# 2023 Fiero Temporary Groundwater Monitoring Plan Summary

## Pontiac North Campus

Draft Submittal: March 2024
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**Pontiac North Campus**

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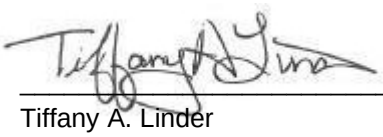
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# Contents

Acronyms and Abbreviations ..... 3
1 Introduction ..... 4
1.1 Background ..... 4
2 Sampling Procedures ..... 5
2.1 Water Level Measurements ..... 5
2.2 Groundwater Sample Collection ..... 6
2.3 Soil Vapor Sample Collection ..... 6
3 Monitoring Results ..... 6
3.1 Groundwater Elevation ..... 6
3.2 Groundwater Analytical Results ..... 7
3.2.1 ZVI Performance Monitoring ..... 7
3.3 Groundwater Trends and Stability Analysis ..... 8
3.4 Soil Gas Results ..... 11
3.5 Soil Vapor Stability Analysis ..... 11
3.6 Analytical Data Quality Assurance / Quality Control ..... 11
4 Conclusions ..... 12
5 Recommendations ..... 12
6 References ..... 14

# Tables


Table 1 2023 Groundwater Elevation Summary

Table 2 Summary of 2023 Groundwater Analytical Results

Table 3 Summary of 2023 Soil Gas Analytical Results


# Figures


Figure 1 2023 Fiero Temporary Monitoring Plan Locations

Figure 2A Fiero Groundwater Contour Map June 5, 2023

Figure 2B Fiero Groundwater Contour Map November 27, 2023

Figure 3 Concentration of Tetrachloroethene in Groundwater

Figure 4 Concentration of Trichloroethene in Groundwater

Figure 5 Concentration of cis-1,2-Dichloroethene in Groundwater

Figure 6 Distribution of Tetrachloroethylene and Trichloroethylene in Groundwater, Concentration of Tetrachloroethylene in Soil

Figure 7A Groundwater Stability Analysis – Tetrachloroethene

Figure 7B Groundwater Stability Analysis – Trichloroethene

Figure 7C Groundwater Stability Analysis – cis-1,2-Dichloroethene

Figure 8 Summary of Soil Vapor Results

Figure 9A Soil Vapor Stability Analysis - Tetrachloroethene

Figure 9B Soil Vapor Stability Analysis - Trichloroethene


# Appendices


A Laboratory Analytical Reports

B Groundwater and Soil Vapor Sampling Logs

C Former Fiero Assembly Site-Specific Criteria Evaluation

D Mann Kendall Calculations and Trend Graphs

E 2024 Fiero Temporary Monitoring Plan

# Acronyms and Abbreviations

| | |
|---|---|
| bgs | below ground surface |
| cis-1,2-DCE | cis-1,2-dichloroethylene |
| COC | chain of custody |
| CSM | conceptual site model |
| cVOC | Chlorinated Volatile Organic Compound |
| 1,1-DCA | 1,1-dichloroethane |
| DO | dissolved oxygen |
| EDD | electronic data deliverable |
| EGLE | Michigan Department of Environment, Great Lakes, and Energy |
| FTMP | Fiero Temporary Monitoring Plan |
| GMC | General Motors Corporation |
| MS/MSD | matrix spike/matrix spike duplicate |
| NRFSSBASE | Nonresidential Fiero site specific vapor intrusion to indoor air criteria – basement |
| NRFSSSOG | Nonresidential Fiero site specific vapor intrusion to indoor air criteria – slab on grade |
| ORP | oxidation reduction potential |
| PCE | tetrachloroethene |
| RACER | Revitalizing Auto Communities Environmental Response |
| RFSSBASE | Residential Fiero site specific vapor intrusion to indoor air criteria – basement |
| RFSSSOG | Residential Fiero site specific vapor intrusion to indoor air criteria – slab on grade |
| SSVIAC | Site-Specific Volatilization to Indoor Air Criteria |
| SVMP | soil vapor monitoring point |
| TCE | trichloroethene |
| TOC | total organic carbon |
| USEPA | U.S. Environmental Protection Agency |
| VI | vapor intrusion |
| VOC | volatile organic compound |

# 1 Introduction

This report summarizes the results of the 2023 quarterly monitoring events completed as part of the Fiero Temporary Monitoring Plan (FTMP) at the Fiero properties of the Revitalizing Auto Communities Environmental Response Trust (RACER) Pontiac North Campus Site (Site) located in Pontiac, Michigan. The 2023 FTMP was submitted to the United States Environmental Protection Agency (USEPA) on March 9, 2023, then revised and resubmitted on April 4, 2023. The FTMP was approved by USEPA via email transmittal on March 16, 2023. The data generated as a result of the FTMP adds to the previous monitoring data for the Fiero portion of the Site.

## 1.1 Background

The general objective of the FTMP was to monitor the chlorinated volatile organic compounds (cVOCs) in groundwater at the Site and assess the potential risk for off-site vapor intrusion. The FTMP was also implemented to supplement groundwater data previously submitted in the *Fiero Vapor Intrusion Conceptual Site Model (CSM)* (Arcadis 2021) and the *2021-2022 Fiero Site Investigation Summary Report* (Arcadis 2023). Furthermore, additional information and data collected at the Fiero Properties is included in the *Draft Corrective Action Summary Report* (Arcadis 2023). CVOCs, specifically tetrachloroethylene (PCE), trichloroethylene (TCE), and cis-1,2-dichloroethylene (cis-DCE), are the primary compounds detected in groundwater. Historical references indicate the presence of steel storage and fabrication operations; trim shop operations; lacquer mixing, spraying, and drying operations; printing and upholstering operations; and woodworking and assembly operations. These operations continued through the late 1970s, when the facility was retooled to manufacture and assemble Fiero vehicles, which occurred for an approximate 10-year period from 1980 through 1990. From the time General Motors Corporation (GMC) ceased manufacturing Fiero models and decommissioned assembly operations in the early 1990s until the late 2000s, the former Fiero Assembly building was used for prototyping, storage, and other non-manufacturing processes. While details pertaining to exact dates and potential sources of cVOCs were not documented and cannot be confirmed, based on available information, the use of chlorinated solvents could have spanned from after World War II up to approximately 1990.

In response to cVOCs vapor intrusion (VI) criteria exceedances near the southwestern boundary of the Fiero property, an investigation was completed in 2021 and 2022 to strengthen the CSM by mapping the groundwater impacts at higher resolution, identifying storage and transport zones, and locating source areas. The findings of the investigation identified several upgradient cVOC source areas in the vicinity of MWF16-05, MWF16-18, and MWF16-06 and confirmed cVOC impacts in groundwater extend off-site above Fiero residential site-specific volatilization to indoor air criteria (SSVIAC) (EGLE 2020) but did not identify an imminent risk of off-site residential VI associated with the former Fiero property.

Site stratigraphy can generally be categorized as three distinct hydrostratigraphic units including:

- Interbedded Unit – consisting of sands, silts, and clays typically encountered between ground surface and 20 feet below ground surface (bgs);
- Sand Unit – consisting of well to poorly sorted sands typically encountered between 20 to 40 feet bgs; and
- Basal Clay – unit consisting of clays and silts typically encountered around 40 feet bgs.

Typically, groundwater is first encountered within the sand unit beneath the interbedded unit and most of the monitoring wells are set within the sand unit, however there is an area in the vicinity of MWF16-12 and MWF16-06 of where groundwater is encountered within the interbedded unit resulting in perched groundwater. Apparent groundwater flow has consistently been to the southwest outside of the perched unit but fans out to the west, southwest, south, and southeast from where perched groundwater is present.

# 2 Sampling Procedures

The monitoring events 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 events are shown on **Figure 1**.

As outlined in the 2023 FTMP, a monitoring event was completed each quarter in 2023. A summary of each event follows:

- Quarter 1 (Q1) – On March 6th, 2023, Arcadis began monitoring activities by gauging Site monitoring wells. Following the gauging event SVMPs and monitoring wells were sampled for volatile organic compounds (VOCs) over a 3-day period. MW-16-22, a flush mount well, was covered by water at the time of sampling. MW-16-22 was later converted to a stick up well on March 29th, 2023 and was sampled on April 7th, 2023.
- Quarter 2 (Q2) – On June 5th, 2023, Arcadis began monitoring activities by gauging Site monitoring wells. Following the gauging event, SVMPs and monitoring wells were sampled for VOCs over a 6-day period.
- Quarter 3 (Q3) – On August 28th, 2023, Arcadis began monitoring activities by gauging Site monitoring wells. Following the gauging event, SVMPs and monitoring wells were sampled for VOCs over a 4-day period. Due to a transportation issue, samples from MW-09-22, MW-16-22, MWF16-05, MWF16-16, and MWF16-18 were lost and could not be recovered. These wells were resampled on September 7th, 2023.
- Quarter 4 (Q4) – On November 27th, 2023, Arcadis began monitoring activities by gauging Site monitoring wells. Following the gauging event, SVMPs and monitoring wells were sampled for VOCs over a 6-day period.

All groundwater samples were submitted to Merit Laboratories, Inc. in Lansing, Michigan (Merit) and analyzed for VOCs via USEPA Method 8260 and all soil vapor samples were submitted to Eurofins Air Toxics (Eurofins) in Folsom, California and analyzed for VOCs via USEPA Method TO-15. The analytical reports from Merit and Eurofins are provided as **Appendix A**. The results of the gauging and sampling are provided in the attached tables:

- **Table 1** – 2023 Groundwater Elevation Summary
- **Table 2** – Summary of 2023 Groundwater Analytical Results
- **Table 3** – Summary of 2023 Soil Gas Analytical Results

The following sections of this report summarize the procedures used to complete the groundwater and soil vapor sampling and a data discussion of the sample analysis results collected during 2023.

## 2.1 Water Level Measurements

The groundwater level measurements were recorded at select monitoring wells to the nearest 0.01 foot with an electronic water level meter. Groundwater elevations were calculated using surveyed top-of-well casing elevations. A summary of water levels and groundwater elevations is presented in **Table 1**.

## 2.2 Groundwater Sample Collection

Groundwater samples were collected using low-flow sampling procedures. The procedures are taken from the Low-Stress (or Low-Flow) Purging and Sampling Procedure (USEPA 2017), which we understand is the USEPA Region V standard method for collecting low-stress/low-flow groundwater samples from monitoring wells.

During sampling, purge water was monitored for dissolved oxygen (DO), temperature, specific conductivity, turbidity, oxygen reduction potential (ORP), and pH. These water quality measurements were used to determine groundwater sample stability prior to collection of the groundwater samples. All groundwater sampling logs are provided in **Appendix B**.

Due to factors such as accessibility and recovery, the following deviations from the planned sampling protocol occurred during the 2023 FTMP implementation:

- MWF16-24 was covered by a roll-off box and could not be uncovered before the end of the Q2 event
- MWF7-02 could not be sampled during the Q4 event due to insufficient water column

## 2.3 Soil Vapor Sample Collection

Soil vapor monitoring was completed quarterly at the six SVMP locations (SV-01-21 through SV-06-21) as part of the 2023 FTMP. The methodology for collecting soil vapor samples included completing a helium leak test to verify the seal of the sampling point, and a “shut-in” test completed on the sampling train to verify that a closed system was in place prior to sampling. Following a passed helium leak test and shut-in test, a SUMMA® canister, with attached pre-set flow regulator, was used to collect the sample for laboratory analysis of the Fiero site-specific VOCs in accordance with the USEPA Method TO-15. Following sampling, an additional three volumes of air was purged into a Tedlar® bag. Oxygen, carbon dioxide, and methane readings were collected from the Tedlar® bag containing purged air at the sample point.

# 3 Monitoring Results

The following sections summarize the results of the four quarters of monitoring during the 2023 FTMP.

## 3.1 Groundwater Elevation

Groundwater elevations from unconfined water table zone monitoring wells (screened across the water table) were used to create groundwater potentiometric surface maps (**Figure 2A** and **2B**). A summary of groundwater elevations collected during the 2023 FTMP is provided in **Table 1.** In most areas across the Site groundwater is first encountered within the sand unit beneath the interbedded unit around 16 to 20 feet bgs. However, at select monitoring well locations (e.g., MWF16-06, MWF16-07, and MWF16-12), groundwater was encountered shallower within the interbedded unit at 10 to 12 feet bgs. A review of historical water level measurements showed that the higher elevation of groundwater was not present in the early to mid-2000s but became evident in 2018. The increased occurrence of shallow water may be the result of the degradation of concrete and asphalt surfaces, or some other change in conditions, that have resulted in increased infiltration across the area. Apparent groundwater flow direction is generally to the southwest and remained consistent through each event except for the area with perched groundwater where flow fans out to the west, southwest, south, and southeast.

## 3.2 Groundwater Analytical Results

Over the four quarters of sampling, 83 groundwater samples were collected and analyzed for VOCs. Groundwater data were compared to the Fiero SSVIAC provided by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) on April 21, 2020. These criteria include residential and non-residential SSVIAC for basement (RFSSBASE and NRFSSBASE) and slab-on-grade (RFSSSOG and NRFSSSOG) scenarios (EGLE 2020). The Fiero SSVIAC is provided as **Appendix C**. Only nonresidential values are relevant to on-site groundwater results, as there are or will be deed restrictions limiting on-site use to nonresidential. Locations within 100 feet of the perimeter property boundary were compared to residential SSVIAC, as they have the potential to be a source of soil vapor impacts to nearby off-site properties. A summary of the groundwater analytical results is provided in **Table 2** and the laboratory analytical reports are provided in **Appendix A**.

A summary of the four quarters of groundwater analytical results follows:

- There were no exceedances of Fiero nonresidential SSVIAC in groundwater.
- The primary compounds detected in groundwater include PCE, TCE, and cis-1,2-DCE. Figures showing the distribution and analytical results for each of these compounds are provided as **Figures 3** through **5**.
  - Other compounds detected above the Fiero residential SSVIAC in groundwater, but are not as extensive as PCE, TCE, and cis-1,2-DCE and are not near the property boundary include: chlorodibromomethane and carbon tetrachloride.
- Elevated VOC detections remain upgradient near the identified source areas in the central portion of the Site and decrease steadily as they approach the southwest property boundary.
  - Concentrations of PCE increased at monitoring well MWF16-22. It was below the Fiero residential SSVIAC for PCE (130 µg/L) during the 2Q monitoring event (77 µg/L) and was above the Fiero residential SSVIAC in the 4Q monitoring event (285 µg/L). MWF16-22 is downgradient of the source areas and is approximately 140 feet from the southwest property boundary. Downgradient perimeter monitoring well MWF16-25 was non-detect for PCE, TCE, and cis-1,2-DCE in 2023.
- All off-site monitoring wells were below the Fiero residential SSVIAC for all monitoring events, except for MWOS-10, which exceeded the Fiero residential SSVIAC in groundwater for TCE (8.1 µg/L) during all four quarterly events ranging from 9 to 12 ug/L (**Figure 4**).

### 3.2.1 ZVI Performance Monitoring

Zero-valent Iron (ZVI) Injections were conducted in December 2022 through January 2023. Details of the injection were provided in the *In Situ Chemical Reduction with Zero Valent Iron Pilot Study Installation Summary Report* dated March 2023 (Arcadis, 2023). The ZVI injection pilot study was completed to collect the information required to evaluate ZVI injections as a potential remedial action and to provide a basis for a full-scale ZVI barrier should it be determined necessary and cost-effective. ZVI Injections were completed as part of a pilot test in Q1 2023 accompanied by quarterly sampling for four quarters. This section evaluates the performance monitoring data associated with ZVI injection and provides recommendations associated with the ZVI pilot study moving forward.

The ZVI performance monitoring network consists of five monitoring wells: MW-13-22, MW-14-22, MW-15-22, MW-16-22, and MWF16-16. These wells are located upgradient and downgradient of the ZVI injection area. In general, concentrations in monitoring wells MW-13-22, MW-15-22, and MWF16-16 remain unchanged while MW-14-22 and MW-16-22 increased and decreased; respectively. Results are shown in **Table 2**, **Figure 6,** and are summarized below:

- MWF16-16 is approximately 70 feet upgradient of the ZVI injection area and is screened from 22 to 32 feet bgs. The primary COC detected at MWF16-16 is PCE which has shown a general increasing trend since 2020.
- MW-16-22 (screened 26 to 31 ft bgs) is approximately 100 feet downgradient of the northwestern portion of the ZVI injection area where confirmatory borings showed evidence of distribution of ZVI in the targeted treatment zone. The primary COC detected at MW-16-22 is PCE which has decreased from approximately 300 ug/L prior to the ZVI injection to 94 µg/L over four quarters of sampling in 2023. PCE is now below the Fiero residential SSVIAC. While cis-1,2-DCE increased to above Fiero residential SSVIAC in third quarter 2023, concentrations were back to below criteria during the fourth quarter. This temporary and singular event increase of cis-1,2-DCE is not likely a result of by-product generation associated with the ZVI treatment. An increase in by-product generation would stay elevated as the by-product would continue to be generated and stay elevated for more than one quarter.
- MW-14-22 (screened 30 to 35 ft bgs) is located approximately 60 feet downgradient from the southeast portion of the ZVI injection area where there was significant surfacing of ZVI during the injection and no ZVI was observed in the target treatment zone. The primary COC detected at MW-14-22 is PCE which increased from approximately 100 µg/L to 212 µg/L in second quarter 2023. Since the spike in second quarter, PCE concentrations have been decreasing but still exceed the Fiero residential SSVIAC as of fourth quarter 2023. An increasing trend for cis-1,2-DCE has been observed over the 2023 monitoring period, but concentrations remain below the Fiero residential SSVIAC. TCE concentrations have been generally stable ranging between 15 and 22 µg/L, above the Fiero residential SSVIAC.
- MW-13-22 and MW-15-22, screened 22 to 27 ft bgs and 31.5 to 36.5 feet bgs respectively, are located approximately 60 feet downgradient from the southeast portion of the ZVI injection area. Concentrations at these wells have remained non-detect before and after the ZVI injections.

The arrival of decreasing concentrations at MW-16-22 and the arrival of increasing concentrations at MW-14-22 in second quarter correspond with an average groundwater velocity of 1.2 feet per day, which is consistent with what was expected based on the CSM.

In general, even with an increasing trend of PCE entering the ZVI treatment transect, the injected ZVI has been successful in reducing concentrations of PCE to below Fiero residential SSVIAC where the ZVI injection was successful in distributing ZVI to the target treatment zone, specifically on the northwestern portion of the ZVI treatment area. In the southeastern portion of the ZVI treatment area where ZVI distribution was not evident, the increasing PCE concentration at MW-14-22 may be due to the disruption of saturated soils upgradient that may have temporarily liberated COCs into groundwater. The fact that no increases were observed in nearby wells MW-13-22 and MW-13-22 (also downgradient of the southeastern portion of the ZVI treatment area) suggest this potential liberation is localized. The decreasing trend of PCE at MW-14-22 since second quarter suggests that the increase is temporary.

ZVI pilot test performance monitoring will not continue for the remainder of 2024 as sufficient data has been collected to determine the effectiveness of the ZVI barrier. Monitoring wells MW-13-22, MW-14-22, and MW-15-22 will no longer be gauged or sampled. Monitoring wells MW-16-22 and MWF16-16 will continue to be gauged and sampled semi-annually for VOCs.

## 3.3 Groundwater Trends and Stability Analysis

Concentration trends for PCE, TCE, and cis-1,2-DCE were reviewed at on-site and off-site monitoring wells. Trend analysis from monitoring wells can provide insights regarding source maturity. Stable concentrations (i.e.,

no trend with low variability in concentrations over time) and decreasing trends indicate that the source is mature or depleted. Increasing trends at individual source area wells can indicate an expanding plume but can also reflect the wide range of concentrations and temporal variability common within source areas.

Mann-Kendall trend tests were conducted at selected wells for constituents present at concentrations higher than the Fiero residential SSVIAC, and coefficient of variation values were calculated. In addition, the magnitude of the trend was evaluated using Sen's slope estimator (SSE). The SSE is a non-parametric method for estimating the slope of time-series data. The approach involves computing slopes for each point compared to every successive point, and then using the median of these slopes as an estimate of overall slope. The SSE is robust to outliers, data sets with a limited number of non-detects (i.e., values less than sample reporting limits), and datasets with missing values.

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* (Arcadis 2023) submitted to and approved by the USEPA. A summary of the trend analysis in groundwater can be found in **Figures 7A** through **7C**, 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 **Appendix D**. Key findings of the trend analysis include the following:

**PCE:** PCE in groundwater is primarily stable with three wells indicating a statistically significant increasing trend. Stability analysis results for PCE in groundwater are summarized in **Figure 7A.**

- ZVI pilot test performance monitoring well MW-14-22, source boundary well MWF7-02, and source area well MWF16-16 show increasing trends. MW-14-22 has had an overall increasing trend for PCE since monitoring began; however, it saw an approximate 100 µg/L spike in concentration in second quarter 2023 and has remained steady. As discussed in Section 3.2.1, increased concentrations of MW-14-22 may be due to the disruption of soils associated with the ZVI emplacement that may have temporarily liberated COCs to groundwater. MWF7-02, located 800 feet from the downgradient property boundary, was not able to be sampled in the Q4 2023 event due to an insufficient water column and remains below Fiero residential SSVIAC.
- Concentrations of PCE at MWF16-16 have continued to fluctuate over the past few years but with an overall increasing trend. MWF16-05, located in a source area, previously showed an increasing trend but has since changed to no significant trend, steadily decreasing through 2023.
- Southern property boundary well MW-02-17 previously showed a decreasing trend but has since changed to no significant trend.
- After additional sampling in 2023, UNKNOWN-01 met Mann-Kendall analysis criteria for PCE and shows no significant trend.
- ZVI pilot test performance monitoring well MW-16-22 also met Mann-Kendall analysis criteria for PCE in 2023 and shows a decreasing trend associated with the ZVI treatment (Section 3.2.1).

**TCE:** Statistical trends for TCE vary across the Site. Stability analysis results for TCE in groundwater are summarized in **Figure 7B.**

- TCE in groundwater at MW-06-20, located near the southwest property boundary, continues to show an overall increasing trend fluctuating between 7 and 14 µg/L.
- Concentrations in monitoring well MW-08-21, located near the southwest property boundary, have been increasing since second quarter 2022 with concentrations generally low and ranging from 9 to 12 µg/L.

- Monitoring well MW-14-22, located downgradient of the ZVI transect has also shown an overall increasing trend but has been relatively stable since September 2022 (see Section 3.2.1).
- Monitoring well MWF16-18, located near a source area, had previously had no significant trend, but as of third quarter 2023 concentrations have increased from 20 to 30 µg/L resulting in an overall increasing trend.
- MWF16-15, interior to the Site, and MWF7-02 located at the southwestern property boundary previously had no significant trend but concentrations have increased over the last 2 quarters resulting in an increasing trend. Both wells are below Fiero residential SSVIAC.
- MWOS-10 located offsite and downgradient from MW-06-20 and MW-08-21 continues to fluctuate around Fiero residential SSVIAC and has no significant trend.
- MWOS-09R previously had a decreasing trend, but now shows no significant trend beginning first quarter 2023. MWF16-05 and MWF16-06 previously had no significant trend, but now show a decreasing trend. MW-16-22 now meets Mann-Kendall analysis criteria and shows a decreasing trend (see Section 3.2.1).

**Cis-1,2-DCE:** Cis-1,2-DCE are generally stable to decreasing across the Site with a few exceptions. Stability analysis results for cis-1,2-DCE in groundwater are summarized in **Figure 7C.**

- Cis-1,2-DCE in groundwater continues to show an increasing trend at MWF16-18 near a source area.
- Monitoring well MWF16-22 downgradient of the source area and MWF16-25 near the southwest property boundary now show increasing trends but remain below Fiero residential SSVIAC.
- Monitoring well MWF16-23 near the southwest property boundary previously had no significant trend and now shows a decreasing trend.
- Downgradient of MWF16-23 and MWF16-25, offsite wells MWOS-08 and MWOS-09R show decreasing and no significant trends, respectively.
- MWOS-10, previously showing a decreasing trend now has no significant trend and continues to stay below Fiero residential SSVIAC.
- MW-16-22 now meets Mann-Kendall analysis criteria and shows no significant trend. MW-16-22 is located downgradient of the ZVI transect (Section 3.2.1).
- All other sampled locations continue to be stable or decreasing.

Based on the trend analysis, continued monitoring is recommended. A Fiero Temporary Monitoring Plan for 2024 is discussed in Section 5.

## 3.4 Soil Gas Results

To monitor for potential vapor intrusion concerns, soil vapor samples were collected from all six SVMP locations on-site and off-site for each of the four quarters. The location of the SVMPs and a summary of the analytical results are shown on **Figure 8**. Complete analytical results are provided in **Table 3**. The following summarizes the results of soil vapor results:

- The SVMPs parent sample results have not exceeded the soil vapor Fiero residential SSVIAC for VOCs in 2023. A duplicate sample collected from SV-02-21 during Q1 exceeded Fiero residential SSVIAC for TCE. SV-02-01 is a deep SVMP installed above the water table at a depth of 23.25 to 23.75 ft bgs.
- Offsite SVMPs (i.e., SV-03-21, SV-05-21) installed at typical basement depth (11.5 to 12 ft bgs) were non-detect for TCE and PCE.

Based on the data collected and analyses completed there is not an imminent risk of vapor intrusion (VI) at the off-site structures. Note that the northern residential structure was destroyed by fire during the first quarter of 2022 and was demolished. The parcel is currently vacant.

## 3.5 Soil Vapor Stability Analysis

Mann-Kendall trend tests were conducted at all SVMP with sufficient data for detectable constituents, 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 August 2023. The methodology, preliminary results summary, figures, and trend graphs associated with the Mann-Kendall trend tests are included in **Appendix D**.

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 **Figure 9A.**
- 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 **Figure 9B.**

## 3.6 Analytical Data Quality Assurance / Quality Control

For lab analysis quality control, one duplicate sample was ordered for every ten groundwater samples, and one matrix spike/matrix spike duplicate (MS/MSD) was ordered for every 20 groundwater samples. Furthermore, one trip blank was ordered for each sample set which included analysis for VOCs. Within a day after delivery of each set of samples to Merit Laboratories, a sample set receipt was issued from the laboratory and checked for any inconsistencies with the Chain of Custody (COC) and planned reference test methods. No issues with hold times or inconsistencies were noted for the 2023 FTMP groundwater sampling events conducted.

Standard Level II laboratory analytical reports were delivered for each COC in both pdf files and electronic data deliverable (EDD) packages, followed by laboratory quality control reports. EDD files were uploaded to the project database from which tables were developed, and results were checked against the laboratory reports and evaluated with respect to data flags as well as consistency with past results. For the 2023 FTMP data, there were no trip blank detections, and duplicate sample results were representative of matched samples. All data collected was usable with no notable variances.

# 4 Conclusions

This FTMP consisted of four quarters of monitoring in 2023. The objective of the FTMP was to collect additional data to further evaluate the potential for cVOC migration, as well as concentration trends for cVOCs in groundwater. Conclusions from the 2023 FTMP are summarized below:

- There were no exceedances of Fiero non-residential SSVIAC in groundwater on-site.
- The only compound detected in groundwater off-site above the Fiero residential SSVIAC was TCE from monitoring well location MWOS-10 during all monitoring events.
- There were no exceedances of the soil gas Fiero residential SSVIAC at SVMP locations during the four quarters of sampling completed in 2023. Based on the data collected and analyses completed there is not an imminent risk of VI at the off-site structures.
- Based on the trend analysis, on-site concentrations of PCE are primarily stable with three locations (MWF7-02, MW-14-22, and MWF16-16) located near source areas exhibiting increasing trends. On-site concentration trends of TCE vary across the Site with several locations (MW-02-17, MW-06-20, MW-08-21, MW-14-22, MWF16-15, and MWF16-18) exhibiting statistically increasing trends. Concentrations of cis-1,2-DCE are generally stable to decreasing across the Site with a few exceptions (MW-11-22, MWF16-22, and MWF16-18) exhibiting increasing trends. Off-site monitoring wells for PCE, TCE, and cis-DCE are stable to decreasing, and concentrations are expected to remain consistent with previous sampling events. Monitoring and trend analysis of these locations will continue to evaluate if any action is needed.

# 5 Recommendations

Based on the results RACER recommends continued monitoring of select monitoring wells within the source area, along the plume core, downgradient near the property boundary, and off-site on a semi-annual frequency except for offsite well, MWOS-10, which will be sampled quarterly. The proposed monitoring locations, monitoring frequency and analytical parameters are summarized and illustrated in **Appendix E**. The 2024 FTMP will be completed in parallel with the overall Site GMP (Arcadis 2018).

Groundwater gauging and sampling methodology of the 2024 FTMP will be consistent with the 2023 FTMP, which utilizes the USEPA Low-Stress (or Low-Flow) Purging and Sampling Procedure (USEPA 2017) described in sections 2.1 and 2.2. All samples will be submitted for laboratory analysis of VOCs via USEPA Method 8260. Additional recommended changes to the FTMP for 2024 include:

- Monitoring well MW-11-22 will be added to the FTMP and sampled semi-annually to provide another data point downgradient of MWF16-22.
- Monitoring well MWF16-26 will be added to the FTMP and sampled semi-annually to provide another data point west of MWF16-22.
- Monitoring well MWOS-10 will continue to be sampled quarterly through 2024.
- ZVI pilot test performance monitoring will not continue for the remainder of 2024 as sufficient data has been collected to determine the effectiveness of the ZVI barrier. Monitoring wells MW-13-22, MW-14-22, and MW-15-22 will no longer be gauged or sampled. Monitoring wells MW-16-22 and MWF16-16 will continue to be gauged and sampled semi-annually for VOCs.

In addition to groundwater monitoring, soil vapor will be sampled from the existing soil vapor monitoring probes (SVMP's) on a semi-annual frequency as part of the 2024 FTMP. Furthermore, a nested set of SVMP's, one shallow and one deep, will be installed in the right of way of St. Clair St., downgradient of MWOS-10. The shallow

SVMP screen will be consistent with the depth of a basement, about 10-12 feet below ground surface, and the deep SVMP will be screened just above the seasonably high-water table. Each SVMP will be constructed of a half-inch outer diameter, 6-inch-long stainless-steel screen attached to a quarter-inch outer diameter nylon lined tubing that extends to the ground surface. Filter sand material will be installed from the base of the screen to 6-inches above its top. Dry granular bentonite will be installed 6-inches above the filter sand. Hydrated bentonite will be installed from the top of the dry bentonite to within 6-inches of ground surface. The SVMP will be protected by a 5-inch steel flush-mount well cover set in a concrete pad at the ground surface. Samples will be collected one week after installation and then continue on a quarterly basis through 2024. The methodology will be consistent with the 2023 FTMP described in section 2.3. Samples will be analyzed for Fiero site-specific VOCs in accordance with the USEPA Method TO-15.

This FTMP will be executed for 2024 at which time an assessment will be completed to evaluate appropriate changes or modifications for 2025. After each event for 2024, the data results will be communicated to USEPA during regularly scheduled meetings. Following completion of the 2024 FTMP a summary report will be provided to USEPA and include:

- Written summary of field activities
- Figures and tables summarizing the analytical results.
- Groundwater elevation contour maps for the semi-annual gauging events
- cVOC trend graphs and a summary of Mann-Kendall stability analysis for wells with exceedances of residential site-specific vapor intrusion screening levels for a basement scenario. The Mann-Kendall analysis can be utilized when the following criteria are met:
    - Include data collected after 2017, when sampling frequency increased and following a spike in concentrations observed at certain monitoring wells due to deteriorating concrete slab conditions.
    - At least 5 data samples collected after 2017.
    - Of the samples collected after 2017, at least 50% of the samples have detections.
- Based on the above criteria for Mann-Kendall, some wells do not have sufficient data to perform the Mann-Kendall analysis. For those wells a concentration over time graph will be developed.

# 6 References

Arcadis 2018. Groundwater Monitoring Program Modification Request, RACER Trust Pontiac North Campus. August 27.

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Arcadis 2022. Fiero Temporary Monitoring Plan, RACER Trust Pontiac North Campus. February 23.

Arcadis 2023. Corrective Action Summary Report, RACER Trust Pontiac North Campus February 10.

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Arcadis 2023. In Situ Chemical Reduction with Zero Valent Iron Pilot Study Installation Summary, Pontiac North Campus, Former Fiero Property. March.

Arcadis 2023. 2023 Revised Fiero Temporary Monitoring Plan, RACER Trust Pontiac North Campus. April 04.

Michigan Department of Environment, Great Lakes, and Energy (EGLE) 2020. Former Fiero Assembly Site-Specific Criteria Evaluation. April 21.

U.S. Environmental Protection Agency (USEPA; Region I). 1996. Low-Stress (or Low-Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells – Revision 4. July 30, 1996; Revised September 19, 2017.

# Tables

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

ARCADIS

| Well ID | Ground Elevation | Well Elevation [1] | Total Depth (ft)[2] | 1st Quarter | | | 2nd Quarter | | | 3rd Quarter | | | 4th Quarter | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Date | Depth to Water (ft)[2] | Groundwater Elevation | Date | Depth to Water (ft)[2] | Groundwater Elevation | Date | Depth to Water (ft)[2] | Groundwater Elevation | Date | Depth to Water (ft)[2] | Groundwater Elevation |
| **Former Fiero Powerhouse** | | | | | | | | | | | | | | | |
| MW-02-17 | 973.53 | 972.52 | 29.71 | -- | -- | -- | 6/5/2023 | 25.82 | 946.70 | -- | -- | -- | 11/27/2023 | 25.78 | 946.74 |
| MW-05-18 | 976.03 | 975.21 | 33.58 | -- | -- | -- | 6/5/2023 | 27.22 | 947.99 | -- | -- | -- | 11/27/2023 | 27.23 | 947.98 |
| MW-06-20 | 975.54 | 974.97 | 29.55 | 3/6/2023 | 29.22 | 945.75 | 6/5/2023 | 26.06 | 948.91 | 8/28/2023 | 26.03 | 948.94 | 11/27/2023 | 26.05 | 948.92 |
| MW-07-20 | 975.48 | 975.06 | 30.15 | -- | -- | -- | 6/5/2023 | 26.62 | 948.44 | -- | -- | -- | 11/27/2023 | 26.63 | 948.43 |
| MW-08-21 | 976.04 | 975.50 | 30.70 | 3/6/2023 | 27.58 | 947.92 | 6/5/2023 | 26.83 | 948.67 | 8/28/2023 | 26.81 | 948.69 | 11/27/2023 | 26.82 | 948.68 |
| MW-13-22 | 973.17 | 972.62 | 27.10 | 3/6/2023 | 22.88 | 949.74 | 6/5/2023 | 21.98 | 950.64 | 8/28/2023 | 21.45 | 951.17 | 11/27/2023 | 21.41 | 951.21 |
| MW-14-22 | 973.21 | 972.71 | 35.20 | 3/6/2023 | 23.25 | 949.46 | 6/5/2023 | 22.51 | 950.20 | 8/28/2023 | 22.36 | 950.35 | 11/27/2023 | 22.54 | 950.17 |
| MW-15-22 | 972.97 | 972.66 | 36.50 | 3/6/2023 | 23.37 | 949.29 | 6/5/2023 | 22.64 | 950.02 | 8/28/2023 | 22.50 | 950.16 | 11/27/2023 | 22.65 | 950.01 |
| MW-16-22 | 972.84 | 972.50 | 34.76 | 3/7/2023 | 23.45 | 949.05 | 6/5/2023 | 26.59 | 945.91 | 8/28/2023 | 26.48 | 946.02 | 11/27/2023 | 26.61 | 945.89 |
| MWF7-02 | NA | 970.58 | 22.62 | -- | -- | -- | 6/5/2023 | 19.39 | 951.19 | -- | -- | -- | 11/27/2023 | 19.50 | 951.08 |
| MWF7-03 | 973.63 | 973.31 | 32.52 | -- | -- | -- | 6/5/2023 | 21.51 | 951.80 | -- | -- | -- | 11/27/2023 | 21.62 | 951.69 |
| MWF12-01R | 964.97 | 967.99 | 23.24 | -- | -- | -- | 6/5/2023 | 20.27 | 947.72 | -- | -- | -- | 11/27/2023 | 20.90 | 947.09 |
| MWF12-02R | 962.38 | 961.91 | 22.49 | -- | -- | -- | 6/5/2023 | 13.45 | 948.46 | -- | -- | -- | 11/27/2023 | 13.55 | 948.36 |
| MWF15-01 | NA | 969.35 | 28.78 | -- | -- | -- | 6/7/2023 | 18.73 | 950.62 | -- | -- | -- | 11/27/2023 | 18.92 | 950.43 |
| MWF16-07 | 973.36 | 972.65 | 17.48 | -- | -- | -- | 6/5/2023 | 4.66 | 967.99 | -- | -- | -- | 11/27/2023 | 5.89 | 966.76 |
| MWF16-15 | 973.30 | 972.71 | 35.48 | -- | -- | -- | 6/5/2023 | 22.98 | 949.73 | -- | -- | -- | 11/27/2023 | 22.04 | 950.67 |
| MWF16-23 | 973.82 | 973.39 | 30.75 | 3/6/2023 | 24.76 | 948.63 | 6/5/2023 | 24.01 | 949.38 | 8/28/2023 | 23.94 | 949.45 | 11/27/2023 | 24.02 | 949.37 |
| Unknown-01 | 969.51 | 969.16 | 24.06 | -- | -- | -- | 6/5/2023 | 18.55 | 950.61 | -- | -- | -- | 11/28/2023 | 18.73 | 950.43 |
| **Former Fiero Assembly** | | | | | | | | | | | | | | | |
| MW-09-22 | 973.83 | 973.46 | 33.37 | 3/6/2023 | 21.84 | 951.62 | 6/5/2023 | 21.19 | 952.27 | 8/28/2023 | 21.06 | 952.40 | 11/27/2023 | 21.27 | 952.19 |
| MW-11-22 | 977.42 | 976.75 | 34.69 | -- | -- | -- | 6/5/2023 | 27.60 | 949.15 | -- | -- | -- | 11/27/2023 | 27.64 | 949.11 |
| MWF2 | NA | 971.74 | 84.88 | -- | -- | -- | 6/5/2023 | 45.43 | 926.31 | -- | -- | -- | 11/27/2023 | 32.32 | 939.42 |
| MWF8-01 | NA | 972.94 | 27.18 | -- | -- | -- | 6/5/2023 | 18.68 | 954.26 | -- | -- | -- | 11/27/2023 | 18.71 | 954.23 |
| TW-12-22 | 973.52 | 973.39 | 32.68 | -- | -- | -- | 6/5/2023 | 22.93 | 950.46 | -- | -- | -- | 11/30/2023 | 23.05 | 950.34 |
| MWF16-05 | 973.95 | 973.68 | 23.00 | 3/6/2023 | 21.22 | 952.46 | 6/5/2023 | 20.53 | 953.15 | 8/28/2023 | 20.40 | 953.28 | 11/27/2023 | 20.63 | 953.05 |
| MWF16-06 | 974.02 | 973.77 | 28.85 | -- | -- | -- | 6/5/2023 | 14.48 | 959.29 | -- | -- | -- | 11/28/2023 | 15.15 | 958.62 |
| MWF16-12 | 973.60 | 973.20 | 18.89 | -- | -- | -- | 6/5/2023 | 14.13 | 959.07 | -- | -- | -- | 11/28/2023 | 13.95 | 959.25 |
| MWF16-16 | 973.44 | 973.22 | 31.65 | 3/6/2023 | 23.32 | 949.90 | 6/5/2023 | 22.57 | 950.65 | 8/31/2023 | 22.35 | 950.87 | 11/28/2023 | 22.68 | 950.54 |
| MWF16-17 | 973.70 | 973.32 | 31.81 | -- | -- | -- | 6/5/2023 | 20.14 | 953.18 | -- | -- | -- | 11/28/2023 | 20.27 | 953.05 |
| MWF16-18 | 973.60 | 973.22 | 32.00 | 3/6/2023 | 21.69 | 951.53 | 6/5/2023 | 20.97 | 952.25 | 8/28/2023 | 20.70 | 952.52 | 11/27/2023 | 21.13 | 952.09 |
| MWF16-22 | 973.50 | 973.18 | 33.92 | -- | -- | -- | 6/5/2023 | 23.38 | 949.80 | -- | -- | -- | 11/28/2023 | 23.49 | 949.69 |
| MWF16-24 | 973.64 | 973.38 | 29.96 | -- | -- | -- | NM | NM | NM | -- | -- | -- | 11/27/2023 | 23.19 | 950.19 |
| MWF16-25 | NA | 975.24 | 37.19 | -- | -- | -- | 6/5/2023 | 26.08 | 949.16 | -- | -- | -- | 11/27/2023 | 26.12 | 949.12 |
| MWF16-26 | NA | 974.14 | 36.25 | -- | -- | -- | 6/5/2023 | 24.56 | 949.58 | -- | -- | -- | 11/27/2023 | 24.60 | 949.54 |
| **Offsite** | | | | | | | | | | | | | | | |
| MWOS-08 | 975.55 | 975.09 | 29.15 | 3/6/2023 | 26.82 | 948.27 | 6/5/2023 | 26.07 | 949.02 | 8/29/2023 | 26.01 | 949.08 | 11/27/2023 | 26.09 | 949.00 |
| MWOS-09R | 976.68 | 976.18 | 29.80 | 3/6/2023 | 28.05 | 948.13 | 6/5/2023 | 27.33 | 948.85 | 8/28/2023 | 27.30 | 948.88 | 11/27/2023 | 27.32 | 948.86 |
| MWOS-10 | 977.01 | 976.55 | 33.15 | 3/6/2023 | 29.19 | 947.36 | 6/5/2023 | 28.51 | 948.04 | 8/28/2023 | 27.53 | 949.02 | 11/27/2023 | 28.51 | 948.04 |

**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] | Date | Depth to Water (ft)[2] | Groundwater Elevation | Date | Depth to Water (ft)[2] | Groundwater Elevation | Date | Depth to Water (ft)[2] | Groundwater Elevation | Date | Depth to Water (ft)[2] | Groundwater Elevation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fiero Parking Lot** | | | | | | | | | | | | | | | |
| PZF17-02 | 977.70 | 977.43 | 31.01 | -- | -- | -- | 6/5/2023 | 24.11 | 953.32 | -- | -- | -- | 11/27/2023 | 24.20 | 953.23 |
| PZF17-04 | 972.90 | 972.47 | 28.87 | -- | -- | -- | 6/5/2023 | 20.16 | 952.31 | -- | -- | -- | 11/27/2023 | 20.23 | 952.24 |
| PZF17-05 | 976.43 | 975.97 | 34.00 | -- | -- | -- | 6/5/2023 | 26.05 | 949.92 | -- | -- | -- | 11/27/2023 | 26.21 | 949.76 |

**Abbreviations:**
ft - feet
NA - Not Available
NM - Not Measured
-- Not gauged during quarterly events

**Notes:**
1. MWF15-01 was covered at the time of Q2 gauging and was gauged at a later date
2. MWF16-24 was covered by a roll-off and could not be uncovered before the end of the Q2 event
3. MWF16-16 and MWOS-08 were covered at the time of Q3 gauging and were gauged at a later date
4. MWF16-06, MWF16-12, MWF16-16, MWF16-17, MWF16-22, and Unknown-01 were covered by snow and ice at the time of gauging. They were uncovered the next morning and gauged on 11/28/23. TW-12-22 was covered by a GFL roll-off at the time of site-wide gauging, and was gauged on 11/30/23 after the roll-off was moved.

