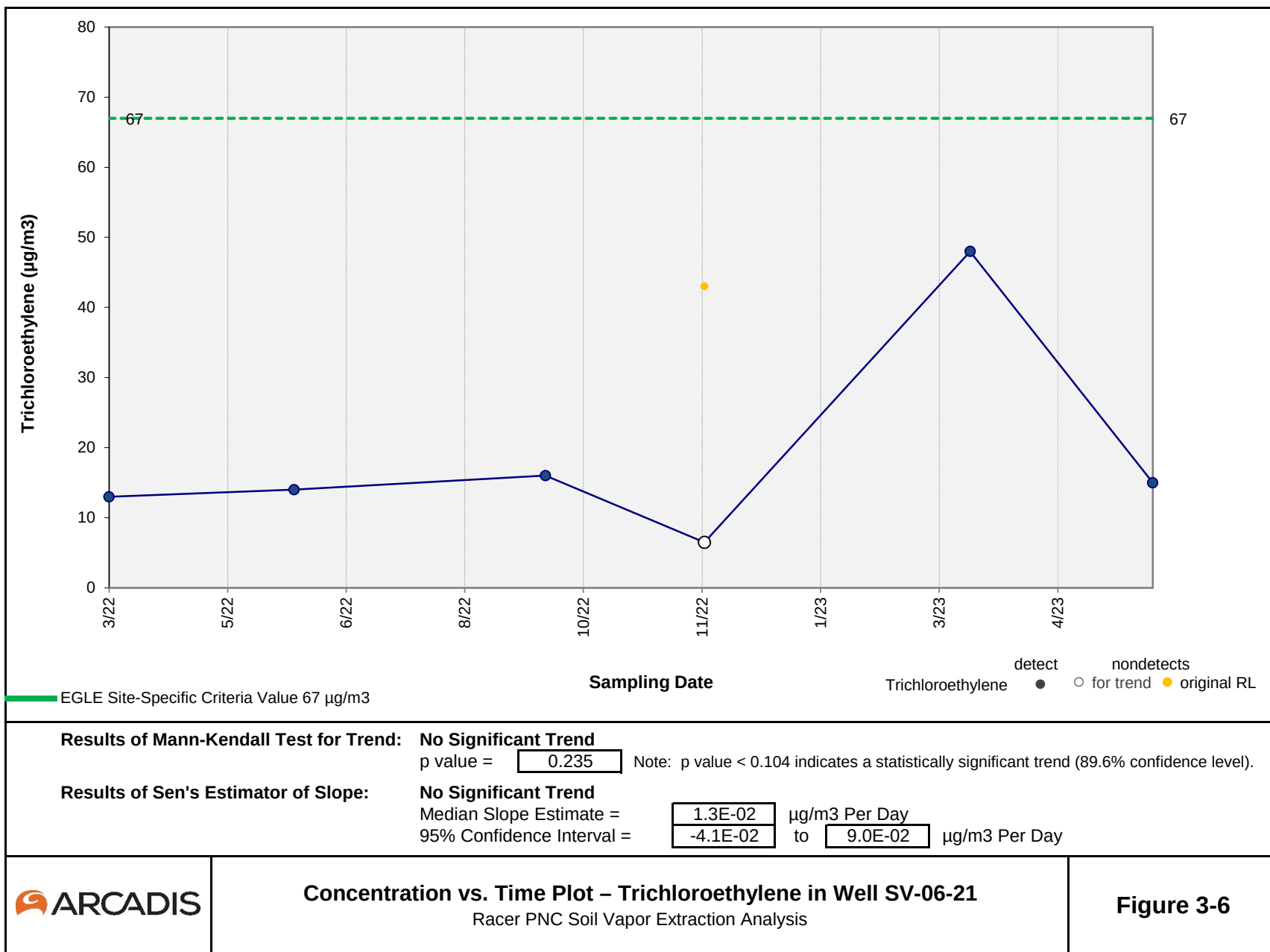




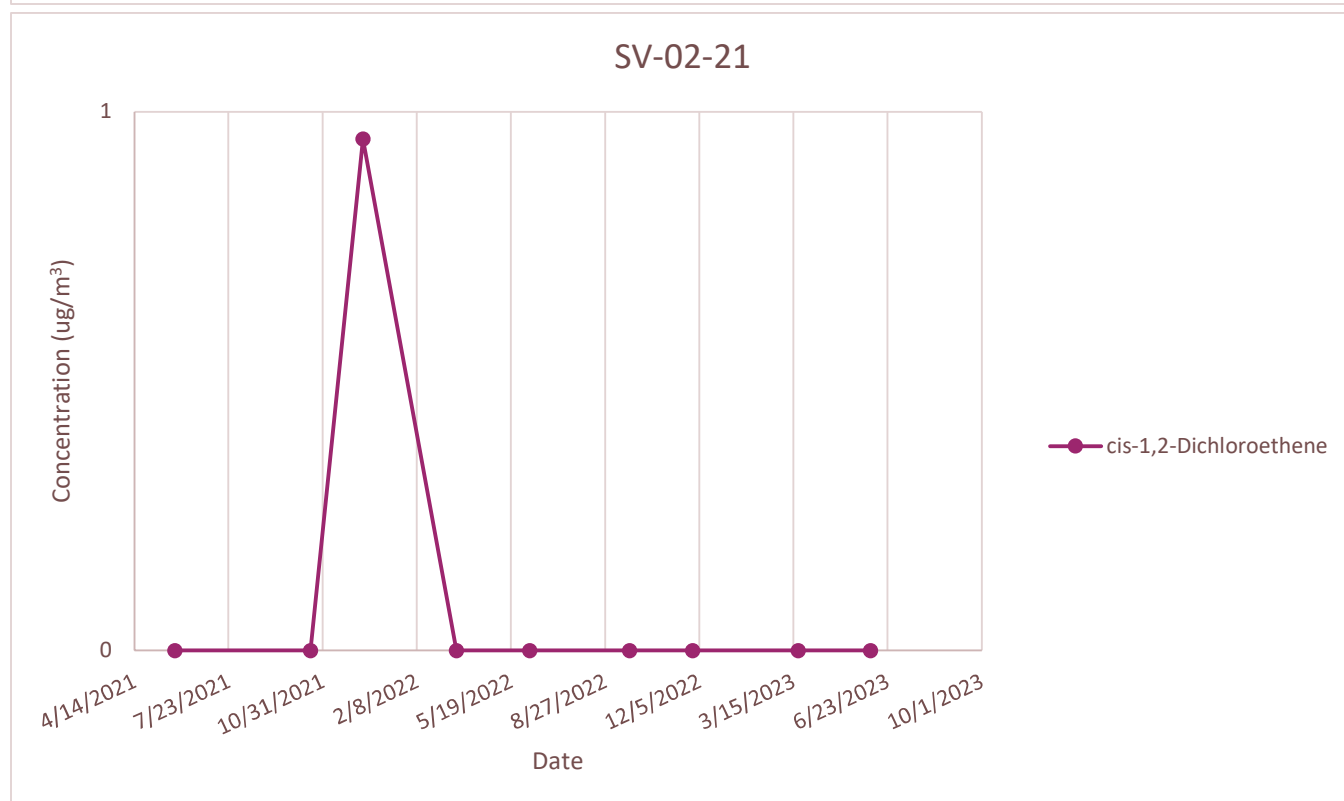