**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**
**Summary of 2023 Groundwater Analytical Results**
**2023 Fiero Temporary Groundwater Monitoring Plan Summary**
**RACER Trust Pontiac North Campus**
**Pontiac, Michigan**

| Location ID: | | | | | | | | MW-02-17 | MW-02-17 | MW-05-18 | MW-05-18 | MW-06-20 | MW-06-20 | MW-06-20 | MW-06-20 | MW-07-20 | MW-07-20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date Collected: | Res Fiero SSVIAC SOG | Res Fiero SSVIAC BASE | NR Fiero SSVIAC <50k SOG | NR Fiero SSVIAC <50k BASE | NR Fiero SSVIAC >50k SOG | NR Fiero SSVIAC >50k BASE | Units | 6/6/2023 | 12/1/2023 | 6/6/2023 | 12/1/2023 | 3/7/2023 | 6/6/2023 | 8/29/2023 | 11/30/2023 | 6/6/2023 | 12/1/2023 |
| Sample Name: | | | | | | | | MW-02-17_GW-060623 | MW-02-17_GW-120123 | MW-05-18_GW-060623 | MW-05-18_GW-120123 | MW-06-20_GW-030723 | MW-06-20_GW-060623 | MW-06-20_GW-082923 | MW-06-20_GW-113023 | MW-07-20_GW-060623 | MW-07-20_GW-120123 |
| **Volatile Organics** | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ***180*** | ***93*** | 5,700 | 2,400 | 8,500 | 3,700 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| 1,1,1-Trichloroethane | ***22,000*** | ***11,000*** | 210,000 | 92,000 | 310,000 | 140,000 | ug/L | 2 | 2 | 8 | 5 | 5 [5 ] | 3 [3 ] | 3 [3 ] | 4 | 4 | 6 |
| 1,1,2,2-Tetrachloroethane | ***130*** | ***66*** | 4,100 | 1,800 | 6,200 | 2,600 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| 1,1,2-Trichloroethane | ***21*** | ***11*** | 410 | 180 | 620 | 280 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| 1,1-Dichloroethane | ***160*** | ***88*** | 5,300 | 2,400 | 8,000 | 3,600 | ug/L | 1 | 2 | 6 | 4 | 7 [7 ] | 5 [5 ] | 4 [4 ] | 4 | 6 | 9 |
| 1,1-Dichloroethene | ***410*** | ***220*** | 8,300 | 3,800 | 13,000 | 5,700 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| 1,2,3-Trichlorobenzene | ***4,100*** | ***2,100*** | 18,000 | 18,000 | 18,000 | 18,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U | < 5 U | < 5 U |
| 1,2,3-Trichloropropane | ***91*** | ***47*** | 1,800 | 790 | 2,700 | 1,200 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| 1,2,3-Trimethylbenzene | ***2,000*** | ***1,100*** | 41,000 | 18,000 | 61,000 | 27,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| 1,2,4-Trichlorobenzene | ***270*** | ***130*** | 5,100 | 2,200 | 7,700 | 3,300 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U | < 5 U | < 5 U |
| 1,2,4-Trimethylbenzene | ***1,100*** | ***590*** | 22,000 | 9,900 | 34,000 | 15,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| 1,2-Dibromo-3-chloropropane | ***0.00045*** | ***0.00045*** | 0.042 | 0.029 | 0.061 | 0.042 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U | < 5 U | < 5 U |
| 1,2-Dibromoethane | ***8*** | ***4*** | 250 | 110 | 370 | 160 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| 1,2-Dichlorobenzene | ***19,000*** | ***9,900*** | 160,000 | 160,000 | 160,000 | 160,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| 1,2-Dichloroethane | ***50*** | ***27*** | 1,600 | 750 | 2,500 | 1,100 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| 1,2-Dichloropropane | ***100*** | ***56*** | 2,100 | 950 | 3,200 | 1,400 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| 1,3,5-Trimethylbenzene | ***800*** | ***420*** | 16,000 | 7,000 | 24,000 | 10,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| 1,3-Dichlorobenzene | ***130*** | ***70*** | 2,700 | 1,200 | 4,000 | 1,700 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| 1,4-Dichlorobenzene | ***310*** | ***160*** | 9,800 | 4,300 | 15,000 | 6,400 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| 2-Butanone | ***4,000,000*** | ***2,200,000*** | 59,000,000 | 27,000,000 | 88,000,000 | 40,000,000 | ug/L | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U [< 25 U] | < 25 U [< 25 U] | < 25 U [< 25 U] | < 25 U | < 25 U | < 25 U |
| 2-Hexanone | ***24,000*** | ***12,000*** | 490,000 | 220,000 | 740,000 | 320,000 | ug/L | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U [< 50 U] | < 50 U [< 50 U] | < 50 U [< 50 U] | < 50 U | < 50 U | < 50 U |
| 2-Methylnaphthalene | ***3,500*** | ***1,800*** | 25,000 | 25,000 | 25,000 | 25,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U | < 5 U | < 5 U |
| 4-Methyl-2-pentanone | ***1,600,000*** | ***810,000*** | 19,000,000 | 9,500,000 | 19,000,000 | 14,000,000 | ug/L | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U [< 50 U] | < 50 U [< 50 U] | < 50 U [< 50 U] | < 50 U | < 50 U | < 50 U |
| Acetone | ***32,000,000*** | ***18,000,000*** | 240,000,000 | 110,000,000 | 360,000,000 | 160,000,000 | ug/L | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U [< 50 U] | < 50 U [< 50 U] | < 50 U [< 50 U] | < 50 U | < 50 U | < 50 U |
| Acrylonitrile | ***120*** | ***67*** | 4,100 | 1,900 | 6,200 | 2,900 | ug/L | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U [< 2 U] | < 2 U [< 2 U] | < 2 U [< 2 U] | < 2 U | < 2 U | < 2 U |
| Benzene | ***34*** | ***18*** | 1,100 | 510 | 1,700 | 760 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| Bromobenzene | ***3,300*** | ***1,700*** | 66,000 | 29,000 | 99,000 | 43,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| Bromodichloromethane | ***60*** | ***31*** | 1,700 | 760 | 2,600 | 1,100 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| Bromoform | ***6,400*** | ***3,200*** | 200,000 | 83,000 | 300,000 | 120,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| Bromomethane | ***59*** | ***33*** | 1,200 | 580 | 1,900 | 860 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U | < 5 U | < 5 U |
| Carbon Disulfide | ***2,200*** | ***1,200*** | 46,000 | 22,000 | 70,000 | 33,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U | < 5 U | < 5 U |
| Carbon Tetrachloride | ***14*** | ***7.2*** | 440 | 190 | 650 | 290 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| CFC-11 | ***300*** | ***160*** | 6,000 | 2,700 | 9,000 | 4,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| CFC-12 | ***71*** | ***38*** | 1,400 | 640 | 2,100 | 960 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U | < 5 U | < 5 U |
| Chlorobenzene | ***1,300*** | ***720*** | 27,000 | 12,000 | 41,000 | 18,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| Chlorobromomethane | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| Chlorodibromomethane | ***58*** | ***29*** | 4,400 | 1,800 | 6,600 | 2,800 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U | < 5 U | < 5 U |
| Chloroethane | ***15,000*** | ***8,600*** | 320,000 | 150,000 | 490,000 | 230,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U | < 5 U | < 5 U |
| Chloroform | ***19*** | ***10*** | 610 | 270 | 910 | 410 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| Chloromethane | ***340*** | ***200*** | 7,400 | 3,500 | 11,000 | 5,300 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U | < 5 U | < 5 U |
| cis-1,2-Dichloroethene | ***110*** | ***62*** | 2,300 | 1,100 | 3,500 | 1,600 | ug/L | 1 | 2 | 11 | 9 | 7 [7 ] | 6 [6 ] | 7 [7 ] | 3 | 7 | 6 |
| cis-1,3-Dichloropropene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| Dibromomethane | ***450*** | ***230*** | 9,000 | 3,900 | 13,000 | 5,900 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U | < 5 U | < 5 U |
| Dichloromethane | ***9,100*** | ***5,000*** | 190,000 | 88,000 | 280,000 | 130,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U | < 5 U | < 5 U |
| Ethyl ether | ***44,000*** | ***24,000*** | 900,000 | 410,000 | 1,400,000 | 620,000 | ug/L | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U [< 10 U] | < 10 U [< 10 U] | < 10 U [< 10 U] | < 10 U | < 10 U | < 10 U |
| Ethylbenzene | ***110*** | ***60*** | 3,600 | 1,600 | 5,400 | 2,400 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| Hexachloroethane | ***130*** | ***64*** | 3,900 | 1,600 | 5,900 | 2,500 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U | < 5 U | < 5 U |
| Iodomethane | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| Isopropyl benzene | ***26*** | ***13*** | 810 | 360 | 1,200 | 540 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U | < 5 U | < 5 U |
| m&p-Xylene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U [< 2 U] | < 2 U [< 2 U] | < 2 U [< 2 U] | < 2 U | < 2 U | < 2 U |
| Methyl tert-butyl ether | ***10,000*** | ***5,300*** | 320,000 | 150,000 | 490,000 | 220,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U | < 5 U | < 5 U |
| Naphthalene | ***190*** | ***100*** | 6,200 | 2,700 | 9,300 | 4,100 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U | < 5 U | < 5 U |
| N-Butylbenzene | ***2,000*** | ***1,100*** | 12,000 | 12,000 | 12,000 | 12,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| N-Propylbenzene | ***10,000*** | ***5,400*** | 52,000 | 31,000 | 52,000 | 46,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| o-Xylene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| Styrene | ***1,400*** | ***740*** | 45,000 | 20,000 | 67,000 | 30,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| tert-Butylbenzene | ***3.4*** | ***1.8*** | 67 | 29 | 100 | 44 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| Tetrachloroethene | ***250*** | ***130*** | 3,400 | 1,500 | 5,000 | 2,200 | ug/L | 5 | 6 | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | 1 |
| Tetrahydrofuran | ***1,300,000*** | ***690,000*** | 27,000,000 | 12,000,000 | 41,000,000 | 19,000,000 | ug/L | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U [< 90 U] | < 90 U [< 90 U] | < 90 U [< 90 U] | < 90 U | < 90 U | < 90 U |
| Toluene | ***56,000*** | ***30,000*** | 530,000 | 250,000 | 530,000 | 380,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| Total Xylenes | ***3,000*** | ***1,600*** | 60,000 | 27,000 | 91,000 | 41,000 | ug/L | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U [< 2 U] | < 2 U [< 2 U] | < 2 U [< 2 U] | < 2 U | < 2 U | < 2 U |
| trans-1,2-Dichloroethene | ***480*** | ***260*** | 9,800 | 4,500 | 15,000 | 6,700 | ug/L | 1 | 1 | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| trans-1,3-Dichloropropene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| trans-1,4-Dichloro-2-butene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |
| Trichloroethene | ***15*** | ***8.1*** | 210 | 93 | 310 | 140 | ug/L | 5 | 7 | 2 | < 1 U | ***14 [14 ]*** | ***12 [12 ]*** | ***9 [9 ]*** | ***9*** | 2 | 1 |
| Vinyl Chloride | ***2.2*** | ***1.2*** | 260 | 120 | 390 | 180 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U | < 1 U | < 1 U |

**Table 2**
**Summary of 2023 Groundwater Analytical Results**
**2023 Fiero Temporary Groundwater Monitoring Plan Summary**
**RACER Trust Pontiac North Campus**
**Pontiac, Michigan**

| Location ID: | Res Fiero SSVIAC SOG | Res Fiero SSVIAC BASE | NR Fiero SSVIAC <50k SOG | NR Fiero SSVIAC <50k BASE | NR Fiero SSVIAC >50k SOG | NR Fiero SSVIAC >50k BASE | Units | MW-08-21 | MW-08-21 | MW-08-21 | MW-08-21 | MW-09-22 | MW-09-22 | MW-09-22 | MW-09-22 | MW-13-22 | MW-13-22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date Collected: | | | | | | | | 3/7/2023 | 6/8/2023 | 8/28/2023 | 11/30/2023 | 3/6/2023 | 6/8/2023 | 9/7/2023 | 11/30/2023 | 3/7/2023 | 6/6/2023 |
| Sample Name: | | | | | | | | MW-08-21_GW-030723 | MW-08-21_GW-060823 | MW-08-21_GW-082823 | MW-08-21_GW-113023 | MW-09-22_GW-030623 | MW-09-22_GW-060823 | MW-09-22_GW-090723 | MW-09-22_GW-113023 | MW-13-22_GW-030723 | MW-13-22_GW-060623 |
| **Volatile Organics** | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ***180*** | ***93*** | 5,700 | 2,400 | 8,500 | 3,700 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| 1,1,1-Trichloroethane | ***22,000*** | ***11,000*** | 210,000 | 92,000 | 310,000 | 140,000 | ug/L | 3 | 3 | 2 | 2 | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| 1,1,2,2-Tetrachloroethane | ***130*** | ***66*** | 4,100 | 1,800 | 6,200 | 2,600 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| 1,1,2-Trichloroethane | ***21*** | ***11*** | 410 | 180 | 620 | 280 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| 1,1-Dichloroethane | ***160*** | ***88*** | 5,300 | 2,400 | 8,000 | 3,600 | ug/L | 9 | 4 | 6 | 2 | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| 1,1-Dichloroethene | ***410*** | ***220*** | 8,300 | 3,800 | 13,000 | 5,700 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| 1,2,3-Trichlorobenzene | ***4,100*** | ***2,100*** | 18,000 | 18,000 | 18,000 | 18,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U |
| 1,2,3-Trichloropropane | ***91*** | ***47*** | 1,800 | 790 | 2,700 | 1,200 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| 1,2,3-Trimethylbenzene | ***2,000*** | ***1,100*** | 41,000 | 18,000 | 61,000 | 27,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| 1,2,4-Trichlorobenzene | ***270*** | ***130*** | 5,100 | 2,200 | 7,700 | 3,300 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U |
| 1,2,4-Trimethylbenzene | ***1,100*** | ***590*** | 22,000 | 9,900 | 34,000 | 15,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| 1,2-Dibromo-3-chloropropane | ***0.00045*** | ***0.00045*** | 0.042 | 0.029 | 0.061 | 0.042 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U |
| 1,2-Dibromoethane | ***8*** | ***4*** | 250 | 110 | 370 | 160 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| 1,2-Dichlorobenzene | ***19,000*** | ***9,900*** | 160,000 | 160,000 | 160,000 | 160,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| 1,2-Dichloroethane | ***50*** | ***27*** | 1,600 | 750 | 2,500 | 1,100 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| 1,2-Dichloropropane | ***100*** | ***56*** | 2,100 | 950 | 3,200 | 1,400 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| 1,3,5-Trimethylbenzene | ***800*** | ***420*** | 16,000 | 7,000 | 24,000 | 10,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| 1,3-Dichlorobenzene | ***130*** | ***70*** | 2,700 | 1,200 | 4,000 | 1,700 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| 1,4-Dichlorobenzene | ***310*** | ***160*** | 9,800 | 4,300 | 15,000 | 6,400 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| 2-Butanone | ***4,000,000*** | ***2,200,000*** | 59,000,000 | 27,000,000 | 88,000,000 | 40,000,000 | ug/L | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U [< 25 U] | < 25 U | < 25 U |
| 2-Hexanone | ***24,000*** | ***12,000*** | 490,000 | 220,000 | 740,000 | 320,000 | ug/L | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U [< 50 U] | < 50 U | < 50 U |
| 2-Methylnaphthalene | ***3,500*** | ***1,800*** | 25,000 | 25,000 | 25,000 | 25,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U |
| 4-Methyl-2-pentanone | ***1,600,000*** | ***810,000*** | 19,000,000 | 9,500,000 | 19,000,000 | 14,000,000 | ug/L | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U [< 50 U] | < 50 U | < 50 U |
| Acetone | ***32,000,000*** | ***18,000,000*** | 240,000,000 | 110,000,000 | 360,000,000 | 160,000,000 | ug/L | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U [< 50 U] | < 50 U | < 50 U |
| Acrylonitrile | ***120*** | ***67*** | 4,100 | 1,900 | 6,200 | 2,900 | ug/L | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U [< 2 U] | < 2 U | < 2 U |
| Benzene | ***34*** | ***18*** | 1,100 | 510 | 1,700 | 760 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| Bromobenzene | ***3,300*** | ***1,700*** | 66,000 | 29,000 | 99,000 | 43,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| Bromodichloromethane | ***60*** | ***31*** | 1,700 | 760 | 2,600 | 1,100 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| Bromoform | ***6,400*** | ***3,200*** | 200,000 | 83,000 | 300,000 | 120,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| Bromomethane | ***59*** | ***33*** | 1,200 | 580 | 1,900 | 860 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U |
| Carbon Disulfide | ***2,200*** | ***1,200*** | 46,000 | 22,000 | 70,000 | 33,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U |
| Carbon Tetrachloride | ***14*** | ***7.2*** | 440 | 190 | 650 | 290 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | 1 | 1 | < 1 U | 2 [2 ] | < 1 U | < 1 U |
| CFC-11 | ***300*** | ***160*** | 6,000 | 2,700 | 9,000 | 4,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| CFC-12 | ***71*** | ***38*** | 1,400 | 640 | 2,100 | 960 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U |
| Chlorobenzene | ***1,300*** | ***720*** | 27,000 | 12,000 | 41,000 | 18,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| Chlorobromomethane | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| Chlorodibromomethane | ***58*** | ***29*** | 4,400 | 1,800 | 6,600 | 2,800 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U |
| Chloroethane | ***15,000*** | ***8,600*** | 320,000 | 150,000 | 490,000 | 230,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U |
| Chloroform | ***19*** | ***10*** | 610 | 270 | 910 | 410 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| Chloromethane | ***340*** | ***200*** | 7,400 | 3,500 | 11,000 | 5,300 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U |
| cis-1,2-Dichloroethene | ***110*** | ***62*** | 2,300 | 1,100 | 3,500 | 1,600 | ug/L | 11 | 4 | 9 | 2 | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| cis-1,3-Dichloropropene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| Dibromomethane | ***450*** | ***230*** | 9,000 | 3,900 | 13,000 | 5,900 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U |
| Dichloromethane | ***9,100*** | ***5,000*** | 190,000 | 88,000 | 280,000 | 130,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U |
| Ethyl ether | ***44,000*** | ***24,000*** | 900,000 | 410,000 | 1,400,000 | 620,000 | ug/L | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U [< 10 U] | < 10 U | < 10 U |
| Ethylbenzene | ***110*** | ***60*** | 3,600 | 1,600 | 5,400 | 2,400 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| Hexachloroethane | ***130*** | ***64*** | 3,900 | 1,600 | 5,900 | 2,500 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U |
| Iodomethane | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| Isopropyl benzene | ***26*** | ***13*** | 810 | 360 | 1,200 | 540 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U |
| m&p-Xylene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U [< 2 U] | < 2 U | < 2 U |
| Methyl tert-butyl ether | ***10,000*** | ***5,300*** | 320,000 | 150,000 | 490,000 | 220,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U |
| Naphthalene | ***190*** | ***100*** | 6,200 | 2,700 | 9,300 | 4,100 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U |
| N-Butylbenzene | ***2,000*** | ***1,100*** | 12,000 | 12,000 | 12,000 | 12,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| N-Propylbenzene | ***10,000*** | ***5,400*** | 52,000 | 31,000 | 52,000 | 46,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| o-Xylene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| Styrene | ***1,400*** | ***740*** | 45,000 | 20,000 | 67,000 | 30,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| tert-Butylbenzene | ***3.4*** | ***1.8*** | 67 | 29 | 100 | 44 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| Tetrachloroethene | ***250*** | ***130*** | 3,400 | 1,500 | 5,000 | 2,200 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | ***148*** | 122 | 78 | ***169 [191 ]*** | < 1 U | < 1 U |
| Tetrahydrofuran | ***1,300,000*** | ***690,000*** | 27,000,000 | 12,000,000 | 41,000,000 | 19,000,000 | ug/L | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U [< 90 U] | < 90 U | < 90 U |
| Toluene | ***56,000*** | ***30,000*** | 530,000 | 250,000 | 530,000 | 380,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| Total Xylenes | ***3,000*** | ***1,600*** | 60,000 | 27,000 | 91,000 | 41,000 | ug/L | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U [< 2 U] | < 2 U | < 2 U |
| trans-1,2-Dichloroethene | ***480*** | ***260*** | 9,800 | 4,500 | 15,000 | 6,700 | ug/L | 1 | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| trans-1,3-Dichloropropene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| trans-1,4-Dichloro-2-butene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |
| Trichloroethene | ***15*** | ***8.1*** | 210 | 93 | 310 | 140 | ug/L | ***11*** | ***11*** | ***12*** | ***12*** | 4 | 4 | 3 | 5 [5 ] | < 1 U | < 1 U |
| Vinyl Chloride | ***2.2*** | ***1.2*** | 260 | 120 | 390 | 180 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U |

**Table 2**
**Summary of 2023 Groundwater Analytical Results**
**2023 Fiero Temporary Groundwater Monitoring Plan Summary**
**RACER Trust Pontiac North Campus**
**Pontiac, Michigan**

| Location ID: / Date Collected: / Sample Name: | Res Fiero SSVIAC SOG | Res Fiero SSVIAC BASE | NR Fiero SSVIAC <50k SOG | NR Fiero SSVIAC <50k BASE | NR Fiero SSVIAC >50k SOG | NR Fiero SSVIAC >50k BASE | Units | MW-13-22 8/30/2023 MW-13-22_GW-083023 | MW-13-22 11/29/2023 MW-13-22_GW_112923 | MW-14-22 3/7/2023 MW-14-22_GW-030723 | MW-14-22 6/6/2023 MW-14-22_GW-060623 | MW-14-22 8/30/2023 MW-14-22_GW-083023 | MW-14-22 11/29/2023 MW-14-22_GW_112923 | MW-15-22 3/7/2023 MW-15-22_GW-030723 | MW-15-22 6/6/2023 MW-15-22_GW-060623 | MW-15-22 8/29/2023 MW-15-22_GW-082923 | MW-15-22 11/29/2023 MW-15-22_GW_112923 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ***180*** | ***93*** | 5,700 | 2,400 | 8,500 | 3,700 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| 1,1,1-Trichloroethane | ***22,000*** | ***11,000*** | 210,000 | 92,000 | 310,000 | 140,000 | ug/L | < 1 U | < 1 U | 6 | 13 | 10 Y | 10 Y | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| 1,1,2,2-Tetrachloroethane | ***130*** | ***66*** | 4,100 | 1,800 | 6,200 | 2,600 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| 1,1,2-Trichloroethane | ***21*** | ***11*** | 410 | 180 | 620 | 280 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| 1,1-Dichloroethane | ***160*** | ***88*** | 5,300 | 2,400 | 8,000 | 3,600 | ug/L | < 1 U | < 1 U | < 1 U | 2 | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| 1,1-Dichloroethene | ***410*** | ***220*** | 8,300 | 3,800 | 13,000 | 5,700 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| 1,2,3-Trichlorobenzene | ***4,100*** | ***2,100*** | 18,000 | 18,000 | 18,000 | 18,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 50 UY | < 50 UY | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] |
| 1,2,3-Trichloropropane | ***91*** | ***47*** | 1,800 | 790 | 2,700 | 1,200 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| 1,2,3-Trimethylbenzene | ***2,000*** | ***1,100*** | 41,000 | 18,000 | 61,000 | 27,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| 1,2,4-Trichlorobenzene | ***270*** | ***130*** | 5,100 | 2,200 | 7,700 | 3,300 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 50 UY | < 50 UY | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] |
| 1,2,4-Trimethylbenzene | ***1,100*** | ***590*** | 22,000 | 9,900 | 34,000 | 15,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| 1,2-Dibromo-3-chloropropane | ***0.00045*** | ***0.00045*** | 0.042 | 0.029 | 0.061 | 0.042 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 50 UY | < 50 UY | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] |
| 1,2-Dibromoethane | ***8*** | ***4*** | 250 | 110 | 370 | 160 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| 1,2-Dichlorobenzene | ***19,000*** | ***9,900*** | 160,000 | 160,000 | 160,000 | 160,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| 1,2-Dichloroethane | ***50*** | ***27*** | 1,600 | 750 | 2,500 | 1,100 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| 1,2-Dichloropropane | ***100*** | ***56*** | 2,100 | 950 | 3,200 | 1,400 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| 1,3,5-Trimethylbenzene | ***800*** | ***420*** | 16,000 | 7,000 | 24,000 | 10,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| 1,3-Dichlorobenzene | ***130*** | ***70*** | 2,700 | 1,200 | 4,000 | 1,700 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| 1,4-Dichlorobenzene | ***310*** | ***160*** | 9,800 | 4,300 | 15,000 | 6,400 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| 2-Butanone | ***4,000,000*** | ***2,200,000*** | 59,000,000 | 27,000,000 | 88,000,000 | 40,000,000 | ug/L | < 25 U | < 25 U | < 25 U | < 25 U | < 250 UY | < 250 UY | < 25 U [< 25 U] | < 25 U [< 25 U] | < 25 U [< 25 U] | < 25 U [< 25 U] |
| 2-Hexanone | ***24,000*** | ***12,000*** | 490,000 | 220,000 | 740,000 | 320,000 | ug/L | < 50 U | < 50 U | < 50 U | < 50 U | < 500 UY | < 500 UY | < 50 U [< 50 U] | < 50 U [< 50 U] | < 50 U [< 50 U] | < 50 U [< 50 U] |
| 2-Methylnaphthalene | ***3,500*** | ***1,800*** | 25,000 | 25,000 | 25,000 | 25,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 50 UY | < 50 UY | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] |
| 4-Methyl-2-pentanone | ***1,600,000*** | ***810,000*** | 19,000,000 | 9,500,000 | 19,000,000 | 14,000,000 | ug/L | < 50 U | < 50 U | < 50 U | < 50 U | < 500 UY | < 500 UY | < 50 U [< 50 U] | < 50 U [< 50 U] | < 50 U [< 50 U] | < 50 U [< 50 U] |
| Acetone | ***32,000,000*** | ***18,000,000*** | 240,000,000 | 110,000,000 | 360,000,000 | 160,000,000 | ug/L | < 50 U | < 50 U | < 50 U | < 50 U | < 500 UY | < 500 UY | < 50 U [< 50 U] | < 50 U [< 50 U] | < 50 U [< 50 U] | < 50 U [< 50 U] |
| Acrylonitrile | ***120*** | ***67*** | 4,100 | 1,900 | 6,200 | 2,900 | ug/L | < 2 U | < 2 U | < 2 U | < 2 U | < 20 UY | < 20 UY | < 2 U [< 2 U] | < 2 U [< 2 U] | < 2 U [< 2 U] | < 2 U [< 2 U] |
| Benzene | ***34*** | ***18*** | 1,100 | 510 | 1,700 | 760 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| Bromobenzene | ***3,300*** | ***1,700*** | 66,000 | 29,000 | 99,000 | 43,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| Bromodichloromethane | ***60*** | ***31*** | 1,700 | 760 | 2,600 | 1,100 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| Bromoform | ***6,400*** | ***3,200*** | 200,000 | 83,000 | 300,000 | 120,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| Bromomethane | ***59*** | ***33*** | 1,200 | 580 | 1,900 | 860 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 50 UY | < 50 UY | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] |
| Carbon Disulfide | ***2,200*** | ***1,200*** | 46,000 | 22,000 | 70,000 | 33,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 50 UY | < 50 UY | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] |
| Carbon Tetrachloride | ***14*** | ***7.2*** | 440 | 190 | 650 | 290 | ug/L | < 1 U | < 1 U | 3 | 5 | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| CFC-11 | ***300*** | ***160*** | 6,000 | 2,700 | 9,000 | 4,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| CFC-12 | ***71*** | ***38*** | 1,400 | 640 | 2,100 | 960 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 50 UY | < 50 UY | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] |
| Chlorobenzene | ***1,300*** | ***720*** | 27,000 | 12,000 | 41,000 | 18,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| Chlorobromomethane | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| Chlorodibromomethane | ***58*** | ***29*** | 4,400 | 1,800 | 6,600 | 2,800 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 50 UY | ***140 Y*** | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] |
| Chloroethane | ***15,000*** | ***8,600*** | 320,000 | 150,000 | 490,000 | 230,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 50 UY | < 50 UY | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] |
| Chloroform | ***19*** | ***10*** | 610 | 270 | 910 | 410 | ug/L | < 1 U | < 1 U | 1 | 1 | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| Chloromethane | ***340*** | ***200*** | 7,400 | 3,500 | 11,000 | 5,300 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 50 UY | < 50 UY | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] |
| cis-1,2-Dichloroethene | ***110*** | ***62*** | 2,300 | 1,100 | 3,500 | 1,600 | ug/L | < 1 U | < 1 U | 8 | 5 | 20 Y | 30 Y | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| cis-1,3-Dichloropropene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| Dibromomethane | ***450*** | ***230*** | 9,000 | 3,900 | 13,000 | 5,900 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 50 UY | < 50 UY | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] |
| Dichloromethane | ***9,100*** | ***5,000*** | 190,000 | 88,000 | 280,000 | 130,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 50 UY | < 50 UY | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] |
| Ethyl ether | ***44,000*** | ***24,000*** | 900,000 | 410,000 | 1,400,000 | 620,000 | ug/L | < 10 U | < 10 U | < 10 U | < 10 U | < 100 UY | < 100 UY | < 10 U [< 10 U] | < 10 U [< 10 U] | < 10 U [< 10 U] | < 10 U [< 10 U] |
| Ethylbenzene | ***110*** | ***60*** | 3,600 | 1,600 | 5,400 | 2,400 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| Hexachloroethane | ***130*** | ***64*** | 3,900 | 1,600 | 5,900 | 2,500 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 50 UY | < 50 UY | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] |
| Iodomethane | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| Isopropyl benzene | ***26*** | ***13*** | 810 | 360 | 1,200 | 540 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 50 UY | < 50 UY | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] |
| m&p-Xylene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 2 U | < 2 U | < 2 U | < 2 U | < 20 UY | < 20 UY | < 2 U [< 2 U] | < 2 U [< 2 U] | < 2 U [< 2 U] | < 2 U [< 2 U] |
| Methyl tert-butyl ether | ***10,000*** | ***5,300*** | 320,000 | 150,000 | 490,000 | 220,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 50 UY | < 50 UY | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] |
| Naphthalene | ***190*** | ***100*** | 6,200 | 2,700 | 9,300 | 4,100 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 50 UY | < 50 UY | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] | < 5 U [< 5 U] |
| N-Butylbenzene | ***2,000*** | ***1,100*** | 12,000 | 12,000 | 12,000 | 12,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| N-Propylbenzene | ***10,000*** | ***5,400*** | 52,000 | 31,000 | 52,000 | 46,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| o-Xylene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| Styrene | ***1,400*** | ***740*** | 45,000 | 20,000 | 67,000 | 30,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| tert-Butylbenzene | ***3.4*** | ***1.8*** | 67 | 29 | 100 | 44 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| Tetrachloroethene | ***250*** | ***130*** | 3,400 | 1,500 | 5,000 | 2,200 | ug/L | < 1 U | < 1 U | 100 | ***212 E*** | ***200 Y*** | ***180 Y*** | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| Tetrahydrofuran | ***1,300,000*** | ***690,000*** | 27,000,000 | 12,000,000 | 41,000,000 | 19,000,000 | ug/L | < 90 U | < 90 U | < 90 U | < 90 U | < 900 UY | < 900 UY | < 90 U [< 90 U] | < 90 U [< 90 U] | < 90 U [< 90 U] | < 90 U [< 90 U] |
| Toluene | ***56,000*** | ***30,000*** | 530,000 | 250,000 | 530,000 | 380,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| Total Xylenes | ***3,000*** | ***1,600*** | 60,000 | 27,000 | 91,000 | 41,000 | ug/L | < 2 U | < 2 U | < 2 U | < 2 U | < 20 UY | < 20 UY | < 2 U [< 2 U] | < 2 U [< 2 U] | < 2 U [< 2 U] | < 2 U [< 2 U] |
| trans-1,2-Dichloroethene | ***480*** | ***260*** | 9,800 | 4,500 | 15,000 | 6,700 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| trans-1,3-Dichloropropene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| trans-1,4-Dichloro-2-butene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| Trichloroethene | ***15*** | ***8.1*** | 210 | 93 | 310 | 140 | ug/L | < 1 U | < 1 U | ***15*** | ***22*** | ***20 Y*** | ***20 Y*** | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |
| Vinyl Chloride | ***2.2*** | ***1.2*** | 260 | 120 | 390 | 180 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 10 UY | < 10 UY | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] | < 1 U [< 1 U] |

**Table 2**
**Summary of 2023 Groundwater Analytical Results**
**2023 Fiero Temporary Groundwater Monitoring Plan Summary**
**RACER Trust Pontiac North Campus**
**Pontiac, Michigan**

| Location ID: | | | | | | | | MW-16-22 | MW-16-22 | MW-16-22 | MW-16-22 | MWF15-01 | MWF15-01 | MWF16-05 | MWF16-05 | MWF16-05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date Collected: | Res Fiero SSVIAC SOG | Res Fiero SSVIAC BASE | NR Fiero SSVIAC <50k SOG | NR Fiero SSVIAC <50k BASE | NR Fiero SSVIAC >50k SOG | NR Fiero SSVIAC >50k BASE | Units | 4/7/2023 | 6/6/2023 | 9/7/2023 | 11/29/2023 | 6/7/2023 | 12/4/2023 | 3/8/2023 | 6/8/2023 | 9/7/2023 |
| Sample Name: | | | | | | | | MW-16-22_GW-040723 | MW-16-22_GW-060623 | MW-16-22_GW-090723 | MW-16-22_GW_112923 | MWF15-01_GW-060723 | MWF15-01_GW-120423 | MWF16-05_GW-030823 | MWF16-05_GW-060823 | MWF16-05_GW-090723 |
| **Volatile Organics** | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ***180*** | ***93*** | 5,700 | 2,400 | 8,500 | 3,700 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| 1,1,1-Trichloroethane | ***22,000*** | ***11,000*** | 210,000 | 92,000 | 310,000 | 140,000 | ug/L | < 10 UY | < 10 UY | < 10 UY | 2 | 4 | 5 | 4 | < 20 UY | < 20 UY |
| 1,1,2,2-Tetrachloroethane | ***130*** | ***66*** | 4,100 | 1,800 | 6,200 | 2,600 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| 1,1,2-Trichloroethane | ***21*** | ***11*** | 410 | 180 | 620 | 280 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| 1,1-Dichloroethane | ***160*** | ***88*** | 5,300 | 2,400 | 8,000 | 3,600 | ug/L | < 10 UY | < 10 UY | < 10 UY | 1 | < 1 U | 1 | < 1 U | < 20 UY | < 20 UY |
| 1,1-Dichloroethene | ***410*** | ***220*** | 8,300 | 3,800 | 13,000 | 5,700 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| 1,2,3-Trichlorobenzene | ***4,100*** | ***2,100*** | 18,000 | 18,000 | 18,000 | 18,000 | ug/L | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 100 UY | < 100 UY |
| 1,2,3-Trichloropropane | ***91*** | ***47*** | 1,800 | 790 | 2,700 | 1,200 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| 1,2,3-Trimethylbenzene | ***2,000*** | ***1,100*** | 41,000 | 18,000 | 61,000 | 27,000 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| 1,2,4-Trichlorobenzene | ***270*** | ***130*** | 5,100 | 2,200 | 7,700 | 3,300 | ug/L | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 100 UY | < 100 UY |
| 1,2,4-Trimethylbenzene | ***1,100*** | ***590*** | 22,000 | 9,900 | 34,000 | 15,000 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| 1,2-Dibromo-3-chloropropane | ***0.00045*** | ***0.00045*** | 0.042 | 0.029 | 0.061 | 0.042 | ug/L | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 100 UY | < 100 UY |
| 1,2-Dibromoethane | ***8*** | ***4*** | 250 | 110 | 370 | 160 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| 1,2-Dichlorobenzene | ***19,000*** | ***9,900*** | 160,000 | 160,000 | 160,000 | 160,000 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| 1,2-Dichloroethane | ***50*** | ***27*** | 1,600 | 750 | 2,500 | 1,100 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| 1,2-Dichloropropane | ***100*** | ***56*** | 2,100 | 950 | 3,200 | 1,400 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| 1,3,5-Trimethylbenzene | ***800*** | ***420*** | 16,000 | 7,000 | 24,000 | 10,000 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| 1,3-Dichlorobenzene | ***130*** | ***70*** | 2,700 | 1,200 | 4,000 | 1,700 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| 1,4-Dichlorobenzene | ***310*** | ***160*** | 9,800 | 4,300 | 15,000 | 6,400 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| 2-Butanone | ***4,000,000*** | ***2,200,000*** | 59,000,000 | 27,000,000 | 88,000,000 | 40,000,000 | ug/L | < 250 UY | < 250 UY | < 250 UY | < 25 U | < 25 U | < 25 U | < 25 U | < 500 UY | < 500 UY |
| 2-Hexanone | ***24,000*** | ***12,000*** | 490,000 | 220,000 | 740,000 | 320,000 | ug/L | < 500 UY | < 500 UY | < 500 UY | < 50 U | < 50 U | < 50 U | < 50 U | < 1000 UY | < 1000 UY |
| 2-Methylnaphthalene | ***3,500*** | ***1,800*** | 25,000 | 25,000 | 25,000 | 25,000 | ug/L | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 100 UY | < 100 UY |
| 4-Methyl-2-pentanone | ***1,600,000*** | ***810,000*** | 19,000,000 | 9,500,000 | 19,000,000 | 14,000,000 | ug/L | < 500 UY | < 500 UY | < 500 UY | < 50 U | < 50 U | < 50 U | < 50 U | < 1000 UY | < 1000 UY |
| Acetone | ***32,000,000*** | ***18,000,000*** | 240,000,000 | 110,000,000 | 360,000,000 | 160,000,000 | ug/L | < 500 UY | < 500 UY | < 500 UY | < 50 U | < 50 U | < 50 U | < 50 U | < 1000 UY | < 1000 UY |
| Acrylonitrile | ***120*** | ***67*** | 4,100 | 1,900 | 6,200 | 2,900 | ug/L | < 20 UY | < 20 UY | < 20 UY | < 2 U | < 2 U | < 2 U | < 2 U | < 40 UY | < 40 UY |
| Benzene | ***34*** | ***18*** | 1,100 | 510 | 1,700 | 760 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| Bromobenzene | ***3,300*** | ***1,700*** | 66,000 | 29,000 | 99,000 | 43,000 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| Bromodichloromethane | ***60*** | ***31*** | 1,700 | 760 | 2,600 | 1,100 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| Bromoform | ***6,400*** | ***3,200*** | 200,000 | 83,000 | 300,000 | 120,000 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| Bromomethane | ***59*** | ***33*** | 1,200 | 580 | 1,900 | 860 | ug/L | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 100 UY | < 100 UY |
| Carbon Disulfide | ***2,200*** | ***1,200*** | 46,000 | 22,000 | 70,000 | 33,000 | ug/L | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 100 UY | < 100 UY |
| Carbon Tetrachloride | ***14*** | ***7.2*** | 440 | 190 | 650 | 290 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| CFC-11 | ***300*** | ***160*** | 6,000 | 2,700 | 9,000 | 4,000 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| CFC-12 | ***71*** | ***38*** | 1,400 | 640 | 2,100 | 960 | ug/L | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 100 UY | < 100 UY |
| Chlorobenzene | ***1,300*** | ***720*** | 27,000 | 12,000 | 41,000 | 18,000 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| Chlorobromomethane | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| Chlorodibromomethane | ***58*** | ***29*** | 4,400 | 1,800 | 6,600 | 2,800 | ug/L | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 100 UY | < 100 UY |
| Chloroethane | ***15,000*** | ***8,600*** | 320,000 | 150,000 | 490,000 | 230,000 | ug/L | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 100 UY | < 100 UY |
| Chloroform | ***19*** | ***10*** | 610 | 270 | 910 | 410 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| Chloromethane | ***340*** | ***200*** | 7,400 | 3,500 | 11,000 | 5,300 | ug/L | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 100 UY | < 100 UY |
| cis-1,2-Dichloroethene | ***110*** | ***62*** | 2,300 | 1,100 | 3,500 | 1,600 | ug/L | 20 Y | 10 Y | ***120 Y*** | 8 | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| cis-1,3-Dichloropropene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| Dibromomethane | ***450*** | ***230*** | 9,000 | 3,900 | 13,000 | 5,900 | ug/L | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 100 UY | < 100 UY |
| Dichloromethane | ***9,100*** | ***5,000*** | 190,000 | 88,000 | 280,000 | 130,000 | ug/L | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 100 UY | < 100 UY |
| Ethyl ether | ***44,000*** | ***24,000*** | 900,000 | 410,000 | 1,400,000 | 620,000 | ug/L | < 100 UY | < 100 UY | < 100 UY | < 10 U | < 10 U | < 10 U | < 10 U | < 200 UY | < 200 UY |
| Ethylbenzene | ***110*** | ***60*** | 3,600 | 1,600 | 5,400 | 2,400 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| Hexachloroethane | ***130*** | ***64*** | 3,900 | 1,600 | 5,900 | 2,500 | ug/L | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 100 UY | < 100 UY |
| Iodomethane | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| Isopropyl benzene | ***26*** | ***13*** | 810 | 360 | 1,200 | 540 | ug/L | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 100 UY | < 100 UY |
| m&p-Xylene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 20 UY | < 20 UY | < 20 UY | < 2 U | < 2 U | < 2 U | < 2 U | < 40 UY | < 40 UY |
| Methyl tert-butyl ether | ***10,000*** | ***5,300*** | 320,000 | 150,000 | 490,000 | 220,000 | ug/L | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 100 UY | < 100 UY |
| Naphthalene | ***190*** | ***100*** | 6,200 | 2,700 | 9,300 | 4,100 | ug/L | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 100 UY | < 100 UY |
| N-Butylbenzene | ***2,000*** | ***1,100*** | 12,000 | 12,000 | 12,000 | 12,000 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| N-Propylbenzene | ***10,000*** | ***5,400*** | 52,000 | 31,000 | 52,000 | 46,000 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| o-Xylene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| Styrene | ***1,400*** | ***740*** | 45,000 | 20,000 | 67,000 | 30,000 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| tert-Butylbenzene | ***3.4*** | ***1.8*** | 67 | 29 | 100 | 44 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| Tetrachloroethene | ***250*** | ***130*** | 3,400 | 1,500 | 5,000 | 2,200 | ug/L | ***300 Y*** | ***180 Y*** | ***170 Y*** | 94 | < 1 U | < 1 U | ***550 Y*** | ***500 Y*** | ***490 Y*** |
| Tetrahydrofuran | ***1,300,000*** | ***690,000*** | 27,000,000 | 12,000,000 | 41,000,000 | 19,000,000 | ug/L | < 900 UY | < 900 UY | < 900 UY | < 90 U | < 90 U | < 90 U | < 90 U | < 1800 UY | < 1800 UY |
| Toluene | ***56,000*** | ***30,000*** | 530,000 | 250,000 | 530,000 | 380,000 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| Total Xylenes | ***3,000*** | ***1,600*** | 60,000 | 27,000 | 91,000 | 41,000 | ug/L | < 20 UY | < 20 UY | < 20 UY | < 2 U | < 2 U | < 2 U | < 2 U | < 40 UY | < 40 UY |
| trans-1,2-Dichloroethene | ***480*** | ***260*** | 9,800 | 4,500 | 15,000 | 6,700 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| trans-1,3-Dichloropropene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| trans-1,4-Dichloro-2-butene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |
| Trichloroethene | ***15*** | ***8.1*** | 210 | 93 | 310 | 140 | ug/L | ***10 Y*** | ***10 Y*** | ***20 Y*** | 3 | < 1 U | < 1 U | ***23*** | < 20 UY | < 20 UY |
| Vinyl Chloride | ***2.2*** | ***1.2*** | 260 | 120 | 390 | 180 | ug/L | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 20 UY | < 20 UY |

**Table 2**
**Summary of 2023 Groundwater Analytical Results**
**2023 Fiero Temporary Groundwater Monitoring Plan Summary**
**RACER Trust Pontiac North Campus**
**Pontiac, Michigan**

| Location ID: / Date Collected: / Sample Name: | Res Fiero SSVIAC SOG | Res Fiero SSVIAC BASE | NR Fiero SSVIAC <50k SOG | NR Fiero SSVIAC <50k BASE | NR Fiero SSVIAC >50k SOG | NR Fiero SSVIAC >50k BASE | Units | MWF16-05 11/30/2023 MWF16-05_GW-113023 | MWF16-06 6/9/2023 MWF16-06_GW-060923 | MWF16-06 11/28/2023 MWF16-06-GW_112823 | MWF16-07 6/7/2023 MWF16-07_GW-060723 | MWF16-07 12/5/2023 MWF16-07_GW-120523 | MWF16-12 6/8/2023 MWF16-12_GW-060823 | MWF16-12 11/29/2023 MWF16-12-GW_112923 | MWF16-15 6/7/2023 MWF16-15_GW-060723 | MWF16-15 12/4/2023 MWF16-15_GW-120423 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ***180*** | ***93*** | 5,700 | 2,400 | 8,500 | 3,700 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,1,1-Trichloroethane | ***22,000*** | ***11,000*** | 210,000 | 92,000 | 310,000 | 140,000 | ug/L | < 10 UY | 93 | 100 | < 1 U | < 1 U | < 1 U | < 1 U | 11 | 11 |
| 1,1,2,2-Tetrachloroethane | ***130*** | ***66*** | 4,100 | 1,800 | 6,200 | 2,600 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,1,2-Trichloroethane | ***21*** | ***11*** | 410 | 180 | 620 | 280 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,1-Dichloroethane | ***160*** | ***88*** | 5,300 | 2,400 | 8,000 | 3,600 | ug/L | < 10 UY | 52 | 32 | < 1 U | < 1 U | < 1 U | < 1 U | 2 | 2 |
| 1,1-Dichloroethene | ***410*** | ***220*** | 8,300 | 3,800 | 13,000 | 5,700 | ug/L | < 10 UY | 5 | 4 | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2,3-Trichlorobenzene | ***4,100*** | ***2,100*** | 18,000 | 18,000 | 18,000 | 18,000 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| 1,2,3-Trichloropropane | ***91*** | ***47*** | 1,800 | 790 | 2,700 | 1,200 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2,3-Trimethylbenzene | ***2,000*** | ***1,100*** | 41,000 | 18,000 | 61,000 | 27,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2,4-Trichlorobenzene | ***270*** | ***130*** | 5,100 | 2,200 | 7,700 | 3,300 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| 1,2,4-Trimethylbenzene | ***1,100*** | ***590*** | 22,000 | 9,900 | 34,000 | 15,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2-Dibromo-3-chloropropane | ***0.00045*** | ***0.00045*** | 0.042 | 0.029 | 0.061 | 0.042 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| 1,2-Dibromoethane | ***8*** | ***4*** | 250 | 110 | 370 | 160 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2-Dichlorobenzene | ***19,000*** | ***9,900*** | 160,000 | 160,000 | 160,000 | 160,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2-Dichloroethane | ***50*** | ***27*** | 1,600 | 750 | 2,500 | 1,100 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2-Dichloropropane | ***100*** | ***56*** | 2,100 | 950 | 3,200 | 1,400 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,3,5-Trimethylbenzene | ***800*** | ***420*** | 16,000 | 7,000 | 24,000 | 10,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,3-Dichlorobenzene | ***130*** | ***70*** | 2,700 | 1,200 | 4,000 | 1,700 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,4-Dichlorobenzene | ***310*** | ***160*** | 9,800 | 4,300 | 15,000 | 6,400 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 2-Butanone | ***4,000,000*** | ***2,200,000*** | 59,000,000 | 27,000,000 | 88,000,000 | 40,000,000 | ug/L | < 250 UY | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U |
| 2-Hexanone | ***24,000*** | ***12,000*** | 490,000 | 220,000 | 740,000 | 320,000 | ug/L | < 500 UY | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U |
| 2-Methylnaphthalene | ***3,500*** | ***1,800*** | 25,000 | 25,000 | 25,000 | 25,000 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| 4-Methyl-2-pentanone | ***1,600,000*** | ***810,000*** | 19,000,000 | 9,500,000 | 19,000,000 | 14,000,000 | ug/L | < 500 UY | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U |
| Acetone | ***32,000,000*** | ***18,000,000*** | 240,000,000 | 110,000,000 | 360,000,000 | 160,000,000 | ug/L | < 500 UY | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U |
| Acrylonitrile | ***120*** | ***67*** | 4,100 | 1,900 | 6,200 | 2,900 | ug/L | < 20 UY | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U |
| Benzene | ***34*** | ***18*** | 1,100 | 510 | 1,700 | 760 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Bromobenzene | ***3,300*** | ***1,700*** | 66,000 | 29,000 | 99,000 | 43,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Bromodichloromethane | ***60*** | ***31*** | 1,700 | 760 | 2,600 | 1,100 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Bromoform | ***6,400*** | ***3,200*** | 200,000 | 83,000 | 300,000 | 120,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Bromomethane | ***59*** | ***33*** | 1,200 | 580 | 1,900 | 860 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Carbon Disulfide | ***2,200*** | ***1,200*** | 46,000 | 22,000 | 70,000 | 33,000 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Carbon Tetrachloride | ***14*** | ***7.2*** | 440 | 190 | 650 | 290 | ug/L | < 10 UY | 7 | ***9*** | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| CFC-11 | ***300*** | ***160*** | 6,000 | 2,700 | 9,000 | 4,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| CFC-12 | ***71*** | ***38*** | 1,400 | 640 | 2,100 | 960 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Chlorobenzene | ***1,300*** | ***720*** | 27,000 | 12,000 | 41,000 | 18,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Chlorobromomethane | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Chlorodibromomethane | ***58*** | ***29*** | 4,400 | 1,800 | 6,600 | 2,800 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Chloroethane | ***15,000*** | ***8,600*** | 320,000 | 150,000 | 490,000 | 230,000 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Chloroform | ***19*** | ***10*** | 610 | 270 | 910 | 410 | ug/L | < 10 UY | 9 | 9 | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Chloromethane | ***340*** | ***200*** | 7,400 | 3,500 | 11,000 | 5,300 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| cis-1,2-Dichloroethene | ***110*** | ***62*** | 2,300 | 1,100 | 3,500 | 1,600 | ug/L | < 10 UY | 18 | 7 | < 1 U | < 1 U | < 1 U | < 1 U | 9 | 7 |
| cis-1,3-Dichloropropene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Dibromomethane | ***450*** | ***230*** | 9,000 | 3,900 | 13,000 | 5,900 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Dichloromethane | ***9,100*** | ***5,000*** | 190,000 | 88,000 | 280,000 | 130,000 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Ethyl ether | ***44,000*** | ***24,000*** | 900,000 | 410,000 | 1,400,000 | 620,000 | ug/L | < 100 UY | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U |
| Ethylbenzene | ***110*** | ***60*** | 3,600 | 1,600 | 5,400 | 2,400 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Hexachloroethane | ***130*** | ***64*** | 3,900 | 1,600 | 5,900 | 2,500 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Iodomethane | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Isopropyl benzene | ***26*** | ***13*** | 810 | 360 | 1,200 | 540 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| m&p-Xylene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 20 UY | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U |
| Methyl tert-butyl ether | ***10,000*** | ***5,300*** | 320,000 | 150,000 | 490,000 | 220,000 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Naphthalene | ***190*** | ***100*** | 6,200 | 2,700 | 9,300 | 4,100 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| N-Butylbenzene | ***2,000*** | ***1,100*** | 12,000 | 12,000 | 12,000 | 12,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| N-Propylbenzene | ***10,000*** | ***5,400*** | 52,000 | 31,000 | 52,000 | 46,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| o-Xylene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Styrene | ***1,400*** | ***740*** | 45,000 | 20,000 | 67,000 | 30,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| tert-Butylbenzene | ***3.4*** | ***1.8*** | 67 | 29 | 100 | 44 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Tetrachloroethene | ***250*** | ***130*** | 3,400 | 1,500 | 5,000 | 2,200 | ug/L | ***250 Y*** | 36 | 44 | < 1 U | < 1 U | 25 | 9 | < 1 U | < 1 U |
| Tetrahydrofuran | ***1,300,000*** | ***690,000*** | 27,000,000 | 12,000,000 | 41,000,000 | 19,000,000 | ug/L | < 900 UY | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U |
| Toluene | ***56,000*** | ***30,000*** | 530,000 | 250,000 | 530,000 | 380,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Total Xylenes | ***3,000*** | ***1,600*** | 60,000 | 27,000 | 91,000 | 41,000 | ug/L | < 20 UY | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U |
| trans-1,2-Dichloroethene | ***480*** | ***260*** | 9,800 | 4,500 | 15,000 | 6,700 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| trans-1,3-Dichloropropene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| trans-1,4-Dichloro-2-butene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Trichloroethene | ***15*** | ***8.1*** | 210 | 93 | 310 | 140 | ug/L | < 10 UY | 5 | 5 | < 1 U | < 1 U | < 1 U | < 1 U | 4 | 4 |
| Vinyl Chloride | ***2.2*** | ***1.2*** | 260 | 120 | 390 | 180 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |

Table 2
Summary of 2023 Groundwater Analytical Results
2023 Fiero Temporary Groundwater Monitoring Plan Summary
RACER Trust Pontiac North Campus
Pontiac, Michigan

| Location ID: | Res Fiero SSVIAC SOG | Res Fiero SSVIAC BASE | NR Fiero SSVIAC <50k SOG | NR Fiero SSVIAC <50k BASE | NR Fiero SSVIAC >50k SOG | NR Fiero SSVIAC >50k BASE | Units | MWF16-16 | MWF16-16 | MWF16-16 | MWF16-16 | MWF16-17 | MWF16-17 | MWF16-18 | MWF16-18 | MWF16-18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date Collected: | | | | | | | | 3/6/2023 | 6/9/2023 | 9/7/2023 | 11/28/2023 | 6/8/2023 | 11/29/2023 | 3/7/2023 | 6/8/2023 | 9/7/2023 |
| Sample Name: | | | | | | | | MWF16-16_GW-030623 | MWF16-16_GW-060923 | MWF16-16_GW-090723 | MWF16-16_GW_112823 | MWF16-17_GW-060823 | MWF16-17-GW_112923 | MWF16-18_GW-030823 | MWF16-18_GW-060823 | MWF16-18_GW-090723 |
| **Volatile Organics** | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ***180*** | ***93*** | 5,700 | 2,400 | 8,500 | 3,700 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| 1,1,1-Trichloroethane | ***22,000*** | ***11,000*** | 210,000 | 92,000 | 310,000 | 140,000 | ug/L | 5 | < 10 UY | < 10 UY | < 10 UY | 2 | 2 | < 10 UY | < 10 UY | < 10 UY |
| 1,1,2,2-Tetrachloroethane | ***130*** | ***66*** | 4,100 | 1,800 | 6,200 | 2,600 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| 1,1,2-Trichloroethane | ***21*** | ***11*** | 410 | 180 | 620 | 280 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| 1,1-Dichloroethane | ***160*** | ***88*** | 5,300 | 2,400 | 8,000 | 3,600 | ug/L | 6 | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| 1,1-Dichloroethene | ***410*** | ***220*** | 8,300 | 3,800 | 13,000 | 5,700 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| 1,2,3-Trichlorobenzene | ***4,100*** | ***2,100*** | 18,000 | 18,000 | 18,000 | 18,000 | ug/L | < 5 U | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 50 UY | < 50 UY | < 50 UY |
| 1,2,3-Trichloropropane | ***91*** | ***47*** | 1,800 | 790 | 2,700 | 1,200 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| 1,2,3-Trimethylbenzene | ***2,000*** | ***1,100*** | 41,000 | 18,000 | 61,000 | 27,000 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| 1,2,4-Trichlorobenzene | ***270*** | ***130*** | 5,100 | 2,200 | 7,700 | 3,300 | ug/L | < 5 U | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 50 UY | < 50 UY | < 50 UY |
| 1,2,4-Trimethylbenzene | ***1,100*** | ***590*** | 22,000 | 9,900 | 34,000 | 15,000 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| 1,2-Dibromo-3-chloropropane | ***0.00045*** | ***0.00045*** | 0.042 | 0.029 | 0.061 | 0.042 | ug/L | < 5 U | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 50 UY | < 50 UY | < 50 UY |
| 1,2-Dibromoethane | ***8*** | ***4*** | 250 | 110 | 370 | 160 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| 1,2-Dichlorobenzene | ***19,000*** | ***9,900*** | 160,000 | 160,000 | 160,000 | 160,000 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| 1,2-Dichloroethane | ***50*** | ***27*** | 1,600 | 750 | 2,500 | 1,100 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| 1,2-Dichloropropane | ***100*** | ***56*** | 2,100 | 950 | 3,200 | 1,400 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| 1,3,5-Trimethylbenzene | ***800*** | ***420*** | 16,000 | 7,000 | 24,000 | 10,000 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| 1,3-Dichlorobenzene | ***130*** | ***70*** | 2,700 | 1,200 | 4,000 | 1,700 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| 1,4-Dichlorobenzene | ***310*** | ***160*** | 9,800 | 4,300 | 15,000 | 6,400 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| 2-Butanone | ***4,000,000*** | ***2,200,000*** | 59,000,000 | 27,000,000 | 88,000,000 | 40,000,000 | ug/L | < 25 U | < 250 UY | < 250 UY | < 250 UY | < 25 U | < 25 U | < 250 UY | < 250 UY | < 250 UY |
| 2-Hexanone | ***24,000*** | ***12,000*** | 490,000 | 220,000 | 740,000 | 320,000 | ug/L | < 50 U | < 500 UY | < 500 UY | < 500 UY | < 50 U | < 50 U | < 500 UY | < 500 UY | < 500 UY |
| 2-Methylnaphthalene | ***3,500*** | ***1,800*** | 25,000 | 25,000 | 25,000 | 25,000 | ug/L | < 5 U | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 50 UY | < 50 UY | < 50 UY |
| 4-Methyl-2-pentanone | ***1,600,000*** | ***810,000*** | 19,000,000 | 9,500,000 | 19,000,000 | 14,000,000 | ug/L | < 50 U | < 500 UY | < 500 UY | < 500 UY | < 50 U | < 50 U | < 500 UY | < 500 UY | < 500 UY |
| Acetone | ***32,000,000*** | ***18,000,000*** | 240,000,000 | 110,000,000 | 360,000,000 | 160,000,000 | ug/L | < 50 U | < 500 UY | < 500 UY | < 500 UY | < 50 U | < 50 U | < 500 UY | < 500 UY | < 500 UY |
| Acrylonitrile | ***120*** | ***67*** | 4,100 | 1,900 | 6,200 | 2,900 | ug/L | < 2 U | < 20 UY | < 20 UY | < 20 UY | < 2 U | < 2 U | < 20 UY | < 20 UY | < 20 UY |
| Benzene | ***34*** | ***18*** | 1,100 | 510 | 1,700 | 760 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| Bromobenzene | ***3,300*** | ***1,700*** | 66,000 | 29,000 | 99,000 | 43,000 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| Bromodichloromethane | ***60*** | ***31*** | 1,700 | 760 | 2,600 | 1,100 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| Bromoform | ***6,400*** | ***3,200*** | 200,000 | 83,000 | 300,000 | 120,000 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| Bromomethane | ***59*** | ***33*** | 1,200 | 580 | 1,900 | 860 | ug/L | < 5 U | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 50 UY | < 50 UY | < 50 UY |
| Carbon Disulfide | ***2,200*** | ***1,200*** | 46,000 | 22,000 | 70,000 | 33,000 | ug/L | < 5 U | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 50 UY | < 50 UY | < 50 UY |
| Carbon Tetrachloride | ***14*** | ***7.2*** | 440 | 190 | 650 | 290 | ug/L | 1 | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| CFC-11 | ***300*** | ***160*** | 6,000 | 2,700 | 9,000 | 4,000 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| CFC-12 | ***71*** | ***38*** | 1,400 | 640 | 2,100 | 960 | ug/L | < 5 U | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 50 UY | < 50 UY | < 50 UY |
| Chlorobenzene | ***1,300*** | ***720*** | 27,000 | 12,000 | 41,000 | 18,000 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| Chlorobromomethane | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| Chlorodibromomethane | ***58*** | ***29*** | 4,400 | 1,800 | 6,600 | 2,800 | ug/L | < 5 U | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 50 UY | < 50 UY | < 50 UY |
| Chloroethane | ***15,000*** | ***8,600*** | 320,000 | 150,000 | 490,000 | 230,000 | ug/L | < 5 U | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 50 UY | < 50 UY | < 50 UY |
| Chloroform | ***19*** | ***10*** | 610 | 270 | 910 | 410 | ug/L | 1 | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| Chloromethane | ***340*** | ***200*** | 7,400 | 3,500 | 11,000 | 5,300 | ug/L | < 5 U | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 50 UY | < 50 UY | < 50 UY |
| cis-1,2-Dichloroethene | ***110*** | ***62*** | 2,300 | 1,100 | 3,500 | 1,600 | ug/L | 8 | 20 Y | 10 Y | 20 Y | < 1 U | < 1 U | ***70 Y*** | ***110 Y*** | ***130 Y*** |
| cis-1,3-Dichloropropene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| Dibromomethane | ***450*** | ***230*** | 9,000 | 3,900 | 13,000 | 5,900 | ug/L | < 5 U | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 50 UY | < 50 UY | < 50 UY |
| Dichloromethane | ***9,100*** | ***5,000*** | 190,000 | 88,000 | 280,000 | 130,000 | ug/L | < 5 U | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 50 UY | < 50 UY | < 50 UY |
| Ethyl ether | ***44,000*** | ***24,000*** | 900,000 | 410,000 | 1,400,000 | 620,000 | ug/L | < 10 U | < 100 UY | < 100 UY | < 100 UY | < 10 U | < 10 U | < 100 UY | < 100 UY | < 100 UY |
| Ethylbenzene | ***110*** | ***60*** | 3,600 | 1,600 | 5,400 | 2,400 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| Hexachloroethane | ***130*** | ***64*** | 3,900 | 1,600 | 5,900 | 2,500 | ug/L | < 5 U | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 50 UY | < 50 UY | < 50 UY |
| Iodomethane | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| Isopropyl benzene | ***26*** | ***13*** | 810 | 360 | 1,200 | 540 | ug/L | < 5 U | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 50 UY | < 50 UY | < 50 UY |
| m&p-Xylene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 2 U | < 20 UY | < 20 UY | < 20 UY | < 2 U | < 2 U | < 20 UY | < 20 UY | < 20 UY |
| Methyl tert-butyl ether | ***10,000*** | ***5,300*** | 320,000 | 150,000 | 490,000 | 220,000 | ug/L | < 5 U | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 50 UY | < 50 UY | < 50 UY |
| Naphthalene | ***190*** | ***100*** | 6,200 | 2,700 | 9,300 | 4,100 | ug/L | < 5 U | < 50 UY | < 50 UY | < 50 UY | < 5 U | < 5 U | < 50 UY | < 50 UY | < 50 UY |
| N-Butylbenzene | ***2,000*** | ***1,100*** | 12,000 | 12,000 | 12,000 | 12,000 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| N-Propylbenzene | ***10,000*** | ***5,400*** | 52,000 | 31,000 | 52,000 | 46,000 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| o-Xylene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| Styrene | ***1,400*** | ***740*** | 45,000 | 20,000 | 67,000 | 30,000 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| tert-Butylbenzene | ***3.4*** | ***1.8*** | 67 | 29 | 100 | 44 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| Tetrachloroethene | ***250*** | ***130*** | 3,400 | 1,500 | 5,000 | 2,200 | ug/L | ***260 Y*** | ***400 Y*** | ***410 Y*** | ***440 Y*** | 1 | < 1 U | ***1,070 Y*** | ***1,040 Y*** | ***1,090 Y*** |
| Tetrahydrofuran | ***1,300,000*** | ***690,000*** | 27,000,000 | 12,000,000 | 41,000,000 | 19,000,000 | ug/L | < 90 U | < 900 UY | < 900 UY | < 900 UY | < 90 U | < 90 U | < 900 UY | < 900 UY | < 900 UY |
| Toluene | ***56,000*** | ***30,000*** | 530,000 | 250,000 | 530,000 | 380,000 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| Total Xylenes | ***3,000*** | ***1,600*** | 60,000 | 27,000 | 91,000 | 41,000 | ug/L | < 2 U | < 20 UY | < 20 UY | < 20 UY | < 2 U | < 2 U | < 20 UY | < 20 UY | < 20 UY |
| trans-1,2-Dichloroethene | ***480*** | ***260*** | 9,800 | 4,500 | 15,000 | 6,700 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| trans-1,3-Dichloropropene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| trans-1,4-Dichloro-2-butene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |
| Trichloroethene | ***15*** | ***8.1*** | 210 | 93 | 310 | 140 | ug/L | 8 | ***10 Y*** | < 10 UY | < 10 UY | < 1 U | < 1 U | ***20 Y*** | ***20 Y*** | ***30 Y*** |
| Vinyl Chloride | ***2.2*** | ***1.2*** | 260 | 120 | 390 | 180 | ug/L | < 1 U | < 10 UY | < 10 UY | < 10 UY | < 1 U | < 1 U | < 10 UY | < 10 UY | < 10 UY |

**Table 2**
**Summary of 2023 Groundwater Analytical Results**
**2023 Fiero Temporary Groundwater Monitoring Plan Summary**
**RACER Trust Pontiac North Campus**
**Pontiac, Michigan**

| Location ID: | | | | | | | | MWF16-18 | MWF16-22 | MWF16-22 | MWF16-23 | MWF16-23 | MWF16-23 | MWF16-23 | MWF16-25 | MWF16-25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date Collected: | Res Fiero SSVIAC SOG | Res Fiero SSVIAC BASE | NR Fiero SSVIAC <50k SOG | NR Fiero SSVIAC <50k BASE | NR Fiero SSVIAC >50k SOG | NR Fiero SSVIAC >50k BASE | Units | 11/29/2023 | 6/9/2023 | 11/28/2023 | 3/7/2023 | 6/6/2023 | 8/29/2023 | 11/30/2023 | 6/8/2023 | 11/29/2023 |
| Sample Name: | | | | | | | | MWF16-18-GW_112923 | MWF16-22_GW-060923 | MWF16-22_GW_112823 | MWF16-23_GW-030723 | MWF16-23_GW-060623 | MWF16-23_GW-082923 | MWF16-23_GW-113023 | MWF16-25_GW-060823 | MWF16-25_GW_112923 |
| **Volatile Organics** | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ***180*** | ***93*** | 5,700 | 2,400 | 8,500 | 3,700 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,1,1-Trichloroethane | ***22,000*** | ***11,000*** | 210,000 | 92,000 | 310,000 | 140,000 | ug/L | < 10 UY | 1 | 5 | 12 | 13 | 8 | 8 | 4 | 4 |
| 1,1,2,2-Tetrachloroethane | ***130*** | ***66*** | 4,100 | 1,800 | 6,200 | 2,600 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,1,2-Trichloroethane | ***21*** | ***11*** | 410 | 180 | 620 | 280 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,1-Dichloroethane | ***160*** | ***88*** | 5,300 | 2,400 | 8,000 | 3,600 | ug/L | < 10 UY | 2 | 5 | 6 | 7 | 4 | 3 | 3 | 3 |
| 1,1-Dichloroethene | ***410*** | ***220*** | 8,300 | 3,800 | 13,000 | 5,700 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2,3-Trichlorobenzene | ***4,100*** | ***2,100*** | 18,000 | 18,000 | 18,000 | 18,000 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| 1,2,3-Trichloropropane | ***91*** | ***47*** | 1,800 | 790 | 2,700 | 1,200 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2,3-Trimethylbenzene | ***2,000*** | ***1,100*** | 41,000 | 18,000 | 61,000 | 27,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2,4-Trichlorobenzene | ***270*** | ***130*** | 5,100 | 2,200 | 7,700 | 3,300 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| 1,2,4-Trimethylbenzene | ***1,100*** | ***590*** | 22,000 | 9,900 | 34,000 | 15,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2-Dibromo-3-chloropropane | ***0.00045*** | ***0.00045*** | 0.042 | 0.029 | 0.061 | 0.042 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| 1,2-Dibromoethane | ***8*** | ***4*** | 250 | 110 | 370 | 160 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2-Dichlorobenzene | ***19,000*** | ***9,900*** | 160,000 | 160,000 | 160,000 | 160,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2-Dichloroethane | ***50*** | ***27*** | 1,600 | 750 | 2,500 | 1,100 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2-Dichloropropane | ***100*** | ***56*** | 2,100 | 950 | 3,200 | 1,400 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,3,5-Trimethylbenzene | ***800*** | ***420*** | 16,000 | 7,000 | 24,000 | 10,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,3-Dichlorobenzene | ***130*** | ***70*** | 2,700 | 1,200 | 4,000 | 1,700 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,4-Dichlorobenzene | ***310*** | ***160*** | 9,800 | 4,300 | 15,000 | 6,400 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 2-Butanone | ***4,000,000*** | ***2,200,000*** | 59,000,000 | 27,000,000 | 88,000,000 | 40,000,000 | ug/L | < 250 UY | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U |
| 2-Hexanone | ***24,000*** | ***12,000*** | 490,000 | 220,000 | 740,000 | 320,000 | ug/L | < 500 UY | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U |
| 2-Methylnaphthalene | ***3,500*** | ***1,800*** | 25,000 | 25,000 | 25,000 | 25,000 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| 4-Methyl-2-pentanone | ***1,600,000*** | ***810,000*** | 19,000,000 | 9,500,000 | 19,000,000 | 14,000,000 | ug/L | < 500 UY | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U |
| Acetone | ***32,000,000*** | ***18,000,000*** | 240,000,000 | 110,000,000 | 360,000,000 | 160,000,000 | ug/L | < 500 UY | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U |
| Acrylonitrile | ***120*** | ***67*** | 4,100 | 1,900 | 6,200 | 2,900 | ug/L | < 20 UY | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U |
| Benzene | ***34*** | ***18*** | 1,100 | 510 | 1,700 | 760 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Bromobenzene | ***3,300*** | ***1,700*** | 66,000 | 29,000 | 99,000 | 43,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Bromodichloromethane | ***60*** | ***31*** | 1,700 | 760 | 2,600 | 1,100 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Bromoform | ***6,400*** | ***3,200*** | 200,000 | 83,000 | 300,000 | 120,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Bromomethane | ***59*** | ***33*** | 1,200 | 580 | 1,900 | 860 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Carbon Disulfide | ***2,200*** | ***1,200*** | 46,000 | 22,000 | 70,000 | 33,000 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Carbon Tetrachloride | ***14*** | ***7.2*** | 440 | 190 | 650 | 290 | ug/L | < 10 UY | < 1 U | 1 | < 1 U | < 1 U | < 1 U | < 1 U | 1 | 1 |
| CFC-11 | ***300*** | ***160*** | 6,000 | 2,700 | 9,000 | 4,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| CFC-12 | ***71*** | ***38*** | 1,400 | 640 | 2,100 | 960 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Chlorobenzene | ***1,300*** | ***720*** | 27,000 | 12,000 | 41,000 | 18,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Chlorobromomethane | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Chlorodibromomethane | ***58*** | ***29*** | 4,400 | 1,800 | 6,600 | 2,800 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Chloroethane | ***15,000*** | ***8,600*** | 320,000 | 150,000 | 490,000 | 230,000 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Chloroform | ***19*** | ***10*** | 610 | 270 | 910 | 410 | ug/L | < 10 UY | < 1 U | 1 | < 1 U | < 1 U | < 1 U | < 1 U | 3 | 3 |
| Chloromethane | ***340*** | ***200*** | 7,400 | 3,500 | 11,000 | 5,300 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| cis-1,2-Dichloroethene | ***110*** | ***62*** | 2,300 | 1,100 | 3,500 | 1,600 | ug/L | ***120 Y*** | 14 | 54 | 7 | 8 | 3 | 2 | 40 | 41 |
| cis-1,3-Dichloropropene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Dibromomethane | ***450*** | ***230*** | 9,000 | 3,900 | 13,000 | 5,900 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Dichloromethane | ***9,100*** | ***5,000*** | 190,000 | 88,000 | 280,000 | 130,000 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Ethyl ether | ***44,000*** | ***24,000*** | 900,000 | 410,000 | 1,400,000 | 620,000 | ug/L | < 100 UY | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U |
| Ethylbenzene | ***110*** | ***60*** | 3,600 | 1,600 | 5,400 | 2,400 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Hexachloroethane | ***130*** | ***64*** | 3,900 | 1,600 | 5,900 | 2,500 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Iodomethane | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Isopropyl benzene | ***26*** | ***13*** | 810 | 360 | 1,200 | 540 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| m&p-Xylene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 20 UY | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U |
| Methyl tert-butyl ether | ***10,000*** | ***5,300*** | 320,000 | 150,000 | 490,000 | 220,000 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Naphthalene | ***190*** | ***100*** | 6,200 | 2,700 | 9,300 | 4,100 | ug/L | < 50 UY | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| N-Butylbenzene | ***2,000*** | ***1,100*** | 12,000 | 12,000 | 12,000 | 12,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| N-Propylbenzene | ***10,000*** | ***5,400*** | 52,000 | 31,000 | 52,000 | 46,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| o-Xylene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Styrene | ***1,400*** | ***740*** | 45,000 | 20,000 | 67,000 | 30,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| tert-Butylbenzene | ***3.4*** | ***1.8*** | 67 | 29 | 100 | 44 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Tetrachloroethene | ***250*** | ***130*** | 3,400 | 1,500 | 5,000 | 2,200 | ug/L | ***1,040 Y*** | 77 | ***285 E*** | < 1 U | < 1 U | < 1 U | 1 | < 1 U | < 1 U |
| Tetrahydrofuran | ***1,300,000*** | ***690,000*** | 27,000,000 | 12,000,000 | 41,000,000 | 19,000,000 | ug/L | < 900 UY | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U |
| Toluene | ***56,000*** | ***30,000*** | 530,000 | 250,000 | 530,000 | 380,000 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Total Xylenes | ***3,000*** | ***1,600*** | 60,000 | 27,000 | 91,000 | 41,000 | ug/L | < 20 UY | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U |
| trans-1,2-Dichloroethene | ***480*** | ***260*** | 9,800 | 4,500 | 15,000 | 6,700 | ug/L | < 10 UY | < 1 U | 2 | 2 | 3 | 1 | < 1 U | 3 | 4 |
| trans-1,3-Dichloropropene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| trans-1,4-Dichloro-2-butene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Trichloroethene | ***15*** | ***8.1*** | 210 | 93 | 310 | 140 | ug/L | ***30 Y*** | 3 | ***13*** | ***16*** | ***21*** | ***16*** | ***15*** | < 1 U | < 1 U |
| Vinyl Chloride | ***2.2*** | ***1.2*** | 260 | 120 | 390 | 180 | ug/L | < 10 UY | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |

**Table 2**
**Summary of 2023 Groundwater Analytical Results**
**2023 Fiero Temporary Groundwater Monitoring Plan Summary**
**RACER Trust Pontiac North Campus**
**Pontiac, Michigan**

| Location ID: | Res Fiero SSVIAC SOG | Res Fiero SSVIAC BASE | NR Fiero SSVIAC <50k SOG | NR Fiero SSVIAC <50k BASE | NR Fiero SSVIAC >50k SOG | NR Fiero SSVIAC >50k BASE | Units | MWF7-02 | MWOS-08 | MWOS-08 | MWOS-08 | MWOS-08 | MWOS-09R | MWOS-09R | MWOS-09R | MWOS-09R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date Collected: | | | | | | | | 6/7/2023 | 3/8/2023 | 6/8/2023 | 8/29/2023 | 11/29/2023 | 3/7/2023 | 6/8/2023 | 8/29/2023 | 11/30/2023 |
| Sample Name: | | | | | | | | MWF7-02_GW-060723 | MWOS-08_GW-030823 | MWOS-08_GW-060823 | MWOS-08_GW-082923 | MWOS-08_GW_112923 | MWOS-09R_GW-030723 | MWOS-09R_GW-060823 | MWOS-09R_GW-082923 | MWOS-09R_GW_113023 |
| **Volatile Organics** | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ***180*** | ***93*** | 5,700 | 2,400 | 8,500 | 3,700 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| 1,1,1-Trichloroethane | ***22,000*** | ***11,000*** | 210,000 | 92,000 | 310,000 | 140,000 | ug/L | 81 | 4 | 4 | 4 | 6 | 4 | 4 [4 ] | 4 | 5 [5 ] |
| 1,1,2,2-Tetrachloroethane | ***130*** | ***66*** | 4,100 | 1,800 | 6,200 | 2,600 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| 1,1,2-Trichloroethane | ***21*** | ***11*** | 410 | 180 | 620 | 280 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| 1,1-Dichloroethane | ***160*** | ***88*** | 5,300 | 2,400 | 8,000 | 3,600 | ug/L | 15 | < 1 U | 1 | 1 | 1 | 4 | 3 [3 ] | 3 | 4 [4 ] |
| 1,1-Dichloroethene | ***410*** | ***220*** | 8,300 | 3,800 | 13,000 | 5,700 | ug/L | 8 | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| 1,2,3-Trichlorobenzene | ***4,100*** | ***2,100*** | 18,000 | 18,000 | 18,000 | 18,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U [< 5 U] |
| 1,2,3-Trichloropropane | ***91*** | ***47*** | 1,800 | 790 | 2,700 | 1,200 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| 1,2,3-Trimethylbenzene | ***2,000*** | ***1,100*** | 41,000 | 18,000 | 61,000 | 27,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| 1,2,4-Trichlorobenzene | ***270*** | ***130*** | 5,100 | 2,200 | 7,700 | 3,300 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U [< 5 U] |
| 1,2,4-Trimethylbenzene | ***1,100*** | ***590*** | 22,000 | 9,900 | 34,000 | 15,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| 1,2-Dibromo-3-chloropropane | ***0.00045*** | ***0.00045*** | 0.042 | 0.029 | 0.061 | 0.042 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U [< 5 U] |
| 1,2-Dibromoethane | ***8*** | ***4*** | 250 | 110 | 370 | 160 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| 1,2-Dichlorobenzene | ***19,000*** | ***9,900*** | 160,000 | 160,000 | 160,000 | 160,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| 1,2-Dichloroethane | ***50*** | ***27*** | 1,600 | 750 | 2,500 | 1,100 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| 1,2-Dichloropropane | ***100*** | ***56*** | 2,100 | 950 | 3,200 | 1,400 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| 1,3,5-Trimethylbenzene | ***800*** | ***420*** | 16,000 | 7,000 | 24,000 | 10,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| 1,3-Dichlorobenzene | ***130*** | ***70*** | 2,700 | 1,200 | 4,000 | 1,700 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| 1,4-Dichlorobenzene | ***310*** | ***160*** | 9,800 | 4,300 | 15,000 | 6,400 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| 2-Butanone | ***4,000,000*** | ***2,200,000*** | 59,000,000 | 27,000,000 | 88,000,000 | 40,000,000 | ug/L | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U [< 25 U] | < 25 U | < 25 U [< 25 U] |
| 2-Hexanone | ***24,000*** | ***12,000*** | 490,000 | 220,000 | 740,000 | 320,000 | ug/L | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U [< 50 U] | < 50 U | < 50 U [< 50 U] |
| 2-Methylnaphthalene | ***3,500*** | ***1,800*** | 25,000 | 25,000 | 25,000 | 25,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U [< 5 U] |
| 4-Methyl-2-pentanone | ***1,600,000*** | ***810,000*** | 19,000,000 | 9,500,000 | 19,000,000 | 14,000,000 | ug/L | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U [< 50 U] | < 50 U | < 50 U [< 50 U] |
| Acetone | ***32,000,000*** | ***18,000,000*** | 240,000,000 | 110,000,000 | 360,000,000 | 160,000,000 | ug/L | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U [< 50 U] | < 50 U | < 50 U [< 50 U] |
| Acrylonitrile | ***120*** | ***67*** | 4,100 | 1,900 | 6,200 | 2,900 | ug/L | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U [< 2 U] | < 2 U | < 2 U [< 2 U] |
| Benzene | ***34*** | ***18*** | 1,100 | 510 | 1,700 | 760 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| Bromobenzene | ***3,300*** | ***1,700*** | 66,000 | 29,000 | 99,000 | 43,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| Bromodichloromethane | ***60*** | ***31*** | 1,700 | 760 | 2,600 | 1,100 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| Bromoform | ***6,400*** | ***3,200*** | 200,000 | 83,000 | 300,000 | 120,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| Bromomethane | ***59*** | ***33*** | 1,200 | 580 | 1,900 | 860 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U [< 5 U] |
| Carbon Disulfide | ***2,200*** | ***1,200*** | 46,000 | 22,000 | 70,000 | 33,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U [< 5 U] |
| Carbon Tetrachloride | ***14*** | ***7.2*** | 440 | 190 | 650 | 290 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| CFC-11 | ***300*** | ***160*** | 6,000 | 2,700 | 9,000 | 4,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| CFC-12 | ***71*** | ***38*** | 1,400 | 640 | 2,100 | 960 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U [< 5 U] |
| Chlorobenzene | ***1,300*** | ***720*** | 27,000 | 12,000 | 41,000 | 18,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| Chlorobromomethane | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| Chlorodibromomethane | ***58*** | ***29*** | 4,400 | 1,800 | 6,600 | 2,800 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U [< 5 U] |
| Chloroethane | ***15,000*** | ***8,600*** | 320,000 | 150,000 | 490,000 | 230,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U [< 5 U] |
| Chloroform | ***19*** | ***10*** | 610 | 270 | 910 | 410 | ug/L | < 1 U | 1 | 1 | 1 | 1 | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| Chloromethane | ***340*** | ***200*** | 7,400 | 3,500 | 11,000 | 5,300 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U [< 5 U] |
| cis-1,2-Dichloroethene | ***110*** | ***62*** | 2,300 | 1,100 | 3,500 | 1,600 | ug/L | 2 | 5 | 2 | 1 | 1 | 28 | 22 [21 ] | 19 | 22 [21 ] |
| cis-1,3-Dichloropropene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| Dibromomethane | ***450*** | ***230*** | 9,000 | 3,900 | 13,000 | 5,900 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U [< 5 U] |
| Dichloromethane | ***9,100*** | ***5,000*** | 190,000 | 88,000 | 280,000 | 130,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U [< 5 U] |
| Ethyl ether | ***44,000*** | ***24,000*** | 900,000 | 410,000 | 1,400,000 | 620,000 | ug/L | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U [< 10 U] | < 10 U | < 10 U [< 10 U] |
| Ethylbenzene | ***110*** | ***60*** | 3,600 | 1,600 | 5,400 | 2,400 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| Hexachloroethane | ***130*** | ***64*** | 3,900 | 1,600 | 5,900 | 2,500 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U [< 5 U] |
| Iodomethane | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| Isopropyl benzene | ***26*** | ***13*** | 810 | 360 | 1,200 | 540 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U [< 5 U] |
| m&p-Xylene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U [< 2 U] | < 2 U | < 2 U [< 2 U] |
| Methyl tert-butyl ether | ***10,000*** | ***5,300*** | 320,000 | 150,000 | 490,000 | 220,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U [< 5 U] |
| Naphthalene | ***190*** | ***100*** | 6,200 | 2,700 | 9,300 | 4,100 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U [< 5 U] | < 5 U | < 5 U [< 5 U] |
| N-Butylbenzene | ***2,000*** | ***1,100*** | 12,000 | 12,000 | 12,000 | 12,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| N-Propylbenzene | ***10,000*** | ***5,400*** | 52,000 | 31,000 | 52,000 | 46,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| o-Xylene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| Styrene | ***1,400*** | ***740*** | 45,000 | 20,000 | 67,000 | 30,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| tert-Butylbenzene | ***3.4*** | ***1.8*** | 67 | 29 | 100 | 44 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| Tetrachloroethene | ***250*** | ***130*** | 3,400 | 1,500 | 5,000 | 2,200 | ug/L | 84 | < 1 U | < 1 U | < 1 U | < 1 U | 17 | 11 [12 ] | 16 | 14 [15 ] |
| Tetrahydrofuran | ***1,300,000*** | ***690,000*** | 27,000,000 | 12,000,000 | 41,000,000 | 19,000,000 | ug/L | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U [< 90 U] | < 90 U | < 90 U [< 90 U] |
| Toluene | ***56,000*** | ***30,000*** | 530,000 | 250,000 | 530,000 | 380,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| Total Xylenes | ***3,000*** | ***1,600*** | 60,000 | 27,000 | 91,000 | 41,000 | ug/L | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U [< 2 U] | < 2 U | < 2 U [< 2 U] |
| trans-1,2-Dichloroethene | ***480*** | ***260*** | 9,800 | 4,500 | 15,000 | 6,700 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | 2 | 2 [2 ] | 1 | 2 [2 ] |
| trans-1,3-Dichloropropene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| trans-1,4-Dichloro-2-butene | **- -** | **- -** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |
| Trichloroethene | ***15*** | ***8.1*** | 210 | 93 | 310 | 140 | ug/L | 4 | < 1 U | < 1 U | < 1 U | < 1 U | 3 | 3 [3 ] | 4 | 5 [5 ] |
| Vinyl Chloride | ***2.2*** | ***1.2*** | 260 | 120 | 390 | 180 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U [< 1 U] | < 1 U | < 1 U [< 1 U] |

**Table 2**
**Summary of 2023 Groundwater Analytical Results**
**2023 Fiero Temporary Groundwater Monitoring Plan Summary**
**RACER Trust Pontiac North Campus**
**Pontiac, Michigan**

| Location ID: | Res Fiero SSVIAC SOG | Res Fiero SSVIAC BASE | NR Fiero SSVIAC <50k SOG | NR Fiero SSVIAC <50k BASE | NR Fiero SSVIAC >50k SOG | NR Fiero SSVIAC >50k BASE | Units | MWOS-10 | MWOS-10 | MWOS-10 | MWOS-10 | TW-12-22 | TW-12-22 | UNKNOWN-1 | Unknown-1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date Collected: | | | | | | | | 3/7/2023 | 6/12/2023 | 8/28/2023 | 11/30/2023 | 6/8/2023 | 11/30/2023 | 6/7/2023 | 12/4/2023 |
| Sample Name: | | | | | | | | MWOS-10_GW-030723 | MWOS-10_GW-061223 | MWOS-10_GW-082823 | MWOS-10_GW-113023 | TW-12-22_GW-060823 | TW-12-22_GW-113023 | UNKNOWN-01_GW-060723 | UNKNOWN-01_GW-120423 |
| **Volatile Organics** | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ***180*** | ***93*** | 5,700 | 2,400 | 8,500 | 3,700 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,1,1-Trichloroethane | ***22,000*** | ***11,000*** | 210,000 | 92,000 | 310,000 | 140,000 | ug/L | 4 | 4 | 3 | 3 | 11 | 17 | 47 | 66 |
| 1,1,2,2-Tetrachloroethane | ***130*** | ***66*** | 4,100 | 1,800 | 6,200 | 2,600 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,1,2-Trichloroethane | ***21*** | ***11*** | 410 | 180 | 620 | 280 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,1-Dichloroethane | ***160*** | ***88*** | 5,300 | 2,400 | 8,000 | 3,600 | ug/L | 7 | 5 | 5 | 5 | 7 | 10 | 5 | 8 |
| 1,1-Dichloroethene | ***410*** | ***220*** | 8,300 | 3,800 | 13,000 | 5,700 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2,3-Trichlorobenzene | ***4,100*** | ***2,100*** | 18,000 | 18,000 | 18,000 | 18,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| 1,2,3-Trichloropropane | ***91*** | ***47*** | 1,800 | 790 | 2,700 | 1,200 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2,3-Trimethylbenzene | ***2,000*** | ***1,100*** | 41,000 | 18,000 | 61,000 | 27,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2,4-Trichlorobenzene | ***270*** | ***130*** | 5,100 | 2,200 | 7,700 | 3,300 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| 1,2,4-Trimethylbenzene | ***1,100*** | ***590*** | 22,000 | 9,900 | 34,000 | 15,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2-Dibromo-3-chloropropane | ***0.00045*** | ***0.00045*** | 0.042 | 0.029 | 0.061 | 0.042 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| 1,2-Dibromoethane | ***8*** | ***4*** | 250 | 110 | 370 | 160 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2-Dichlorobenzene | ***19,000*** | ***9,900*** | 160,000 | 160,000 | 160,000 | 160,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2-Dichloroethane | ***50*** | ***27*** | 1,600 | 750 | 2,500 | 1,100 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,2-Dichloropropane | ***100*** | ***56*** | 2,100 | 950 | 3,200 | 1,400 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,3,5-Trimethylbenzene | ***800*** | ***420*** | 16,000 | 7,000 | 24,000 | 10,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,3-Dichlorobenzene | ***130*** | ***70*** | 2,700 | 1,200 | 4,000 | 1,700 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 1,4-Dichlorobenzene | ***310*** | ***160*** | 9,800 | 4,300 | 15,000 | 6,400 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| 2-Butanone | ***4,000,000*** | ***2,200,000*** | 59,000,000 | 27,000,000 | 88,000,000 | 40,000,000 | ug/L | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U | < 25 U |
| 2-Hexanone | ***24,000*** | ***12,000*** | 490,000 | 220,000 | 740,000 | 320,000 | ug/L | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U |
| 2-Methylnaphthalene | ***3,500*** | ***1,800*** | 25,000 | 25,000 | 25,000 | 25,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| 4-Methyl-2-pentanone | ***1,600,000*** | ***810,000*** | 19,000,000 | 9,500,000 | 19,000,000 | 14,000,000 | ug/L | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U |
| Acetone | ***32,000,000*** | ***18,000,000*** | 240,000,000 | 110,000,000 | 360,000,000 | 160,000,000 | ug/L | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U |
| Acrylonitrile | ***120*** | ***67*** | 4,100 | 1,900 | 6,200 | 2,900 | ug/L | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U |
| Benzene | ***34*** | ***18*** | 1,100 | 510 | 1,700 | 760 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Bromobenzene | ***3,300*** | ***1,700*** | 66,000 | 29,000 | 99,000 | 43,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Bromodichloromethane | ***60*** | ***31*** | 1,700 | 760 | 2,600 | 1,100 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Bromoform | ***6,400*** | ***3,200*** | 200,000 | 83,000 | 300,000 | 120,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Bromomethane | ***59*** | ***33*** | 1,200 | 580 | 1,900 | 860 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Carbon Disulfide | ***2,200*** | ***1,200*** | 46,000 | 22,000 | 70,000 | 33,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Carbon Tetrachloride | ***14*** | ***7.2*** | 440 | 190 | 650 | 290 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | 2 | 1 | < 1 U | < 1 U |
| CFC-11 | ***300*** | ***160*** | 6,000 | 2,700 | 9,000 | 4,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| CFC-12 | ***71*** | ***38*** | 1,400 | 640 | 2,100 | 960 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Chlorobenzene | ***1,300*** | ***720*** | 27,000 | 12,000 | 41,000 | 18,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Chlorobromomethane | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Chlorodibromomethane | ***58*** | ***29*** | 4,400 | 1,800 | 6,600 | 2,800 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Chloroethane | ***15,000*** | ***8,600*** | 320,000 | 150,000 | 490,000 | 230,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Chloroform | ***19*** | ***10*** | 610 | 270 | 910 | 410 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | 10 | 8 | < 1 U | < 1 U |
| Chloromethane | ***340*** | ***200*** | 7,400 | 3,500 | 11,000 | 5,300 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| cis-1,2-Dichloroethene | ***110*** | ***62*** | 2,300 | 1,100 | 3,500 | 1,600 | ug/L | 9 | 7 | 8 | 8 | 48 | 33 | < 1 U | < 1 U |
| cis-1,3-Dichloropropene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Dibromomethane | ***450*** | ***230*** | 9,000 | 3,900 | 13,000 | 5,900 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Dichloromethane | ***9,100*** | ***5,000*** | 190,000 | 88,000 | 280,000 | 130,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Ethyl ether | ***44,000*** | ***24,000*** | 900,000 | 410,000 | 1,400,000 | 620,000 | ug/L | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U | < 10 U |
| Ethylbenzene | ***110*** | ***60*** | 3,600 | 1,600 | 5,400 | 2,400 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Hexachloroethane | ***130*** | ***64*** | 3,900 | 1,600 | 5,900 | 2,500 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Iodomethane | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Isopropyl benzene | ***26*** | ***13*** | 810 | 360 | 1,200 | 540 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| m&p-Xylene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U |
| Methyl tert-butyl ether | ***10,000*** | ***5,300*** | 320,000 | 150,000 | 490,000 | 220,000 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| Naphthalene | ***190*** | ***100*** | 6,200 | 2,700 | 9,300 | 4,100 | ug/L | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U | < 5 U |
| N-Butylbenzene | ***2,000*** | ***1,100*** | 12,000 | 12,000 | 12,000 | 12,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| N-Propylbenzene | ***10,000*** | ***5,400*** | 52,000 | 31,000 | 52,000 | 46,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| o-Xylene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Styrene | ***1,400*** | ***740*** | 45,000 | 20,000 | 67,000 | 30,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| tert-Butylbenzene | ***3.4*** | ***1.8*** | 67 | 29 | 100 | 44 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Tetrachloroethene | ***250*** | ***130*** | 3,400 | 1,500 | 5,000 | 2,200 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | 4 | < 1 U | 29 | 45 |
| Tetrahydrofuran | ***1,300,000*** | ***690,000*** | 27,000,000 | 12,000,000 | 41,000,000 | 19,000,000 | ug/L | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U | < 90 U |
| Toluene | ***56,000*** | ***30,000*** | 530,000 | 250,000 | 530,000 | 380,000 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Total Xylenes | ***3,000*** | ***1,600*** | 60,000 | 27,000 | 91,000 | 41,000 | ug/L | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U | < 2 U |
| trans-1,2-Dichloroethene | ***480*** | ***260*** | 9,800 | 4,500 | 15,000 | 6,700 | ug/L | 1 | 1 | 1 | 1 | 2 | 2 | < 1 U | < 1 U |
| trans-1,3-Dichloropropene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| trans-1,4-Dichloro-2-butene | ***- -*** | ***- -*** | - - | - - | - - | - - | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |
| Trichloroethene | ***15*** | ***8.1*** | 210 | 93 | 310 | 140 | ug/L | ***11*** | ***12*** | ***10*** | ***9*** | ***13*** | 3 | < 1 U | < 1 U |
| Vinyl Chloride | ***2.2*** | ***1.2*** | 260 | 120 | 390 | 180 | ug/L | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U | < 1 U |

**Table 2**
**Summary of 2023 Groundwater Analytical Results**
**2023 Fiero Temporary Groundwater Monitoring Plan Summary**
**RACER Trust Pontiac North Campus**
**Pontiac, Michigan**

**Notes:**

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

**Abbreviations:**

| | |
|---|---|
| µg/L | Micrograms per liter |
| BASE | Basement scenario |
| E | Concentration exceeds calibration range |
| NA | Not analyzed |
| 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 |
| >50k | Greater than 50,000 square feet |

**Table 3**
**Summary of 2023 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-01-21 14-14.5 8/28/2023 | SV-01-21 14-14.5 11/27/2023 | SV-02-21 23.25-23.75 3/20/2023 | SV-02-21 23.25-23.75 6/5/2023 | SV-02-21 23.25-23.75 8/28/2023 | SV-02-21 23.25-23.75 11/27/2023 | SV-03-21 11.5-12 3/20/2023 | SV-03-21 11.5-12 6/6/2023 | SV-03-21 11.5-12 8/28/2023 | SV-03-21 11.5-12 11/27/2023 | SV-04-21 22.5-23 3/22/2022 | SV-04-21 22.5-23 6/8/2022 | SV-04-21 22.5-23 9/22/2022 | SV-04-21 22.5-23 11/28/2022 | SV-04-21 22.5-23 3/20/2023 | SV-04-21 22.5-23 6/6/2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyte** | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | **7,000** | 7,000 | ug/m$^3$ | < 4.0 U | < 3.9 U | < 4.3 U | < 4.0 U | < 4.0 U (<4.0 U) | < 4.2 U (< 4.3 U) | < 4.3 U (< 4.1 U) | < 3.9 U (< 3.8 U) | < 4.1 U | < 4.1 U | < 4.1 U | < 3.9 U | < 3.8 U | < 4.5 U | < 4.2 U | < 32 U | < 4.1 U | < 4.4 U |
| cis-1,2-Dichloroethene | **280** | 280 | ug/m$^3$ | < 4.0 U | < 3.9 U | < 4.3 U | < 4.0 U | < 4.0 U (<4.0 U) | < 4.2 U (< 4.3 U) | < 4.3 U (< 4.1 U) | < 3.9 U (< 3.8 U) | < 4.1 U | < 4.1 U | < 4.1 U | < 3.9 U | < 3.8 U | < 4.5 U | < 4.2 U | < 32 U | < 4.1 U | < 4.4 U |
| trans-1,2-Dichloroethene | **2,800** | 2,800 | ug/m$^3$ | < 4.0 U | < 3.9 U | < 4.3 U | < 4.0 U | < 4.0 U (<4.0 U) | < 4.2 U (< 4.3 U) | < 4.3 U (< 4.1 U) | < 3.9 U (< 3.8 U) | < 4.1 U | < 4.1 U | < 4.1 U | < 3.9 U | < 3.8 U | < 4.5 U | < 4.2 U | < 32 U | < 4.1 U | < 4.4 U |
| Tetrachloroethene | **1,400** | 1,400 | ug/m$^3$ | < 6.8 U | 7.5 | 17 | 9.7 | 7.6 (8.4) | 8.8 (8.1) | 12 (12) | 8.3 (8.1) | < 7.0 U | < 7.0 U | < 7.0 U | < 6.6 U | < 6.6 U | < 7.6 U | < 7.2 U | < 56 U | < 7.0 U | < 7.5 U |
| Trichloroethene | **67** | 67 | ug/m$^3$ | 8 | 9.3 | 32 | 16 | 61.0 **(68.0)** | 50.0 (54.0) | 60 (60) | 50 (51) | < 5.6 U | < 5.6 U | < 5.5 U | < 5.3 U | 11 | 12 | 14 | < 44 U | 18 | 17 |
| Vinyl Chloride | **54** | 54 | ug/m$^3$ | < 2.6 U | < 2.5 U | < 2.8 U | < 2.6 U | < 2.6 U (<2.6 U) | < 2.7 U (< 2.8 U) | < 2.7 U (< 2.6 U) | < 2.5 U (< 2.5 U) | < 2.6 U | < 2.6 U | < 2.6 U | < 2.5 U | < 2.5 U | < 2.9 U | < 2.7 U | < 21 U | < 2.6 U | < 2.8 U |

**Table 3**
**Summary of 2023 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-04-21 22.5-23 8/28/2023 | SV-04-21 22.5-23 11/27/2023 | SV-05-21 11.5-12 3/22/2022 | SV-05-21 11.5-12 6/8/2022 | SV-05-21 11.5-12 9/22/2022 | SV-05-21 11.5-12 11/28/2022 | SV-05-21 11.5-12 3/20/2023 | SV-05-21 11.5-12 6/5/2023 | SV-05-21 11.5-12 8/28/2023 | SV-05-21 11.5-12 11/27/2023 | SV-06-21 22.5-23 3/22/2022 | SV-06-21 22.5-23 6/8/2022 | SV-06-21 22.5-23 9/22/2022 | SV-06-21 22.5-23 11/28/2022 | SV-06-21 22.5-23 3/20/2023 | SV-06-21 22.5-23 6/5/2023 | SV-06-21 22.5-23 8/28/2023 | SV-06-21 22.5-23 11/27/2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analyte** | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | **7,000** | 7,000 | ug/m$^3$ | < 4.0 U | < 3.9 U | < 4.1 U | < 4.2 U | < 4.4 U | < 32 U | < 4.1 U | < 4.4 U | < 4.1 U | < 3.9 U | < 4.0 U | < 4.3 U | < 3.9 U | < 32 U | < 4.2 U | < 4.2 U | < 4.2 U | < 3.9 U |
| cis-1,2-Dichloroethene | **280** | 280 | ug/m$^3$ | < 4.0 U | < 3.9 U | < 4.1 U | < 4.2 U | < 4.4 U | < 32 U | < 4.1 U | < 4.4 U | < 4.1 U | < 3.9 U | < 4.0 U | < 4.3 U | < 3.9 U | < 32 U | < 4.2 U | < 4.2 U | < 4.2 U | < 3.9 U |
| trans-1,2-Dichloroethene | **2,800** | 2,800 | ug/m$^3$ | < 4.0 U | < 3.9 U | < 4.1 U | < 4.2 U | < 4.4 U | < 32 U | < 4.1 U | < 4.4 U | < 4.1 U | < 3.9 U | < 4.0 U | < 4.3 U | < 3.9 U | < 32 U | < 4.2 U | < 4.2 U | < 4.2 U | < 3.9 U |
| Tetrachloroethene | **1,400** | 1,400 | ug/m$^3$ | < 6.8 U | < 6.7 U | < 7.0 U | < 7.1 U | < 7.5 U | < 55 U | < 7.0 U | < 7.5 U | < 7.0 U | < 6.6 U | < 6.8 U | < 7.4 U | < 6.7 U | < 55 U | < 7.2 U | < 7.2 U | < 7.2 U | < 6.6 U |
| Trichloroethene | **67** | 67 | ug/m$^3$ | 16 | 16 | < 5.5 U | < 5.6 U | < 5.9 U | < 43 U | < 5.5 U | < 5.9 U | < 5.5 U | < 5.2 U | 13 | 14 | 16 | < 43 U | 48 | 15 | 17 | 17 |
| Vinyl Chloride | **54** | 54 | ug/m$^3$ | < 2.6 U | < 2.5 U | < 2.6 U | < 2.7 U | < 2.8 U | < 20 U | < 2.6 U | < 2.8 U | < 2.6 U | < 2.5 U | < 2.6 U | < 2.8 U | < 2.5 U | < 20 U | < 2.7 U | < 2.7 U | < 2.7 U | < 2.5 U |