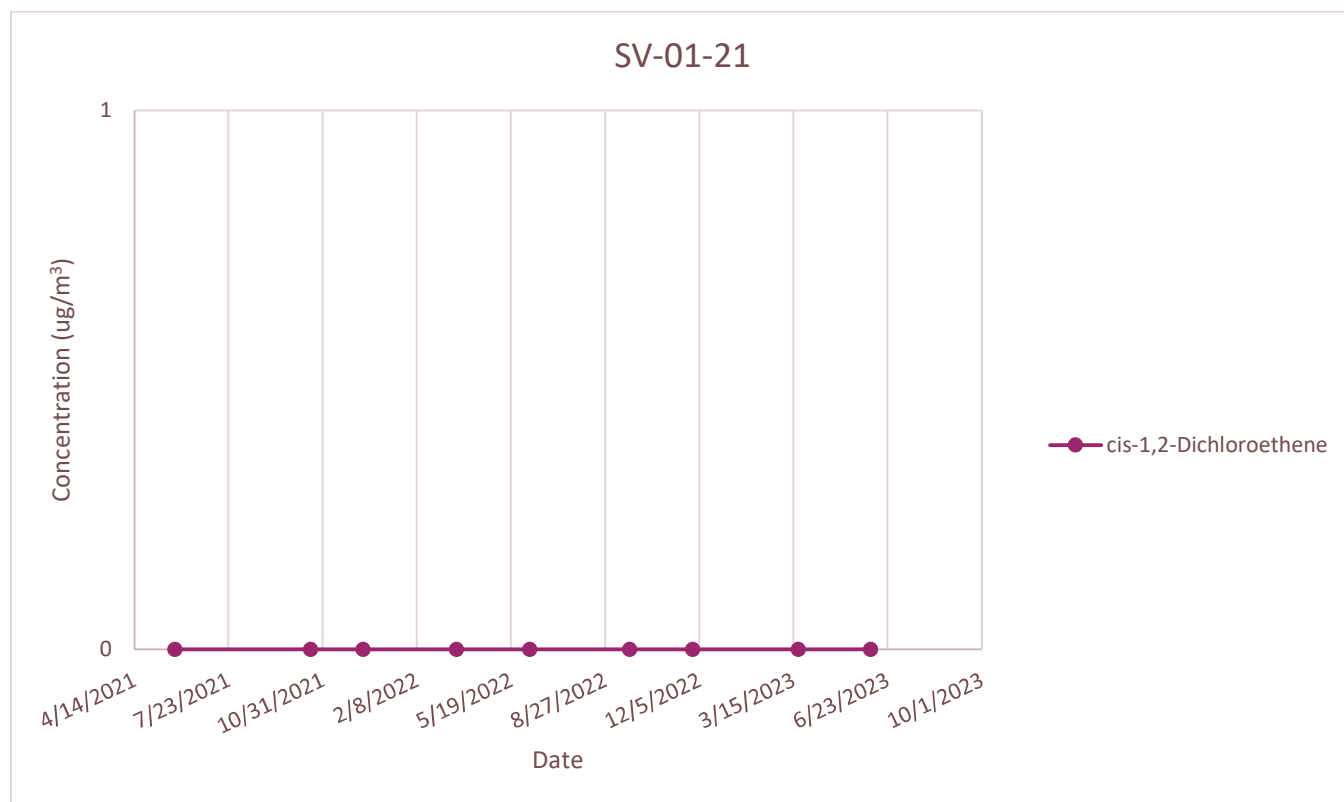