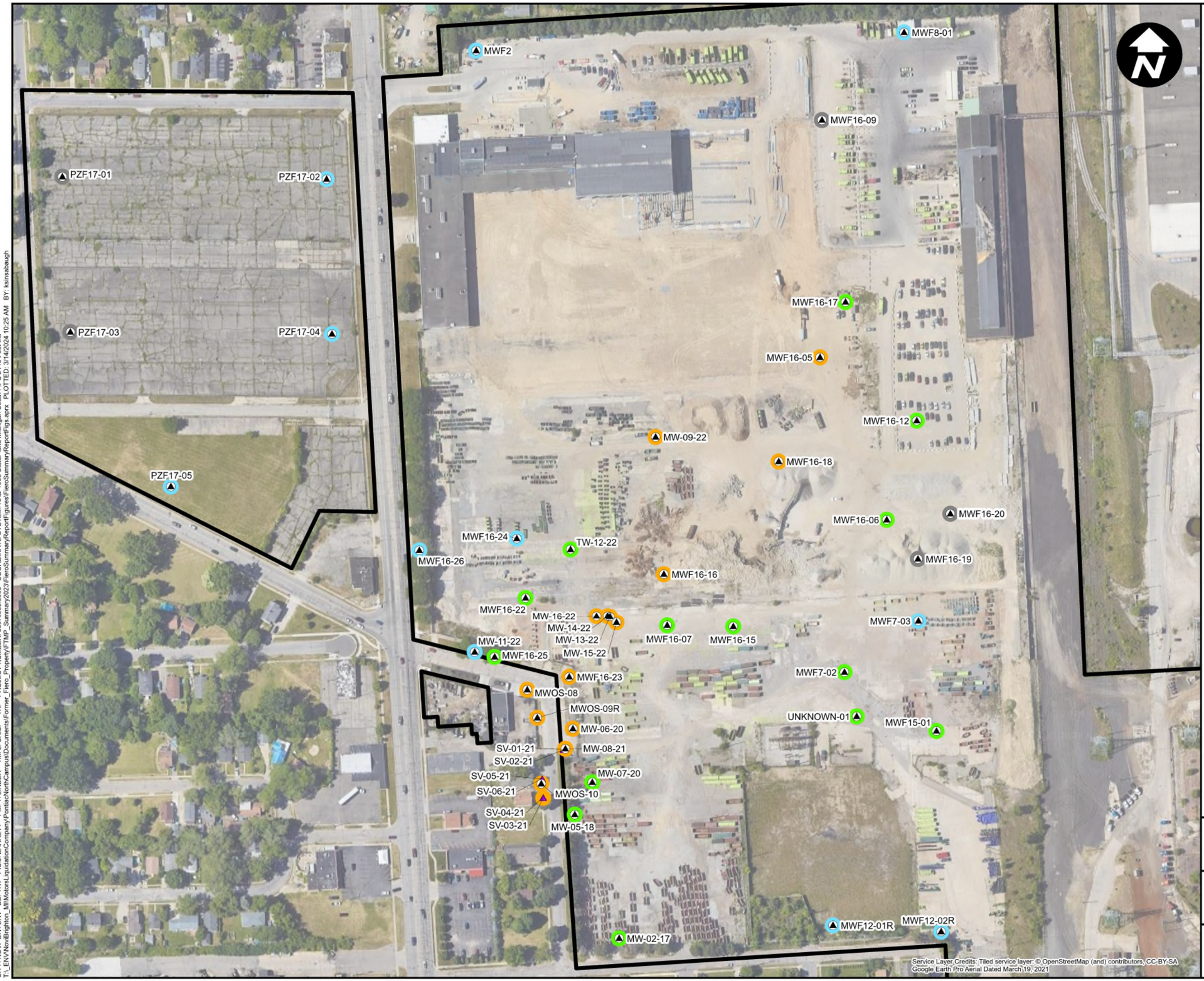
**NOTES:**

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 next to parent sample.
5) Samples analyzed by USEPA TO-15 Methods

**Abbreviations:**

µg/m - 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
- SEMI-ANNUAL GAUGING ONLY
- SEMI-ANNUAL GW SAMPLING
- QUARTERLY GW SAMPLING
- NOT MONITORED
- CURRENT OR FORMER RACER PROPERTY

0 200 400

SCALE IN FEET

RACER TRUST
PONTIAC NORTH CAMPUS
PONTIAC, MICHIGAN

# 2023 FIERO TEMPORARY MONITORING PLAN LOCATIONS

ARCADIS

FIGURE 1

CITY: NOVI DIV: ENV DB: TRY PIC: J. BARRETT PM: T. LINDER TM: L. CRISP TR: PROJECT NUMBER: 30075936.0005 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
T:_ENV\Novi\Brighton_MI\Motors Liquidation Company\Pontiac North Campus\Documents\Former_Fiero_Property\FTMP_Summary\2023\FieroSummaryReport\Figures\FieroSummaryReportFigs.aprx PLOTTED: 3/14/2024 10:25 AM BY: ksinsabaugh

E Beverly Ave
Price
Hollywood
W Tennyson
PZF17-01
PZF17-02
953.32
FORMER FIERO PARKING LOT
PZF17-03
PZF17-04
952.31
Saint Louis Ave
PZF17-05
949.92
W Kennett Rd
Parkdale Ave
N Merrimac St
N Merrimac St
S Merrimac
MWF2
926.31*
MWF8-01
954.26
954
MWF16-09
FORMER FIERO PLANT 17
MWF16-17
953.18
MWF16-05
953.15
MW-09-22
952.27
952
MWF16-12
959.07
MWF16-18
952.25
954
956
958
MWF16-06
959.29
MWF16-20
MWF16-19
MWF16-26
949.58
MWF16-24
TW-12-22
950.46
950
MWF16-16
950.65
MWF16-22
949.8
MW-14-22
950.20
MW-13-22
950.64
MW-16-22
945.91*
MW-15-22
950.02
MWF16-07
967.99*
MWF16-15
949.73
MWF7-03
951.80
MWF16-25
949.16
MW-11-22
949.15
E Kennett Rd
MWF16-23
949.38
POWER HOUSE
MWF7-02
951.19
MWOS-08
949.02
MWOS-09R
948.85
MW-06-20
948.91
UNKNOWN-01
950.61
MW-08-21
948.67
MWF15-01
950.62**
Baldwin Ave
MWOS-10
948.04
MW-07-20
948.44
MW-05-18
947.99
948
Owens St
Saint Clair St
MW-02-17
946.70
MWF12-01R
947.72
MWF12-02R
948.46
Young
Wing
Portland
MWOS-01
E Montcalm
MWOS-02
Rd
Service Layer Credits: Tiled service layer: © OpenStreetMap (and) contributors, CC-BY-SA
Google Earth Pro Aerial Dated March 19, 2021

**LEGEND**

- MONITORING WELL
- 947.09 GROUNDWATER ELEVATION
- GROUNDWATER CONTOUR
- INFERRED GROUNDWATER CONTOUR
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- * ELEVATION NOT USED FOR CONTOURING
- ** GAUGED AT LATER DATE
- CURRENT OR FORMER RACER PROPERTY

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

0 210 420
SCALE IN FEET

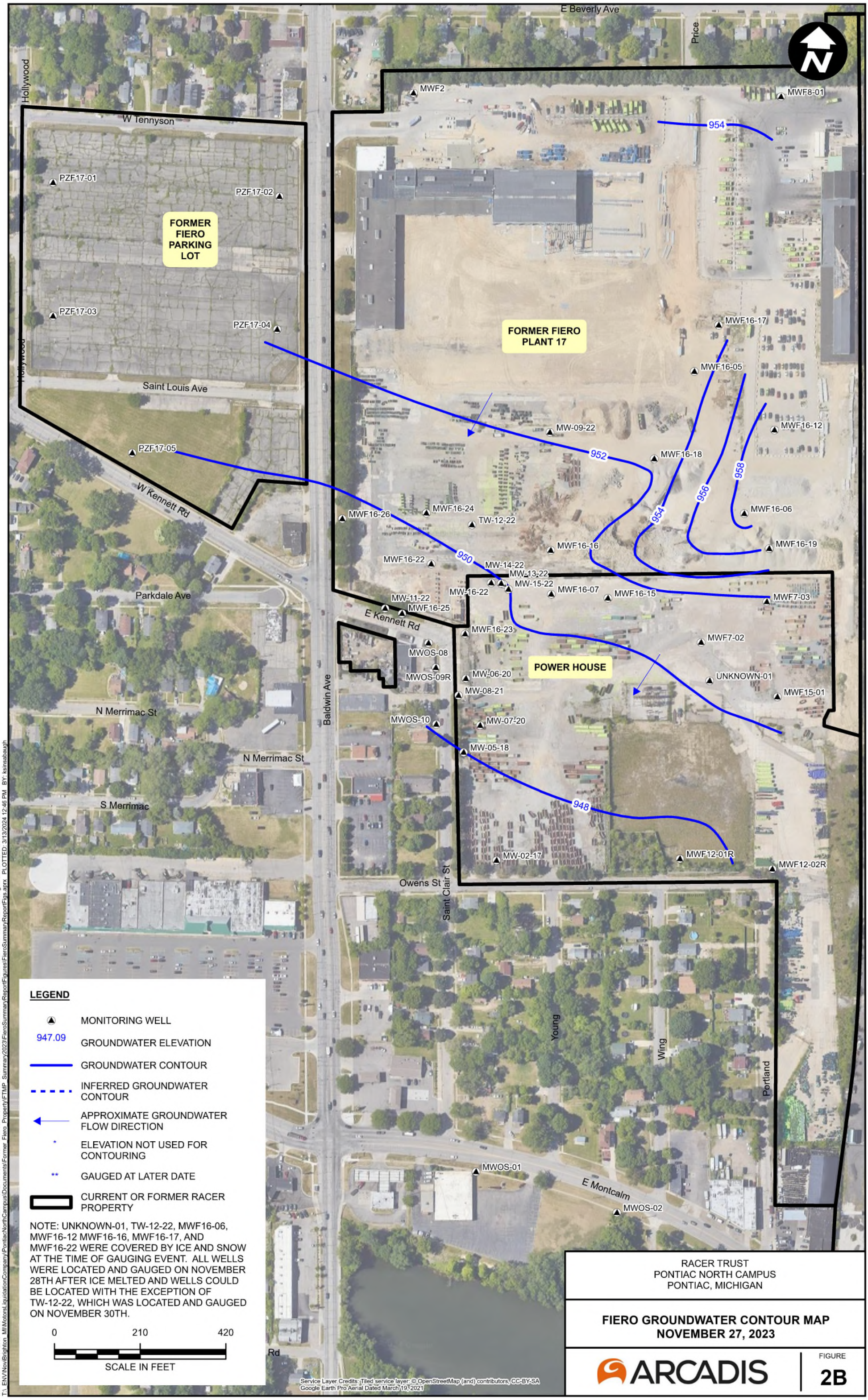
RACER TRUST
PONTIAC NORTH CAMPUS
PONTIAC, MICHIGAN

**FIERO GROUNDWATER CONTOUR MAP**
**JUNE 5, 2023**

ARCADIS

FIGURE
**2A**

CITY: NOVI DIV: ENV DB: TRY PIC:S.INSALACO PM: T. LINDER TM: L.CRISP TR: PROJECT NUMBER: 30167840.00005 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
T:\ENV\NoviBrighton\MiMotorsLiquidationCompany\PontiacNorthCampus\Documents\Former Fiero Property\FTMP Summary\2023\FieroSummaryReportFigures\FieroSummaryReportFigs.aprx PLOTTED: 3/13/2024 12:46 PM BY: ksinsabaugh




**LEGEND**

- MONITORING WELL
- 947.09 GROUNDWATER ELEVATION
- GROUNDWATER CONTOUR
- INFERRED GROUNDWATER CONTOUR
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- * ELEVATION NOT USED FOR CONTOURING
- ** GAUGED AT LATER DATE
- CURRENT OR FORMER RACER PROPERTY

NOTE: UNKNOWN-01, TW-12-22, MWF16-06, MWF16-12 MWF16-16, MWF16-17, AND MWF16-22 WERE COVERED BY ICE AND SNOW AT THE TIME OF GAUGING EVENT. ALL WELLS WERE LOCATED AND GAUGED ON NOVEMBER 28TH AFTER ICE MELTED AND WELLS COULD BE LOCATED WITH THE EXCEPTION OF TW-12-22, WHICH WAS LOCATED AND GAUGED ON NOVEMBER 30TH.

0 210 420

SCALE IN FEET

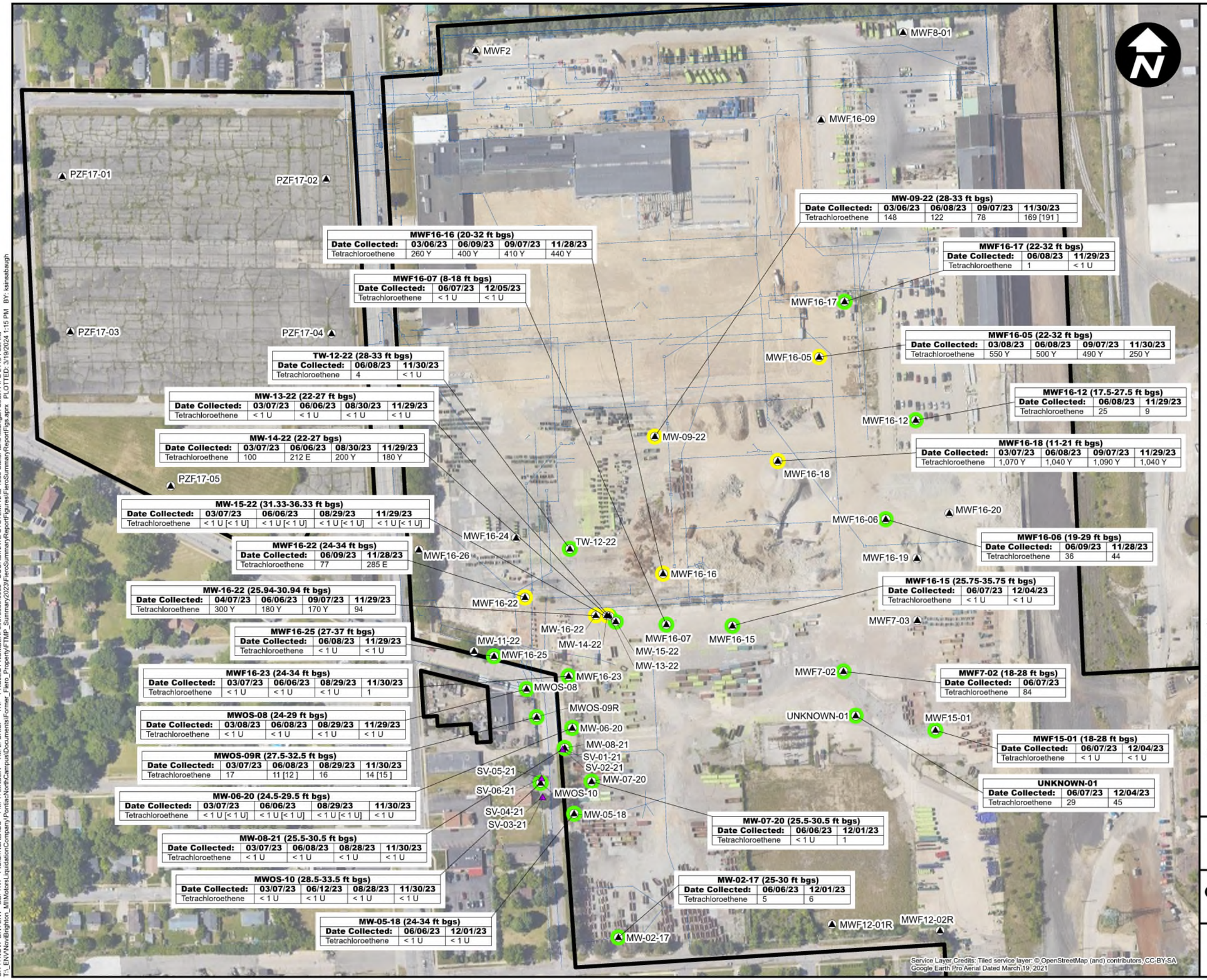
RACER TRUST
PONTIAC NORTH CAMPUS
PONTIAC, MICHIGAN

**FIERO GROUNDWATER CONTOUR MAP**
**NOVEMBER 27, 2023**

ARCADIS

FIGURE
**2B**

CITY: NOVI DIV: ENV DB: TRY PIC:S.INSALACO PM: T. LINDER TM: L.CRISP TR: PROJECT NUMBER: 30167840.00005 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
T:\ ENV\NoviBrighton MIMotorsLiquidationCompany\PontiacNorthCampus\Documents\Former Fiero Property\FTMP Summary\2023\FieroSummaryReportFigures\FieroSummaryReportFigs.aprx PLOTTED: 3/13/2024 12:46 PM BY: ksinsabaugh




**LEGEND**

- EXISTING MONITORING WELL
- SOIL VAPOR MONITORING POINT
- EXISTING UTILITY
- CURRENT OR FORMER RACER PROPERTY

**CONCENTRATION OF PCE IN GROUNDWATER**

- < 130 µg/L
- 130 - 3,400 µg/L
- > 3,400 µg/L

| Res Fiero SSVIAC SOG | Res Fiero SSVIAC BASE | NR Fiero SSVIAC <50k SOG |
|---|---|---|
| 250 | 130 | 3,400 |

| | |
|---|---|
| PCE | TETRACHLOROETHENE |
| BASE | BASEMENT SCENARIO |
| ft bgs | FEET BELOW GROUND SURFACE |
| NR | NON-RESIDENTIAL |
| Res | RESIDENTIAL |
| SOG | SLAB-ON-GRADE SCENARIO |
| SSVIAC | SITE-SPECIFIC VOLATILIZATION TO INDOOR AIR CRITERIA |
| E | CONCENTRATION EXCEEDS CALIBRATION RANGE |
| U | COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. THE ASSOCIATED VALUE IS THE COMPOUND QUANTITATION LIMIT. |
| Y | ELEVATED REPORTING LIMIT DUE TO HIGH TARGET CONCENTRATION. |
| <50k | LESS THAN 50,000 SQUARE FEET |
| < | NOT DETECTED ABOVE THE LABORATORY REPORTING LIMIT |

ALL GROUNDWATER CONCENTRATIONS ARE PRESENTED IN MICROGRAMS PER LITER (µg/L)

DUPLICATE ANALYSES ARE PRESENTED IN BRACKETS.

CRITERIA LISTED ARE FROM THE EGLE FORMER FIERO ASSEMBLY SITE-SPECIFIC CRITERIA EVALUATION DATED APRIL 21, 2020.

ON-SITE MONITORING WELL LOCATIONS COMPARED TO THE NONRESIDENTIAL SSVIAC. MONITORING WELL LOCATIONS WITHIN 100-FEET OF THE PROPERTY BOUNDARY AND OFF-SITE MONITORING WELLS LOCATIONS COMPARED TO THE RESIDENTIAL SSVIAC.

0 200 400

SCALE IN FEET

RACER TRUST
PONTIAC NORTH CAMPUS
PONTIAC, MICHIGAN

# CONCENTRATION OF TETRACHLOROETHENE IN GROUNDWATER - 2023

ARCADIS

FIGURE 3

CITY: NOVI DIV: ENV DB: TRY PIC:S:\NSALACO PM: T. LINDER TM: L. CRISP TR: PROJECT NUMBER: 30075936.0005 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
T:_ENV\NoviBrighton_MiMotorsLiquidationCompany\Pontiac\NorthCampus\Documents\Formel_Fiero_Property\FTMP_Summary\2023\FieroSummaryReport\Figures\FieroSummaryReportFigs.aprx PLOTTED: 3/19/2024 1:15 PM BY: tsimsabaugh




CITY: NOVI DIV/ ENV DB: TRY PIC:S.INSALACO PM: T. LINDER TM: L. CRISP TR: PROJECT NUMBER: 30075936.0005 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
T:_ENV\Work\Brighton_MI\Motors\Liquidation\Company\Pontiac\North\Campus\Documents\Former_Fiero_Property\FTMP_Summary\2023\FieroSummaryReport\Figures\FieroSummaryReportFigs.aprx PLOTTED: 3/14/2024 9:51 AM BY: lsinsabaugh

## LEGEND

- EXISTING MONITORING WELL
- SOIL VAPOR MONITORING POINT
- EXISTING UTILITY
- CURRENT OR FORMER RACER PROPERTY

**CONCENTRATION OF TCE IN GROUNDWATER**

- < 8.1 µg/L
- 8.1 - 210 µg/L
- > 210 µg/L

| Res Fiero SSVIAC SOG | Res Fiero SSVIAC BASE | NR Fiero SSVIAC <50k SOG |
|---|---|---|
| 15 | 8.1 | 210 |

| | |
|---|---|
| TCE | TRICHLOROETHENE |
| BASE | BASEMENT SCENARIO |
| ft bgs | FEET BELOW GROUND SURFACE |
| 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 |
| < | NOT DETECTED ABOVE THE LABORATORY REPORTING LIMIT |

ALL GROUNDWATER CONCENTRATIONS ARE PRESENTED IN MICROGRAMS PER LITER (µg/L)

DUPLICATE ANALYSES ARE PRESENTED IN BRACKETS.

CRITERIA LISTED ARE FROM THE EGLE FORMER FIERO ASSEMBLY SITE-SPECIFIC CRITERIA EVALUATION DATED APRIL 21, 2020.

ON-SITE MONITORING WELL LOCATIONS COMPARED TO THE NONRESIDENTIAL SSVIAC. MONITORING WELL LOCATIONS WITHIN 100-FEET OF THE PROPERTY BOUNDARY AND OFF-SITE MONITORING WELLS LOCATIONS COMPARED TO THE RESIDENTIAL SSVIAC.

0 200 400

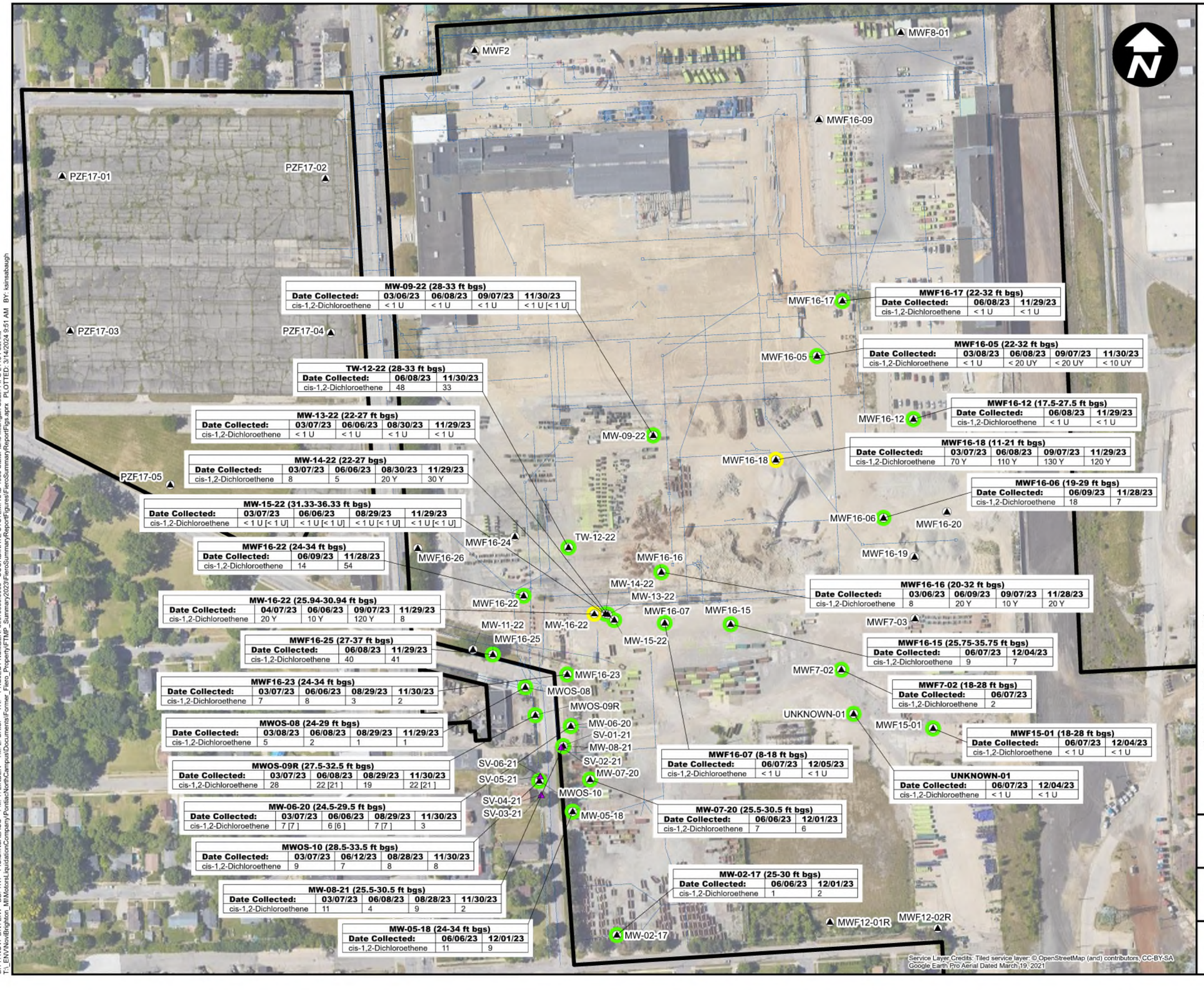
SCALE IN FEET

RACER TRUST
PONTIAC NORTH CAMPUS
PONTIAC, MICHIGAN

# CONCENTRATION OF TRICHLOROETHENE IN GROUNDWATER - 2023

ARCADIS

FIGURE 4




**LEGEND**

- EXISTING MONITORING WELL
- SOIL VAPOR MONITORING POINT
- EXISTING UTILITY
- CURRENT OR FORMER RACER PROPERTY

**CONCENTRATION OF DCE IN GROUNDWATER**

- < 62 µg/L
- 62 - 2,300 µg/L
- > 2,300 µg/L

| Res Fiero SSVIAC SOG | Res Fiero SSVIAC BASE | NR Fiero SSVIAC <50k SOG |
|---|---|---|
| 110 | 62 | 2,300 |

| | |
|---|---|
| DCE | cis-1,2-DICHLOROETHENE |
| BASE | BASEMENT SCENARIO |
| ft bgs | FEET BELOW GROUND SURFACE |
| 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 |
| < | NOT DETECTED ABOVE THE LABORATORY REPORTING LIMIT |

ALL GROUNDWATER CONCENTRATIONS ARE PRESENTED IN MICROGRAMS PER LITER (µg/L)

DUPLICATE ANALYSES ARE PRESENTED IN BRACKETS.

CRITERIA LISTED ARE FROM THE EGLE FORMER FIERO ASSEMBLY SITE-SPECIFIC CRITERIA EVALUATION DATED APRIL 21, 2020.

ON-SITE MONITORING WELL LOCATIONS COMPARED TO THE NONRESIDENTIAL SSVIAC. MONITORING WELL LOCATIONS WITHIN 100-FEET OF THE PROPERTY BOUNDARY AND OFF-SITE MONITORING WELLS LOCATIONS COMPARED TO THE RESIDENTIAL SSVIAC.

0 200 400

SCALE IN FEET

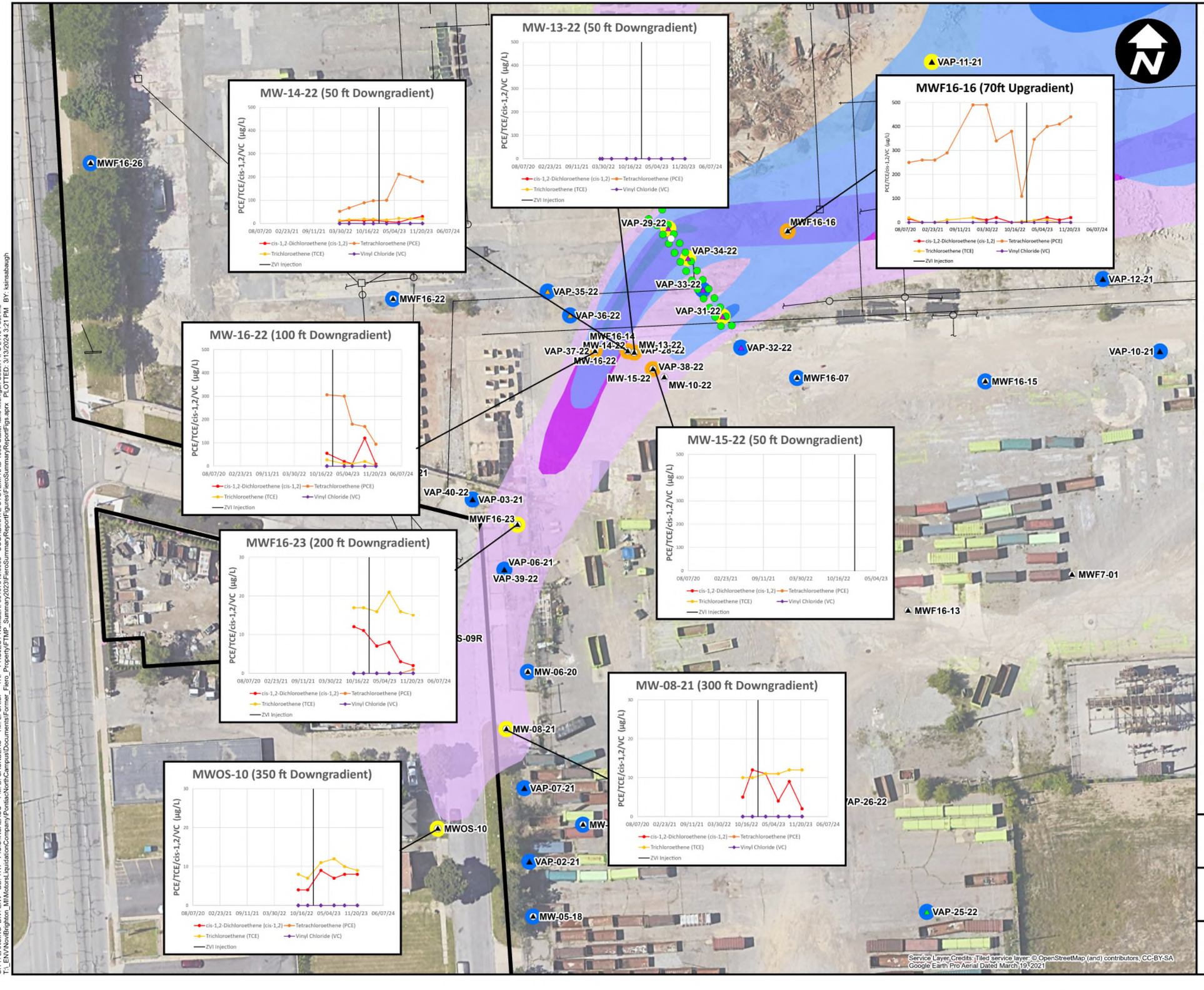
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PONTIAC, MICHIGAN

# CONCENTRATION OF CIS-1,2-DICHLOROETHENE IN GROUNDWATER - 2023

ARCADIS

FIGURE 5

CITY: NOVI DIV: ENV DB: TRY PIC:S INSALACO PM: T. LINDER TM: L. CRISP TR: PROJECT NUMBER: 30075936.0005 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
T:_ENV\Novi\Brighton_MiMotorsLiquidationCompany\Pontiac\NorthCampus\Documents\Former_Fiero_Property\FTMP_Summary2023\FieroSummaryReportFigures\FieroSummaryReportFigs.aprx PLOTTED: 3/14/2024 9:51 AM BY: tsimsabaugh




**LEGEND**

- ZVI PILOT INJECTION POINT
- CONFIRMATORY SOIL BORINGS
- SOIL BORING
- MONITORING WELL
- VERTICAL AQUIFER PROFILE (VAP, ARCADIS OCTOBER 2021)
- VERTICAL AQUIFER PROFILE (VAP, ARCADIS FEBRUARY 2022)
- VERTICAL AQUIFER PROFILE (VAP, ARCADIS JUNE 2022)
- VERTICAL AQUIFER PROFILE (VAP, ARCADIS SEPTEMBER 2022)
- PERFORMANCE MONITORING WELL
- EXCEEDS RESIDENTIAL FIERO SSVIAC BASEMENT (TCE >8.1 µg/L, PCE >130 µg/L)
- DOES NOT EXCEED RESIDENTIAL FIERO SSVIAC BASEMENT (TCE <8.1 µg/L, PCE <130 µg/L)
- UNABLE TO COLLECT VAP SAMPLE
- PROPOSED OR EXISTING BUILDING
- PROPOSED OR EXISTING UTILITY
- CURRENT OR FORMER RACER PROPERTY

**CONCENTRATION OF TETRACHLOROETHENE IN SOIL**

- 1,000 - 5,000 µg/kg
- 5,000 - 10,000 µg/kg
- 10,000 µg/kg

**CONCENTRATION OF TETRACHLOROETHENE IN GROUNDWATER**

- 130 - 500 µg/L
- >500 µg/L

**CONCENTRATION OF TRICHLOROETHENE IN GROUNDWATER**

- 8.1 - 20 µg/L
- 20 - 35 µg/L
- >35 µg/L

NOTES:

1. ALL CONCENTRATIONS ARE PRESENTED IN MICROGRAMS PER LITER (µg/L) AND MICROGRAMS PER KILOGRAM (µg/kg).
2. GROUNDWATER RESULTS ARE FROM THIRD QUARTER 2022.
3. SSVIAC - SITE-SPECIFIC VOLATILIZATION TO INDOOR AIR CRITERIA.
4. CRITERIA FROM DEPARTMENT OF ENVIRONMENT, GREAT LAKES AND ENERGY (EGLE) DEVELOPED SITE-SPECIFIC VOLATIZATION TO INDOOR AIR CRITERA FOR THE FORMER FIERO ASSEMBLY PLANT, APRIL 21, 2020.

0 70 140

SCALE IN FEET

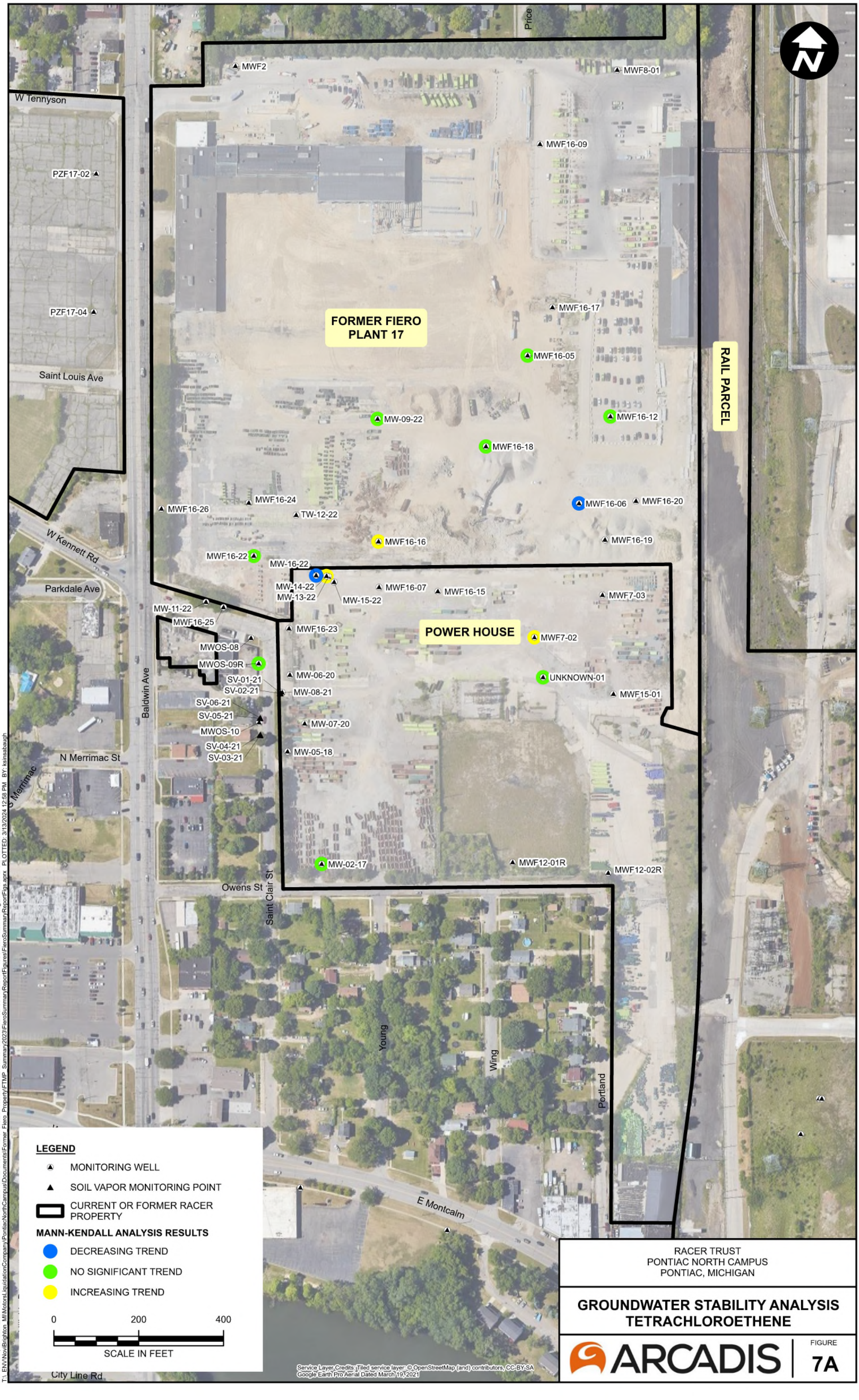
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PONTIAC, MICHIGAN

**DISTRIBUTION OF TETRACHLOROETHENE AND TRICHLOROETHENE IN GROUNDWATER, CONCENTRATION OF TETRACHLOROETHENE IN SOIL**

ARCADIS

FIGURE 6

CITY: LANSING DIV: ENV DB: TRY PIC: S.INSALACO PM: B. SAUNDERS TM: L. CRISP TR: PROJECT NUMBER: 30167840.0005 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
T:_ENV\NewBrighton_MMotors\Liquidation\Company\Pontiac\NorthCampus\Documents\Former_Fiero_Property\FTMP_Summary\2023\FieroSummaryReport\Figures\FieroSummaryReportFigs.aprx PLOTTED: 3/13/2024 3:21 PM BY: kstinsabaugh



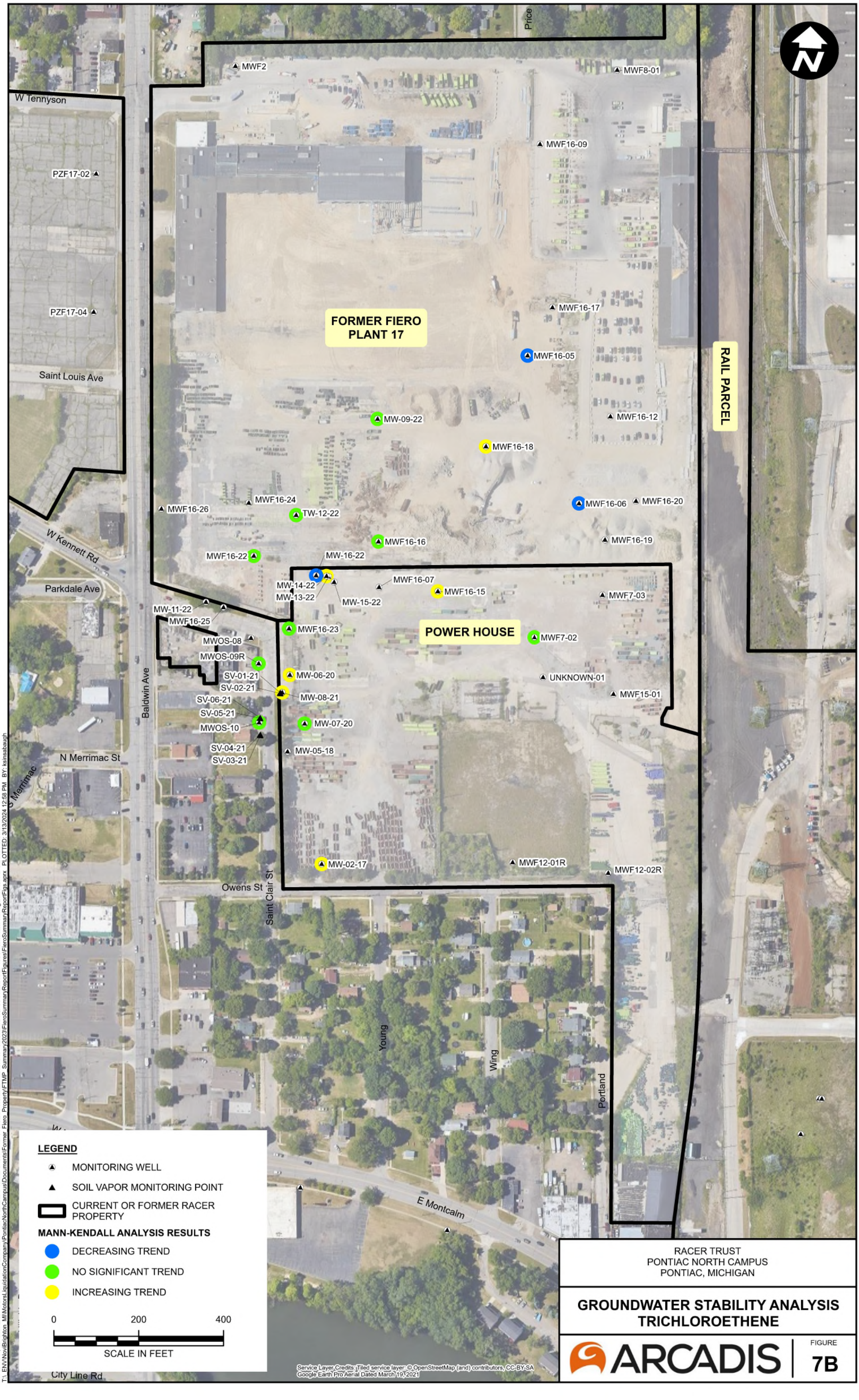

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PONTIAC, MICHIGAN

# GROUNDWATER STABILITY ANALYSIS TETRACHLOROETHENE

ARCADIS

FIGURE
7A

CITY: NOVI, MI DIV: ENV DB: TRY PIC: J. BARRETT PM: T. LINDER TM: L. CRISP TR: PROJECT NUMBER: 30167840 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
T:_ENV\NoviBrighton_MIMotorsLiquidationCompany\PontiacNorthCampus\Documents\Former_Fiero_Property\FTMP_Summary2023\FieroSummaryReportFigures\FieroSummaryReportFigs.aprx PLOTTED: 3/13/2024 12:58 PM BY: ksinsabaugh




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PONTIAC, MICHIGAN

# GROUNDWATER STABILITY ANALYSIS TRICHLOROETHENE

ARCADIS

FIGURE
7B

CITY: NOVI, MI DIV: ENV DB: TRY PIC: J. BARRETT PM: T. LINDER TM: L. CRISP TR: PROJECT NUMBER: 30167840 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
T:_ENV\NoviBrighton_MIMotorsLiquidationCompany\PontiacNorthCampus\Documents\Former_Fiero_Property\FTMP_Summary2023\FieroSummaryReportFigures\FieroSummaryReportFigs.aprx PLOTTED: 3/13/2024 12:58 PM BY: ksinsabaugh

MWF2
MWF8-01
MWF16-09
PZF17-02
PZF17-04
FORMER FIERO PLANT 17
MWF16-17
MWF16-05
RAIL PARCEL
MW-09-22
MWF16-12
MWF16-18
MWF16-24
MWF16-26
TW-12-22
MWF16-06
MWF16-20
MWF16-16
MWF16-19
MWF16-22
MW-16-22
MW-14-22
MW-13-22
MW-15-22
MWF16-07
MWF16-15
MWF7-03
MW-11-22
MWF16-25
MWF16-23
POWER HOUSE
MWF7-02
MWOS-08
MWOS-09R
MW-06-20
UNKNOWN-01
SV-01-21
SV-02-21
MW-08-21
MWF15-01
SV-06-21
SV-05-21
MWOS-10
MW-07-20
SV-04-21
SV-03-21
MW-05-18
MW-02-17
MWF12-01R
MWF12-02R
W Tennyson
W Kennett Rd
Parkdale Ave
Saint Louis Ave
N Merrimac St
S Merrimac
Baldwin Ave
Owens St
Saint Clair St
Young
Wing
Portland
E Montcalm
City Line Rd
Price

**LEGEND**

- MONITORING WELL
- SOIL VAPOR MONITORING POINT
- CURRENT OR FORMER RACER PROPERTY

**MANN-KENDALL ANALYSIS RESULTS**

- DECREASING TREND
- NO SIGNIFICANT TREND
- INCREASING TREND

0 200 400

SCALE IN FEET

Service Layer Credits: Tiled service layer: © OpenStreetMap (and) contributors, CC-BY-SA
Google Earth Pro Aerial Dated March 19, 2021

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PONTIAC, MICHIGAN

# GROUNDWATER STABILITY ANALYSIS
# cis-1,2-DICHLOROETHENE

ARCADIS

FIGURE
7C

CITY: NOVI, MI DIV: ENV DB: TRY PIC: J. BARRETT PM: T. LINDER TM: L. CRISP TR: PROJECT NUMBER: 30167840 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
T:\ ENV\NoviBrighton MIMotorsLiquidationCompany\PontiacNorthCampus\Documents\Former Fiero Property\FTMP Summary\2023\FieroSummaryReportFigures\FieroSummaryReportFigs.aprx PLOTTED: 3/13/2024 12:59 PM BY: ksinsabaugh

| SV-01-21 | | | | |
|---|---|---|---|---|
| **Sample Depth (ft. bgs):** | **14-14.5** | | | |
| **Date Collected:** | **3/20/2023** | **6/5/2023** | **8/28/2023** | **11/27/2023** |
| PCE | < 6.8 U | 7.5 | 17 | 9.7 |
| TCE | 8.0 | 9.3 | 32 | 16 |

| SV-02-21 | | | | |
|---|---|---|---|---|
| **Sample Depth (ft. bgs):** | **23.25-23.75** | | | |
| **Date Collected:** | **3/20/2023** | **6/5/2023** | **8/28/2023** | **11/27/2023** |
| PCE | 7.6 (8.4) | 8.8 (8.1) | 12 (12) | 8.3 (8.1) |
| TCE | 61.0 **(68.0)** | 50.0 (54.0) | 60 (60) | 50 (51) |

| SV-06-21 | | | | |
|---|---|---|---|---|
| **Sample Depth (ft. bgs):** | **22.5-23** | | | |
| **Date Collected:** | **3/20/2023** | **6/5/2023** | **8/28/2023** | **11/27/2023** |
| PCE | < 7.2 U | < 7.2 U | < 7.2 U | < 6.6 U |
| TCE | 48 | 15 | 17 | 17 |

| SV-05-21 | | | | |
|---|---|---|---|---|
| **Sample Depth (ft. bgs):** | **11.5-12** | | | |
| **Date Collected:** | **3/20/2023** | **6/5/2023** | **8/28/2023** | **11/27/2023** |
| PCE | < 7.0 U | < 7.5 U | < 7.0 U | < 6.6 U |
| TCE | < 5.5 U | < 5.9 U | < 5.5 U | < 5.2 U |

| SV-04-21 | | | | |
|---|---|---|---|---|
| **Sample Depth (ft. bgs):** | **22.5-23** | | | |
| **Date Collected:** | **3/20/2023** | **6/6/2023** | **8/28/2023** | **11/27/2023** |
| PCE | < 7.0 U | < 7.5 U | < 6.8 U | < 6.7 U |
| TCE | 18 | 17 | 16 | 16 |

| SV-03-21 | | | | |
|---|---|---|---|---|
| **Sample Depth (ft. bgs):** | **11.5-12** | | | |
| **Date Collected:** | **3/20/2023** | **6/6/2023** | **8/28/2023** | **11/27/2023** |
| PCE | < 7.0 U | < 7.0 U | < 7.0 U | < 6.6 U |
| TCE | < 5.6 U | < 5.6 U | < 5.5 U | < 5.3 U |

**LEGEND**

- MONITORING WELL
- SOIL VAPOR MONITORING POINT
- CURRENT OR FORMER RACER PROPERTY

NOTES:

1) ALL CONCENTRATIONS ARE PRESENTED IN MICROGRAMS PER CUBIC METER (µg/m$^3$)

2) FT. BGS - FEET BELOW GROUND SURFACE

3) SOG - SLAB-ON-GRADE

4) SSVIAC - SITE-SPECIFIC VOLATILIZATION TO INDOOR AIR CRITERIA

5) CRITERIA LISTED ARE FROM THE EGLE FORMER FIERO ASSEMBLY SITE-SPECIFIC CRITERIA EVALUATION DATED APRIL 21, 2020.

6) < - NOT DETECTED

7) U - COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. THE ASSOCIATED VALUE IS THE COMPOUND QUANTITATION LIMIT.

8) DUPLICATE ANALYSES ARE PRESENTED IN ()

9) SAMPLES ANALYZED BY USEPA TO-15 METHODS.

0 100 200

SCALE IN FEET

| | Fiero SSVIAC Soil Vapor Residential SOG Criteria | Fiero SSVIAC Soil Vapor Residential Basement Criteria |
|---|---|---|
| **Analyte** | | |
| Tetrachloroethene (PCE) | **1,400** | 1,400 |
| Trichloroethene (TCE) | **67** | 67 |

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PONTIAC, MICHIGAN

**SUMMARY OF SOIL VAPOR RESULTS**

ARCADIS

FIGURE
**8**

Service Layer Credits: Tiled service layer: © OpenStreetMap (and) contributors, CC-BY-SA Google Earth Pro Aerial Dated March 19, 2021

CITY: NOVI, MI DIV: ENV DB: TRY PIC: J. BARRETT PM: T. LINDER TM: L. CRISP TR: PROJECT NUMBER: COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
T:\ ENV\Novi\Brighton_MI\MotorsLiquidationCompany\PontiacNorthCampus\Documents\Former Fiero Property\FTMP Summary\2023\FieroSummary\ReportFigures\FieroSummaryReportFigs.aprx PLOTTED: 3/13/2024 12:59 PM BY: ksinsabaugh

MWF16-24
MWF16-26
TW-12-22
MWF16-22
MW-16-22
MW-14-22
MW-13-22
MW-15-22
MW-11-22
MWF16-25
E Kennett Rd
SV-01-21
MW-08-21
SV-02-21
MWF16-23
MWOS-08
MWOS-09R
SV-06-21
SV-05-21
MW-06-20
MWOS-10
SV-01-21
MW-08-21
SV-02-21
SV-04-21
SV-03-21
SV-06-21
SV-05-21
MWOS-10
MW-07-20
SV-04-21
SV-03-21
Saint Clair St
MW-05-18

**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

0 50 100

SCALE IN FEET

Service Layer Credits: Tiled service layer: © OpenStreetMap (and) contributors, CC-BY-SA
Google Earth Pro Aerial Dated March 19, 2021

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PONTIAC, MICHIGAN

# SOIL VAPOR STABILITY ANALYSIS TETRACHLOROETHENE

ARCADIS

FIGURE 9A

CITY: NOVI, MI DIV: ENV DB: TRY PIC: J. BARRETT PM: T. LINDER TM: L. CRISP TR: PROJECT NUMBER: 30167840 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
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MWF16-24
MWF16-26
TW-12-22
MWF16-22
MW-16-22
MW-14-22
MW-13-22
MW-15-22
MW-11-22
MWF16-25
E Kennett Rd
SV-01-21
MW-08-21
SV-02-21
MWF16-23
MWOS-08
MWOS-09R
SV-06-21
SV-05-21
MW-06-20
MWOS-10
SV-01-21
MW-08-21
SV-02-21
SV-04-21
SV-03-21
SV-06-21
SV-05-21
MWOS-10
MW-07-20
SV-04-21
SV-03-21
Saint Clair St
MW-05-18

**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

0 50 100

SCALE IN FEET

Service Layer Credits: Tiled service layer: © OpenStreetMap (and) contributors, CC-BY-SA
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PONTIAC, MICHIGAN

**SOIL VAPOR STABILITY ANALYSIS TRICHLOROETHENE**

ARCADIS

FIGURE
**9B**

CITY: NOVI, MI DIV: ENV DB: TRY PIC: J. BARRETT PM: T. LINDER TM: L. CRISP TR: PROJECT NUMBER: 30167840 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
T:\ ENV\Novi\Brighton_MI\MotorsLiquidationCompany\PontiacNorthCampus\Documents\Former_Fiero_Property\FTMP_Summary\2023\FieroSummaryReport\Figures\FieroSummaryReportFigs.aprx PLOTTED: 3/18/2024 12:18 PM BY: ksinsabaugh

# Appendix A

## Laboratory Analytical Reports

# Analytical Laboratory Report

Report ID: S45983.01(01)
Generated on 03/09/2023

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

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S45983.01-S45983.04
Project: 30167840.00005 / RACER PNC
Collected Date(s): 03/06/2023 - 03/07/2023
Submitted Date/Time: 03/07/2023 16:05
Sampled by: Leticia Ferreria / Sommer Guy
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

**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 |

**Method Summary**

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

**Sample Summary (4 samples)**

| Sample ID | Sample Tag | Matrix | Collected Date/Time |
|---|---|---|---|
| S45983.01 | MW-09-22_GW-030623 | Groundwater | 03/06/23 13:48 |
| S45983.02 | tripblank_01 | Water | 03/06/23 00:01 |
| S45983.03 | MW-08-21_GW-030723 | Groundwater | 03/07/23 13:55 |
| S45983.04 | MWF16-23_GW-030723 | Groundwater | 03/07/23 14:22 |

**Lab Sample ID: S45983.01**
Sample Tag: MW-09-22_GW-030623
Collected Date/Time: 03/06/2023 13:48
Matrix: Groundwater
COC Reference: 160085

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/09/23 10:00 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 19:16, 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 | 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 | 148 | 1 | | ug/L | 1 | 127-18-4 | |
| trans-1,4-Dichloro-2-butene | Not detected | 1 | | ug/L | 1 | 110-57-6 | |

**Lab Sample ID: S45983.01 (continued)**
Sample Tag: MW-09-22_GW-030623

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 19:16, 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 | |

**Lab Sample ID: S45983.02**
Sample Tag: tripblank_01
Collected Date/Time: 03/06/2023 00:01
Matrix: Water
COC Reference: 160085

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 1 | 40ml Glass | HCL | Yes | 2.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/09/23 10:00 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 15:04, 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 | |

**Lab Sample ID: S45983.02 (continued)**
Sample Tag: tripblank_01

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 15:04, 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 | |

**Lab Sample ID: S45983.03**
Sample Tag: MW-08-21_GW-030723
Collected Date/Time: 03/07/2023 13:55
Matrix: Groundwater
COC Reference: 160085

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/09/23 10:00 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 19:35, 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 | 1 | 1 | | ug/L | 1 | 156-60-5 | |
| 1,1-Dichloroethane | 9 | 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 | 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 | |

**Lab Sample ID: S45983.03 (continued)**
Sample Tag: MW-08-21_GW-030723

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 19:35, 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 | |

**Lab Sample ID: S45983.04**
Sample Tag: MWF16-23_GW-030723
Collected Date/Time: 03/07/2023 14:22
Matrix: Groundwater
COC Reference: 160085

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/09/23 10:00 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 19:54, 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 | 2 | 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 | 12 | 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 | 16 | 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 | |

**Lab Sample ID: S45983.04 (continued)**
Sample Tag: MWF16-23_GW-030723

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 19:54, 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:S45983
Client:ARCADIS_NOVI (ARCADIS U.S., Inc.)
Project: 30167840.00005 / RACER PNC
Submitted:03/07/2023 16:05 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. | [X] Yes | [ ] No | [ ] N/A | Samples are received at 4C +/- 2C Thermometer # | IR 2.5 |
| 02. | [X] Yes | [ ] No | [ ] N/A | Received on ice/ cooling process begun | |
| 03. | [ ] Yes | [X] No | [ ] N/A | Samples shipped | |
| 04. | [ ] Yes | [X] No | [ ] N/A | Samples left in 24 hr. drop box | |
| 05. | [ ] Yes | [ ] No | [X] N/A | Are there custody seals/tape or is the drop box locked | |
| **Chain of Custody** | | | | | |
| 06. | [X] Yes | [ ] No | [ ] N/A | COC adequately filled out | |
| 07. | [X] Yes | [ ] No | [ ] N/A | COC signed and relinquished to the lab | |
| 08. | [X] Yes | [ ] No | [ ] N/A | Sample tag on bottles match COC | |
| 09. | [ ] Yes | [X] No | [ ] N/A | Subcontracting needed? Subcontacted to: | |
| **Preservation** | | | | | |
| 10. | [X] Yes | [ ] No | [ ] N/A | Do sample have correct chemical preservation | |
| 11. | [ ] Yes | [ ] No | [X] N/A | Completed pH checks on preserved samples? (no VOAs) | |
| 12. | [ ] Yes | [X] No | [ ] N/A | Did any samples need to be preserved in the lab? | |
| **Bottle Conditions** | | | | | |
| 13. | [X] Yes | [ ] No | [ ] N/A | All bottles intact | |
| 14. | [X] Yes | [ ] No | [ ] N/A | Appropriate analytical bottles are used | |
| 15. | [X] Yes | [ ] No | [ ] N/A | Merit bottles used | |
| 16. | [X] Yes | [ ] No | [ ] N/A | Sufficient sample volume received | |
| 17. | [ ] Yes | [X] No | [ ] N/A | Samples require laboratory filtration | |
| 18. | [X] Yes | [ ] No | [ ] N/A | Samples submitted within holding time | |
| 19. | [ ] Yes | [X] 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:_____

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

C.O.C. PAGE # _____ OF _____ 160085

# CHAIN OF CUSTODY RECORD

## REPORT TO

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

## INVOICE TO

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

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

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER _____

DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☒ EDD ☐ OTHER _____

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Full 8260 VOCs list

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other _____

Special Instructions

| MERIT LAB NO. (FOR LAB USE ONLY) | COLLECTION DATE | COLLECTION TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | Full 8260 VOCs list | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 45983.01 | 3/6/23 | 1348 | MW-09-22_GW-030623 | GW | 3 | | X | | | | | | X | |
| .02 | — | — | tripblank_01 | L | 1 | | 1 | | | | | | X | tripblank |
| .03 | 3/7/23 | 1355 | MW-08-21_GW-030723 | GW | 3 | | 3 | | | | | | X | |
| .04 | 3/7/23 | 1422 | MWF-16-23_GW-030723 | GW | 3 | | 3 | | | | | | X | |

| RELINQUISHED BY: SIGNATURE/ORGANIZATION | ☐ Sampler | DATE | TIME |
|---|---|---|---|
| Sommer Guy | | 3/7/23 | 1440 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| | | 3/7/23 | 14:40 |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| | | 3/7/23 | 16:05 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| M Chilcote | | 3/7/23 | 1605 |

| RELINQUISHED BY: SIGNATURE/ORGANIZATION | DATE | TIME |
|---|---|---|
| | | |
| RECEIVED BY: SIGNATURE/ORGANIZATION | DATE | TIME |
| | | |

| SEAL NO. | SEAL INTACT YES ☐ NO ☐ | INITIALS |
|---|---|---|
| | | |
| SEAL NO. | SEAL INTACT YES ☐ NO ☐ | INITIALS |
| | | |

NOTES: TEMP. ON ARRIVAL 2.5

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

Rev. 1.26.22

# Analytical Laboratory Report

Report ID: S45984.01(01)
Generated on 03/10/2023

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

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S45984.01-S45984.08
Project: 30167840.00005 / RACER PNC
Collected Date(s): 03/06/2023 - 03/07/2023
Submitted Date/Time: 03/07/2023 16:05
Sampled by: Leticia Ferreria / Sommer Guy
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

**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 |

**Method Summary**

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

**Sample Summary (8 samples)**

| Sample ID | Sample Tag | Matrix | Collected Date/Time |
|---|---|---|---|
| S45984.01 | MWF16-16_GW-030623 | Groundwater | 03/06/23 13:37 |
| S45984.02 | MW-14-22_GW-030723 | Groundwater | 03/07/23 11:34 |
| S45984.03 | MW-14-22_GW-030723 MS | Groundwater | 03/07/23 11:34 |
| S45984.04 | MW-14-22_GW-030723 MSD | Groundwater | 03/07/23 11:34 |
| S45984.05 | MW-15-22_GW-030723 | Groundwater | 03/07/23 12:45 |
| S45984.06 | MW-13-22_GW-030723 | Groundwater | 03/07/23 12:51 |
| S45984.07 | tripblank_02 | Water | 03/07/23 00:01 |
| S45984.08 | DUP-02_GW-030723 | Groundwater | 03/07/23 00:01 |

# Analytical Laboratory Report

**Lab Sample ID: S45984.01**
Sample Tag: MWF16-16_GW-030623
Collected Date/Time: 03/06/2023 13:37
Matrix: Groundwater
COC Reference: 138071

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/09/23 10:00 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 14:39, 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 | 8 | 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 | 5 | 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 | 8 | 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 | 346 | 1 | | ug/L | 1 | 127-18-4 | E |

E-Concentration exceeds calibration range

**Lab Sample ID: S45984.01 (continued)**
Sample Tag: MWF16-16_GW-030623

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 14:39, Analyst: KAG (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: 03/08/23 18:56, Analyst: KAG**

| 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 |

Y-Elevated reporting limit due to high target concentration

**Lab Sample ID: S45984.01 (continued)**
Sample Tag: MWF16-16_GW-030623

**Volatile Organics - DEQ List (Replicate 01), Method: SW5030C/8260C, Run Date: 03/08/23 18:56, Analyst: KAG (continued)**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| 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 | Not detected | 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 | Not detected | 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 | 260 | 10 | | ug/L | 10 | 127-18-4 | Y |
| 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 |

Y-Elevated reporting limit due to high target concentration

**Lab Sample ID: S45984.01 (continued)**
Sample Tag: MWF16-16_GW-030623

**Volatile Organics - DEQ List (Replicate 01), Method: SW5030C/8260C, Run Date: 03/08/23 18:56, Analyst: KAG (continued)**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| 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

**Lab Sample ID: S45984.02**
Sample Tag: MW-14-22_GW-030723
Collected Date/Time: 03/07/2023 11:34
Matrix: Groundwater
COC Reference: 138071

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/09/23 10:00 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 15:26, 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 | 8 | 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 | 6 | 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 | 3 | 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 | 15 | 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 | 100 | 1 | | ug/L | 1 | 127-18-4 | |
| trans-1,4-Dichloro-2-butene | Not detected | 1 | | ug/L | 1 | 110-57-6 | |

**Lab Sample ID: S45984.02 (continued)**
Sample Tag: MW-14-22_GW-030723

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 15:26, 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 | |

**Lab Sample ID: S45984.03**
Sample Tag: MW-14-22_GW-030723 MS
Collected Date/Time: 03/07/2023 11:34
Matrix: Groundwater
COC Reference: 138071

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/09/23 10:00 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 19:20, Analyst: KAG**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| Diethyl ether | 52 | 10 | | ug/L | 1 | 60-29-7 | 1 |
| Acetone | 51 | 50 | | ug/L | 1 | 67-64-1 | 1 |
| Methyl iodide | 48 | 1 | | ug/L | 1 | 74-88-4 | 1 |
| Carbon disulfide | 47 | 5 | | ug/L | 1 | 75-15-0 | 1 |
| tert-Methyl butyl ether (MTBE) | 48 | 5 | | ug/L | 1 | 1634-04-4 | 1 |
| Acrylonitrile | 49 | 2 | | ug/L | 1 | 107-13-1 | 1 |
| 2-Butanone (MEK) | 48 | 25 | | ug/L | 1 | 78-93-3 | 1 |
| Dichlorodifluoromethane | 45 | 5 | | ug/L | 1 | 75-71-8 | 1 |
| Chloromethane | 53 | 5 | | ug/L | 1 | 74-87-3 | 1 |
| Vinyl chloride | 52 | 1 | | ug/L | 1 | 75-01-4 | 1 |
| Bromomethane | 57 | 5 | | ug/L | 1 | 74-83-9 | 1 |
| Chloroethane | 56 | 5 | | ug/L | 1 | 75-00-3 | 1 |
| Trichlorofluoromethane | 50 | 1 | | ug/L | 1 | 75-69-4 | 1 |
| 1,1-Dichloroethene | 52 | 1 | | ug/L | 1 | 75-35-4 | 1 |
| Methylene chloride | 49 | 5 | | ug/L | 1 | 75-09-2 | 1 |
| trans-1,2-Dichloroethene | 49 | 1 | | ug/L | 1 | 156-60-5 | 1 |
| 1,1-Dichloroethane | 51 | 1 | | ug/L | 1 | 75-34-3 | 1 |
| cis-1,2-Dichloroethene | 56 | 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 | 50 | 1 | | ug/L | 1 | 74-97-5 | 1 |
| 1,1,1-Trichloroethane | 53 | 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 | 47 | 1 | | ug/L | 1 | 56-23-5 | 1 |
| Benzene | 49 | 1 | | ug/L | 1 | 71-43-2 | 1 |
| 1,2-Dichloroethane | 47 | 1 | | ug/L | 1 | 107-06-2 | 1 |
| Trichloroethene | 62 | 1 | | ug/L | 1 | 79-01-6 | 1 |
| 1,2-Dichloropropane | 49 | 1 | | ug/L | 1 | 78-87-5 | 1 |
| Bromodichloromethane | 48 | 1 | | ug/L | 1 | 75-27-4 | 1 |
| Dibromomethane | 48 | 5 | | ug/L | 1 | 74-95-3 | 1 |
| cis-1,3-Dichloropropene | 49 | 1 | | ug/L | 1 | 10061-01-5 | 1 |
| Toluene | 49 | 1 | | ug/L | 1 | 108-88-3 | 1 |
| trans-1,3-Dichloropropene | 48 | 1 | | ug/L | 1 | 10061-02-6 | 1 |
| 1,1,2-Trichloroethane | 50 | 1 | | ug/L | 1 | 79-00-5 | 1 |
| Tetrachloroethene | 138 | 1 | | ug/L | 1 | 127-18-4 | 1 |

1-Spiked at 50ug/L

**Lab Sample ID: S45984.03 (continued)**
Sample Tag: MW-14-22_GW-030723 MS

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 19:20, Analyst: KAG (continued)**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| trans-1,4-Dichloro-2-butene | 36 | 1 | | ug/L | 1 | 110-57-6 | 1 |
| Dibromochloromethane | 45 | 5 | | ug/L | 1 | 124-48-1 | 1 |
| 1,2-Dibromoethane | 46 | 1 | | ug/L | 1 | 106-93-4 | 1 |
| Chlorobenzene | 47 | 1 | | ug/L | 1 | 108-90-7 | 1 |
| 1,1,1,2-Tetrachloroethane | 46 | 1 | | ug/L | 1 | 630-20-6 | 1 |
| Ethylbenzene | 47 | 1 | | ug/L | 1 | 100-41-4 | 1 |
| p,m-Xylene* | 93 | 2 | | ug/L | 1 | | 1 |
| o-Xylene | 46 | 1 | | ug/L | 1 | 95-47-6 | 1 |
| Styrene | 47 | 1 | | ug/L | 1 | 100-42-5 | 1 |
| Isopropylbenzene | 46 | 5 | | ug/L | 1 | 98-82-8 | 1 |
| Bromoform | 45 | 1 | | ug/L | 1 | 75-25-2 | 1 |
| 1,1,2,2-Tetrachloroethane | 47 | 1 | | ug/L | 1 | 79-34-5 | 1 |
| 1,2,3-Trichloropropane | 45 | 1 | | ug/L | 1 | 96-18-4 | 1 |
| n-Propylbenzene | 46 | 1 | | ug/L | 1 | 103-65-1 | 1 |
| Bromobenzene | 48 | 1 | | ug/L | 1 | 108-86-1 | 1 |
| 1,3,5-Trimethylbenzene | 45 | 1 | | ug/L | 1 | 108-67-8 | 1 |
| tert-Butylbenzene | 44 | 1 | | ug/L | 1 | 98-06-6 | 1 |
| 1,2,4-Trimethylbenzene | 46 | 1 | | ug/L | 1 | 95-63-6 | 1 |
| sec-Butylbenzene | 45 | 1 | | ug/L | 1 | 135-98-8 | 1 |
| p-Isopropyltoluene | 44 | 5 | | ug/L | 1 | 99-87-6 | 1 |
| 1,3-Dichlorobenzene | 46 | 1 | | ug/L | 1 | 541-73-1 | 1 |
| 1,4-Dichlorobenzene | 46 | 1 | | ug/L | 1 | 106-46-7 | 1 |
| 1,2-Dichlorobenzene | 46 | 1 | | ug/L | 1 | 95-50-1 | 1 |
| 1,2,3-Trimethylbenzene | 45 | 1 | | ug/L | 1 | 526-73-8 | 1 |
| n-Butylbenzene | 45 | 1 | | ug/L | 1 | 104-51-8 | 1 |
| Hexachloroethane | 40 | 5 | | ug/L | 1 | 67-72-1 | 1 |
| 1,2-Dibromo-3-chloropropane | 44 | 5 | | ug/L | 1 | 96-12-8 | 1 |
| 1,2,4-Trichlorobenzene | 45 | 5 | | ug/L | 1 | 120-82-1 | 1 |
| 1,2,3-Trichlorobenzene | 45 | 5 | | ug/L | 1 | 87-61-6 | 1 |
| Naphthalene | 45 | 5 | | ug/L | 1 | 91-20-3 | 1 |
| 2-Methylnaphthalene | 38 | 5 | | ug/L | 1 | 91-57-6 | 1 |

1-Spiked at 50ug/L

**Lab Sample ID: S45984.04**
Sample Tag: MW-14-22_GW-030723 MSD
Collected Date/Time: 03/07/2023 11:34
Matrix: Groundwater
COC Reference: 138071

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/09/23 10:00 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 19:43, Analyst: KAG**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| Diethyl ether | 54 | 10 | | ug/L | 1 | 60-29-7 | 1 |
| Acetone | 56 | 50 | | ug/L | 1 | 67-64-1 | 1 |
| Methyl iodide | 47 | 1 | | ug/L | 1 | 74-88-4 | 1 |
| Carbon disulfide | 46 | 5 | | ug/L | 1 | 75-15-0 | 1 |
| tert-Methyl butyl ether (MTBE) | 49 | 5 | | ug/L | 1 | 1634-04-4 | 1 |
| Acrylonitrile | 53 | 2 | | ug/L | 1 | 107-13-1 | 1 |
| 2-Butanone (MEK) | 53 | 25 | | ug/L | 1 | 78-93-3 | 1 |
| Dichlorodifluoromethane | 41 | 5 | | ug/L | 1 | 75-71-8 | 1 |
| Chloromethane | 53 | 5 | | ug/L | 1 | 74-87-3 | 1 |
| Vinyl chloride | 51 | 1 | | ug/L | 1 | 75-01-4 | 1 |
| Bromomethane | 56 | 5 | | ug/L | 1 | 74-83-9 | 1 |
| Chloroethane | 56 | 5 | | ug/L | 1 | 75-00-3 | 1 |
| Trichlorofluoromethane | 49 | 1 | | ug/L | 1 | 75-69-4 | 1 |
| 1,1-Dichloroethene | 48 | 1 | | ug/L | 1 | 75-35-4 | 1 |
| Methylene chloride | 49 | 5 | | ug/L | 1 | 75-09-2 | 1 |
| trans-1,2-Dichloroethene | 49 | 1 | | ug/L | 1 | 156-60-5 | 1 |
| 1,1-Dichloroethane | 50 | 1 | | ug/L | 1 | 75-34-3 | 1 |
| cis-1,2-Dichloroethene | 56 | 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 | 49 | 1 | | ug/L | 1 | 74-97-5 | 1 |
| 1,1,1-Trichloroethane | 53 | 1 | | ug/L | 1 | 71-55-6 | 1 |
| 4-Methyl-2-pentanone (MIBK) | 52 | 50 | | ug/L | 1 | 108-10-1 | 1 |
| 2-Hexanone | 54 | 50 | | ug/L | 1 | 591-78-6 | 1 |
| Carbon tetrachloride | 47 | 1 | | ug/L | 1 | 56-23-5 | 1 |
| Benzene | 48 | 1 | | ug/L | 1 | 71-43-2 | 1 |
| 1,2-Dichloroethane | 47 | 1 | | ug/L | 1 | 107-06-2 | 1 |
| Trichloroethene | 61 | 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 | 50 | 5 | | ug/L | 1 | 74-95-3 | 1 |
| cis-1,3-Dichloropropene | 50 | 1 | | ug/L | 1 | 10061-01-5 | 1 |
| Toluene | 48 | 1 | | ug/L | 1 | 108-88-3 | 1 |
| trans-1,3-Dichloropropene | 49 | 1 | | ug/L | 1 | 10061-02-6 | 1 |
| 1,1,2-Trichloroethane | 52 | 1 | | ug/L | 1 | 79-00-5 | 1 |
| Tetrachloroethene | 139 | 1 | | ug/L | 1 | 127-18-4 | 1 |

1-Spiked at 50ug/L

**Lab Sample ID: S45984.04 (continued)**
Sample Tag: MW-14-22_GW-030723 MSD

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 19:43, Analyst: KAG (continued)**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| trans-1,4-Dichloro-2-butene | 41 | 1 | | ug/L | 1 | 110-57-6 | 1 |
| Dibromochloromethane | 47 | 5 | | ug/L | 1 | 124-48-1 | 1 |
| 1,2-Dibromoethane | 49 | 1 | | ug/L | 1 | 106-93-4 | 1 |
| Chlorobenzene | 47 | 1 | | ug/L | 1 | 108-90-7 | 1 |
| 1,1,1,2-Tetrachloroethane | 47 | 1 | | ug/L | 1 | 630-20-6 | 1 |
| Ethylbenzene | 48 | 1 | | ug/L | 1 | 100-41-4 | 1 |
| p,m-Xylene* | 94 | 2 | | ug/L | 1 | | 1 |
| o-Xylene | 47 | 1 | | ug/L | 1 | 95-47-6 | 1 |
| Styrene | 47 | 1 | | ug/L | 1 | 100-42-5 | 1 |
| Isopropylbenzene | 47 | 5 | | ug/L | 1 | 98-82-8 | 1 |
| Bromoform | 48 | 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 | 51 | 1 | | ug/L | 1 | 96-18-4 | 1 |
| n-Propylbenzene | 47 | 1 | | ug/L | 1 | 103-65-1 | 1 |
| Bromobenzene | 49 | 1 | | ug/L | 1 | 108-86-1 | 1 |
| 1,3,5-Trimethylbenzene | 46 | 1 | | ug/L | 1 | 108-67-8 | 1 |
| tert-Butylbenzene | 45 | 1 | | ug/L | 1 | 98-06-6 | 1 |
| 1,2,4-Trimethylbenzene | 46 | 1 | | ug/L | 1 | 95-63-6 | 1 |
| sec-Butylbenzene | 45 | 1 | | ug/L | 1 | 135-98-8 | 1 |
| p-Isopropyltoluene | 45 | 5 | | ug/L | 1 | 99-87-6 | 1 |
| 1,3-Dichlorobenzene | 47 | 1 | | ug/L | 1 | 541-73-1 | 1 |
| 1,4-Dichlorobenzene | 48 | 1 | | ug/L | 1 | 106-46-7 | 1 |
| 1,2-Dichlorobenzene | 47 | 1 | | ug/L | 1 | 95-50-1 | 1 |
| 1,2,3-Trimethylbenzene | 46 | 1 | | ug/L | 1 | 526-73-8 | 1 |
| n-Butylbenzene | 46 | 1 | | ug/L | 1 | 104-51-8 | 1 |
| Hexachloroethane | 43 | 5 | | ug/L | 1 | 67-72-1 | 1 |
| 1,2-Dibromo-3-chloropropane | 49 | 5 | | ug/L | 1 | 96-12-8 | 1 |
| 1,2,4-Trichlorobenzene | 48 | 5 | | ug/L | 1 | 120-82-1 | 1 |
| 1,2,3-Trichlorobenzene | 50 | 5 | | ug/L | 1 | 87-61-6 | 1 |
| Naphthalene | 49 | 5 | | ug/L | 1 | 91-20-3 | 1 |
| 2-Methylnaphthalene | 49 | 5 | | ug/L | 1 | 91-57-6 | 1 |

1-Spiked at 50ug/L

**Lab Sample ID: S45984.05**
Sample Tag: MW-15-22_GW-030723
Collected Date/Time: 03/07/2023 12:45
Matrix: Groundwater
COC Reference: 138071

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/09/23 10:00 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 15:49, 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 | |

**Lab Sample ID: S45984.05 (continued)**
Sample Tag: MW-15-22_GW-030723

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 15:49, 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 | |

**Lab Sample ID: S45984.06**
Sample Tag: MW-13-22_GW-030723
Collected Date/Time: 03/07/2023 12:51
Matrix: Groundwater
COC Reference: 138071

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/09/23 10:00 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 16:13, 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 | |

**Lab Sample ID: S45984.06 (continued)**
Sample Tag: MW-13-22_GW-030723

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 16:13, 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 | |

**Lab Sample ID: S45984.07**
Sample Tag: tripblank_02
Collected Date/Time: 03/07/2023 00:01
Matrix: Water
COC Reference: 138071

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 1 | 40ml Glass | HCL | Yes | 2.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/09/23 10:00 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 16:59, 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 | |

**Lab Sample ID: S45984.07 (continued)**
Sample Tag: tripblank_02

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 16:59, 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 | |

**Lab Sample ID: S45984.08**
Sample Tag: DUP-02_GW-030723
Collected Date/Time: 03/07/2023 00:01
Matrix: Groundwater
COC Reference: 138071

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/09/23 10:00 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 17:23, 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 | |

**Lab Sample ID: S45984.08 (continued)**
Sample Tag: DUP-02_GW-030723

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/08/23 17:23, 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:S45984
Client:ARCADIS_NOVI (ARCADIS U.S., Inc.)
Project: 30167840.00005 / RACER PNC
Submitted:03/07/2023 16:05 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. | [X] Yes | [ ] No | [ ] N/A | Samples are received at 4C +/- 2C Thermometer # | IR 2.5 |
| 02. | [X] Yes | [ ] No | [ ] N/A | Received on ice/ cooling process begun | |
| 03. | [ ] Yes | [X] No | [ ] N/A | Samples shipped | |
| 04. | [ ] Yes | [X] No | [ ] N/A | Samples left in 24 hr. drop box | |
| 05. | [ ] Yes | [ ] No | [X] N/A | Are there custody seals/tape or is the drop box locked | |
| **Chain of Custody** | | | | | |
| 06. | [X] Yes | [ ] No | [ ] N/A | COC adequately filled out | |
| 07. | [X] Yes | [ ] No | [ ] N/A | COC signed and relinquished to the lab | |
| 08. | [X] Yes | [ ] No | [ ] N/A | Sample tag on bottles match COC | |
| 09. | [ ] Yes | [X] No | [ ] N/A | Subcontracting needed? Subcontacted to: | |
| **Preservation** | | | | | |
| 10. | [X] Yes | [ ] No | [ ] N/A | Do sample have correct chemical preservation | |
| 11. | [ ] Yes | [ ] No | [X] N/A | Completed pH checks on preserved samples? (no VOAs) | |
| 12. | [ ] Yes | [X] No | [ ] N/A | Did any samples need to be preserved in the lab? | |
| **Bottle Conditions** | | | | | |
| 13. | [X] Yes | [ ] No | [ ] N/A | All bottles intact | |
| 14. | [X] Yes | [ ] No | [ ] N/A | Appropriate analytical bottles are used | |
| 15. | [X] Yes | [ ] No | [ ] N/A | Merit bottles used | |
| 16. | [X] Yes | [ ] No | [ ] N/A | Sufficient sample volume received | |
| 17. | [ ] Yes | [X] No | [ ] N/A | Samples require laboratory filtration | |
| 18. | [X] Yes | [ ] No | [ ] N/A | Samples submitted within holding time | |
| 19. | [ ] Yes | [X] 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:_____

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

C.O.C. PAGE # _____ OF _____ 138071

# CHAIN OF CUSTODY RECORD

## REPORT TO

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

## INVOICE TO

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

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

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER _____

DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER _____

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

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

| MERIT LAB NO. (FOR LAB USE ONLY) | YEAR DATE | YEAR TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | Full 8260 VOC's | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 45984.01 | 3/6/23 | 1337 | MWF16-16_GW-030623 | GW | 3 | | 3 | | | | | | X | |
| .02/.03/.04 | 3/7/23 | 1134 | ~~MW-14-22_GW-030723~~ MS MW-14-22_GW-030723 | GW | 9 | | 9 | | | | | | X | Run MS/MSD |
| .05 | 3/7/23 | 1245 | MW-15-22_GW-030723 | GW | 3 | | 3 | | | | | | X | |
| .06 | 3/7/23 | 1251 | MW-13-22_GW-030723 | GW | 3 | | 3 | | | | | | X | |
| .07 | — | — | tripblank_02 | L | 1 | | 1 | | | | | | X | tripblank |
| .08 | 3/7/23 | — | DUP-02_GW-030723 | GW | 3 | | 3 | | | | | | X | |

| | | | |
|---|---|---|---|
| RELINQUISHED BY: SIGNATURE/ORGANIZATION: Sommer Guy ☐ Sampler | DATE: 3/7/23 | TIME: 1440 | |
| RECEIVED BY: SIGNATURE/ORGANIZATION: | DATE: 3/7/23 | TIME: 14:40 | |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION: | DATE: 3/7/23 | TIME: 10:05 | |
| RECEIVED BY: SIGNATURE/ORGANIZATION: M Allford | DATE: 3/7/23 | TIME: 1605 | |

| | | | |
|---|---|---|---|
| RELINQUISHED BY: SIGNATURE/ORGANIZATION: | DATE: | TIME: | |
| RECEIVED BY: SIGNATURE/ORGANIZATION: | DATE: | TIME: | |
| SEAL NO. | SEAL INTACT YES ☐ NO ☐ | INITIALS | NOTES: TEMP. ON ARRIVAL: 2.5 |
| SEAL NO. | SEAL INTACT YES ☐ NO ☐ | INITIALS | |

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

Rev. 5.18.12

# Analytical Laboratory Report

Report ID: S46021.01(01)
Generated on 03/10/2023

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

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S46021.01
Project: 30167840.00005 / RACER PNC
Collected Date(s): 03/07/2023
Submitted Date/Time: 03/08/2023 13:25
Sampled by: Leticia Ferreria
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

## 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 |

**Method Summary**

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

**Sample Summary (1 samples)**

| Sample ID | Sample Tag | Matrix | Collected Date/Time |
|---|---|---|---|
| S46021.01 | MWOS-09R_GW-030723 | Groundwater | 03/07/23 15:38 |

# Analytical Laboratory Report

**Lab Sample ID: S46021.01**
Sample Tag: MWOS-09R_GW-030723
Collected Date/Time: 03/07/2023 15:38
Matrix: Groundwater
COC Reference: 138071

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.2 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/10/23 10:45 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/09/23 19:16, 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 | 2 | 1 | | ug/L | 1 | 156-60-5 | |
| 1,1-Dichloroethane | 4 | 1 | | ug/L | 1 | 75-34-3 | |
| cis-1,2-Dichloroethene | 28 | 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 | 17 | 1 | | ug/L | 1 | 127-18-4 | |
| trans-1,4-Dichloro-2-butene | Not detected | 1 | | ug/L | 1 | 110-57-6 | |

**Lab Sample ID: S46021.01 (continued)**
Sample Tag: MWOS-09R_GW-030723

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/09/23 19:16, 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 | |

# Merit Laboratories Login Checklist

Lab Set ID:S46021
Client:ARCADIS_NOVI (ARCADIS U.S., Inc.)
Project: 30167840.00005 / RACER PNC
Submitted:03/08/2023 13:25 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. | [X] Yes | [ ] No | [ ] N/A | Samples are received at 4C +/- 2C Thermometer # | IR 4.2 |
| 02. | [X] Yes | [ ] No | [ ] N/A | Received on ice/ cooling process begun | |
| 03. | [ ] Yes | [X] No | [ ] N/A | Samples shipped | |
| 04. | [ ] Yes | [X] No | [ ] N/A | Samples left in 24 hr. drop box | |
| 05. | [ ] Yes | [ ] No | [X] N/A | Are there custody seals/tape or is the drop box locked | |
| **Chain of Custody** | | | | | |
| 06. | [X] Yes | [ ] No | [ ] N/A | COC adequately filled out | |
| 07. | [X] Yes | [ ] No | [ ] N/A | COC signed and relinquished to the lab | |
| 08. | [X] Yes | [ ] No | [ ] N/A | Sample tag on bottles match COC | |
| 09. | [ ] Yes | [X] No | [ ] N/A | Subcontracting needed? Subcontacted to: | |
| **Preservation** | | | | | |
| 10. | [X] Yes | [ ] No | [ ] N/A | Do sample have correct chemical preservation | |
| 11. | [ ] Yes | [ ] No | [X] N/A | Completed pH checks on preserved samples? (no VOAs) | |
| 12. | [ ] Yes | [X] No | [ ] N/A | Did any samples need to be preserved in the lab? | |
| **Bottle Conditions** | | | | | |
| 13. | [X] Yes | [ ] No | [ ] N/A | All bottles intact | |
| 14. | [X] Yes | [ ] No | [ ] N/A | Appropriate analytical bottles are used | |
| 15. | [X] Yes | [ ] No | [ ] N/A | Merit bottles used | |
| 16. | [X] Yes | [ ] No | [ ] N/A | Sufficient sample volume received | |
| 17. | [ ] Yes | [X] No | [ ] N/A | Samples require laboratory filtration | |
| 18. | [X] Yes | [ ] No | [ ] N/A | Samples submitted within holding time | |
| 19. | [ ] Yes | [X] 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:_____

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

C.O.C. PAGE # _____ OF _____

138071

# CHAIN OF CUSTODY RECORD

## REPORT TO

CONTACT NAME: Alexis Crisp
COMPANY: Arcadis
ADDRESS: 28850 Cabot Dr # 500
CITY: Novi STATE: ZIP CODE:
PHONE NO.: FAX NO.: P.O. NO.: 30167840.00005
E-MAIL ADDRESS: Tiffany.Linder@arcadis.com; Lexis.Crisp@arcadis.com QUOTE NO.:

## INVOICE TO

CONTACT NAME: Accounts Payable ☐ SAME
COMPANY: Arcadis
ADDRESS: 630 Plaza Dr #60
CITY: Highlands Ranch STATE: CO ZIP CODE: 80129
PHONE NO.: E-MAIL ADDRESS: accountspayable.administration@arcadis.com

PROJECT NO./NAME:
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Leticia Ferreira

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☐ STANDARD ☐ OTHER _____

DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☒ EDD ☐ OTHER _____

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

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

| MERIT LAB NO. (FOR LAB USE ONLY) | YEAR DATE | YEAR TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | Full 8260 VOCs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 46021 | ~~3/7/13~~ | ~~1420~~ | ~~MW05-09R-GW-030723~~ | GW3 | | | X | | | | | | X LF |
| 001 | 03/7/13 | 1538 | MW05-09R-GW-030723 | GW3 | | | X | | | | | | X |
| | ~~03/08/13~~ | | ~~MW16-05-GW-030823~~ | GW3 | | | X | | | | | | X LF |

| RELINQUISHED BY: SIGNATURE/ORGANIZATION | ☐ Sampler | DATE | TIME |
|---|---|---|---|
| | | 3/8/23 | 1200 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | 3/8/23 | 1810 |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | 3/8/23 | 13:35 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | 3/8/23 | 1325 |

| RELINQUISHED BY: SIGNATURE/ORGANIZATION | DATE | TIME |
|---|---|---|
| RECEIVED BY: SIGNATURE/ORGANIZATION | DATE | TIME |

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 4.2

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

Rev. 5.18.12

# Analytical Laboratory Report

Report ID: S46018.01(01)
Generated on 03/10/2023

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

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S46018.01-S46018.05
Project: 30167840.00005 / RACER PNC
Collected Date(s): 03/07/2023
Submitted Date/Time: 03/08/2023 13:25
Sampled by: Sommer Guy
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

**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 |

**Method Summary**

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

**Sample Summary (5 samples)**

| Sample ID | Sample Tag | Matrix | Collected Date/Time |
|---|---|---|---|
| S46018.01 | MW-06-20_GW-030723 | Groundwater | 03/07/23 14:58 |
| S46018.02 | MWOS-10_GW-030723 | Groundwater | 03/07/23 15:55 |
| S46018.03 | DUP-01_GW-030723 | Groundwater | 03/07/23 00:01 |
| S46018.04 | Tripblank | Water | 03/07/23 00:01 |
| S46018.05 | MWF16-18_GW-030823 | Groundwater | 03/07/23 11:35 |

**Lab Sample ID: S46018.01**
Sample Tag: MW-06-20_GW-030723
Collected Date/Time: 03/07/2023 14:58
Matrix: Groundwater
COC Reference: 138071

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.2 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/10/23 10:45 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/09/23 17:59, 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 | 7 | 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 | 5 | 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 | 14 | 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 | |

**Lab Sample ID: S46018.01 (continued)**
Sample Tag: MW-06-20_GW-030723

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/09/23 17:59, 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 | |

**Lab Sample ID: S46018.02**
Sample Tag: MWOS-10_GW-030723
Collected Date/Time: 03/07/2023 15:55
Matrix: Groundwater
COC Reference: 138071

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.2 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/10/23 10:45 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/09/23 18:19, 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 | 7 | 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 | 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 | 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 | |

**Lab Sample ID: S46018.02 (continued)**
Sample Tag: MWOS-10_GW-030723

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/09/23 18:19, 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 | |

**Lab Sample ID: S46018.03**
Sample Tag: DUP-01_GW-030723
Collected Date/Time: 03/07/2023 00:01
Matrix: Groundwater
COC Reference: 138071

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.2 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/10/23 10:45 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/09/23 18:38, 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 | 7 | 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 | 5 | 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 | 14 | 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 | |

**Lab Sample ID: S46018.03 (continued)**
Sample Tag: DUP-01_GW-030723

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/09/23 18:38, 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 | |

**Lab Sample ID: S46018.04**
Sample Tag: Tripblank
Collected Date/Time: 03/07/2023 00:01
Matrix: Water
COC Reference: 138071

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 1 | 40ml Glass | HCL | Yes | 4.2 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/10/23 10:45 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/09/23 18:57, 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 | 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 | |

**Lab Sample ID: S46018.04 (continued)**
Sample Tag: Tripblank

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/09/23 18:57, 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: S46018.05**
Sample Tag: MWF16-18_GW-030823
Collected Date/Time: 03/07/2023 11:35
Matrix: Groundwater
COC Reference: 138071

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.2 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/10/23 10:45 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/09/23 20:15, Analyst: KAG**

| 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 | 70 | 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 | 1,070 | 10 | | ug/L | 10 | 127-18-4 | Y |

Y-Elevated reporting limit due to high target concentration

**Lab Sample ID: S46018.05 (continued)**
Sample Tag: MWF16-18_GW-030823

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/09/23 20:15, Analyst: KAG (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:S46018
Client:ARCADIS_NOVI (ARCADIS U.S., Inc.)
Project: 30167840.00005 / RACER PNC
Submitted:03/08/2023 13:25 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. | [X] Yes | [ ] No | [ ] N/A | Samples are received at 4C +/- 2C Thermometer # | IR 4.2 |
| 02. | [X] Yes | [ ] No | [ ] N/A | Received on ice/ cooling process begun | |
| 03. | [ ] Yes | [X] No | [ ] N/A | Samples shipped | |
| 04. | [ ] Yes | [X] No | [ ] N/A | Samples left in 24 hr. drop box | |
| 05. | [ ] Yes | [ ] No | [X] N/A | Are there custody seals/tape or is the drop box locked | |
| **Chain of Custody** | | | | | |
| 06. | [X] Yes | [ ] No | [ ] N/A | COC adequately filled out | |
| 07. | [X] Yes | [ ] No | [ ] N/A | COC signed and relinquished to the lab | |
| 08. | [X] Yes | [ ] No | [ ] N/A | Sample tag on bottles match COC | |
| 09. | [ ] Yes | [X] No | [ ] N/A | Subcontracting needed? Subcontacted to: | |
| **Preservation** | | | | | |
| 10. | [X] Yes | [ ] No | [ ] N/A | Do sample have correct chemical preservation | |
| 11. | [ ] Yes | [ ] No | [X] N/A | Completed pH checks on preserved samples? (no VOAs) | |
| 12. | [ ] Yes | [X] No | [ ] N/A | Did any samples need to be preserved in the lab? | |
| **Bottle Conditions** | | | | | |
| 13. | [X] Yes | [ ] No | [ ] N/A | All bottles intact | |
| 14. | [X] Yes | [ ] No | [ ] N/A | Appropriate analytical bottles are used | |
| 15. | [X] Yes | [ ] No | [ ] N/A | Merit bottles used | |
| 16. | [X] Yes | [ ] No | [ ] N/A | Sufficient sample volume received | |
| 17. | [ ] Yes | [X] No | [ ] N/A | Samples require laboratory filtration | |
| 18. | [X] Yes | [ ] No | [ ] N/A | Samples submitted within holding time | |
| 19. | [ ] Yes | [X] 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:_____

Merit Laboratories, Inc.