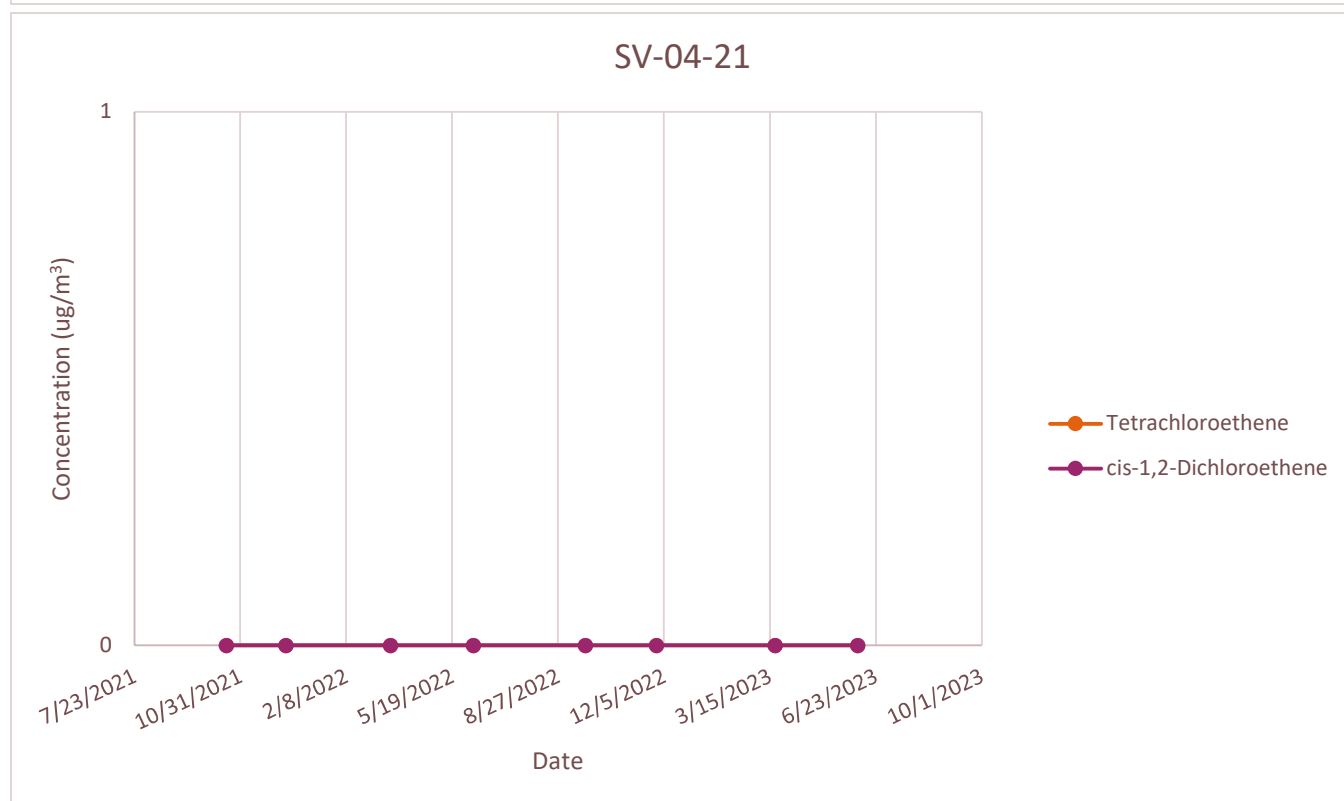
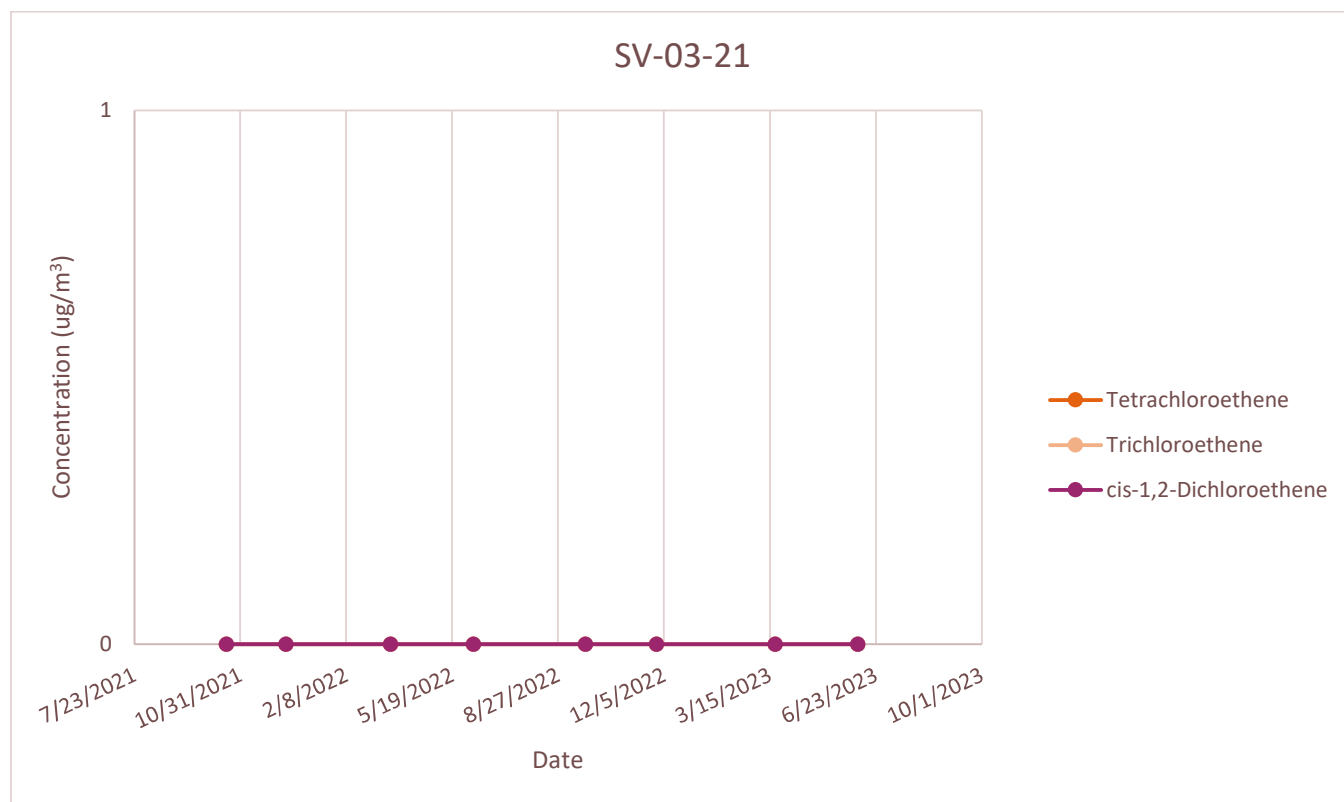