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

C.O.C. PAGE # _____ OF _____

138071

# CHAIN OF CUSTODY RECORD

## REPORT TO

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

## INVOICE TO

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

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 _____

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other _____

Special Instructions

| MERIT LAB NO. (FOR LAB USE ONLY) | YEAR DATE | YEAR TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | Full 8260 VOCs | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 460180.01 | 3/7/23 | 1458 | MW-06-20_GW-030723 | GW | 3 | | 3 | | | | | | X | |
| .02 | 3/7/23 | 1555 | MW05-10_GW-030723 | GW | 3 | | 3 | | | | | | X | |
| .03 | 3/7/23 | — | DUP-01_GW-030723 | GW | 3 | | 3 | | | | | | X | |
| .04 | — | — | tripblank | L | 1 | | 1 | | | | | | X | tripblank |
| .05 | 3/8/23 | 1135 | MWF16-18_GW-030823 | GW | 3 | | 3 | | | | | | X | |

| | | | |
|---|---|---|---|
| RELINQUISHED BY: SIGNATURE/ORGANIZATION: Sommer Guy ☒ Sampler | DATE: 3/8/23 | TIME: 1200 | |
| RECEIVED BY: SIGNATURE/ORGANIZATION: [illegible] | DATE: 3/8/23 | TIME: 1800 | |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION: [illegible] | DATE: 3/8/23 | TIME: 1125 | |
| RECEIVED BY: SIGNATURE/ORGANIZATION: M Chilcote | DATE: 3/8/23 | TIME: 1325 | |

RELINQUISHED BY: SIGNATURE/ORGANIZATION: _____ DATE: _____ TIME: _____
RECEIVED BY: SIGNATURE/ORGANIZATION: _____ DATE: _____ TIME: _____

SEAL NO. _____ SEAL INTACT YES ☐ NO ☐ INITIALS _____
SEAL NO. _____ SEAL INTACT YES ☐ NO ☐ INITIALS _____

NOTES: TEMP. ON ARRIVAL 4.2

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

Rev. 5.18.12

# Analytical Laboratory Report

Report ID: S46108.01(01)
Generated on 03/15/2023

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

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S46108.01-S46108.02
Project: 30167840 / Racer PNC
Collected Date(s): 03/08/2023
Submitted Date/Time: 03/09/2023 15:20
Sampled by: Leticia Ferreria
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

## 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 |

**Method Summary**

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

**Sample Summary (2 samples)**

| Sample ID | Sample Tag | Matrix | Collected Date/Time |
|---|---|---|---|
| S46108.01 | MWOS-08_GW-030823 | Groundwater | 03/08/23 13:17 |
| S46108.02 | MWF16-05_GW-030823 | Groundwater | 03/08/23 12:08 |

# Analytical Laboratory Report

**Lab Sample ID: S46108.01**
Sample Tag: MWOS-08_GW-030823
Collected Date/Time: 03/08/2023 13:17
Matrix: Groundwater
COC Reference: 138071

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 3.3 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/13/23 10:58 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/10/23 22:47, 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 | 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 | 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 | |

**Lab Sample ID: S46108.01 (continued)**
Sample Tag: MWOS-08_GW-030823

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/10/23 22:47, 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 | |

**Lab Sample ID: S46108.02**
Sample Tag: MWF16-05_GW-030823
Collected Date/Time: 03/08/2023 12:08
Matrix: Groundwater
COC Reference: 138071

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 3.3 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 03/13/23 10:58 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/10/23 23:07, 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 | 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 | 23 | 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 | 623 | 1 | | ug/L | 1 | 127-18-4 | E |

E-Concentration exceeds calibration range

**Lab Sample ID: S46108.02 (continued)**
Sample Tag: MWF16-05_GW-030823

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/10/23 23:07, Analyst: KAG (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: 03/13/23 18:45, Analyst: KAG**

| 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 |

Y-Elevated reporting limit due to high target concentration

**Lab Sample ID: S46108.02 (continued)**
Sample Tag: MWF16-05_GW-030823

**Volatile Organics - DEQ List (Replicate 01), Method: SW5030C/8260C, Run Date: 03/13/23 18:45, Analyst: KAG (continued)**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| 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 | Not detected | 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 | 550 | 10 | | ug/L | 10 | 127-18-4 | Y |
| 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 |

Y-Elevated reporting limit due to high target concentration

**Lab Sample ID: S46108.02 (continued)**
Sample Tag: MWF16-05_GW-030823

**Volatile Organics - DEQ List (Replicate 01), Method: SW5030C/8260C, Run Date: 03/13/23 18:45, Analyst: KAG (continued)**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| 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:S46108
Client:ARCADIS_NOVI (ARCADIS U.S., Inc.)
Project: 30167840 / Racer PNC
Submitted:03/09/2023 15:20 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. | [X] Yes | [ ] No | [ ] N/A | Samples are received at 4C +/- 2C Thermometer # | IR 3.3 |
| 02. | [X] Yes | [ ] No | [ ] N/A | Received on ice/ cooling process begun | |
| 03. | [ ] Yes | [X] No | [ ] N/A | Samples shipped | |
| 04. | [ ] Yes | [X] No | [ ] N/A | Samples left in 24 hr. drop box | |
| 05. | [ ] Yes | [ ] No | [X] N/A | Are there custody seals/tape or is the drop box locked | |
| **Chain of Custody** | | | | | |
| 06. | [X] Yes | [ ] No | [ ] N/A | COC adequately filled out | |
| 07. | [X] Yes | [ ] No | [ ] N/A | COC signed and relinquished to the lab | |
| 08. | [X] Yes | [ ] No | [ ] N/A | Sample tag on bottles match COC | |
| 09. | [ ] Yes | [X] No | [ ] N/A | Subcontracting needed? Subcontacted to: | |
| **Preservation** | | | | | |
| 10. | [X] Yes | [ ] No | [ ] N/A | Do sample have correct chemical preservation | |
| 11. | [ ] Yes | [ ] No | [X] N/A | Completed pH checks on preserved samples? (no VOAs) | |
| 12. | [ ] Yes | [X] No | [ ] N/A | Did any samples need to be preserved in the lab? | |
| **Bottle Conditions** | | | | | |
| 13. | [X] Yes | [ ] No | [ ] N/A | All bottles intact | |
| 14. | [X] Yes | [ ] No | [ ] N/A | Appropriate analytical bottles are used | |
| 15. | [X] Yes | [ ] No | [ ] N/A | Merit bottles used | |
| 16. | [X] Yes | [ ] No | [ ] N/A | Sufficient sample volume received | |
| 17. | [ ] Yes | [X] No | [ ] N/A | Samples require laboratory filtration | |
| 18. | [X] Yes | [ ] No | [ ] N/A | Samples submitted within holding time | |
| 19. | [ ] Yes | [X] 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:_____

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

C.O.C. PAGE # _____ OF _____

138071

# CHAIN OF CUSTODY RECORD

## REPORT TO

CONTACT NAME: Alexis Crisp
COMPANY: Arcadis
ADDRESS: 28550 Cabot Drive #500
CITY: Novi STATE: MI ZIP CODE: 48377
PHONE NO.: FAX NO.: P.O. NO.: 30167840.00005
E-MAIL ADDRESS: Tiffany.Linder@arcadis.com Alexis.Crisp@arcadis.com QUOTE NO.:

## INVOICE TO

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

PROJECT NO./NAME: 30167840 / Racer PNC
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Leticia Ferreira

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☐ STANDARD ☐ OTHER _____

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER _____

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

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

| MERIT LAB NO. (FOR LAB USE ONLY) | YEAR DATE | YEAR TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | Full VOCs | Full 8260 VOCs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 46108.01 | 03/08/23 | 1317 | MWOS-08_GW-030823 | GW | 3 | | X | | | | | | | X |
| .02 | 03/08/23 | 1208 | MWF16-05_GW-030823 | GW | 3 | | X | | | | | | | X |

| | | | |
|---|---|---|---|
| RELINQUISHED BY: SIGNATURE/ORGANIZATION ☐ Sampler | DATE 03/09/23 | TIME 1400 | |
| RECEIVED BY: SIGNATURE/ORGANIZATION | DATE 3/9/23 | TIME 14:30 | |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | DATE 3/9/23 | TIME 15:20 | |
| RECEIVED BY: SIGNATURE/ORGANIZATION | DATE 3/9/23 | TIME 1520 | |

RELINQUISHED BY: SIGNATURE/ORGANIZATION — DATE — TIME
RECEIVED BY: SIGNATURE/ORGANIZATION — DATE — TIME

SEAL NO. — SEAL INTACT YES ☐ NO ☐ — INITIALS
SEAL NO. — SEAL INTACT YES ☐ NO ☐ — INITIALS

NOTES: TEMP. ON ARRIVAL 3.3

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

Rev. 5.18.12

# Analytical Laboratory Report

Report ID: S47239.01(01)
Generated on 04/13/2023

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

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S47239.01-S47239.02
Project: 30167840.00005 / RACER PNC
Collected Date(s): 04/07/2023
Submitted Date/Time: 04/07/2023 13:35
Sampled by: Sommer Guy
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

## 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 |

**Method Summary**

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

**Sample Summary (2 samples)**

| Sample ID | Sample Tag | Matrix | Collected Date/Time |
|---|---|---|---|
| S47239.01 | tripblank | Water | 04/07/23 00:01 |
| S47239.02 | MW-16-22_GW-040723 | Groundwater | 04/07/23 11:48 |

# Analytical Laboratory Report

**Lab Sample ID: S47239.01**
Sample Tag: tripblank
Collected Date/Time: 04/07/2023 00:01
Matrix: Water
COC Reference: 150908

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 1 | 40ml Glass | HCL | Yes | 5.0 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 04/13/23 10:30 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 04/12/23 16:09, 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 | |

**Lab Sample ID: S47239.01 (continued)**
Sample Tag: tripblank

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 04/12/23 16:09, 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 | |

**Lab Sample ID: S47239.02**
Sample Tag: MW-16-22_GW-040723
Collected Date/Time: 04/07/2023 11:48
Matrix: Groundwater
COC Reference: 150908

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 5.0 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 04/12/23 10:51 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 04/12/23 05:59, Analyst: KAG**

| 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 | 300 | 10 | | ug/L | 10 | 127-18-4 | Y |

Y-Elevated reporting limit due to high target concentration

**Lab Sample ID: S47239.02 (continued)**
Sample Tag: MW-16-22_GW-040723

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 04/12/23 05:59, Analyst: KAG (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:S47239
Client:ARCADIS_NOVI (ARCADIS U.S., Inc.)
Project: 30167840.00005 / RACER PNC
Submitted: 04/07/2023 13:35 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. | [X] Yes | [ ] No | [ ] N/A | Samples are received at 4C +/- 2C Thermometer # | IR 5.0 |
| 02. | [X] Yes | [ ] No | [ ] N/A | Received on ice/ cooling process begun | |
| 03. | [ ] Yes | [X] No | [ ] N/A | Samples shipped | |
| 04. | [ ] Yes | [X] No | [ ] N/A | Samples left in 24 hr. drop box | |
| 05. | [ ] Yes | [ ] No | [X] N/A | Are there custody seals/tape or is the drop box locked | |
| **Chain of Custody** | | | | | |
| 06. | [X] Yes | [ ] No | [ ] N/A | COC adequately filled out | |
| 07. | [X] Yes | [ ] No | [ ] N/A | COC signed and relinquished to the lab | |
| 08. | [X] Yes | [ ] No | [ ] N/A | Sample tag on bottles match COC | |
| 09. | [ ] Yes | [X] No | [ ] N/A | Subcontracting needed? Subcontacted to: | |
| **Preservation** | | | | | |
| 10. | [X] Yes | [ ] No | [ ] N/A | Do sample have correct chemical preservation | |
| 11. | [ ] Yes | [ ] No | [X] N/A | Completed pH checks on preserved samples? (no VOAs) | |
| 12. | [ ] Yes | [X] No | [ ] N/A | Did any samples need to be preserved in the lab? | |
| **Bottle Conditions** | | | | | |
| 13. | [X] Yes | [ ] No | [ ] N/A | All bottles intact | |
| 14. | [X] Yes | [ ] No | [ ] N/A | Appropriate analytical bottles are used | |
| 15. | [X] Yes | [ ] No | [ ] N/A | Merit bottles used | |
| 16. | [X] Yes | [ ] No | [ ] N/A | Sufficient sample volume received | |
| 17. | [ ] Yes | [X] No | [ ] N/A | Samples require laboratory filtration | |
| 18. | [X] Yes | [ ] No | [ ] N/A | Samples submitted within holding time | |
| 19. | [ ] Yes | [X] 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:_____

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

C.O.C. PAGE # 1 OF 1 150908

# CHAIN OF CUSTODY RECORD

## REPORT TO

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

## INVOICE TO

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

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

| MERIT LAB NO. (FOR LAB USE ONLY) | COLLECTION DATE | COLLECTION TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | Full #8260 VOC's | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 47239.01 | - | - | tripblank | W | 1 | | X | | | | | | X | tripblank |
| .02 | 4/7/23 | 1148 | MW-16-22_GW-040723 | GW | 3 | | 3 | | | | | | X | |

RELINQUISHED BY: SIGNATURE/ORGANIZATION: Sommer Guy / Sampler — DATE: 4/7/23 — TIME: 1155
RECEIVED BY: SIGNATURE/ORGANIZATION: [illegible] — DATE: 4/7/23 — TIME: 1155
RELINQUISHED BY: SIGNATURE/ORGANIZATION: [illegible] — DATE: 4/7/23 — TIME: 1717
RECEIVED BY: SIGNATURE/ORGANIZATION: M Chilcote — DATE: 4/7/23 — TIME: 1335

RELINQUISHED BY: SIGNATURE/ORGANIZATION: — DATE: — TIME:
RECEIVED BY: SIGNATURE/ORGANIZATION: — DATE: — TIME:

SEAL NO. — SEAL INTACT YES ☐ NO ☐ — INITIALS
SEAL NO. — SEAL INTACT YES ☐ NO ☐ — INITIALS

NOTES: TEMP. ON ARRIVAL 5.0

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

Rev. 1.26.22

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# Analytical Report

3/28/2023

Ms. Lexi Crisp
Arcadis U.S., Inc.
7575 Huntington Park Drive
Suite 130
Columbus OH 43235

Project Name: Racer PNC
Project #: 30167840.00004
Workorder #: 2303510

Dear Ms. Lexi Crisp

The following report includes the data for the above referenced project for sample(s) received on 3/21/2023 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

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# WORK ORDER #: 2303510

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Ms. Lexi Crisp<br>Arcadis U.S., Inc.<br>7575 Huntington Park Drive<br>Suite 130<br>Columbus, OH 43235 | **BILL TO:** | Accounts Payable<br>Arcadis U.S., Inc.<br>630 Plaza Drive<br>Suite 600<br>Highlands Ranch, CO 80129 |
| **PHONE:** | | **P.O. #** | 30167840.00004 |
| **FAX:** | | **PROJECT #** | 30167840.00004 Racer PNC |
| **DATE RECEIVED:** | 03/21/2023 | **CONTACT:** | Jade White |
| **DATE COMPLETED:** | 03/28/2023 | | |

| FRACTION # | NAME | TEST | RECEIPT VAC./PRES. | FINAL PRESSURE |
|---|---|---|---|---|
| 01A | SV-01-21_SG-032023 | TO-15 | 4.9 "Hg | 9.9 psi |
| 02A | SV-02-21_SG-032023 | TO-15 | 5.1 "Hg | 10 psi |
| 03A | SV-03-21_SG_032023 | TO-15 | 5.9 "Hg | 9.9 psi |
| 04A | SV-04-21_SG-032023 | TO-15 | 5.5 "Hg | 10.1 psi |
| 05A | SV-05-21_SG-032023 | TO-15 | 5.7 "Hg | 9.8 psi |
| 06A | SV-06-21_SG-032023 | TO-15 | 6.3 "Hg | 9.8 psi |
| 07A | DUP-01_SG-032023 | TO-15 | 6.1 "Hg | 9.9 psi |
| 08A | Lab Blank | TO-15 | NA | NA |
| 09A | CCV | TO-15 | NA | NA |
| 10A | LCS | TO-15 | NA | NA |
| 10AA | LCSD | TO-15 | NA | NA |

CERTIFIED BY: Heidi Hayes DATE: 03/28/23

Technical Director

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# 2303510**

Seven 1 Liter Summa Canister samples were received on March 21, 2023. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

**Receiving Notes**

The Chain of Custody (COC) information for sample SV-03-21_SG_032023 did not match the entry on the sample tag with regard to sample identification. The information on the COC was used to process and report the sample.

**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

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

**Client Sample ID: SV-01-21_SG-032023**

**Lab ID#: 2303510-01A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 1.0 | 1.5 | 5.4 | 8.0 |

**Client Sample ID: SV-02-21_SG-032023**

**Lab ID#: 2303510-02A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 1.0 | 11 | 5.4 | 61 |
| Tetrachloroethene | 1.0 | 1.1 | 6.8 | 7.6 |

**Client Sample ID: SV-03-21_SG_032023**

**Lab ID#: 2303510-03A**

No Detections Were Found.

**Client Sample ID: SV-04-21_SG-032023**

**Lab ID#: 2303510-04A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 1.0 | 3.3 | 5.5 | 18 |

**Client Sample ID: SV-05-21_SG-032023**

**Lab ID#: 2303510-05A**

No Detections Were Found.

**Client Sample ID: SV-06-21_SG-032023**

**Lab ID#: 2303510-06A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 1.0 | 8.9 | 5.7 | 48 |

**Client Sample ID: DUP-01_SG-032023**

**Lab ID#: 2303510-07A**

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

**Client Sample ID: DUP-01_SG-032023**

**Lab ID#: 2303510-07A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 1.0 | 13 | 5.6 | 68 |
| Tetrachloroethene | 1.0 | 1.2 | 7.1 | 8.4 |

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**Client Sample ID: SV-01-21_SG-032023**

**Lab ID#: 2303510-01A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **3032726** | **Date of Collection:** | **3/20/23 11:51:00 AM** |
| **Dil. Factor:** | **2.00** | **Date of Analysis:** | **3/28/23 12:06 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Vinyl Chloride | 1.0 | Not Detected | 2.6 | Not Detected |
| 1,1-Dichloroethene | 1.0 | Not Detected | 4.0 | Not Detected |
| cis-1,2-Dichloroethene | 1.0 | Not Detected | 4.0 | Not Detected |
| Trichloroethene | 1.0 | 1.5 | 5.4 | 8.0 |
| trans-1,2-Dichloroethene | 1.0 | Not Detected | 4.0 | Not Detected |
| Tetrachloroethene | 1.0 | Not Detected | 6.8 | Not Detected |

**Container Type: 1 Liter Summa Canister**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 108 | 70-130 |
| 1,2-Dichloroethane-d4 | 96 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

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**Client Sample ID: SV-02-21_SG-032023**

**Lab ID#: 2303510-02A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **3032727** | **Date of Collection:** | **3/20/23 12:24:00 PM** |
| **Dil. Factor:** | **2.02** | **Date of Analysis:** | **3/28/23 12:35 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Vinyl Chloride | 1.0 | Not Detected | 2.6 | Not Detected |
| 1,1-Dichloroethene | 1.0 | Not Detected | 4.0 | Not Detected |
| cis-1,2-Dichloroethene | 1.0 | Not Detected | 4.0 | Not Detected |
| Trichloroethene | 1.0 | 11 | 5.4 | 61 |
| trans-1,2-Dichloroethene | 1.0 | Not Detected | 4.0 | Not Detected |
| Tetrachloroethene | 1.0 | 1.1 | 6.8 | 7.6 |

**Container Type: 1 Liter Summa Canister**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 108 | 70-130 |
| 1,2-Dichloroethane-d4 | 99 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

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**Client Sample ID: SV-03-21_SG_032023**

**Lab ID#: 2303510-03A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **3032728** | **Date of Collection:** | **3/20/23 1:14:00 PM** |
| **Dil. Factor:** | **2.08** | **Date of Analysis:** | **3/28/23 01:03 AM** |

| 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 | 108 | 70-130 |
| 1,2-Dichloroethane-d4 | 98 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

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**Client Sample ID: SV-04-21_SG-032023**

**Lab ID#: 2303510-04A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **3032729** | **Date of Collection:** | **3/20/23 2:32:00 PM** |
| **Dil. Factor:** | **2.06** | **Date of Analysis:** | **3/28/23 01:32 AM** |

| 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 | 3.3 | 5.5 | 18 |
| 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 | 109 | 70-130 |
| 1,2-Dichloroethane-d4 | 98 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: SV-05-21_SG-032023**

**Lab ID#: 2303510-05A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **3032730** | **Date of Collection:** | **3/20/23 2:09:00 PM** |
| **Dil. Factor:** | **2.06** | **Date of Analysis:** | **3/28/23 02:01 AM** |

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

**Container Type: 1 Liter Summa Canister**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 109 | 70-130 |
| 1,2-Dichloroethane-d4 | 96 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: SV-06-21_SG-032023**

**Lab ID#: 2303510-06A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **3032716** | **Date of Collection:** | **3/20/23 2:54:00 PM** |
| **Dil. Factor:** | **2.11** | **Date of Analysis:** | **3/27/23 05:03 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Vinyl Chloride | 1.0 | Not Detected | 2.7 | Not Detected |
| 1,1-Dichloroethene | 1.0 | Not Detected | 4.2 | Not Detected |
| cis-1,2-Dichloroethene | 1.0 | Not Detected | 4.2 | Not Detected |
| Trichloroethene | 1.0 | 8.9 | 5.7 | 48 |
| trans-1,2-Dichloroethene | 1.0 | Not Detected | 4.2 | Not Detected |
| Tetrachloroethene | 1.0 | Not Detected | 7.2 | Not Detected |

**Container Type: 1 Liter Summa Canister**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 110 | 70-130 |
| 1,2-Dichloroethane-d4 | 98 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: DUP-01_SG-032023**

**Lab ID#: 2303510-07A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **3032715** | **Date of Collection: 3/20/23** | |
| **Dil. Factor:** | **2.10** | **Date of Analysis: 3/27/23 04:34 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Vinyl Chloride | 1.0 | Not Detected | 2.7 | Not Detected |
| 1,1-Dichloroethene | 1.0 | Not Detected | 4.2 | Not Detected |
| cis-1,2-Dichloroethene | 1.0 | Not Detected | 4.2 | Not Detected |
| Trichloroethene | 1.0 | 13 | 5.6 | 68 |
| trans-1,2-Dichloroethene | 1.0 | Not Detected | 4.2 | Not Detected |
| Tetrachloroethene | 1.0 | 1.2 | 7.1 | 8.4 |

**Container Type: 1 Liter Summa Canister**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 110 | 70-130 |
| 1,2-Dichloroethane-d4 | 100 | 70-130 |
| 4-Bromofluorobenzene | 97 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 2303510-08A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **3032705c** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/27/23 10:24 AM** | |

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

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 112 | 70-130 |
| 1,2-Dichloroethane-d4 | 100 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: CCV**

**Lab ID#: 2303510-09A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **3032702** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/27/23 08:43 AM** | |

| Compound | %Recovery |
|---|---|
| Vinyl Chloride | 104 |
| 1,1-Dichloroethene | 92 |
| cis-1,2-Dichloroethene | 90 |
| Trichloroethene | 93 |
| trans-1,2-Dichloroethene | 90 |
| Tetrachloroethene | 95 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 1,2-Dichloroethane-d4 | 98 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 2303510-10A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **3032703** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/27/23 09:10 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Vinyl Chloride | 102 | 70-130 |
| 1,1-Dichloroethene | 86 | 70-130 |
| cis-1,2-Dichloroethene | 90 | 70-130 |
| Trichloroethene | 89 | 70-130 |
| trans-1,2-Dichloroethene | 90 | 70-130 |
| Tetrachloroethene | 98 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 95 | 70-130 |
| 1,2-Dichloroethane-d4 | 94 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 2303510-10AA**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **3032704** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/27/23 09:37 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Vinyl Chloride | 102 | 70-130 |
| 1,1-Dichloroethene | 86 | 70-130 |
| cis-1,2-Dichloroethene | 89 | 70-130 |
| Trichloroethene | 92 | 70-130 |
| trans-1,2-Dichloroethene | 90 | 70-130 |
| Tetrachloroethene | 98 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |
| 1,2-Dichloroethane-d4 | 96 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

# 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

Addtional 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 Laverty (johnlaverty@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

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

## 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 |

**Method Summary**

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

**Sample Summary (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 |

**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 | |

**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 | |

**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

**Lab Sample ID: S49704.02 (continued)**
Sample Tag: MWF7-02_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

**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

**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

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

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

Merit Laboratories, Inc.

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

# CHAIN OF CUSTODY RECORD

## REPORT TO

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

## INVOICE TO

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

PROJECT NO./NAME: 30167840.00005 / Racer PVC
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Samantha Szpuchler / Samantha Szpuchler

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☒ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

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

| MERIT LAB NO. (FOR LAB USE ONLY) | COLLECTION DATE | COLLECTION TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | FULL 8260 VOC's | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .01/.02/.03 | 6/7/23 | 1411 | MWF7-02_GW-060723 | GW | 9 | | 9 | | | | | | X | RUN MS/MSD |
| 49704.04 | 6/7/23 | 1257 | MWF16-15_GW-060723 | GW | 3 | | 3 | | | | | | X | |
| .05 | 6/7/23 | 1520 | UNKNOWN-01_GW-060723 | GW | 3 | | 3 | | | | | | X | |
| .06 | 6/7/23 | 1658 | MWF15-01_GW-060723 | GW | 3 | | 3 | | | | | | X | |
| .07 | 6/8/23 | 1050 | MW-08-21_GW-060923 | GW | 3 | | 3 | | | | | | X | |
| .08 | 6/8/23 | 1255 | MWF16-25_GW-060823 | GW | 3 | | 3 | | | | | | X | |
| .09 | 6/8/23 | 1433 | MWF16-17_GW-060823 | GW | 3 | | 3 | | | | | | X | |
| .10 | 6/8/23 | 1558 | MWF16-12_GW-060823 | GW | 3 | | 3 | | | | | | X | |
| .11 | 6/9/23 | 1227 | MWF16-06_GW-060923 | GW | 3 | | 3 | | | | | | X | |
| .12 | 6/8/23 | 1735 | TW-12-22_GW-060823 | GW | 3 | | 3 | | | | | | X | |
| | 6/9/23 | | ~~MWF16-16_GW-060923~~ | GW | 3 | | 3 | | | | | | X | |
| .13 | — | — | TRIP BLANK | W | 1 | | 1 | | | | | | X | |

| | | | |
|---|---|---|---|
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | ☒ Sampler | DATE 6/9/23 | TIME 1701 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | NOVI cold storage / Arcadis | DATE 6/9/23 | TIME 1701 |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | DATE 6/13/23 | TIME 1335 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE 6/13/23 | TIME 1335 |

| | | | |
|---|---|---|---|
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | DATE 6/13/23 | TIME 1435 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | Chilcote | DATE 6/13/23 | TIME 1435 |

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 2.4

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

Rev. 1.26.22

# 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

Addtional 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 Laverty (johnlaverty@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

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

**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 |

**Method Summary**

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

**Sample Summary (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 |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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

**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

**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

**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

**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 | |

**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 | |

**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 | |

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



Prepared by Merit Laboratories

Merit Laboratories, Inc.

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Phone (517) 332-0167 Fax (517) 332-4034
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C.O.C. PAGE # _____ OF _____ 156519

# CHAIN OF CUSTODY RECORD

## REPORT TO

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

## INVOICE TO

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

PROJECT NO./NAME: 30167840.00005/RACER PNC
SAMPLER(S) - PLEASE PRINT/SIGN NAME: SierraSider

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER _____

DELIVERABLES REQUIRED ☒ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER _____

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

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

| MERIT LAB NO. (FOR LAB USE ONLY) | COLLECTION DATE | COLLECTION TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | Full 8260 VOCs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 49707.01 | 6/08/2023 | 1110 | MWOS-09R_GW-060823 | GW | 3 | | 3 | | | | | | X |
| .02 | 6/08/2023 | N/A | DUP-03_GW-060823 | GW | 3 | | 3 | | | | | | X |
| .03 | 6/08/2023 | 1220 | MWOS-08_GW-060823 | GW | 3 | | 3 | | | | | | X |
| .04 | 6/08/2023 | 1415 | MWF16-05_GW-060823 | GW | 3 | | 3 | | | | | | X |
| .05 | 6/08/2023 | 1525 | MWF16-18_GW-060823 | GW | 3 | | 3 | | | | | | X |
| .06 | 6/08/2023 | 1630 | MW-09-22_GW-060823 | GW | 3 | | 3 | | | | | | X |
| .07 ~~.06~~ | 6/9/23 | — | Trip Blank | W | 1 | | 1 | | | | | | X |
| (mc) | | | | | | | | | | | | | |

| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
|---|---|---|---|
| | Sierra Sider ☒ Sampler | 6/8/23 | 1700 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | Samantha Sepulveda | 6/8/23 | 1700 |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | Samantha Sepulveda | 6/9/23 | 1701 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | NOVI cold storage / Arcadis | 6/9/23 | 1701 |

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

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

Rev. 1.26.22

# 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

Addtional 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 Laverty (johnlaverty@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

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

## 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 |

**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

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

Merit Laboratories, Inc.

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

C.O.C. PAGE # _____ OF _____ 156520

# CHAIN OF CUSTODY RECORD

## REPORT TO

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

## INVOICE TO

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

PROJECT NO./NAME: 30167840.00005 / Racer PNC
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 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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other _____

Special Instructions

| MERIT LAB NO. (FOR LAB USE ONLY) | COLLECTION DATE | COLLECTION TIME | SAMPLE TAG. IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | Full 8260 VOCs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 497708.01 | 6/9/23 | 1332 | MWF16-16_GW-060923 | GW | 3 | | 3 | | | | | | X |
| | | | TRIP BLANK | W | 1 | | 1 | | | | | | X |

| RELINQUISHED BY: SIGNATURE/ORGANIZATION | ☐ Sampler | DATE | TIME |
|---|---|---|---|
| Samantha Spaicher / Arcadis | | 6/9/23 | 1701 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| Novi cold storage / Arcadis | | 6/9/23 | 1701 |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| Megan Lee | | 6/13/23 | 1335 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| | | 6/13/23 | 1335 |

| RELINQUISHED BY: SIGNATURE/ORGANIZATION | DATE | TIME |
|---|---|---|
| M Ailcot | 6/13/23 | 1435 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | DATE | TIME |
| | 6/13/23 | 1435 |

| SEAL NO. | SEAL INTACT YES ☐ NO ☐ | INITIALS |
|---|---|---|
| SEAL NO. | SEAL INTACT YES ☐ NO ☐ | INITIALS |

NOTES: TEMP. ON ARRIVAL 2.4

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

Rev. 1.26.22

# 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

Addtional 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 Laverty (johnlaverty@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

**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 |

**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 | |

**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

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

ARCADIS

ID#:

# CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page ___ of ___

Lab Work Order #

**Send Results to:**

Contact & Company Name: Alexis Crisp / Arcadis
Telephone:
Address: 28550 Cabot Dr #500
Fax:
City: Novi State: MI Zip: 48377
E-mail Address: tiffany.linder@arcadis.com alexis.crisp@arcadis.com
Project Name/Location (City, State): Racer Pinc / Pontiac, MI
Project #: 30167840.00005
Sampler's Printed Name: Samantha Szpaichler
Sampler's Signature:

| Sample ID | Collection Date | Collection Time | Type (✓) Comp | Type (✓) Grab | Matrix | Preservative | Filtered (✓) | # of Containers | Container Information | Full 8260 VOCs | PARAMETER ANALYSIS & METHOD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | HCL | | 3 | 1. | | |
| MWF16-22_GW-060923 | 6/9/23 | 1438 | | ✓ | GW | | | | | X | |
| ~~TRIP BLANK~~ | 6/9/23 | — | | ✓ | W | | | | | X | |

**Keys**

**Preservation Key:**
A. $H_2SO_4$
B. HCL
C. $HNO_3$
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

**Container Information Key:**
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

**Matrix Key:**
SO - Soil
W - Water
T - Tissue
SE - Sediment
SL - Sludge
A - Air
NL - NAPL/Oil
SW - Sample W
Other: GW =

**REMARKS**

49709.01

**Special Instructions/Comments:**
Please Bill to: Accounts Payable / Arcadis / accountspayable.administration@arcadis.com 630 Plaza Dr #600 Highlands Ranch, CO 80129

☐ **Special QA/QC Instructions(✓):**

Deliverables Reqd: STD / Level II
TAT: STD

| Laboratory Information and Receipt | | Relinquished By | Received By | Relinquished By | Laboratory Received By |
|---|---|---|---|---|---|
| Lab Name: Merit Laboratories, Inc | Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact | Printed Name: Samantha Szpaichler | Printed Name: Novi cold storage | Printed Name: | Printed Name: M Chilcote |
| ☐ Cooler packed with ice (✓) | | Signature: | Signature: — | Signature: | Signature: M Chilcote |
| Specify Turnaround Requirements: | Sample Receipt: | Firm: Arcadis | Firm/Courier: Arcadis | Firm/Courier: | Firm: 1438 Merit |
| Shipping Tracking #: | Condition/Cooler Temp: _____ | Date/Time: 6/9/23 1701 | Date/Time: 6/9/23 1701 | Date/Time: 6/13/23 1335 | Date/Time: 6/13/23 1435 |

20730826 CofC AR Form 08.27.2015

**Distribution:** WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by Arcadis

Megan Lee 6/13/23 1335

IR 2.4

# Analytical Laboratory Report

Report ID: S49710.01(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

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

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

Table of Contents

Cover Page (Page 1)
General Report Notes (Page 2)
Report Narrative (Page 2)
Laboratory Certifications (Page 3)
Qualifier Descriptions (Page 3)
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Maya Murshak
Technical Director

## General Report Notes

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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 |

**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 | |

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



Prepared by Merit Laboratories

ARCADIS

ID#:

# CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page ___ of ___

Lab Work Order #

**Send Results to:**

Contact & Company Name: Alexis Crisp/Arcadis

Telephone:

Address: 28550 Cabot Dr #500

Fax:

City: Novi State: MI Zip: 48377

E-mail Address: Tiffany.Linder@arcadis.com Alexis.crisp@arcadis.com

Project Name/Location (City, State): RacerPNC | Bristol, MI

Project #: 30167840.00005

Sampler's Printed Name: Samantha Szpaichler

Sampler's Signature:

| Sample ID | Collection Date | Collection Time | Type (✓) Comp | Type (✓) Grab | Matrix | Preservative | Filtered (✓) | # of Containers | Container Information | PARAMETER ANALYSIS & METHOD: Full 8260 VOCs |
|---|---|---|---|---|---|---|---|---|---|---|
| MWOS-10_GW-061223 | 6/12/23 | 1233 | | ✓ | GW | B. | | 3 | 1. | X |
| ~~Trip Blank~~ | 6/12/23 | - | | ✓ | W | | | | | X |

**Keys**

**Preservation Key:**
A. $H_2SO_4$
B. HCl
C. $HNO_3$
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

**Container Information Key:**
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

**Matrix Key:**
SO - Soil; SE - Sediment; NL - NAPL/Oil
W - Water; SL - Sludge; SW - Sample Wipe
T - Tissue; A - Air; Other: GW=GW WQ

**REMARKS**

49710.01

**Special Instructions/Comments:**

Please Accounts Payable/Arcadis/accounts payable.administration@arcadis.com
Bill to: 630 Plaza Dr #6000 Highlands Ranch, CO 80129

☐ Special QA/QC Instructions(✓):

Deliverables Required: STD/Level II
TAT: STD.

| Laboratory Information and Receipt | | Relinquished By | Received By | Relinquished By | Laboratory Received By |
|---|---|---|---|---|---|
| Lab Name: Merit Laboratories, inc. | Cooler Custody Seal (✓) | Printed Name: Samantha Szpaichler | Printed Name: Novi cold storage | Printed Name: | Printed Name: M Chilcote |
| ☐ Cooler packed with ice (✓) | ☐ Intact ☐ Not Intact | Signature: | Signature: — | Signature: | Signature: M Chilcote |
| Specify Turnaround Requirements: | Sample Receipt: | Firm: Arcadis | Firm/Courier: Arcadis | Firm/Courier: | Firm: Merit |
| Shipping Tracking #: | Condition/Cooler Temp: _____ | Date/Time: 6/12/23 14:03 | Date/Time: 6/12/23 14:03 | Date/Time: | Date/Time: 6/13/23 1435 |

6/13/23 1335

6/13/23 1435

20730826 CofC AR Form 08.27.2015

**Distribution:** WHITE – Laboratory returns with results; YELLOW – Lab copy; PINK – Retained by Arcadis

Kleaven Lee 6/13/23 1335

IR 2.4

# 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

Addtional 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 Laverty (johnlaverty@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

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

## 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 |

**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 |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

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

Merit Laboratories, Inc.

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

# CHAIN OF CUSTODY RECORD

## REPORT TO

CONTACT NAME: Alexis Crisp
COMPANY: Arcadis
ADDRESS: 28550 Cabot Dr #500
CITY: Novi STATE: MI ZIP CODE: 48377
PHONE NO. 1: CELL NO.: P.O. NO.: 30167840.00005
E-MAIL ADDRESS: tiffany.linder@arcadis.com alexis.crisp@arcadis.com QUOTE NO.:

## INVOICE TO

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

PROJECT NO./NAME: Racer NPL / ~~FORD~~ 30167840.00005
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Samantha Spraichler / Samantha Spraichler

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER _____

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER _____

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other _____

Special Instructions

| MERIT LAB NO. (FOR LAB USE ONLY) | COLLECTION DATE | COLLECTION TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | Full 8260 VOCs | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ~~6/5/23~~ | — | ~~MW-02-17_060523~~ | GW | 6 | | 6 | | | | | | | |
| 49444.01 | 6/6/23 | 1050 | MW-02-17_GW-060623 | GW | 3 | | 3 | | | | | | X | |
| .02 | 6/6/23 | 1145 | MW-07-20_GW-060623 | GW | 3 | | 3 | | | | | | X | |
| .03 | 6/6/23 | 1245 | MW-05-18_GW-060623 | GW | 3 | | 3 | | | | | | X | |
| .04 | 6/6/23 | 1448 | MW-06-20_GW-060623 | GW | 3 | | 3 | | | | | | X | |
| .05 | 6/6/23 | — | DUP-01_GW-060623 | GW | 3 | | 3 | | | | | | X | |
| .06 | 6/6/23 | 1558 | MWF16-23_GW-060623 | GW | 3 | | 3 | | | | | | X | |
| .07 | 6/7/23 | 1145 | MWF16-07_GW-060723 | GW | 3 | | 3 | | | | | | X | |
| | ~~6/7/23~~ | | ~~MWF16-15_GW-060723~~ | GW | 3 | | 3 | | | | | | X | |
| .08 | 6/7/23 | — | TRIP BLANK | W | 1 | | 1 | | | | | | | TRIP BLANK |

| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
|---|---|---|---|
| ☐ Sampler | Samantha Spraichler - Arcadis | 6/7/23 | 1238 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| | | 6/7/23 | 1238 |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| | | 6/7/23 | 15:0 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| | | 6/7/23 | 1510 |

| RELINQUISHED BY: SIGNATURE/ORGANIZATION | DATE | TIME |
|---|---|---|
| RECEIVED BY: SIGNATURE/ORGANIZATION | DATE | TIME |

| SEAL NO. | SEAL INTACT YES ☐ NO ☐ | INITIALS |
|---|---|---|
| SEAL NO. | SEAL INTACT YES ☐ NO ☐ | INITIALS |

NOTES: TEMP. ON ARRIVAL 2.8

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

Rev. 1.26.22

# 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

Addtional 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 Laverty (johnlaverty@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

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

## 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 |

**Method Summary**

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

**Sample Summary (8 samples)**

| Sample ID | Sample Tag | Matrix | Collected Date/Time |
|---|---|---|---|
| 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 |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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 | |

**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

**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

**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

**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

**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

**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

**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

**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

**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

**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 | |

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

Merit Laboratories, Inc.

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

C.O.C. PAGE # 1 OF 1

150909

# CHAIN OF CUSTODY RECORD

## REPORT TO

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

## INVOICE TO

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

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

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

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

| MERIT LAB NO. (FOR LAB USE ONLY) | COLLECTION DATE | COLLECTION TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | Full 8260 VOC's | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 44/50.01 | — | — | tripblank | W | 1 | | 1 | | | | | | X | tripblank |
| .02 | 6/6/23 | 1000 | MW-15-22_GW-060623 | GW | 3 | | 3 | | | | | | X | |
| .03 | 6/6/23 | 1345 | MW-13-22_GW-060623 | GW | 3 | | 3 | | | | | | X | |
| .04, .05, .06 | 6/6/23 | 1440 | MW-14-22_GW-060623 | GW | 9 | | 9 | | | | | | X | Run MS/MSD |
| .07 | 6/6/23 | 1600 | MW-16-22_GW-060623 | GW | 3 | | 3 | | | | | | X | |
| .08 | 6/6/23 | — | DUP-02_GW-060623 | GW | 3 | | 3 | | | | | | X | |

| | | | |
|---|---|---|---|
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | Sommer Guy ☒ Sampler | DATE 6/6/23 | TIME 1630 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE 6/6/23 | TIME 1630 |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | DATE 6/7/23 | TIME 1230 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE 6/7/23 | TIME 1730 |

| | | | |
|---|---|---|---|
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | DATE 6/7/23 | TIME 15:10 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE 6/7/23 | TIME 1510 |

SEAL NO. | SEAL INTACT YES ☐ NO ☐ | INITIALS
SEAL NO. | SEAL INTACT YES ☐ NO ☐ | INITIALS

NOTES: TEMP. ON ARRIVAL 2.8

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

Rev. 1.26.22

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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

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# WORK ORDER #: 2306190

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Ms. Lexi Crisp<br>Arcadis U.S., Inc.<br>7575 Huntington Park Drive<br>Suite 130<br>Columbus, OH 43235 | **BILL TO:** | Accounts Payable<br>Arcadis U.S., Inc.<br>630 Plaza Drive<br>Suite 600<br>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 | | |

| FRACTION # | NAME | TEST | RECEIPT VAC./PRES. | FINAL PRESSURE |
|---|---|---|---|---|
| 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: Heidi Hayes DATE: 06/17/23

Technical Director

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

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# 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 |

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# 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 |

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**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 |

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**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 |

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**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 |

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**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 |

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**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 |

eurofins | 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 |

eurofins | Air Toxics

**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 |

eurofins | Air Toxics

**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 |

eurofins | 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 |

eurofins | Air Toxics

**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 |

eurofins | Air Toxics

**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 |

# Analytical Laboratory Report

Report ID: S53170.01(01)
Generated on 09/13/2023

Report to

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

Phone: 810-225-1909 FAX: 248-994-2241
Email: Alexis.Crisp@arcadis.com

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S53170.01-S53170.02
Project: Racer PNC / 30167840.00005
Collected Date(s): 09/07/2023
Submitted Date/Time: 09/08/2023 14:50
Sampled by: Sommer Guy
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

## 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/IEC 17025:2017 | #69699 |
| WBENC | #2005110032 |
| Ohio VAP | #CL0002 |
| Indiana DOH | #C-MI-07 |
| New York NELAC | #11814 |
| North Carolina DENR | #680 |
| North Carolina DOH | #26702 |
| Pennsylvania DEP | #68-05884 |
| Wisconsin DNR | FID# 399147320 |

**Qualifier Descriptions**

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

**Glossary of Abbreviations**

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

**Method Summary**

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

# Analytical Laboratory Report

**Sample Summary (2 samples)**

| Sample ID | Sample Tag | Matrix | Collected Date/Time |
|---|---|---|---|
| S53170.01 | Trip Blank | Liquid | 09/07/23 00:01 |
| S53170.02 | MW-16-22_GW-090723 | Groundwater | 09/07/23 14:43 |

# Analytical Laboratory Report

**Lab Sample ID: S53170.01**
Sample Tag: Trip Blank
Collected Date/Time: 09/07/2023 00:01
Matrix: Liquid
COC Reference: 141362

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 1 | 40ml Glass | HCL | Yes | 4.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/13/23 10:41 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/12/23 14:11, 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 | 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 | |

**Lab Sample ID: S53170.01 (continued)**
Sample Tag: Trip Blank

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/12/23 14:11, 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: S53170.02**
Sample Tag: MW-16-22_GW-090723
Collected Date/Time: 09/07/2023 14:43
Matrix: Groundwater
COC Reference: 141362

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/13/23 10:43 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/13/23 06:55, 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 | 120 | 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 | 170 | 10 | | ug/L | 10 | 127-18-4 | Y |

Y-Elevated reporting limit due to high target concentration

**Lab Sample ID: S53170.02 (continued)**
Sample Tag: MW-16-22_GW-090723

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/13/23 06:55, 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: S53170
Client: ARCADIS_NOVI (Arcadis US, Inc. - Novi)
Project: Racer PNC / 30167840.00005
Submitted: 09/08/2023 14:50 Login User: MMC

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

Phone: 810-225-1909 FAX: 248-994-2241
Email: Alexis.Crisp@arcadis.com

| Selection | | | | Description | Note |
|---|---|---|---|---|---|
| **Sample Receiving** | | | | | |
| 01. | [X] Yes | [ ] No | [ ] N/A | Samples are received at 4C +/- 2C Thermometer # | IR 4.5 |
| 02. | [X] Yes | [ ] No | [ ] N/A | Received on ice/ cooling process begun | |
| 03. | [ ] Yes | [X] No | [ ] N/A | Samples shipped | |
| 04. | [ ] Yes | [X] No | [ ] N/A | Samples left in 24 hr. drop box | |
| 05. | [ ] Yes | [ ] No | [X] N/A | Are there custody seals/tape or is the drop box locked | |
| **Chain of Custody** | | | | | |
| 06. | [X] Yes | [ ] No | [ ] N/A | COC adequately filled out | |
| 07. | [X] Yes | [ ] No | [ ] N/A | COC signed and relinquished to the lab | |
| 08. | [X] Yes | [ ] No | [ ] N/A | Sample tag on bottles match COC | |
| 09. | [ ] Yes | [X] No | [ ] N/A | Subcontracting needed? Subcontacted to: | |
| **Preservation** | | | | | |
| 10. | [X] Yes | [ ] No | [ ] N/A | Do sample have correct chemical preservation | |
| 11. | [ ] Yes | [ ] No | [X] N/A | Completed pH checks on preserved samples? (no VOAs) | |
| 12. | [ ] Yes | [X] No | [ ] N/A | Did any samples need to be preserved in the lab? | |
| **Bottle Conditions** | | | | | |
| 13. | [X] Yes | [ ] No | [ ] N/A | All bottles intact | |
| 14. | [X] Yes | [ ] No | [ ] N/A | Appropriate analytical bottles are used | |
| 15. | [X] Yes | [ ] No | [ ] N/A | Merit bottles used | |
| 16. | [X] Yes | [ ] No | [ ] N/A | Sufficient sample volume received | |
| 17. | [ ] Yes | [X] No | [ ] N/A | Samples require laboratory filtration | |
| 18. | [X] Yes | [ ] No | [ ] N/A | Samples submitted within holding time | |
| 19. | [ ] Yes | [X] 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: _____

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

C.O.C. PAGE # 1 OF 1

141362

# CHAIN OF CUSTODY RECORD

## REPORT TO

CONTACT NAME: Alexis Crisp
COMPANY: Arcadis
ADDRESS: 28550 Cabot Dr #500
CITY: Novi STATE: MI ZIP CODE:
PHONE NO.: FAX NO.: P.O. NO.:
E-MAIL ADDRESS: Alexis.crisp@arcadis.com tiffany.linder@arcadis.com QUOTE NO.:

## INVOICE TO

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

PROJECT NO./NAME: Racer PNC | 30167840.00005
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

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

| MERIT LAB NO. FOR LAB USE ONLY | YEAR DATE | YEAR TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | VOC's (8260) | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 53170.01 | – | – | tripblank | L | 1 | | 1 | | | | | | X | tripblank |
| .02 | 9/1/23 | 1443 | MW-16-22_GW-090723 | GW | 3 | | 3 | | | | | | X | |

RELINQUISHED BY: SIGNATURE/ORGANIZATION: Sommer Guy / Arcadis ☒ Sampler DATE: 9/8/23 TIME: 1400
RECEIVED BY: SIGNATURE/ORGANIZATION: DATE: 9/8/23 TIME: 1420
RELINQUISHED BY: SIGNATURE/ORGANIZATION: DATE: 9/8/23 TIME: 14:50
RECEIVED BY: SIGNATURE/ORGANIZATION: M Chilcote DATE: 9/8/23 TIME: 1450

RELINQUISHED BY: SIGNATURE/ORGANIZATION: DATE: TIME:
RECEIVED BY: SIGNATURE/ORGANIZATION: DATE: TIME:

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 4.5

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

Rev. 5.18.1

# Analytical Laboratory Report

Report ID: S52760.01(01)
Generated on 09/05/2023

Report to

Attention: Alexis Crisp
Arcadis US, Inc.
7575 Huntington Park Drive, Suite 130
Columbus, OH 43235

Phone: 810-225-1909 FAX:
Email: Alexis.Crisp@arcadis.com

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S52760.01-S52760.05
Project: 30167840.00005 / RACER PNC
Collected Date(s): 08/28/2023 - 08/29/2023
Submitted Date/Time: 08/29/2023 14:20
Sampled by: Kaylee DeRoo
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

## 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/IEC 17025:2017 | #69699 |
| WBENC | #2005110032 |
| Ohio VAP | #CL0002 |
| Indiana DOH | #C-MI-07 |
| New York NELAC | #11814 |
| North Carolina DENR | #680 |
| North Carolina DOH | #26702 |
| Pennsylvania DEP | #68-05884 |
| Wisconsin DNR | FID# 399147320 |

**Qualifier Descriptions**

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

**Glossary of Abbreviations**

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

**Method Summary**

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

**Sample Summary (5 samples)**

| Sample ID | Sample Tag | Matrix | Collected Date/Time |
|---|---|---|---|
| S52760.01 | MWOS-10_GW-082823 | Groundwater | 08/28/23 14:50 |
| S52760.02 | MW-08-21_GW-082823 | Groundwater | 08/28/23 16:00 |
| S52760.03 | Trip Blank | Water | 08/28/23 00:01 |
| S52760.04 | MWOS-08_GW-082923 | Groundwater | 08/29/23 10:45 |
| S52760.05 | MWOS-09R_GW-082923 | Groundwater | 08/29/23 12:10 |

**Lab Sample ID: S52760.01**
Sample Tag: MWOS-10_GW-082823
Collected Date/Time: 08/28/2023 14:50
Matrix: Groundwater
COC Reference: 164393

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 3.0 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/05/23 11:11 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/01/23 19:35, 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 | 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 | 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 | 10 | 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 | |

**Lab Sample ID: S52760.01 (continued)**
Sample Tag: MWOS-10_GW-082823

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/01/23 19:35, 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 | |

**Lab Sample ID: S52760.02**
Sample Tag: MW-08-21_GW-082823
Collected Date/Time: 08/28/2023 16:00
Matrix: Groundwater
COC Reference: 164393

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 3.0 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/05/23 11:11 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/01/23 19:58, 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 | 6 | 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 | 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 | 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 | |

**Lab Sample ID: S52760.02 (continued)**
Sample Tag: MW-08-21_GW-082823

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/01/23 19:58, 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 | |

**Lab Sample ID: S52760.03**
Sample Tag: Trip Blank
Collected Date/Time: 08/28/2023 00:01
Matrix: Water
COC Reference: 164393

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 1 | 40ml Glass | HCL | Yes | 3.0 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/05/23 11:11 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/01/23 16:03, 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 | 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 | |

**Lab Sample ID: S52760.03 (continued)**
Sample Tag: Trip Blank

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/01/23 16:03, 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 | |

**Lab Sample ID: S52760.04**
Sample Tag: MWOS-08_GW-082923
Collected Date/Time: 08/29/2023 10:45
Matrix: Groundwater
COC Reference: 164393

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 3.0 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/05/23 11:11 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/01/23 20:22, 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 | 1 | 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 | |

**Lab Sample ID: S52760.04 (continued)**
Sample Tag: MWOS-08_GW-082923

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/01/23 20:22, 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 | |

**Lab Sample ID: S52760.05**
Sample Tag: MWOS-09R_GW-082923
Collected Date/Time: 08/29/2023 12:10
Matrix: Groundwater
COC Reference: 164393

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 3.0 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/05/23 11:11 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/01/23 20:46, 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 | 3 | 1 | | ug/L | 1 | 75-34-3 | |
| cis-1,2-Dichloroethene | 19 | 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 | 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 | 16 | 1 | | ug/L | 1 | 127-18-4 | |
| trans-1,4-Dichloro-2-butene | Not detected | 1 | | ug/L | 1 | 110-57-6 | |

**Lab Sample ID: S52760.05 (continued)**
Sample Tag: MWOS-09R_GW-082923

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/01/23 20:46, 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: S52760
Client: ARCADIS_NOVI (ARCADIS U.S., Inc.)
Project: 30167840.00005 / RACER PNC
Submitted: 08/29/2023 14:20 Login User: MMC

Attention: Alexis Crisp
Address: Arcadis US, Inc.
7575 Huntington Park Drive, Suite 130
Columbus, OH 43235

Phone: 810-225-1909 FAX:
Email: Alexis.Crisp@arcadis.com

| Selection | | | | Description | Note |
|---|---|---|---|---|---|
| **Sample Receiving** | | | | | |
| 01. | [X] Yes | [ ] No | [ ] N/A | Samples are received at 4C +/- 2C Thermometer # | IR 3.0 |
| 02. | [X] Yes | [ ] No | [ ] N/A | Received on ice/ cooling process begun | |
| 03. | [ ] Yes | [X] No | [ ] N/A | Samples shipped | |
| 04. | [ ] Yes | [X] No | [ ] N/A | Samples left in 24 hr. drop box | |
| 05. | [ ] Yes | [ ] No | [X] N/A | Are there custody seals/tape or is the drop box locked | |
| **Chain of Custody** | | | | | |
| 06. | [X] Yes | [ ] No | [ ] N/A | COC adequately filled out | |
| 07. | [X] Yes | [ ] No | [ ] N/A | COC signed and relinquished to the lab | |
| 08. | [X] Yes | [ ] No | [ ] N/A | Sample tag on bottles match COC | |
| 09. | [ ] Yes | [X] No | [ ] N/A | Subcontracting needed? Subcontacted to: | |
| **Preservation** | | | | | |
| 10. | [X] Yes | [ ] No | [ ] N/A | Do sample have correct chemical preservation | |
| 11. | [ ] Yes | [ ] No | [X] N/A | Completed pH checks on preserved samples? (no VOAs) | |
| 12. | [ ] Yes | [X] No | [ ] N/A | Did any samples need to be preserved in the lab? | |
| **Bottle Conditions** | | | | | |
| 13. | [X] Yes | [ ] No | [ ] N/A | All bottles intact | |
| 14. | [X] Yes | [ ] No | [ ] N/A | Appropriate analytical bottles are used | |
| 15. | [X] Yes | [ ] No | [ ] N/A | Merit bottles used | |
| 16. | [X] Yes | [ ] No | [ ] N/A | Sufficient sample volume received | |
| 17. | [ ] Yes | [X] No | [ ] N/A | Samples require laboratory filtration | |
| 18. | [X] Yes | [ ] No | [ ] N/A | Samples submitted within holding time | |
| 19. | [ ] Yes | [X] 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: _____

Merit Laboratories, Inc.

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

C.O.C. PAGE # 1 OF 1

164393

# CHAIN OF CUSTODY RECORD

## REPORT TO

CONTACT NAME: Lexi Crisp
COMPANY: Arcadis
ADDRESS: 7575 Huntington Park Drive, Suite 130
CITY: Columbus STATE: OH ZIP CODE: 43235
PHONE NO.: 614-985-9163 CELL NO.:
P.O. NO.: 30167840.00005
E-MAIL ADDRESS: Alexis.Crisp@arcadis.com QUOTE NO.:

## INVOICE TO

☐ SAME

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

PROJECT NO./NAME: 30167840.00005/RALER PNC
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Kaylee DeRoo/Kaylee DeRoo

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☒ EDD ☐ OTHER

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

| MERIT LAB NO. FOR LAB USE ONLY | COLLECTION DATE | COLLECTION TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | 8260 | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 52760.01 | 8/28/23 | 1450 | MWOS-10_GW-082823 | GW | 3 | | X | | | | | | X | |
| .02 | 8/28/23 | 1600 | MW-08-21_GW-082823 | GW | 3 | | X | | | | | | X | |
| .03 | — | — | Trip blank | W | 1 | | X | | | | | | X | Trip blank |
| .04 | 8/29/23 | 1045 | MWOS-08_GW-082923 | GW | 3 | | X | | | | | | X | |
| .05 | 8/29/23 | 1210 | MWOS-09R_GW-082923 | GW | 3 | | X | | | | | | X | |

| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
|---|---|---|---|
| | Kaylee DeRoo/Arcadis ☒ Sampler | 8/29/23 | 1255 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| | | 8/29/23 | 18:55 |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| | | 8/29/23 | 14:20 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| | | 8/29/23 | 1420 |

| RELINQUISHED BY: SIGNATURE/ORGANIZATION | DATE | TIME |
|---|---|---|
| | | |
| RECEIVED BY: SIGNATURE/ORGANIZATION | DATE | TIME |
| | | |

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 3.0

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

Rev. 1.26.2

# Analytical Laboratory Report

Report ID: S52802.01(01)
Generated on 09/05/2023

Report to

Attention: Alexis Crisp
Arcadis US, Inc.
7575 Huntington Park Drive, Suite 130
Columbus, OH 43235

Phone: 810-225-1909 FAX:
Email: Alexis.Crisp@arcadis.com

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S52802.01-S52802.04
Project: 30167840.00005 / RACER PNC
Collected Date(s): 08/29/2023
Submitted Date/Time: 08/30/2023 13:20
Sampled by: Kaylee DeRoo
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

## 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/IEC 17025:2017 | #69699 |
| WBENC | #2005110032 |
| Ohio VAP | #CL0002 |
| Indiana DOH | #C-MI-07 |
| New York NELAC | #11814 |
| North Carolina DENR | #680 |
| North Carolina DOH | #26702 |
| Pennsylvania DEP | #68-05884 |
| Wisconsin DNR | FID# 399147320 |

**Qualifier Descriptions**

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

**Glossary of Abbreviations**

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

**Method Summary**

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

**Sample Summary (4 samples)**

| Sample ID | Sample Tag | Matrix | Collected Date/Time |
|---|---|---|---|
| S52802.01 | MW-06-20_GW-082923 | Groundwater | 08/29/23 13:30 |
| S52802.02 | MWF16-23_GW-082923 | Groundwater | 08/29/23 14:40 |
| S52802.03 | DUP-01_GW-082923 | Groundwater | 08/29/23 00:01 |
| S52802.04 | Trip Blank | Water | 08/29/23 00:01 |

**Lab Sample ID: S52802.01**
Sample Tag: MW-06-20_GW-082923
Collected Date/Time: 08/29/2023 13:30
Matrix: Groundwater
COC Reference: 164394

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.1 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/05/23 11:21 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/02/23 03:49, 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 | 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 | 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 | 9 | 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 | |

**Lab Sample ID: S52802.01 (continued)**
Sample Tag: MW-06-20_GW-082923

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/02/23 03:49, 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 | |

**Lab Sample ID: S52802.02**
Sample Tag: MWF16-23_GW-082923
Collected Date/Time: 08/29/2023 14:40
Matrix: Groundwater
COC Reference: 164394

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.1 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/05/23 11:21 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/02/23 04:13, 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 | 4 | 1 | | ug/L | 1 | 75-34-3 | |
| cis-1,2-Dichloroethene | 3 | 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 | 16 | 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 | |

**Lab Sample ID: S52802.02 (continued)**
Sample Tag: MWF16-23_GW-082923

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/02/23 04:13, 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 | |

**Lab Sample ID: S52802.03**
Sample Tag: DUP-01_GW-082923
Collected Date/Time: 08/29/2023 00:01
Matrix: Groundwater
COC Reference: 164394

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.1 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/05/23 11:21 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/02/23 04:36, 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 | 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 | 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 | 9 | 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 | |

**Lab Sample ID: S52802.03 (continued)**
Sample Tag: DUP-01_GW-082923

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/02/23 04:36, 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 | |

**Lab Sample ID: S52802.04**
Sample Tag: Trip Blank
Collected Date/Time: 08/29/2023 00:01
Matrix: Water
COC Reference: 164394

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 1 | 40ml Glass | HCL | Yes | 4.1 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/05/23 11:54 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/02/23 01:28, 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 | |

**Lab Sample ID: S52802.04 (continued)**
Sample Tag: Trip Blank

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/02/23 01:28, 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 | |

# Merit Laboratories Login Checklist

Lab Set ID: S52802
Client: ARCADIS_NOVI (ARCADIS U.S., Inc.)
Project: 30167840.00005 / RACER PNC
Submitted: 08/30/2023 13:20 Login User: MMC

Attention: Alexis Crisp
Address: Arcadis US, Inc.
7575 Huntington Park Drive, Suite 130
Columbus, OH 43235

Phone: 810-225-1909 FAX:
Email: Alexis.Crisp@arcadis.com

| Selection | | | | Description | Note |
|---|---|---|---|---|---|
| **Sample Receiving** | | | | | |
| 01. | [X] Yes | [ ] No | [ ] N/A | Samples are received at 4C +/- 2C Thermometer # | IR 4.1 |
| 02. | [X] Yes | [ ] No | [ ] N/A | Received on ice/ cooling process begun | |
| 03. | [ ] Yes | [X] No | [ ] N/A | Samples shipped | |
| 04. | [ ] Yes | [X] No | [ ] N/A | Samples left in 24 hr. drop box | |
| 05. | [ ] Yes | [ ] No | [X] N/A | Are there custody seals/tape or is the drop box locked | |
| **Chain of Custody** | | | | | |
| 06. | [X] Yes | [ ] No | [ ] N/A | COC adequately filled out | |
| 07. | [X] Yes | [ ] No | [ ] N/A | COC signed and relinquished to the lab | |
| 08. | [X] Yes | [ ] No | [ ] N/A | Sample tag on bottles match COC | |
| 09. | [ ] Yes | [X] No | [ ] N/A | Subcontracting needed? Subcontacted to: | |
| **Preservation** | | | | | |
| 10. | [X] Yes | [ ] No | [ ] N/A | Do sample have correct chemical preservation | |
| 11. | [ ] Yes | [ ] No | [X] N/A | Completed pH checks on preserved samples? (no VOAs) | |
| 12. | [ ] Yes | [X] No | [ ] N/A | Did any samples need to be preserved in the lab? | |
| **Bottle Conditions** | | | | | |
| 13. | [X] Yes | [ ] No | [ ] N/A | All bottles intact | |
| 14. | [X] Yes | [ ] No | [ ] N/A | Appropriate analytical bottles are used | |
| 15. | [X] Yes | [ ] No | [ ] N/A | Merit bottles used | |
| 16. | [X] Yes | [ ] No | [ ] N/A | Sufficient sample volume received | |
| 17. | [ ] Yes | [X] No | [ ] N/A | Samples require laboratory filtration | |
| 18. | [X] Yes | [ ] No | [ ] N/A | Samples submitted within holding time | |
| 19. | [ ] Yes | [X] 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: _____

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

C.O.C. PAGE # 1 OF 1

164394

# CHAIN OF CUSTODY RECORD

## REPORT TO

CONTACT NAME: Alexis Crisp
COMPANY: Arcadis
ADDRESS: 28550 Cabot Dr #500
CITY: Novi STATE: MI ZIP CODE: 48377
PHONE NO.: 614-985-9163 CELL NO.:
P.O. NO.: 30167840.00005
E-MAIL ADDRESS: Alexis.Crisp@arcadis.com
QUOTE NO.:

## INVOICE TO

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

PROJECT NO./NAME: 30167840.00005/Racer PNC
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Kaylee DeRoo / Kaylee DeRoo

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☒ EDD ☐ OTHER

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

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

| MERIT LAB NO. (FOR LAB USE ONLY) | COLLECTION DATE | COLLECTION TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | Method 8260 | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 52802.01 | 8/29/23 | 1330 | MW-06-20_GW-082923 | GW | 3 | | X | | | | | | X | |
| .02 | 8/29/23 | 1440 | MWF16-23_GW-082923 | GW | 3 | | X | | | | | | X | |
| .03 | 8/29/23 | — | DUP-01_GW-082923 | GW | 3 | | X | | | | | | X | |
| .04 | 8/29/23 | — | Trip Blank | W | 1 | | X | | | | | | X | Trip blank |

| | | | |
|---|---|---|---|
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | Kaylee DeRoo / Arcadis ☒ Sampler | DATE 8/30/23 | TIME 11:45 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE 8/30/23 | TIME 11:45 |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | DATE 8/30/23 | TIME 13:20 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE 8/30/23 | TIME 1320 |

RELINQUISHED BY: SIGNATURE/ORGANIZATION — DATE — TIME
RECEIVED BY: SIGNATURE/ORGANIZATION — DATE — TIME

SEAL NO. — SEAL INTACT YES ☐ NO ☐ — INITIALS
SEAL NO. — SEAL INTACT YES ☐ NO ☐ — INITIALS

NOTES: TEMP. ON ARRIVAL 4.1

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

Rev. 1.26.22

# Analytical Laboratory Report

Report ID: S52803.01(01)
Generated on 09/07/2023

Report to

Attention: Alexis Crisp
Arcadis US, Inc.
7575 Huntington Park Drive, Suite 130
Columbus, OH 43235

Phone: 810-225-1909 FAX:
Email: Alexis.Crisp@arcadis.com

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S52803.01-S52803.07
Project: 30167840.00005 / RACER PNC
Collected Date(s): 08/29/2023 - 08/30/2023
Submitted Date/Time: 08/30/2023 13:20
Sampled by: Kaylee DeRoo
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

## 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/IEC 17025:2017 | #69699 |
| WBENC | #2005110032 |
| Ohio VAP | #CL0002 |
| Indiana DOH | #C-MI-07 |
| New York NELAC | #11814 |
| North Carolina DENR | #680 |
| North Carolina DOH | #26702 |
| Pennsylvania DEP | #68-05884 |
| Wisconsin DNR | FID# 399147320 |

**Qualifier Descriptions**

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

**Glossary of Abbreviations**

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

**Method Summary**

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

**Sample Summary (7 samples)**

| Sample ID | Sample Tag | Matrix | Collected Date/Time |
|---|---|---|---|
| S52803.01 | MW-15-22_GW-082923 | Groundwater | 08/29/23 15:40 |
| S52803.02 | MW-13-22_GW-083023 | Groundwater | 08/30/23 10:30 |
| S52803.03 | MW-14-22_GW-083023 | Groundwater | 08/30/23 11:25 |
| S52803.04 | MW-14-22_GW-083023 MS | Groundwater | 08/30/23 11:25 |
| S52803.05 | MW-14-22_GW-083023 MSD | Groundwater | 08/30/23 11:25 |
| S52803.06 | DUP-02_GW-083023 | Groundwater | 08/29/23 00:01 |
| S52803.07 | Trip Blank | Water | 08/29/23 00:01 |

**Lab Sample ID: S52803.01**
Sample Tag: MW-15-22_GW-082923
Collected Date/Time: 08/29/2023 15:40
Matrix: Groundwater
COC Reference:

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.1 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/05/23 11:21 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/02/23 05:00, 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 | Not detected | 1 | | ug/L | 1 | 127-18-4 | |
| trans-1,4-Dichloro-2-butene | Not detected | 1 | | ug/L | 1 | 110-57-6 | |

**Lab Sample ID: S52803.01 (continued)**
Sample Tag: MW-15-22_GW-082923

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/02/23 05:00, 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 | |

**Lab Sample ID: S52803.02**
Sample Tag: MW-13-22_GW-083023
Collected Date/Time: 08/30/2023 10:30
Matrix: Groundwater
COC Reference:

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.1 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/05/23 11:21 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/02/23 05:24, 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 | |

**Lab Sample ID: S52803.02 (continued)**
Sample Tag: MW-13-22_GW-083023

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/02/23 05:24, 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 | |

**Lab Sample ID: S52803.03**
Sample Tag: MW-14-22_GW-083023
Collected Date/Time: 08/30/2023 11:25
Matrix: Groundwater
COC Reference:

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.1 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/07/23 12:01 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/06/23 21:47, 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 | 10 | 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 | 200 | 10 | | ug/L | 10 | 127-18-4 | Y |

Y-Elevated reporting limit due to high target concentration

**Lab Sample ID: S52803.03 (continued)**
Sample Tag: MW-14-22_GW-083023

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/06/23 21:47, 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

**Lab Sample ID: S52803.04**
Sample Tag: MW-14-22_GW-083023 MS
Collected Date/Time: 08/30/2023 11:25
Matrix: Groundwater
COC Reference:

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.1 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/05/23 11:11 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/06/23 12:24, Analyst: NDK**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| Diethyl ether | 560 | 100 | | ug/L | 10 | 60-29-7 | Y1 |
| Acetone | 540 | 500 | | ug/L | 10 | 67-64-1 | Y1 |
| Methyl iodide | 580 | 10 | | ug/L | 10 | 74-88-4 | Y1 |
| Carbon disulfide | 560 | 50 | | ug/L | 10 | 75-15-0 | Y1 |
| tert-Methyl butyl ether (MTBE) | 540 | 50 | | ug/L | 10 | 1634-04-4 | Y1 |
| Acrylonitrile | 540 | 20 | | ug/L | 10 | 107-13-1 | Y1 |
| 2-Butanone (MEK) | 490 | 250 | | ug/L | 10 | 78-93-3 | Y1 |
| Dichlorodifluoromethane | 470 | 50 | | ug/L | 10 | 75-71-8 | Y1 |
| Chloromethane | 490 | 50 | | ug/L | 10 | 74-87-3 | Y1 |
| Vinyl chloride | 510 | 10 | | ug/L | 10 | 75-01-4 | Y1 |
| Bromomethane | 470 | 50 | | ug/L | 10 | 74-83-9 | Y1 |
| Chloroethane | 470 | 50 | | ug/L | 10 | 75-00-3 | Y1 |
| Trichlorofluoromethane | 470 | 10 | | ug/L | 10 | 75-69-4 | Y1 |
| 1,1-Dichloroethene | 510 | 10 | | ug/L | 10 | 75-35-4 | Y1 |
| Methylene chloride | 530 | 50 | | ug/L | 10 | 75-09-2 | Y1 |
| trans-1,2-Dichloroethene | 500 | 10 | | ug/L | 10 | 156-60-5 | Y1 |
| 1,1-Dichloroethane | 520 | 10 | | ug/L | 10 | 75-34-3 | Y1 |
| cis-1,2-Dichloroethene | 550 | 10 | | ug/L | 10 | 156-59-2 | Y1 |
| Tetrahydrofuran* | Not detected | 900 | | ug/L | 10 | 109-99-9 | Y1 |
| Chloroform | 500 | 10 | | ug/L | 10 | 67-66-3 | Y1 |
| Bromochloromethane | 550 | 10 | | ug/L | 10 | 74-97-5 | Y1 |
| 1,1,1-Trichloroethane | 510 | 10 | | ug/L | 10 | 71-55-6 | Y1 |
| 4-Methyl-2-pentanone (MIBK) | Not detected | 500 | | ug/L | 10 | 108-10-1 | Y1 |
| 2-Hexanone | Not detected | 500 | | ug/L | 10 | 591-78-6 | Y1 |
| Carbon tetrachloride | 510 | 10 | | ug/L | 10 | 56-23-5 | Y1 |
| Benzene | 500 | 10 | | ug/L | 10 | 71-43-2 | Y1 |
| 1,2-Dichloroethane | 430 | 10 | | ug/L | 10 | 107-06-2 | Y1 |
| Trichloroethene | 520 | 10 | | ug/L | 10 | 79-01-6 | Y1 |
| 1,2-Dichloropropane | 500 | 10 | | ug/L | 10 | 78-87-5 | Y1 |
| Bromodichloromethane | 500 | 10 | | ug/L | 10 | 75-27-4 | Y1 |
| Dibromomethane | 560 | 50 | | ug/L | 10 | 74-95-3 | Y1 |
| cis-1,3-Dichloropropene | 520 | 10 | | ug/L | 10 | 10061-01-5 | Y1 |
| Toluene | 480 | 10 | | ug/L | 10 | 108-88-3 | Y1 |
| trans-1,3-Dichloropropene | 530 | 10 | | ug/L | 10 | 10061-02-6 | Y1 |
| 1,1,2-Trichloroethane | 490 | 10 | | ug/L | 10 | 79-00-5 | Y1 |
| Tetrachloroethene | 730 | 10 | | ug/L | 10 | 127-18-4 | Y1 |

Y-Elevated reporting limit due to high target concentration 1-Spiked at 500ug/L

**Lab Sample ID: S52803.04 (continued)**
Sample Tag: MW-14-22_GW-083023 MS

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/06/23 12:24, Analyst: NDK (continued)**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| trans-1,4-Dichloro-2-butene | 490 | 10 | | ug/L | 10 | 110-57-6 | Y1 |
| Dibromochloromethane | 580 | 50 | | ug/L | 10 | 124-48-1 | Y1 |
| 1,2-Dibromoethane | 540 | 10 | | ug/L | 10 | 106-93-4 | Y1 |
| Chlorobenzene | 520 | 10 | | ug/L | 10 | 108-90-7 | Y1 |
| 1,1,1,2-Tetrachloroethane | 560 | 10 | | ug/L | 10 | 630-20-6 | Y1 |
| Ethylbenzene | 520 | 10 | | ug/L | 10 | 100-41-4 | Y1 |
| p,m-Xylene* | 1,040 | 20 | | ug/L | 10 | | Y1 |
| o-Xylene | 510 | 10 | | ug/L | 10 | 95-47-6 | Y1 |
| Styrene | 530 | 10 | | ug/L | 10 | 100-42-5 | Y1 |
| Isopropylbenzene | 520 | 50 | | ug/L | 10 | 98-82-8 | Y1 |
| Bromoform | 590 | 10 | | ug/L | 10 | 75-25-2 | Y1 |
| 1,1,2,2-Tetrachloroethane | 520 | 10 | | ug/L | 10 | 79-34-5 | Y1 |
| 1,2,3-Trichloropropane | 520 | 10 | | ug/L | 10 | 96-18-4 | Y1 |
| n-Propylbenzene | 530 | 10 | | ug/L | 10 | 103-65-1 | Y1 |
| Bromobenzene | 560 | 10 | | ug/L | 10 | 108-86-1 | Y1 |
| 1,3,5-Trimethylbenzene | 530 | 10 | | ug/L | 10 | 108-67-8 | Y1 |
| tert-Butylbenzene | 500 | 10 | | ug/L | 10 | 98-06-6 | Y1 |
| 1,2,4-Trimethylbenzene | 530 | 10 | | ug/L | 10 | 95-63-6 | Y1 |
| sec-Butylbenzene | 500 | 10 | | ug/L | 10 | 135-98-8 | Y1 |
| p-Isopropyltoluene | 500 | 50 | | ug/L | 10 | 99-87-6 | Y1 |
| 1,3-Dichlorobenzene | 510 | 10 | | ug/L | 10 | 541-73-1 | Y1 |
| 1,4-Dichlorobenzene | 510 | 10 | | ug/L | 10 | 106-46-7 | Y1 |
| 1,2-Dichlorobenzene | 520 | 10 | | ug/L | 10 | 95-50-1 | Y1 |
| 1,2,3-Trimethylbenzene | 500 | 10 | | ug/L | 10 | 526-73-8 | Y1 |
| n-Butylbenzene | 510 | 10 | | ug/L | 10 | 104-51-8 | Y1 |
| Hexachloroethane | 570 | 50 | | ug/L | 10 | 67-72-1 | Y1 |
| 1,2-Dibromo-3-chloropropane | 570 | 50 | | ug/L | 10 | 96-12-8 | Y1 |
| 1,2,4-Trichlorobenzene | 570 | 50 | | ug/L | 10 | 120-82-1 | Y1 |
| 1,2,3-Trichlorobenzene | 560 | 50 | | ug/L | 10 | 87-61-6 | Y1 |
| Naphthalene | 520 | 50 | | ug/L | 10 | 91-20-3 | Y1 |
| 2-Methylnaphthalene | 520 | 50 | | ug/L | 10 | 91-57-6 | Y1 |

Y-Elevated reporting limit due to high target concentration 1-Spiked at 500ug/L

**Lab Sample ID: S52803.05**
Sample Tag: MW-14-22_GW-083023 MSD
Collected Date/Time: 08/30/2023 11:25
Matrix: Groundwater
COC Reference:

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.1 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/05/23 11:11 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/06/23 12:47, Analyst: NDK**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| Diethyl ether | 600 | 100 | | ug/L | 10 | 60-29-7 | Y1 |
| Acetone | 550 | 500 | | ug/L | 10 | 67-64-1 | Y1 |
| Methyl iodide | 570 | 10 | | ug/L | 10 | 74-88-4 | Y1 |
| Carbon disulfide | 510 | 50 | | ug/L | 10 | 75-15-0 | Y1 |
| tert-Methyl butyl ether (MTBE) | 580 | 50 | | ug/L | 10 | 1634-04-4 | Y1 |
| Acrylonitrile | 530 | 20 | | ug/L | 10 | 107-13-1 | Y1 |
| 2-Butanone (MEK) | 500 | 250 | | ug/L | 10 | 78-93-3 | Y1 |
| Dichlorodifluoromethane | 420 | 50 | | ug/L | 10 | 75-71-8 | Y1 |
| Chloromethane | 460 | 50 | | ug/L | 10 | 74-87-3 | Y1 |
| Vinyl chloride | 470 | 10 | | ug/L | 10 | 75-01-4 | Y1 |
| Bromomethane | 470 | 50 | | ug/L | 10 | 74-83-9 | Y1 |
| Chloroethane | 470 | 50 | | ug/L | 10 | 75-00-3 | Y1 |
| Trichlorofluoromethane | 420 | 10 | | ug/L | 10 | 75-69-4 | Y1 |
| 1,1-Dichloroethene | 470 | 10 | | ug/L | 10 | 75-35-4 | Y1 |
| Methylene chloride | 550 | 50 | | ug/L | 10 | 75-09-2 | Y1 |
| trans-1,2-Dichloroethene | 480 | 10 | | ug/L | 10 | 156-60-5 | Y1 |
| 1,1-Dichloroethane | 510 | 10 | | ug/L | 10 | 75-34-3 | Y1 |
| cis-1,2-Dichloroethene | 540 | 10 | | ug/L | 10 | 156-59-2 | Y1 |
| Tetrahydrofuran* | Not detected | 900 | | ug/L | 10 | 109-99-9 | Y1 |
| Chloroform | 500 | 10 | | ug/L | 10 | 67-66-3 | Y1 |
| Bromochloromethane | 570 | 10 | | ug/L | 10 | 74-97-5 | Y1 |
| 1,1,1-Trichloroethane | 480 | 10 | | ug/L | 10 | 71-55-6 | Y1 |
| 4-Methyl-2-pentanone (MIBK) | Not detected | 500 | | ug/L | 10 | 108-10-1 | Y1 |
| 2-Hexanone | Not detected | 500 | | ug/L | 10 | 591-78-6 | Y1 |
| Carbon tetrachloride | 450 | 10 | | ug/L | 10 | 56-23-5 | Y1 |
| Benzene | 470 | 10 | | ug/L | 10 | 71-43-2 | Y1 |
| 1,2-Dichloroethane | 440 | 10 | | ug/L | 10 | 107-06-2 | Y1 |
| Trichloroethene | 480 | 10 | | ug/L | 10 | 79-01-6 | Y1 |
| 1,2-Dichloropropane | 490 | 10 | | ug/L | 10 | 78-87-5 | Y1 |
| Bromodichloromethane | 500 | 10 | | ug/L | 10 | 75-27-4 | Y1 |
| Dibromomethane | 560 | 50 | | ug/L | 10 | 74-95-3 | Y1 |
| cis-1,3-Dichloropropene | 530 | 10 | | ug/L | 10 | 10061-01-5 | Y1 |
| Toluene | 460 | 10 | | ug/L | 10 | 108-88-3 | Y1 |
| trans-1,3-Dichloropropene | 540 | 10 | | ug/L | 10 | 10061-02-6 | Y1 |
| 1,1,2-Trichloroethane | 500 | 10 | | ug/L | 10 | 79-00-5 | Y1 |
| Tetrachloroethene | 680 | 10 | | ug/L | 10 | 127-18-4 | Y1 |

Y-Elevated reporting limit due to high target concentration 1-Spiked at 500ug/L

**Lab Sample ID: S52803.05 (continued)**
Sample Tag: MW-14-22_GW-083023 MSD

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/06/23 12:47, Analyst: NDK (continued)**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| trans-1,4-Dichloro-2-butene | 480 | 10 | | ug/L | 10 | 110-57-6 | Y1 |
| Dibromochloromethane | 550 | 50 | | ug/L | 10 | 124-48-1 | Y1 |
| 1,2-Dibromoethane | 510 | 10 | | ug/L | 10 | 106-93-4 | Y1 |
| Chlorobenzene | 490 | 10 | | ug/L | 10 | 108-90-7 | Y1 |
| 1,1,1,2-Tetrachloroethane | 530 | 10 | | ug/L | 10 | 630-20-6 | Y1 |
| Ethylbenzene | 460 | 10 | | ug/L | 10 | 100-41-4 | Y1 |
| p,m-Xylene* | 940 | 20 | | ug/L | 10 | | Y1 |
| o-Xylene | 470 | 10 | | ug/L | 10 | 95-47-6 | Y1 |
| Styrene | 490 | 10 | | ug/L | 10 | 100-42-5 | Y1 |
| Isopropylbenzene | 460 | 50 | | ug/L | 10 | 98-82-8 | Y1 |
| Bromoform | 570 | 10 | | ug/L | 10 | 75-25-2 | Y1 |
| 1,1,2,2-Tetrachloroethane | 490 | 10 | | ug/L | 10 | 79-34-5 | Y1 |
| 1,2,3-Trichloropropane | 490 | 10 | | ug/L | 10 | 96-18-4 | Y1 |
| n-Propylbenzene | 460 | 10 | | ug/L | 10 | 103-65-1 | Y1 |
| Bromobenzene | 530 | 10 | | ug/L | 10 | 108-86-1 | Y1 |
| 1,3,5-Trimethylbenzene | 480 | 10 | | ug/L | 10 | 108-67-8 | Y1 |
| tert-Butylbenzene | 440 | 10 | | ug/L | 10 | 98-06-6 | Y1 |
| 1,2,4-Trimethylbenzene | 480 | 10 | | ug/L | 10 | 95-63-6 | Y1 |
| sec-Butylbenzene | 430 | 10 | | ug/L | 10 | 135-98-8 | Y1 |
| p-Isopropyltoluene | 430 | 50 | | ug/L | 10 | 99-87-6 | Y1 |
| 1,3-Dichlorobenzene | 480 | 10 | | ug/L | 10 | 541-73-1 | Y1 |
| 1,4-Dichlorobenzene | 480 | 10 | | ug/L | 10 | 106-46-7 | Y1 |
| 1,2-Dichlorobenzene | 490 | 10 | | ug/L | 10 | 95-50-1 | Y1 |
| 1,2,3-Trimethylbenzene | 460 | 10 | | ug/L | 10 | 526-73-8 | Y1 |
| n-Butylbenzene | 440 | 10 | | ug/L | 10 | 104-51-8 | Y1 |
| Hexachloroethane | 500 | 50 | | ug/L | 10 | 67-72-1 | Y1 |
| 1,2-Dibromo-3-chloropropane | 520 | 50 | | ug/L | 10 | 96-12-8 | Y1 |
| 1,2,4-Trichlorobenzene | 540 | 50 | | ug/L | 10 | 120-82-1 | Y1 |
| 1,2,3-Trichlorobenzene | 550 | 50 | | ug/L | 10 | 87-61-6 | Y1 |
| Naphthalene | 490 | 50 | | ug/L | 10 | 91-20-3 | Y1 |
| 2-Methylnaphthalene | 530 | 50 | | ug/L | 10 | 91-57-6 | Y1 |

Y-Elevated reporting limit due to high target concentration 1-Spiked at 500ug/L

**Lab Sample ID: S52803.06**
Sample Tag: DUP-02_GW-083023
Collected Date/Time: 08/29/2023 00:01
Matrix: Groundwater
COC Reference:

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.1 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/05/23 11:21 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/02/23 05:47, 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 | |

**Lab Sample ID: S52803.06 (continued)**
Sample Tag: DUP-02_GW-083023

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/02/23 05:47, 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: S52803.07**
Sample Tag: Trip Blank
Collected Date/Time: 08/29/2023 00:01
Matrix: Water
COC Reference:

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 1 | n/a | n/a | Yes | n/a | n/a |

***Other / Misc.***

**Method: , Run Date: 08/31/23 13:25, Analyst: JRM**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| No Analyses* | Completed | | | | 1 | | |

# Merit Laboratories Login Checklist

Lab Set ID: S52803
Client: ARCADIS_NOVI (ARCADIS U.S., Inc.)
Project: 30167840.00005 / RACER PNC
Submitted: 08/30/2023 13:20 Login User: MMC

Attention: Alexis Crisp
Address: Arcadis US, Inc.
7575 Huntington Park Drive, Suite 130
Columbus, OH 43235

Phone: 810-225-1909 FAX:
Email: Alexis.Crisp@arcadis.com

| Selection | | | | Description | Note |
|---|---|---|---|---|---|
| **Sample Receiving** | | | | | |
| 01. | [X] Yes | [ ] No | [ ] N/A | Samples are received at 4C +/- 2C Thermometer # | IR 4.1 |
| 02. | [X] Yes | [ ] No | [ ] N/A | Received on ice/ cooling process begun | |
| 03. | [ ] Yes | [X] No | [ ] N/A | Samples shipped | |
| 04. | [ ] Yes | [X] No | [ ] N/A | Samples left in 24 hr. drop box | |
| 05. | [ ] Yes | [ ] No | [X] N/A | Are there custody seals/tape or is the drop box locked | |
| **Chain of Custody** | | | | | |
| 06. | [X] Yes | [ ] No | [ ] N/A | COC adequately filled out | |
| 07. | [X] Yes | [ ] No | [ ] N/A | COC signed and relinquished to the lab | |
| 08. | [X] Yes | [ ] No | [ ] N/A | Sample tag on bottles match COC | |
| 09. | [ ] Yes | [X] No | [ ] N/A | Subcontracting needed? Subcontacted to: | |
| **Preservation** | | | | | |
| 10. | [X] Yes | [ ] No | [ ] N/A | Do sample have correct chemical preservation | |
| 11. | [ ] Yes | [ ] No | [X] N/A | Completed pH checks on preserved samples? (no VOAs) | |
| 12. | [ ] Yes | [X] No | [ ] N/A | Did any samples need to be preserved in the lab? | |
| **Bottle Conditions** | | | | | |
| 13. | [X] Yes | [ ] No | [ ] N/A | All bottles intact | No trip blank |
| 14. | [X] Yes | [ ] No | [ ] N/A | Appropriate analytical bottles are used | |
| 15. | [X] Yes | [ ] No | [ ] N/A | Merit bottles used | |
| 16. | [X] Yes | [ ] No | [ ] N/A | Sufficient sample volume received | |
| 17. | [ ] Yes | [X] No | [ ] N/A | Samples require laboratory filtration | |
| 18. | [X] Yes | [ ] No | [ ] N/A | Samples submitted within holding time | |
| 19. | [ ] Yes | [X] 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: _____

ARCADIS

ID#:

# CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order #

**Send Results to:**

| | |
|---|---|
| Contact & Company Name: Lexi Crise / Arcadis | Telephone: 614-985-9163 |
| Address: 28550 Cabot Drive, Suite 500 | Fax: |
| City: Novi State: MI Zip: 48377 | E-mail Address: Alexis.Crise@arcadis.com |
| Project Name/Location (City, State): Pontiac, MI | Project #: 30167840.00005 |
| Sampler's Printed Name: Kaylee DeRoo | Sampler's Signature: Kaylee DeRoo |

| Preservative | HCl | | | | | | |
|---|---|---|---|---|---|---|---|
| Filtered (✓) | | | | | | | |
| # of Containers | 3 | | | | | | |
| Container Information | | | | | | | |

**PARAMETER ANALYSIS & METHOD**

| Sample ID | Collection Date | Collection Time | Type (✓) Comp | Type (✓) Grab | Matrix | Method 8260 | | | | | | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-15-22_GW-082923 | 8/29/23 | 1540 | | ✓ | GW | X | | | | | | | 3 containers 52803.01 |
| MW-13-22_GW-083023 | 8/30/23 | 1030 | | ✓ | GW | X | | | | | | | 3 containers .02 |
| MW-14-22_GW-083023 | 8/30/23 | 1125 | | ✓ | GW | X | | | | | | | 9 containers .03/.04/.05 |
| DUP-02_GW-082923 | 8/29/23 | — | | ✓ | GW | X | | | | | | | 3 containers .06 |
| Trip Blank | 8/29/23 | — | | — | W | X | | | | | | | 1 container .07 |
| | | | | | | | | | | | | | |
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**Keys**

**Preservation Key:**
A. $H_2SO_4$
B. HCL
C. $HNO_3$
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

**Container Information Key:**
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

**Matrix Key:**
SO - Soil | SE - Sediment | NL - NAPL/Oil
W - Water | SL - Sludge | SW - Sample Wipe
T - Tissue | A - Air | Other: _____

**Special Instructions/Comments:**
MS/MSD = MW-14-22

☐ Special QA/QC Instructions(✓):

| Laboratory Information and Receipt | | Relinquished By | Received By | Relinquished By | Laboratory Received By |
|---|---|---|---|---|---|
| Lab Name: Merit | Cooler Custody Seal (✓) | Printed Name: Kaylee DeRoo | Printed Name: DOUG MILLER | Printed Name: Doug Miller | Printed Name: M Chilcote |
| ☐ Cooler packed with ice (✓) | ☐ Intact ☐ Not Intact | Signature: Kaylee DeRoo | Signature: | Signature: | Signature: M Chilcote |
| Specify Turnaround Requirements: Standard TAT | Sample Receipt: | Firm: Arcadis | Firm/Courier: Merit | Firm/Courier: Merit | Firm: Merit |
| Shipping Tracking #: | Condition/Cooler Temp: 4.1 | Date/Time: 8/30/23 / 11:45 | Date/Time: 8/30/23 11:45 | Date/Time: 8/30/23 13:20 | Date/Time: 8/30/23 1320 |



Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by Arcadis

# Analytical Laboratory Report

Report ID: S53169.01(01)
Generated on 09/13/2023

Report to

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

Phone: 810-225-1909 FAX: 248-994-2241
Email: Alexis.Crisp@arcadis.com

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S53169.01-S53169.05
Project: Racer PNC / 30167840.00005
Collected Date(s): 09/07/2023
Submitted Date/Time: 09/08/2023 14:50
Sampled by: Sommer Guy
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

## 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/IEC 17025:2017 | #69699 |
| WBENC | #2005110032 |
| Ohio VAP | #CL0002 |
| Indiana DOH | #C-MI-07 |
| New York NELAC | #11814 |
| North Carolina DENR | #680 |
| North Carolina DOH | #26702 |
| Pennsylvania DEP | #68-05884 |
| Wisconsin DNR | FID# 399147320 |

**Qualifier Descriptions**

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

**Glossary of Abbreviations**

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

**Method Summary**

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

**Sample Summary (5 samples)**

| Sample ID | Sample Tag | Matrix | Collected Date/Time |
|---|---|---|---|
| S53169.01 | Trip Blank | Liquid | 09/07/23 00:01 |
| S53169.02 | MWF16-05_GW-090723 | Groundwater | 09/07/23 10:35 |
| S53169.03 | MWF16-18_GW-090723 | Groundwater | 09/07/23 11:28 |
| S53169.04 | MWF16-16_GW-090723 | Groundwater | 09/07/23 12:25 |
| S53169.05 | MW-09-22_GW-090723 | Groundwater | 09/07/23 13:17 |

**Lab Sample ID: S53169.01**
Sample Tag: Trip Blank
Collected Date/Time: 09/07/2023 00:01
Matrix: Liquid
COC Reference: 141363

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 1 | 40ml Glass | HCL | Yes | 4.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/13/23 10:43 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/12/23 14:11, 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 | 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 | |

**Lab Sample ID: S53169.01 (continued)**
Sample Tag: Trip Blank

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/12/23 14:11, 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 | |

**Lab Sample ID: S53169.02**
Sample Tag: MWF16-05_GW-090723
Collected Date/Time: 09/07/2023 10:35
Matrix: Groundwater
COC Reference: 141363

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/13/23 10:43 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/12/23 20:24, 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 | 490 | 20 | | ug/L | 20 | 127-18-4 | Y |

Y-Elevated reporting limit due to high target concentration

**Lab Sample ID: S53169.02 (continued)**
Sample Tag: MWF16-05_GW-090723

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/12/23 20:24, 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

**Lab Sample ID: S53169.03**
Sample Tag: MWF16-18_GW-090723
Collected Date/Time: 09/07/2023 11:28
Matrix: Groundwater
COC Reference: 141363

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/13/23 10:43 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/12/23 20:01, 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 | 130 | 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 | 30 | 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 | 1,090 | 10 | | ug/L | 10 | 127-18-4 | Y |

Y-Elevated reporting limit due to high target concentration

**Lab Sample ID: S53169.03 (continued)**
Sample Tag: MWF16-18_GW-090723

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/12/23 20:01, 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

**Lab Sample ID: S53169.04**
Sample Tag: MWF16-16_GW-090723
Collected Date/Time: 09/07/2023 12:25
Matrix: Groundwater
COC Reference: 141363

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/13/23 10:43 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/13/23 06:31, 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 | Not detected | 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 | 410 | 10 | | ug/L | 10 | 127-18-4 | Y |

Y-Elevated reporting limit due to high target concentration

**Lab Sample ID: S53169.04 (continued)**
Sample Tag: MWF16-16_GW-090723

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/13/23 06:31, 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

**Lab Sample ID: S53169.05**
Sample Tag: MW-09-22_GW-090723
Collected Date/Time: 09/07/2023 13:17
Matrix: Groundwater
COC Reference: 141363

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.5 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 09/13/23 10:43 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/12/23 23:56, 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 | 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 | 78 | 1 | | ug/L | 1 | 127-18-4 | |
| trans-1,4-Dichloro-2-butene | Not detected | 1 | | ug/L | 1 | 110-57-6 | |

**Lab Sample ID: S53169.05 (continued)**
Sample Tag: MW-09-22_GW-090723

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 09/12/23 23:56, 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: S53169
Client: ARCADIS_NOVI (Arcadis US, Inc. - Novi)
Project: Racer PNC / 30167840.00005
Submitted: 09/08/2023 14:50 Login User: MMC

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

Phone: 810-225-1909 FAX: 248-994-2241
Email: Alexis.Crisp@arcadis.com

| Selection | | | | Description | Note |
|---|---|---|---|---|---|
| **Sample Receiving** | | | | | |
| 01. | [X] Yes | [ ] No | [ ] N/A | Samples are received at 4C +/- 2C Thermometer # | IR 4.5 |
| 02. | [X] Yes | [ ] No | [ ] N/A | Received on ice/ cooling process begun | |
| 03. | [ ] Yes | [X] No | [ ] N/A | Samples shipped | |
| 04. | [ ] Yes | [X] No | [ ] N/A | Samples left in 24 hr. drop box | |
| 05. | [ ] Yes | [ ] No | [X] N/A | Are there custody seals/tape or is the drop box locked | |
| **Chain of Custody** | | | | | |
| 06. | [X] Yes | [ ] No | [ ] N/A | COC adequately filled out | |
| 07. | [X] Yes | [ ] No | [ ] N/A | COC signed and relinquished to the lab | |
| 08. | [X] Yes | [ ] No | [ ] N/A | Sample tag on bottles match COC | |
| 09. | [ ] Yes | [X] No | [ ] N/A | Subcontracting needed? Subcontacted to: | |
| **Preservation** | | | | | |
| 10. | [X] Yes | [ ] No | [ ] N/A | Do sample have correct chemical preservation | |
| 11. | [ ] Yes | [ ] No | [X] N/A | Completed pH checks on preserved samples? (no VOAs) | |
| 12. | [ ] Yes | [X] No | [ ] N/A | Did any samples need to be preserved in the lab? | |
| **Bottle Conditions** | | | | | |
| 13. | [X] Yes | [ ] No | [ ] N/A | All bottles intact | |
| 14. | [X] Yes | [ ] No | [ ] N/A | Appropriate analytical bottles are used | |
| 15. | [X] Yes | [ ] No | [ ] N/A | Merit bottles used | |
| 16. | [X] Yes | [ ] No | [ ] N/A | Sufficient sample volume received | |
| 17. | [ ] Yes | [X] No | [ ] N/A | Samples require laboratory filtration | |
| 18. | [X] Yes | [ ] No | [ ] N/A | Samples submitted within holding time | |
| 19. | [ ] Yes | [X] 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: _____

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

C.O.C. PAGE # 1 OF 1

141363

# CHAIN OF CUSTODY RECORD

## REPORT TO

CONTACT NAME: Alexis Crisp
COMPANY: Arcadis
ADDRESS: 28550 Cabot Dr #500
CITY: Novi STATE: MI ZIP CODE:
PHONE NO.: FAX NO.: P.O. NO.:
E-MAIL ADDRESS: Alexis.crisp@arcadis.com tiffany.linder@arcadis.com QUOTE NO.:

## INVOICE TO

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

PROJECT NO./NAME: Racer PNC | 30167840.00005
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

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

| MERIT LAB NO. FOR LAB USE ONLY | YEAR DATE | YEAR TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | VOC's (8260) | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 53169.01 | - | - | trip blank | L | 1 | | 1 | | | | | | X | trip blank |
| .02 | 9/7/23 | 1035 | MWF16-05_GW-090723 | GW | 3 | | 3 | | | | | | X | |
| .03 | 9/7/23 | 1128 | MWF16-18_GW-090723 | GW | 3 | | 3 | | | | | | X | |
| .04 | 9/7/23 | 1225 | MWF16-16_GW-090723 | GW | 3 | | 3 | | | | | | X | |
| .05 | 9/7/23 | 1317 | MW-09-22_GW-090723 | GW | 3 | | 3 | | | | | | X | |

| | | | | |
|---|---|---|---|---|
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | Sommer Guy / Arcadis ☒ Sampler | 9/8/23 | 1400 | |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | 9/8/23 | 14:44 | |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | 9/8/23 | 14:54 | |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | 9/8/23 | 1450 | |

RELINQUISHED BY: SIGNATURE/ORGANIZATION — DATE — TIME
RECEIVED BY: SIGNATURE/ORGANIZATION — DATE — TIME

SEAL NO. — SEAL INTACT YES ☐ NO ☐ — INITIALS
SEAL NO. — SEAL INTACT YES ☐ NO ☐ — INITIALS

NOTES: TEMP. ON ARRIVAL 4.5

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

Rev. 5.18.12

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9/7/2023
Ms. Lexi Crisp
Arcadis U.S., Inc.
7575 Huntington Park Drive
Suite 130
Columbus OH 43235

Project Name: Racer PNC
Project #:
Workorder #: 2308673

Dear Ms. Lexi Crisp

The following report includes the data for the above referenced project for sample(s) received on 8/30/2023 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

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# WORK ORDER #: 2308673

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Ms. Lexi Crisp<br>Arcadis U.S., Inc.<br>7575 Huntington Park Drive<br>Suite 130<br>Columbus, OH 43235 | **BILL TO:** | Accounts Payable<br>Arcadis U.S., Inc.<br>630 Plaza Drive<br>Suite 600<br>Highlands Ranch, CO 80129 |
| **PHONE:** | | **P.O. #** | 30167840.00004 |
| **FAX:** | | **PROJECT #** | Racer PNC |
| **DATE RECEIVED:** | 08/30/2023 | **CONTACT:** | Jade White |
| **DATE COMPLETED:** | 09/07/2023 | | |

| FRACTION # | NAME | TEST | RECEIPT VAC./PRES. | FINAL PRESSURE |
|---|---|---|---|---|
| 01A | SV-01-21_SG-082823 | TO-15 | 6.7 "Hg | 10 psi |
| 02A | SV-02-21_SG-082823 | TO-15 | 6.7 "Hg | 9.9 psi |
| 03A | SV-03-21_SG-082823 | TO-15 | 5.5 "Hg | 9.9 psi |
| 04A | SV-04-21_SG-082823 | TO-15 | 5.0 "Hg | 10psi |
| 05A | SV-05-21_SG-082823 | TO-15 | 5.5 "Hg | 10psi |
| 06A | SV-06-21_SG-082823 | TO-15 | 6.5 "Hg | 10psi |
| 07A | DUP-01_SG-082823 | TO-15 | 5.5 "Hg | 10psi |
| 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:  DATE: 09/07/23

Technical Director

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

**LABORATORY NARRATIVE**
**EPA Method TO-15**
**Arcadis U.S., Inc.**
**Workorder# 2308673**

Seven 1 Liter Summa Canister samples were received on August 30, 2023. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

## Receiving Notes

The Chain of Custody (COC) information for sample DUP-01_SG-082823 did not match the information on the canister with regard to canister barcode. The sample labeled 2480 on the COC is labeled as 4280 on the canister. The client was notified of the discrepancy and the information on the canister was used to process and report the sample.

## 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

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

**Client Sample ID: SV-01-21_SG-082823**

**Lab ID#: 2308673-01A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 1.1 | 6.1 | 5.8 | 32 |
| Tetrachloroethene | 1.1 | 2.5 | 7.3 | 17 |

**Client Sample ID: SV-02-21_SG-082823**

**Lab ID#: 2308673-02A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 1.1 | 11 | 5.8 | 60 |
| Tetrachloroethene | 1.1 | 1.8 | 7.3 | 12 |

**Client Sample ID: SV-03-21_SG-082823**

**Lab ID#: 2308673-03A**

No Detections Were Found.

**Client Sample ID: SV-04-21_SG-082823**

**Lab ID#: 2308673-04A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 1.0 | 3.0 | 5.4 | 16 |

**Client Sample ID: SV-05-21_SG-082823**

**Lab ID#: 2308673-05A**

No Detections Were Found.