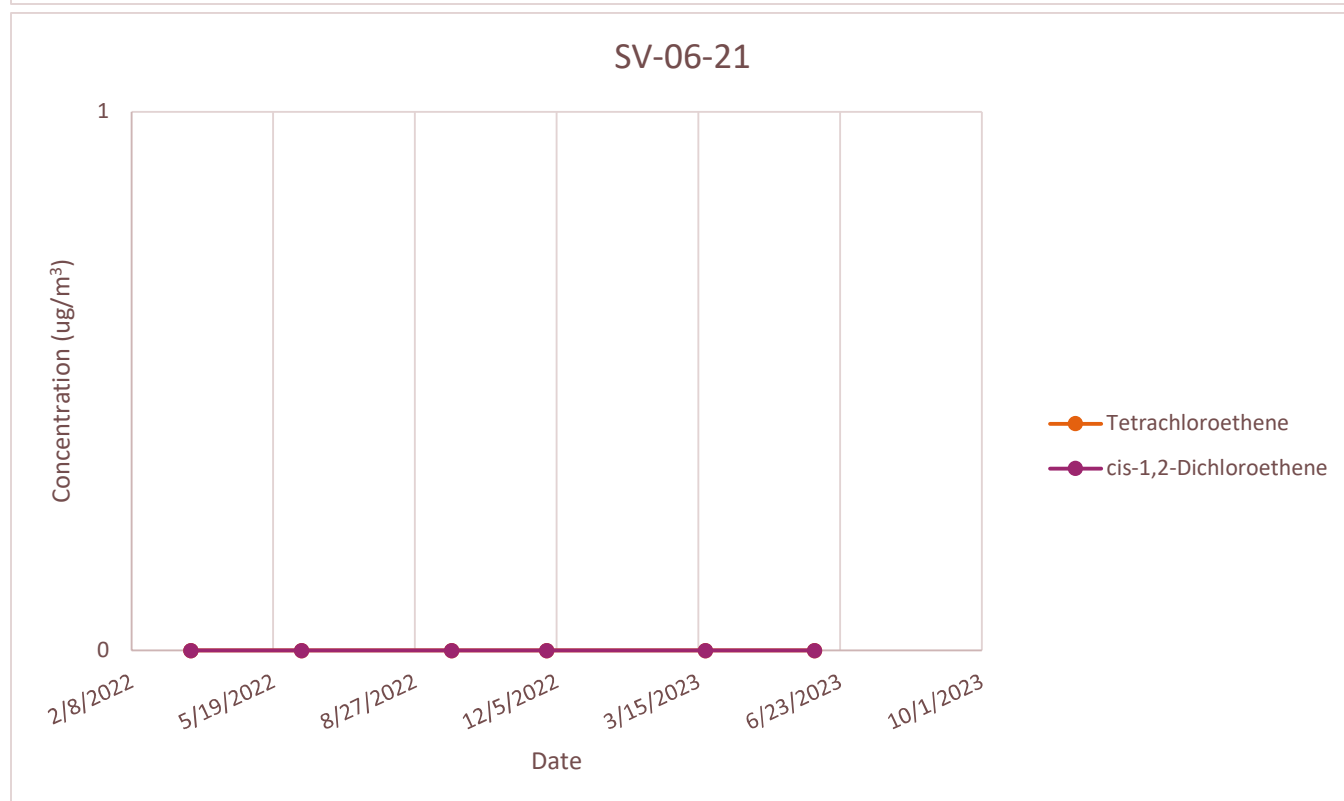
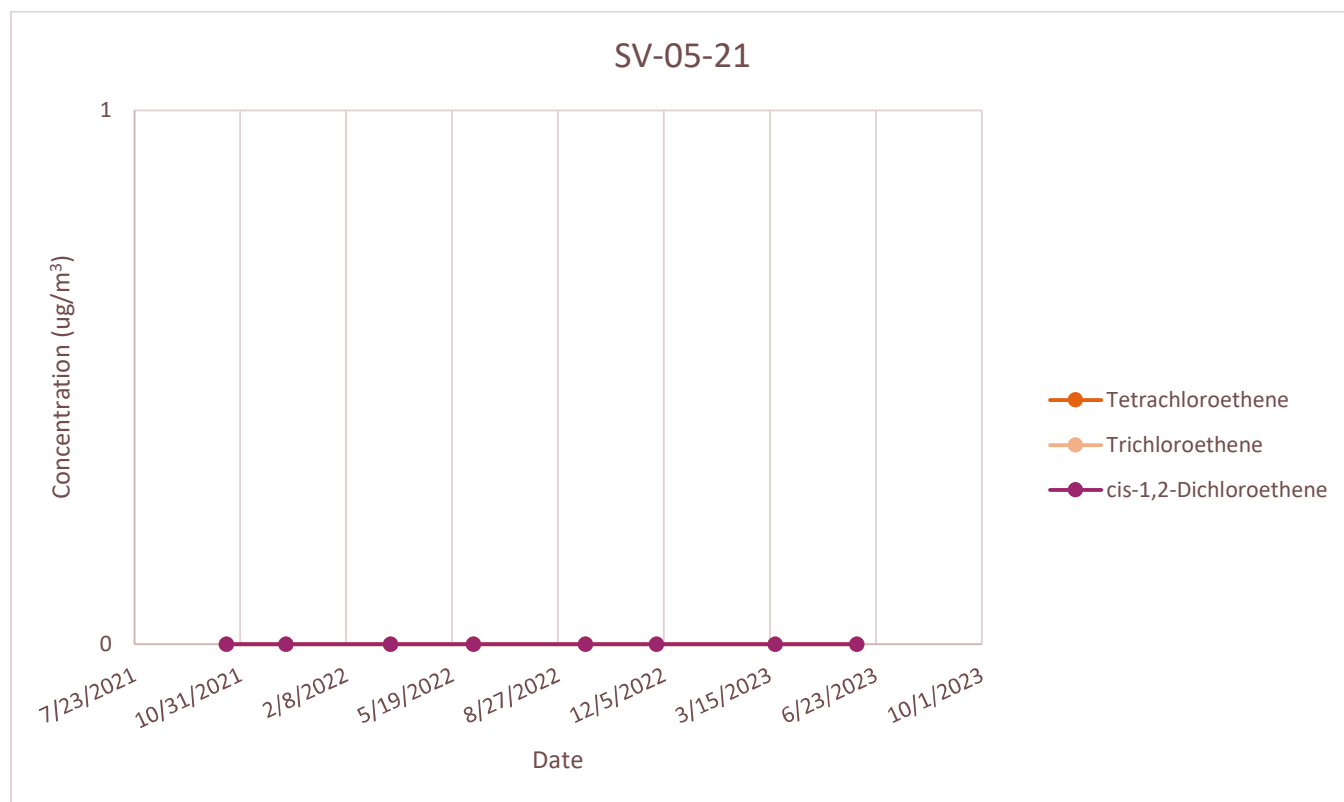
Attachment 3 -
Soil Vapor Trend Graphs



Attachment 3 -
Soil Vapor Trend Graphs



Attachment 3 -
Soil Vapor Trend Graphs



Attachment 4

Soil Vapor Collection Logs



Soil Vapor Collection Log Sheet

Office Name & Address (Reporting Information): Novi, MI 28550 Cabot Dr #500 Novi, MI 48377									Project Name: RACER Pontiac North Campus 2023						
Field Manager: Alexis Crisp									Project Number: 30167840						
Phone: 614-985-9163		Special Instructions: 1,1-DCE; cis-1,2-DCE; trans-1,2-DCE; PCE; TCE; Vinyl Chloride							Site Address: 200 E. Montcalm Pontiac Michigan 48342 US						
Email Address for Result Reporting:									Sampler Name: Sommer Guy				Phone Number:947-465-3421		
Alexis.crisp@arcadis.com									Email:Alexis.crisp@arcadis.com						
Helium Detector Used: MGD-2002				Helium Leak Method: Helium Tracer Test					Summa Canister Size (1L, 2.7 L, 6L): 1 L					Lab: Eurofins	
Sample ID	Sample Location Description	Date	Leak/Tracer Test completed prior to sample collection						Canister Number	Flow Controller Number	Sample Collection Start Time	Beginning Canister Pressure (in. Hg)	Sample Collection End Time	Ending Canister Pressure (in. Hg)	Notes
			Shut in Test Pass/Fail?	Purge Reading (ppm)	Shroud Helium Concentration (%)	Helium Test Pass/Fail?	Purge Volume (mL)	Purge Rate (mL/min)							
SV-02-21_SG-060523	In grass. Eastern ROW of St. Clair	06/05/2023	Pass	200	45.3	Pass	321	100	2297	24312	12:16	-29	12:23	-5	N/A
SV-05-21_SG-060523	In sidewalk. Western ROW of St. Clair	06/05/2023	Pass	0	55.8	Pass	160.74	100	3632	24414	13:08	-28	13:14	-5	N/A
SV-01-21_SG-060523	In grass. Eastern ROW of St. Clair	06/05/2023	Pass	0	44.8	Pass	200.91	100	4109	24671	10:06	-29	10:14	-5	N/A
SV-03-21_SG-060623	In sidewalk. Western ROW of St. Clair	06/05/2023	Pass	0	54.6	Pass	160.74	100	3548	23364	12:18	-29	12:26	-5	N/A
SV-06-21_SG-060523	In sidewalk. Western ROW of St. Clair	06/05/2023	Pass	0	58.5	Pass	309.15	100	1729	23442	12:47	-29	12:53	-5	N/A
DUP-01_SG-060523	In grass. Eastern ROW of St. Clair	06/05/2023	--	--	--	--	--	--	3871	24294	--	-29	--	-5	N/A
SV-04-21_SG-060523	In grass. Western ROW of St. Clair	06/05/2023	Pass	0	56.6	Pass	309.15	150	1915	23771	12:38	-28	12:44	-5	N/A

Meteorological Data						General Notes or Observations	
Date	Time	Temp		Relative Humidity (%)	Barometric Pressure (in.Hg)	Weather source	
		Indoor	Outdoor				
06/05/2023	08:53		61	51	30	60.8 degrees F and Cloudy. The wind is blowing N at 2 mph	
06/06/2023	11:53		66	60	30	66.2 degrees F and Cloudy. The wind is blowing undefined at 8.1 mph.	



Soil Vapor Collection Log Sheet

Air Parameters (completed after sample collection)					
Location ID	CH4 %	CH4 LEL %	O2 %	PID (ppm)	Differential Pressure (in. Water Column)
SV-02-21	0	NM	16.3	NM	NM
SV-05-21	0	NM	13.4	NM	NM
SV-01-21	0	NM	16.3	NM	NM
SV-03-21	0	NM	14	NM	NM
SV-06-21	0	NM	12.9	NM	NM
--	NM	NM	NM	NM	NM
SV-04-21	0	NM	12.6	NM	NM

Attachment 5

Photograph Log

Photograph Log

RACER Trust
Pontiac North Campus



Photograph: 1

Description:

Construction where
MWF16-01 was located

Location:

MWF16-01

Photograph taken by:

Gary Schafer

Date: 8/26/2022



Photograph: 2

Description:

Casing is collapsed
near ground surface

Location:

MWF16-02

Photograph taken by:

Christina Weaver

Date: 9/23/2022

Photograph Log

RACER Trust
Pontiac North Campus



Photograph: 3

Description:
Construction near
MWF16-02

Location:
MWF16-02

Photograph taken by:
Christina Weaver

Date: 9/23/2022



Photograph: 4

Description:
Sand and gravel pile
covering MWF16-19

Location:
MWF16-19

Photograph taken by:
Christina Weaver

Date: 9/23/2022

Photograph Log

RACER Trust
Pontiac North Campus



Photograph: 5

Description:
Well lid destroyed and
vault filled with mud

Location:
MWF16-20

Photograph taken by:
Christina Weaver

Date: 9/23/2022



Photograph: 6

Description:
Debris pile near
MWF16-20

Location:
MWF16-20

Photograph taken by:
Christina Weaver

Date: 9/23/2022