**Client Sample ID: SV-06-21_SG-082823**

**Lab ID#: 2308673-06A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 1.1 | 3.1 | 5.8 | 17 |

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

**Client Sample ID: DUP-01_SG-082823**

**Lab ID#: 2308673-07A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 1.0 | 11 | 5.5 | 60 |
| Tetrachloroethene | 1.0 | 1.8 | 7.0 | 12 |

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**Client Sample ID: SV-01-21_SG-082823**

**Lab ID#: 2308673-01A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **91090523** | **Date of Collection: 8/28/23 1:26:00 PM** | |
| **Dil. Factor:** | **2.16** | **Date of Analysis: 9/5/23 10:23 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 | 6.1 | 5.8 | 32 |
| trans-1,2-Dichloroethene | 1.1 | Not Detected | 4.3 | Not Detected |
| Tetrachloroethene | 1.1 | 2.5 | 7.3 | 17 |

**Container Type: 1 Liter Summa Canister**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 1,2-Dichloroethane-d4 | 109 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

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**Client Sample ID: SV-02-21_SG-082823**

**Lab ID#: 2308673-02A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **91090524** | **Date of Collection: 8/28/23 1:47:00 PM** | |
| **Dil. Factor:** | **2.15** | **Date of Analysis: 9/5/23 10:48 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Vinyl Chloride | 1.1 | Not Detected | 2.7 | Not Detected |
| 1,1-Dichloroethene | 1.1 | Not Detected | 4.3 | Not Detected |
| cis-1,2-Dichloroethene | 1.1 | Not Detected | 4.3 | Not Detected |
| Trichloroethene | 1.1 | 11 | 5.8 | 60 |
| trans-1,2-Dichloroethene | 1.1 | Not Detected | 4.3 | Not Detected |
| Tetrachloroethene | 1.1 | 1.8 | 7.3 | 12 |

**Container Type: 1 Liter Summa Canister**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 1,2-Dichloroethane-d4 | 111 | 70-130 |
| 4-Bromofluorobenzene | 97 | 70-130 |

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**Client Sample ID: SV-03-21_SG-082823**

**Lab ID#: 2308673-03A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **91090525** | **Date of Collection:** | **8/28/23 2:15:00 PM** |
| **Dil. Factor:** | **2.05** | **Date of Analysis:** | **9/5/23 11:13 PM** |

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

**Container Type: 1 Liter Summa Canister**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |
| 1,2-Dichloroethane-d4 | 110 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

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**Client Sample ID: SV-04-21_SG-082823**

**Lab ID#: 2308673-04A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **91090526** | **Date of Collection:** | **8/28/23 2:30:00 PM** |
| **Dil. Factor:** | **2.02** | **Date of Analysis:** | **9/5/23 11:38 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Vinyl Chloride | 1.0 | Not Detected | 2.6 | Not Detected |
| 1,1-Dichloroethene | 1.0 | Not Detected | 4.0 | Not Detected |
| cis-1,2-Dichloroethene | 1.0 | Not Detected | 4.0 | Not Detected |
| Trichloroethene | 1.0 | 3.0 | 5.4 | 16 |
| trans-1,2-Dichloroethene | 1.0 | Not Detected | 4.0 | Not Detected |
| Tetrachloroethene | 1.0 | Not Detected | 6.8 | Not Detected |

**Container Type: 1 Liter Summa Canister**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 1,2-Dichloroethane-d4 | 110 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

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**Client Sample ID: SV-05-21_SG-082823**

**Lab ID#: 2308673-05A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **91090527** | **Date of Collection: 8/28/23 2:49:00 PM** | |
| **Dil. Factor:** | **2.06** | **Date of Analysis: 9/6/23 12:03 AM** | |

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

**Container Type: 1 Liter Summa Canister**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 1,2-Dichloroethane-d4 | 110 | 70-130 |
| 4-Bromofluorobenzene | 97 | 70-130 |

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**Client Sample ID: SV-06-21_SG-082823**

**Lab ID#: 2308673-06A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **91090528** | **Date of Collection: 8/28/23 3:06:00 PM** | |
| **Dil. Factor:** | **2.14** | **Date of Analysis: 9/6/23 12:28 AM** | |

| 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 | 3.1 | 5.8 | 17 |
| 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 | 97 | 70-130 |
| 1,2-Dichloroethane-d4 | 112 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

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**Client Sample ID: DUP-01_SG-082823**

**Lab ID#: 2308673-07A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **91090529** | **Date of Collection: 8/28/23** | |
| **Dil. Factor:** | **2.06** | **Date of Analysis: 9/6/23 12:53 AM** | |

| 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 | 11 | 5.5 | 60 |
| trans-1,2-Dichloroethene | 1.0 | Not Detected | 4.1 | Not Detected |
| Tetrachloroethene | 1.0 | 1.8 | 7.0 | 12 |

**Container Type: 1 Liter Summa Canister**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 1,2-Dichloroethane-d4 | 110 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 2308673-08A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **91090507f** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/5/23 12:30 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 | 98 | 70-130 |
| 1,2-Dichloroethane-d4 | 108 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

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**Client Sample ID: CCV**

**Lab ID#: 2308673-09A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **91090503** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/5/23 10:13 AM** | |

| Compound | %Recovery |
|---|---|
| Vinyl Chloride | 110 |
| 1,1-Dichloroethene | 97 |
| cis-1,2-Dichloroethene | 94 |
| Trichloroethene | 90 |
| trans-1,2-Dichloroethene | 97 |
| Tetrachloroethene | 112 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 1,2-Dichloroethane-d4 | 92 | 70-130 |
| 4-Bromofluorobenzene | 93 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 2308673-10A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **91090504** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/5/23 10:36 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Vinyl Chloride | 104 | 70-130 |
| 1,1-Dichloroethene | 89 | 70-130 |
| cis-1,2-Dichloroethene | 90 | 70-130 |
| Trichloroethene | 89 | 70-130 |
| trans-1,2-Dichloroethene | 92 | 70-130 |
| Tetrachloroethene | 110 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |
| 1,2-Dichloroethane-d4 | 93 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 2308673-10AA**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **91090505** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/5/23 11:00 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Vinyl Chloride | 106 | 70-130 |
| 1,1-Dichloroethene | 90 | 70-130 |
| cis-1,2-Dichloroethene | 92 | 70-130 |
| Trichloroethene | 90 | 70-130 |
| trans-1,2-Dichloroethene | 92 | 70-130 |
| Tetrachloroethene | 107 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |
| 1,2-Dichloroethane-d4 | 96 | 70-130 |
| 4-Bromofluorobenzene | 94 | 70-130 |

# Analytical Laboratory Report

Report ID: S56305.01(01)
Generated on 12/05/2023

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

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S56305.01-S56305.05
Project: 30167840.00005 / RACER PNC
Collected Date(s): 11/30/2023
Submitted Date/Time: 12/01/2023 14:50
Sampled by: Sommer Guy
P.O. #: 30167840.00005

Table of Contents

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

Maya Murshak
Technical Director

## 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.
Starred (*) analytes are not NY 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.
All accreditations/certifications held by this laboratory are listed on page 3. Not all accreditations/certifications are applicable to this report.
For a specific list of accredited analytes, please feel free to contact the laboratory or visit https://www.meritlabs.com/certifications.

## Report Narrative

There is no additional narrative for this analytical report

**Laboratory Accreditations (For Reference Only)**

| Authority | Accreditation ID |
|---|---|
| Michigan DEQ | #9956 |
| DOD ELAP & ISO/IEC 17025:2017 | #69699 PJLA Testing |
| WBENC | #2005110032 |
| Ohio VAP | #CL0002 |
| Indiana DOH | #C-MI-07 |
| New York NELAC | #11814 |
| North Carolina DENR | #680 |
| North Carolina DOH | #26702 |
| Pennsylvania DEP | #68-05884 |
| Wisconsin DNR | FID# 399147320 |

**Qualifier Descriptions**

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

**Glossary of Abbreviations**

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

**Method Summary**

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

**Sample Summary (5 samples)**

| Sample ID | Sample Tag | Matrix | Collected Date/Time |
|---|---|---|---|
| S56305.01 | MWOS-10_GW-113023 | Groundwater | 11/30/23 11:22 |
| S56305.02 | MW-08-21_GW-113023 | Groundwater | 11/30/23 12:13 |
| S56305.03 | MW-09-22_GW-113023 | Groundwater | 11/30/23 13:35 |
| S56305.04 | DUP-01_GW-113023 | Groundwater | 11/30/23 00:01 |
| S56305.05 | TW-12-22_GW-113023 | Groundwater | 11/30/23 15:30 |

# Analytical Laboratory Report

**Lab Sample ID: S56305.01**
Sample Tag: MWOS-10_GW-113023
Collected Date/Time: 11/30/2023 11:22
Matrix: Groundwater
COC Reference: 141695

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.7 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/05/23 11:05 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 20:39, 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 | 5 | 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 | 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 | 9 | 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 | |

**Lab Sample ID: S56305.01 (continued)**
Sample Tag: MWOS-10_GW-113023

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 20:39, 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 | |

**Lab Sample ID: S56305.02**
Sample Tag: MW-08-21_GW-113023
Collected Date/Time: 11/30/2023 12:13
Matrix: Groundwater
COC Reference: 141695

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.7 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/05/23 11:05 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 20:59, 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 | 2 | 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 | 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 | 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 | |

**Lab Sample ID: S56305.02 (continued)**
Sample Tag: MW-08-21_GW-113023

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 20:59, 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 | |

**Lab Sample ID: S56305.03**
Sample Tag: MW-09-22_GW-113023
Collected Date/Time: 11/30/2023 13:35
Matrix: Groundwater
COC Reference: 141695

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.7 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/05/23 11:05 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 21:19, 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 | 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 | 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 | 169 | 1 | | ug/L | 1 | 127-18-4 | |
| trans-1,4-Dichloro-2-butene | Not detected | 1 | | ug/L | 1 | 110-57-6 | |

**Lab Sample ID: S56305.03 (continued)**
Sample Tag: MW-09-22_GW-113023

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 21:19, 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 | |

**Lab Sample ID: S56305.04**
Sample Tag: DUP-01_GW-113023
Collected Date/Time: 11/30/2023 00:01
Matrix: Groundwater
COC Reference: 141695

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.7 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/05/23 11:05 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 21:39, 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 | 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 | 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 | 191 | 1 | | ug/L | 1 | 127-18-4 | |
| trans-1,4-Dichloro-2-butene | Not detected | 1 | | ug/L | 1 | 110-57-6 | |

**Lab Sample ID: S56305.04 (continued)**
Sample Tag: DUP-01_GW-113023

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 21:39, 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: S56305.05**
Sample Tag: TW-12-22_GW-113023
Collected Date/Time: 11/30/2023 15:30
Matrix: Groundwater
COC Reference: 141695

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.7 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/05/23 11:05 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 21:59, 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 | 2 | 1 | | ug/L | 1 | 156-60-5 | |
| 1,1-Dichloroethane | 10 | 1 | | ug/L | 1 | 75-34-3 | |
| cis-1,2-Dichloroethene | 33 | 1 | | ug/L | 1 | 156-59-2 | |
| Tetrahydrofuran* | Not detected | 90 | | ug/L | 1 | 109-99-9 | |
| Chloroform | 8 | 1 | | ug/L | 1 | 67-66-3 | |
| Bromochloromethane | Not detected | 1 | | ug/L | 1 | 74-97-5 | |
| 1,1,1-Trichloroethane | 17 | 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 | 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 | Not detected | 1 | | ug/L | 1 | 127-18-4 | |
| trans-1,4-Dichloro-2-butene | Not detected | 1 | | ug/L | 1 | 110-57-6 | |

**Lab Sample ID: S56305.05 (continued)**
Sample Tag: TW-12-22_GW-113023

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 21:59, 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: S56305
Client: ARCADIS_NOVI (Arcadis US, Inc. - Novi)
Project: 30167840.00005 / RACER PNC
Submitted: 12/01/2023 14:50 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. | [X] Yes | [ ] No | [ ] N/A | Samples are received at 4C +/- 2C Thermometer # | IR 2.7 |
| 02. | [X] Yes | [ ] No | [ ] N/A | Received on ice/ cooling process begun | |
| 03. | [ ] Yes | [X] No | [ ] N/A | Samples shipped | |
| 04. | [ ] Yes | [X] No | [ ] N/A | Samples left in 24 hr. drop box | |
| 05. | [ ] Yes | [ ] No | [X] N/A | Are there custody seals/tape or is the drop box locked | |
| **Chain of Custody** | | | | | |
| 06. | [X] Yes | [ ] No | [ ] N/A | COC adequately filled out | |
| 07. | [X] Yes | [ ] No | [ ] N/A | COC signed and relinquished to the lab | |
| 08. | [X] Yes | [ ] No | [ ] N/A | Sample tag on bottles match COC | |
| 09. | [ ] Yes | [X] No | [ ] N/A | Subcontracting needed? Subcontacted to: | |
| **Preservation** | | | | | |
| 10. | [X] Yes | [ ] No | [ ] N/A | Do sample have correct chemical preservation | |
| 11. | [ ] Yes | [ ] No | [X] N/A | Completed pH checks on preserved samples? (no VOAs) | |
| 12. | [ ] Yes | [X] No | [ ] N/A | Did any samples need to be preserved in the lab? | |
| **Bottle Conditions** | | | | | |
| 13. | [X] Yes | [ ] No | [ ] N/A | All bottles intact | |
| 14. | [X] Yes | [ ] No | [ ] N/A | Appropriate analytical bottles are used | |
| 15. | [X] Yes | [ ] No | [ ] N/A | Merit bottles used | |
| 16. | [X] Yes | [ ] No | [ ] N/A | Sufficient sample volume received | |
| 17. | [ ] Yes | [X] No | [ ] N/A | Samples require laboratory filtration | |
| 18. | [X] Yes | [ ] No | [ ] N/A | Samples submitted within holding time | |
| 19. | [ ] Yes | [ ] No | [X] N/A | Do water VOC or TOX bottles contain headspace | |

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

Client Review By: _____ Date: _____

Merit Laboratories, Inc.

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

C.O.C. PAGE # _____ OF _____

141695

# CHAIN OF CUSTODY RECORD

## REPORT TO

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

## INVOICE TO

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

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 _____

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

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

| MERIT LAB NO. (FOR LAB USE ONLY) | YEAR DATE | YEAR TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | Full VOC's List method 8260 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 56305.01 | 11/30/23 | 1122 | MW05-10_GW-113023 | GW | 3 | | X | | | | | | X |
| .02 | 11/30/23 | 1213 | MW-08-21_GW-113023 | GW | 3 | | X | | | | | | X |
| .03 | 11/30/23 | 1335 | MW-09-22_GW-113023 | GW | 3 | | X | | | | | | X |
| .04 | 11/30/23 | — | DUP-01_GW-113023 | GW | 3 | | X | | | | | | X |
| .05 | 11/30/23 | 1530 | TW-12-22_GW-113023 | GW | 3 | | X | | | | | | X |

| | | | |
|---|---|---|---|
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | Sommer Guy / Arcadis ☒ Sampler | DATE 11/30/23 | TIME 1600 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE 12/1/23 | TIME 13:30 |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | DATE 12/1/23 | TIME 14:50 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE 12/1/23 | TIME 1950 |

| | | | |
|---|---|---|---|
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 2.7

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

Rev. 5.18.12

# Analytical Laboratory Report

Report ID: S56306.01(01)
Generated on 12/05/2023

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

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S56306.01-S56306.07
Project: 30167840.00005 / RACER PNC
Collected Date(s): 11/30/2023 - 12/01/2023
Submitted Date/Time: 12/01/2023 14:50
Sampled by: Alaina Pitera
P.O. #: 30167840.00005

Table of Contents

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



Maya Murshak
Technical Director

## 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.
Starred (*) analytes are not NY 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.
All accreditations/certifications held by this laboratory are listed on page 3. Not all accreditations/certifications are applicable to this report.
For a specific list of accredited analytes, please feel free to contact the laboratory or visit https://www.meritlabs.com/certifications.

## Report Narrative

There is no additional narrative for this analytical report

**Laboratory Accreditations (For Reference Only)**

| Authority | Accreditation ID |
|---|---|
| Michigan DEQ | #9956 |
| DOD ELAP & ISO/IEC 17025:2017 | #69699 PJLA Testing |
| WBENC | #2005110032 |
| Ohio VAP | #CL0002 |
| Indiana DOH | #C-MI-07 |
| New York NELAC | #11814 |
| North Carolina DENR | #680 |
| North Carolina DOH | #26702 |
| Pennsylvania DEP | #68-05884 |
| Wisconsin DNR | FID# 399147320 |

**Qualifier Descriptions**

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

**Glossary of Abbreviations**

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

**Method Summary**

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

**Sample Summary (7 samples)**

| Sample ID | Sample Tag | Matrix | Collected Date/Time |
|---|---|---|---|
| S56306.01 | Trip Blank | Water | 11/30/23 00:01 |
| S56306.02 | MW-06-20_GW-113023 | Groundwater | 11/30/23 10:50 |
| S56306.03 | MWF16-23_GW-113023 | Groundwater | 11/30/23 12:05 |
| S56306.04 | MWF16-05_GW-113023 | Groundwater | 11/30/23 14:20 |
| S56306.05 | MW-02-17_GW-120123 | Groundwater | 12/01/23 10:35 |
| S56306.06 | MW-07-20_GW-120123 | Groundwater | 12/01/23 11:45 |
| S56306.07 | MW-05-18_GW-120123 | Groundwater | 12/01/23 12:55 |

**Lab Sample ID: S56306.01**
Sample Tag: Trip Blank
Collected Date/Time: 11/30/2023 00:01
Matrix: Water
COC Reference: 141315

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 1 | 40ml Glass | HCL | Yes | 2.7 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/05/23 11:05 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 17:00, 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 | |

**Lab Sample ID: S56306.01 (continued)**
Sample Tag: Trip Blank

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 17:00, 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 | |

**Lab Sample ID: S56306.02**
Sample Tag: MW-06-20_GW-113023
Collected Date/Time: 11/30/2023 10:50
Matrix: Groundwater
COC Reference: 141315

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.7 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/05/23 11:05 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 22:18, 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 | Not detected | 1 | | ug/L | 1 | 156-60-5 | |
| 1,1-Dichloroethane | 4 | 1 | | ug/L | 1 | 75-34-3 | |
| cis-1,2-Dichloroethene | 3 | 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 | 9 | 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 | |

**Lab Sample ID: S56306.02 (continued)**
Sample Tag: MW-06-20_GW-113023

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 22:18, 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 | |

**Lab Sample ID: S56306.03**
Sample Tag: MWF16-23_GW-113023
Collected Date/Time: 11/30/2023 12:05
Matrix: Groundwater
COC Reference: 141315

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.7 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/05/23 11:05 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 22:38, 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 | 3 | 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 | 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 | 15 | 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 | |

**Lab Sample ID: S56306.03 (continued)**
Sample Tag: MWF16-23_GW-113023

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 22:38, 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 | |

**Lab Sample ID: S56306.04**
Sample Tag: MWF16-05_GW-113023
Collected Date/Time: 11/30/2023 14:20
Matrix: Groundwater
COC Reference: 141315

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.7 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/05/23 11:05 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/05/23 01:36, Analyst: KAG**

| 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 | Not detected | 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 | Not detected | 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 | 250 | 10 | | ug/L | 10 | 127-18-4 | Y |

Y-Elevated reporting limit due to high target concentration

**Lab Sample ID: S56306.04 (continued)**
Sample Tag: MWF16-05_GW-113023

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/05/23 01:36, Analyst: KAG (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

**Lab Sample ID: S56306.05**
Sample Tag: MW-02-17_GW-120123
Collected Date/Time: 12/01/2023 10:35
Matrix: Groundwater
COC Reference: 141315

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.7 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/05/23 11:05 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 22:59, 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 | 2 | 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 | 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 | 7 | 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 | 6 | 1 | | ug/L | 1 | 127-18-4 | |
| trans-1,4-Dichloro-2-butene | Not detected | 1 | | ug/L | 1 | 110-57-6 | |

**Lab Sample ID: S56306.05 (continued)**
Sample Tag: MW-02-17_GW-120123

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 22:59, 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 | |

**Lab Sample ID: S56306.06**
Sample Tag: MW-07-20_GW-120123
Collected Date/Time: 12/01/2023 11:45
Matrix: Groundwater
COC Reference: 141315

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.7 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/05/23 11:05 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 23:18, 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 | Not detected | 1 | | ug/L | 1 | 156-60-5 | |
| 1,1-Dichloroethane | 9 | 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 | 6 | 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 | 1 | 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 | |

**Lab Sample ID: S56306.06 (continued)**
Sample Tag: MW-07-20_GW-120123

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 23:18, 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 | |

**Lab Sample ID: S56306.07**
Sample Tag: MW-05-18_GW-120123
Collected Date/Time: 12/01/2023 12:55
Matrix: Groundwater
COC Reference: 141315

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 2.7 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/05/23 11:05 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 23:38, 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 | 4 | 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 | 5 | 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 | |

**Lab Sample ID: S56306.07 (continued)**
Sample Tag: MW-05-18_GW-120123

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 23:38, 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: S56306
Client: ARCADIS_NOVI (Arcadis US, Inc. - Novi)
Project: 30167840.00005 / RACER PNC
Submitted: 12/01/2023 14:50 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. | [X] Yes | [ ] No | [ ] N/A | Samples are received at 4C +/- 2C Thermometer # | IR 2.7 |
| 02. | [X] Yes | [ ] No | [ ] N/A | Received on ice/ cooling process begun | |
| 03. | [ ] Yes | [X] No | [ ] N/A | Samples shipped | |
| 04. | [ ] Yes | [X] No | [ ] N/A | Samples left in 24 hr. drop box | |
| 05. | [ ] Yes | [ ] No | [X] N/A | Are there custody seals/tape or is the drop box locked | |
| **Chain of Custody** | | | | | |
| 06. | [X] Yes | [ ] No | [ ] N/A | COC adequately filled out | |
| 07. | [X] Yes | [ ] No | [ ] N/A | COC signed and relinquished to the lab | |
| 08. | [X] Yes | [ ] No | [ ] N/A | Sample tag on bottles match COC | |
| 09. | [ ] Yes | [X] No | [ ] N/A | Subcontracting needed? Subcontacted to: | |
| **Preservation** | | | | | |
| 10. | [X] Yes | [ ] No | [ ] N/A | Do sample have correct chemical preservation | |
| 11. | [ ] Yes | [ ] No | [X] N/A | Completed pH checks on preserved samples? (no VOAs) | |
| 12. | [ ] Yes | [X] No | [ ] N/A | Did any samples need to be preserved in the lab? | |
| **Bottle Conditions** | | | | | |
| 13. | [X] Yes | [ ] No | [ ] N/A | All bottles intact | |
| 14. | [X] Yes | [ ] No | [ ] N/A | Appropriate analytical bottles are used | |
| 15. | [X] Yes | [ ] No | [ ] N/A | Merit bottles used | |
| 16. | [X] Yes | [ ] No | [ ] N/A | Sufficient sample volume received | |
| 17. | [ ] Yes | [X] No | [ ] N/A | Samples require laboratory filtration | |
| 18. | [X] Yes | [ ] No | [ ] N/A | Samples submitted within holding time | |
| 19. | [ ] Yes | [X] 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: _____

Merit Laboratories, Inc.

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

C.O.C. PAGE # _____ OF _____

141315

# CHAIN OF CUSTODY RECORD

## REPORT TO

CONTACT NAME: Alexis Crisp
COMPANY: Arcadis
ADDRESS: Arcadis 28550 Cabot Dr. #500
CITY: Novi STATE: MI ZIP CODE: 48377
PHONE NO.: FAX NO.: P.O. NO.:
E-MAIL ADDRESS: 30167840.00005/Racer PNC QUOTE NO.:

## INVOICE TO

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

PROJECT NO./NAME: Alexis.Crisp@arcadis.com tiffany.Linder@arcadis.com
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Alaina Pitera / Alaina Pitera

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER _____

DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☒ EDD ☐ OTHER _____

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

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

| MERIT LAB NO. (FOR LAB USE ONLY) | YEAR DATE | YEAR TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | Full VOC's list Method 8260 | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 56306.01 | — | — | Trip Blank | L | 1 | | X | | | | | | X | Trip Blank |
| .02 | 11/30/23 | 1050 | MW-06-20_GW-113023 | GW | 3 | | X | | | | | | X | |
| .03 | 11/30/23 | 1205 | MWF16-23_GW-113023 | GW | 3 | | X | | | | | | X | |
| [illegible] | | | | | | | | | | | | | | |
| .04 | 11/30/23 | 1420 | MWF16-25_GW-113023 | GW | 3 | | X | | | | | | X | |
| .05 | 12/01/23 | 1035 | MW-02-17_GW-120123 | GW | 3 | | X | | | | | | X | |
| .06 | 12/01/23 | 1145 | MW-07-20_GW-120123 | GW | 3 | | X | | | | | | X | |
| .07 | 12/01/23 | 1255 | MW-05-18_GW-120123 | GW | 3 | | X | | | | | | X | |

| | | | |
|---|---|---|---|
| RELINQUISHED BY: SIGNATURE/ORGANIZATION: Alaina Pitera ☒ Sampler | DATE: 12/01/23 | TIME: 1330 | |
| RECEIVED BY: SIGNATURE/ORGANIZATION: | DATE: 12/1/23 | TIME: 13:30 | |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION: | DATE: 12/1/23 | TIME: 14:50 | |
| RECEIVED BY: SIGNATURE/ORGANIZATION: | DATE: 12/1 | TIME: 1450 | |

| | | | |
|---|---|---|---|
| RELINQUISHED BY: SIGNATURE/ORGANIZATION: | DATE: | TIME: | |
| RECEIVED BY: SIGNATURE/ORGANIZATION: | DATE: | TIME: | |
| SEAL NO. | SEAL INTACT YES ☐ NO ☐ | INITIALS | NOTES: TEMP. ON ARRIVAL _____ |
| SEAL NO. | SEAL INTACT YES ☐ NO ☐ | INITIALS | 2.7 |

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

Rev. 5.18.12

# Analytical Laboratory Report

Report ID: S56393.01(01)
Generated on 12/08/2023

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

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S56393.01-S56393.07
Project: RACER PNC
Collected Date(s): 12/04/2023 - 12/05/2023
Submitted Date/Time: 12/05/2023 13:00
Sampled by: Garrett Link
P.O. #: 30167840

Table of Contents

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



Maya Murshak
Technical Director

**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.
Starred (*) analytes are not NY 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.
All accreditations/certifications held by this laboratory are listed on page 3. Not all accreditations/certifications are applicable to this report.
For a specific list of accredited analytes, please feel free to contact the laboratory or visit https://www.meritlabs.com/certifications.

**Report Narrative**

There is no additional narrative for this analytical report

**Laboratory Accreditations (For Reference Only)**

| Authority | Accreditation ID |
|---|---|
| Michigan DEQ | #9956 |
| DOD ELAP & ISO/IEC 17025:2017 | #69699 PJLA Testing |
| WBENC | #2005110032 |
| Ohio VAP | #CL0002 |
| Indiana DOH | #C-MI-07 |
| New York NELAC | #11814 |
| North Carolina DENR | #680 |
| North Carolina DOH | #26702 |
| Pennsylvania DEP | #68-05884 |
| Wisconsin DNR | FID# 399147320 |

**Qualifier Descriptions**

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

**Glossary of Abbreviations**

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

**Method Summary**

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

**Sample Summary (7 samples)**

| Sample ID | Sample Tag | Matrix | Collected Date/Time |
|---|---|---|---|
| S56393.01 | MWF16-15_GW-120423 | Groundwater | 12/04/23 11:05 |
| S56393.02 | UNKNOWN-01_GW-120423 | Groundwater | 12/04/23 12:20 |
| S56393.03 | MWF15-01_GW-120423 | Groundwater | 12/04/23 14:07 |
| S56393.04 | MWF16-07_GW-120523 | Groundwater | 12/05/23 10:45 |
| S56393.05 | MWF16-07_GW-120523 MS | Groundwater | 12/05/23 10:45 |
| S56393.06 | MWF16-07_GW-120523 MSD | Groundwater | 12/05/23 10:45 |
| S56393.07 | TRIP BLANK | Water | 12/05/23 00:01 |

**Lab Sample ID: S56393.01**
Sample Tag: MWF16-15_GW-120423
Collected Date/Time: 12/04/2023 11:05
Matrix: Groundwater
COC Reference: 141696

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 3.3 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/07/23 11:02 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/07/23 14:45, 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 | 2 | 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 | 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 | |

**Lab Sample ID: S56393.01 (continued)**
Sample Tag: MWF16-15_GW-120423

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/07/23 14:45, 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 | |

**Lab Sample ID: S56393.02**
Sample Tag: UNKNOWN-01_GW-120423
Collected Date/Time: 12/04/2023 12:20
Matrix: Groundwater
COC Reference: 141696

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 3.3 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/07/23 11:02 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/06/23 14:46, 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 | 8 | 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 | 66 | 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 | 45 | 1 | | ug/L | 1 | 127-18-4 | |
| trans-1,4-Dichloro-2-butene | Not detected | 1 | | ug/L | 1 | 110-57-6 | |

**Lab Sample ID: S56393.02 (continued)**
Sample Tag: UNKNOWN-01_GW-120423

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/06/23 14:46, 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 | |

**Lab Sample ID: S56393.03**
Sample Tag: MWF15-01_GW-120423
Collected Date/Time: 12/04/2023 14:07
Matrix: Groundwater
COC Reference: 141696

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 3.3 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/07/23 11:02 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/06/23 15:06, 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 | 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 | 5 | 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 | |

**Lab Sample ID: S56393.03 (continued)**
Sample Tag: MWF15-01_GW-120423

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/06/23 15:06, 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 | |

**Lab Sample ID: S56393.04**
Sample Tag: MWF16-07_GW-120523
Collected Date/Time: 12/05/2023 10:45
Matrix: Groundwater
COC Reference: 141696

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 3.3 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/07/23 11:02 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/07/23 01:59, 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 | 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 | |

**Lab Sample ID: S56393.04 (continued)**
Sample Tag: MWF16-07_GW-120523

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/07/23 01:59, 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 | |

**Lab Sample ID: S56393.05**
Sample Tag: MWF16-07_GW-120523 MS
Collected Date/Time: 12/05/2023 10:45
Matrix: Groundwater
COC Reference: 141696

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 3.3 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/07/23 11:02 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/06/23 21:02, Analyst: NDK**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| Diethyl ether | 55 | 10 | | ug/L | 1 | 60-29-7 | 1 |
| Acetone | 62 | 50 | | ug/L | 1 | 67-64-1 | 1 |
| Methyl iodide | 54 | 1 | | ug/L | 1 | 74-88-4 | 1 |
| Carbon disulfide | 52 | 5 | | ug/L | 1 | 75-15-0 | 1 |
| tert-Methyl butyl ether (MTBE) | 55 | 5 | | ug/L | 1 | 1634-04-4 | 1 |
| Acrylonitrile | 57 | 2 | | ug/L | 1 | 107-13-1 | 1 |
| 2-Butanone (MEK) | 55 | 25 | | ug/L | 1 | 78-93-3 | 1 |
| Dichlorodifluoromethane | 74 | 5 | | ug/L | 1 | 75-71-8 | 1 |
| Chloromethane | 69 | 5 | | ug/L | 1 | 74-87-3 | 1 |
| Vinyl chloride | 66 | 1 | | ug/L | 1 | 75-01-4 | 1 |
| Bromomethane | 60 | 5 | | ug/L | 1 | 74-83-9 | 1 |
| Chloroethane | 60 | 5 | | ug/L | 1 | 75-00-3 | 1 |
| Trichlorofluoromethane | 60 | 1 | | ug/L | 1 | 75-69-4 | 1 |
| 1,1-Dichloroethene | 55 | 1 | | ug/L | 1 | 75-35-4 | 1 |
| Methylene chloride | 54 | 5 | | ug/L | 1 | 75-09-2 | 1 |
| trans-1,2-Dichloroethene | 55 | 1 | | ug/L | 1 | 156-60-5 | 1 |
| 1,1-Dichloroethane | 55 | 1 | | ug/L | 1 | 75-34-3 | 1 |
| cis-1,2-Dichloroethene | 56 | 1 | | ug/L | 1 | 156-59-2 | 1 |
| Tetrahydrofuran* | Not detected | 90 | | ug/L | 1 | 109-99-9 | 1 |
| Chloroform | 55 | 1 | | ug/L | 1 | 67-66-3 | 1 |
| Bromochloromethane | 54 | 1 | | ug/L | 1 | 74-97-5 | 1 |
| 1,1,1-Trichloroethane | 54 | 1 | | ug/L | 1 | 71-55-6 | 1 |
| 4-Methyl-2-pentanone (MIBK) | 56 | 50 | | ug/L | 1 | 108-10-1 | 1 |
| 2-Hexanone | 57 | 50 | | ug/L | 1 | 591-78-6 | 1 |
| Carbon tetrachloride | 52 | 1 | | ug/L | 1 | 56-23-5 | 1 |
| Benzene | 54 | 1 | | ug/L | 1 | 71-43-2 | 1 |
| 1,2-Dichloroethane | 54 | 1 | | ug/L | 1 | 107-06-2 | 1 |
| Trichloroethene | 53 | 1 | | ug/L | 1 | 79-01-6 | 1 |
| 1,2-Dichloropropane | 54 | 1 | | ug/L | 1 | 78-87-5 | 1 |
| Bromodichloromethane | 55 | 1 | | ug/L | 1 | 75-27-4 | 1 |
| Dibromomethane | 53 | 5 | | ug/L | 1 | 74-95-3 | 1 |
| cis-1,3-Dichloropropene | 53 | 1 | | ug/L | 1 | 10061-01-5 | 1 |
| Toluene | 53 | 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 | 55 | 1 | | ug/L | 1 | 79-00-5 | 1 |
| Tetrachloroethene | 52 | 1 | | ug/L | 1 | 127-18-4 | 1 |

1-Spiked at 50 ug/L

**Lab Sample ID: S56393.05 (continued)**
Sample Tag: MWF16-07_GW-120523 MS

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/06/23 21:02, Analyst: NDK (continued)**

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

1-Spiked at 50 ug/L

**Lab Sample ID: S56393.06**
Sample Tag: MWF16-07_GW-120523 MSD
Collected Date/Time: 12/05/2023 10:45
Matrix: Groundwater
COC Reference: 141696

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 3.3 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/07/23 11:02 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/06/23 21:21, Analyst: NDK**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| Diethyl ether | 52 | 10 | | ug/L | 1 | 60-29-7 | 1 |
| Acetone | 62 | 50 | | ug/L | 1 | 67-64-1 | 1 |
| Methyl iodide | 52 | 1 | | ug/L | 1 | 74-88-4 | 1 |
| Carbon disulfide | 49 | 5 | | ug/L | 1 | 75-15-0 | 1 |
| tert-Methyl butyl ether (MTBE) | 54 | 5 | | ug/L | 1 | 1634-04-4 | 1 |
| Acrylonitrile | 57 | 2 | | ug/L | 1 | 107-13-1 | 1 |
| 2-Butanone (MEK) | 56 | 25 | | ug/L | 1 | 78-93-3 | 1 |
| Dichlorodifluoromethane | 70 | 5 | | ug/L | 1 | 75-71-8 | 1 |
| Chloromethane | 63 | 5 | | ug/L | 1 | 74-87-3 | 1 |
| Vinyl chloride | 62 | 1 | | ug/L | 1 | 75-01-4 | 1 |
| Bromomethane | 56 | 5 | | ug/L | 1 | 74-83-9 | 1 |
| Chloroethane | 56 | 5 | | ug/L | 1 | 75-00-3 | 1 |
| Trichlorofluoromethane | 57 | 1 | | ug/L | 1 | 75-69-4 | 1 |
| 1,1-Dichloroethene | 52 | 1 | | ug/L | 1 | 75-35-4 | 1 |
| Methylene chloride | 51 | 5 | | ug/L | 1 | 75-09-2 | 1 |
| trans-1,2-Dichloroethene | 53 | 1 | | ug/L | 1 | 156-60-5 | 1 |
| 1,1-Dichloroethane | 52 | 1 | | ug/L | 1 | 75-34-3 | 1 |
| cis-1,2-Dichloroethene | 52 | 1 | | ug/L | 1 | 156-59-2 | 1 |
| Tetrahydrofuran* | Not detected | 90 | | ug/L | 1 | 109-99-9 | 1 |
| Chloroform | 52 | 1 | | ug/L | 1 | 67-66-3 | 1 |
| Bromochloromethane | 52 | 1 | | ug/L | 1 | 74-97-5 | 1 |
| 1,1,1-Trichloroethane | 52 | 1 | | ug/L | 1 | 71-55-6 | 1 |
| 4-Methyl-2-pentanone (MIBK) | 57 | 50 | | ug/L | 1 | 108-10-1 | 1 |
| 2-Hexanone | 56 | 50 | | ug/L | 1 | 591-78-6 | 1 |
| Carbon tetrachloride | 50 | 1 | | ug/L | 1 | 56-23-5 | 1 |
| Benzene | 52 | 1 | | ug/L | 1 | 71-43-2 | 1 |
| 1,2-Dichloroethane | 52 | 1 | | ug/L | 1 | 107-06-2 | 1 |
| Trichloroethene | 51 | 1 | | ug/L | 1 | 79-01-6 | 1 |
| 1,2-Dichloropropane | 53 | 1 | | ug/L | 1 | 78-87-5 | 1 |
| Bromodichloromethane | 53 | 1 | | ug/L | 1 | 75-27-4 | 1 |
| Dibromomethane | 51 | 5 | | ug/L | 1 | 74-95-3 | 1 |
| cis-1,3-Dichloropropene | 51 | 1 | | ug/L | 1 | 10061-01-5 | 1 |
| Toluene | 52 | 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 | 53 | 1 | | ug/L | 1 | 79-00-5 | 1 |
| Tetrachloroethene | 51 | 1 | | ug/L | 1 | 127-18-4 | 1 |

1-Spiked at 50 ug/L

**Lab Sample ID: S56393.06 (continued)**
Sample Tag: MWF16-07_GW-120523 MSD

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/06/23 21:21, Analyst: NDK (continued)**

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

1-Spiked at 50 ug/L

**Lab Sample ID: S56393.07**
Sample Tag: TRIP BLANK
Collected Date/Time: 12/05/2023 00:01
Matrix: Water
COC Reference: 141696

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 1 | 40ml Glass | HCL | Yes | 3.3 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/07/23 11:02 | ACK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/06/23 13:40, 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 | 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 | |

**Lab Sample ID: S56393.07 (continued)**
Sample Tag: TRIP BLANK

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/06/23 13:40, 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 | |

# Merit Laboratories Login Checklist

Lab Set ID: S56393
Client: ARCADIS_NOVI (Arcadis US, Inc. - Novi)
Project: RACER PNC
Submitted: 12/05/2023 13:00 Login User: MMC

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

Phone: 810-225-1909 FAX:
Email: Alexis.Crisp@arcadis.com

| Selection | | | | Description | Note |
|---|---|---|---|---|---|
| **Sample Receiving** | | | | | |
| 01. | [X] Yes | [ ] No | [ ] N/A | Samples are received at 4C +/- 2C Thermometer # | IR 3.3 |
| 02. | [X] Yes | [ ] No | [ ] N/A | Received on ice/ cooling process begun | |
| 03. | [ ] Yes | [X] No | [ ] N/A | Samples shipped | |
| 04. | [ ] Yes | [X] No | [ ] N/A | Samples left in 24 hr. drop box | |
| 05. | [ ] Yes | [ ] No | [X] N/A | Are there custody seals/tape or is the drop box locked | |
| **Chain of Custody** | | | | | |
| 06. | [X] Yes | [ ] No | [ ] N/A | COC adequately filled out | |
| 07. | [X] Yes | [ ] No | [ ] N/A | COC signed and relinquished to the lab | |
| 08. | [X] Yes | [ ] No | [ ] N/A | Sample tag on bottles match COC | |
| 09. | [ ] Yes | [X] No | [ ] N/A | Subcontracting needed? Subcontacted to: | |
| **Preservation** | | | | | |
| 10. | [X] Yes | [ ] No | [ ] N/A | Do sample have correct chemical preservation | |
| 11. | [ ] Yes | [ ] No | [X] N/A | Completed pH checks on preserved samples? (no VOAs) | |
| 12. | [ ] Yes | [X] No | [ ] N/A | Did any samples need to be preserved in the lab? | |
| **Bottle Conditions** | | | | | |
| 13. | [X] Yes | [ ] No | [ ] N/A | All bottles intact | |
| 14. | [X] Yes | [ ] No | [ ] N/A | Appropriate analytical bottles are used | |
| 15. | [X] Yes | [ ] No | [ ] N/A | Merit bottles used | |
| 16. | [X] Yes | [ ] No | [ ] N/A | Sufficient sample volume received | |
| 17. | [ ] Yes | [X] No | [ ] N/A | Samples require laboratory filtration | |
| 18. | [X] Yes | [ ] No | [ ] N/A | Samples submitted within holding time | |
| 19. | [ ] Yes | [X] 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: _____

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

C.O.C. PAGE # _____ OF _____ 141696

# CHAIN OF CUSTODY RECORD

## REPORT TO

CONTACT NAME: Lexi Crisp
COMPANY: ARCADIS
ADDRESS: 28550 Cabot Dr. #500
CITY: Novi STATE: MI ZIP CODE: 48377
PHONE NO.: – FAX NO.: –
P.O. NO.:
E-MAIL ADDRESS: LEXI.CRISP@ARCADIS.COM
QUOTE NO.:

## INVOICE TO

CONTACT NAME: ☐ SAME
COMPANY:
ADDRESS:
CITY: STATE: ZIP CODE:
PHONE NO.: E-MAIL ADDRESS: ACCOUNTS.PAYABLE@ARCADIS.COM

PROJECT NO./NAME: RACER PNC
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Garrett Link

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER _____

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER _____

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other _____

| MERIT LAB NO. FOR LAB USE ONLY | YEAR DATE | YEAR TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | ASTM-8260 (VOCs) | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 56393.01 | 12/04/23 | 11:05 | MWF16-15_GW-120423 | GW | 3 | | 3 | | | | | | X | |
| .02 | 12/04/23 | 12:20 | UNKNOWN-01_GW-120423 | GW | 3 | | 3 | | | | | | X | |
| .03 | 12/04/23 | 14:07 | MWF15-01_GW-120423 | GW | 3 | | 3 | | | | | | X | |
| .04/.05/.06 | 12/05/23 | 10:45 | MWF16-07_GW-120523 | GW | 9 | | 9 | | | | | | X | MS/MSD |
| .07 | 12/05/23 | – | TRIP BLANK | – | 1 | | 1 | | | | | | X | (1) Trip blank |

| RELINQUISHED BY: SIGNATURE/ORGANIZATION | DATE | TIME |
|---|---|---|
| Garrett Link/ARCADIS ☒ Sampler | 12/05/23 | 1300 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | 12/5/23 | 1200 |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | |

| RELINQUISHED BY: SIGNATURE/ORGANIZATION | DATE | TIME |
|---|---|---|
| | | |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | |

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 3.3

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

Rev. 5.18.12

# Analytical Laboratory Report

Report ID: S56261.01(01)
Generated on 12/04/2023

Report to

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Report Summary

Lab Sample ID(s): S56261.01-S56261.04
Project: RACER PNC / 30167840.00005
Collected Date(s): 11/28/2023 - 11/29/2023
Submitted Date/Time: 11/30/2023 16:00
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 Accreditations (Page 3)
Qualifier Descriptions (Page 3)
Glossary of Abbreviations (Page 3)
Method Summary (Page 4)
Sample Summary (Page 5)



Maya Murshak
Technical Director

## 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.
Starred (*) analytes are not NY 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.
All accreditations/certifications held by this laboratory are listed on page 3. Not all accreditations/certifications are applicable to this report.
For a specific list of accredited analytes, please feel free to contact the laboratory or visit https://www.meritlabs.com/certifications.

## Report Narrative

There is no additional narrative for this analytical report

**Laboratory Accreditations (For Reference Only)**

| Authority | Accreditation ID |
|---|---|
| Michigan DEQ | #9956 |
| DOD ELAP & ISO/IEC 17025:2017 | #69699 PJLA Testing |
| WBENC | #2005110032 |
| Ohio VAP | #CL0002 |
| Indiana DOH | #C-MI-07 |
| New York NELAC | #11814 |
| North Carolina DENR | #680 |
| North Carolina DOH | #26702 |
| Pennsylvania DEP | #68-05884 |
| Wisconsin DNR | FID# 399147320 |

**Qualifier Descriptions**

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

**Glossary of Abbreviations**

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

**Method Summary**

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

**Sample Summary (4 samples)**

| Sample ID | Sample Tag | Matrix | Collected Date/Time |
|---|---|---|---|
| S56261.01 | MWF16-06-GW_112823 | Groundwater | 11/28/23 14:50 |
| S56261.02 | MWF16-12-GW_112923 | Groundwater | 11/29/23 11:20 |
| S56261.03 | MWF16-18-GW_112923 | Groundwater | 11/29/23 12:45 |
| S56261.04 | MWF16-17-GW_112923 | Groundwater | 11/29/23 14:48 |

**Lab Sample ID: S56261.01**
Sample Tag: MWF16-06-GW_112823
Collected Date/Time: 11/28/2023 14:50
Matrix: Groundwater
COC Reference: 141312

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.1 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/04/23 13:05 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 02:26, 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 | 4 | 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 | 32 | 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 | 9 | 1 | | ug/L | 1 | 67-66-3 | |
| Bromochloromethane | Not detected | 1 | | ug/L | 1 | 74-97-5 | |
| 1,1,1-Trichloroethane | 100 | 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 | 9 | 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 | 44 | 1 | | ug/L | 1 | 127-18-4 | |
| trans-1,4-Dichloro-2-butene | Not detected | 1 | | ug/L | 1 | 110-57-6 | |

**Lab Sample ID: S56261.01 (continued)**
Sample Tag: MWF16-06-GW_112823

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 02:26, 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 | |

**Lab Sample ID: S56261.02**
Sample Tag: MWF16-12-GW_112923
Collected Date/Time: 11/29/2023 11:20
Matrix: Groundwater
COC Reference: 141312

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.1 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/04/23 13:05 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 02:50, 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 | 9 | 1 | | ug/L | 1 | 127-18-4 | |
| trans-1,4-Dichloro-2-butene | Not detected | 1 | | ug/L | 1 | 110-57-6 | |

**Lab Sample ID: S56261.02 (continued)**
Sample Tag: MWF16-12-GW_112923

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 02:50, 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: S56261.03**
Sample Tag: MWF16-18-GW_112923
Collected Date/Time: 11/29/2023 12:45
Matrix: Groundwater
COC Reference: 141312

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.1 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/04/23 13:05 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 07:58, Analyst: KAG**

| 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 | 120 | 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 | 30 | 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

**Lab Sample ID: S56261.03 (continued)**
Sample Tag: MWF16-18-GW_112923

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 07:58, Analyst: KAG (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: S56261.04**
Sample Tag: MWF16-17-GW_112923
Collected Date/Time: 11/29/2023 14:48
Matrix: Groundwater
COC Reference: 141312

Sample Containers

| # | Type | Preservative(s) | Refrigerated? | Arrival Temp. (C) | Thermometer # |
|---|---|---|---|---|---|
| 3 | 40ml Glass | HCL | Yes | 4.1 | IR |

***Extraction / Prep.***

| Parameter | Result | Method | Run Date | Analyst | Flags |
|---|---|---|---|---|---|
| pH check for VOCs* | <2 | N/A | 12/04/23 13:05 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 03:13, 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 | 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 | Not detected | 1 | | ug/L | 1 | 127-18-4 | |
| trans-1,4-Dichloro-2-butene | Not detected | 1 | | ug/L | 1 | 110-57-6 | |

**Lab Sample ID: S56261.04 (continued)**
Sample Tag: MWF16-17-GW_112923

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 03:13, 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: S56261
Client: ARCADIS_NOVI (Arcadis US, Inc. - Novi)
Project: RACER PNC / 30167840.00005
Submitted: 11/30/2023 16:00 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. | [X] Yes | [ ] No | [ ] N/A | Samples are received at 4C +/- 2C Thermometer # | IR 2.8 |
| 02. | [X] Yes | [ ] No | [ ] N/A | Received on ice/ cooling process begun | |
| 03. | [ ] Yes | [X] No | [ ] N/A | Samples shipped | |
| 04. | [ ] Yes | [X] No | [ ] N/A | Samples left in 24 hr. drop box | |
| 05. | [ ] Yes | [ ] No | [X] N/A | Are there custody seals/tape or is the drop box locked | |
| **Chain of Custody** | | | | | |
| 06. | [X] Yes | [ ] No | [ ] N/A | COC adequately filled out | |
| 07. | [X] Yes | [ ] No | [ ] N/A | COC signed and relinquished to the lab | |
| 08. | [X] Yes | [ ] No | [ ] N/A | Sample tag on bottles match COC | |
| 09. | [ ] Yes | [X] No | [ ] N/A | Subcontracting needed? Subcontacted to: | |
| **Preservation** | | | | | |
| 10. | [X] Yes | [ ] No | [ ] N/A | Do sample have correct chemical preservation | |
| 11. | [ ] Yes | [ ] No | [X] N/A | Completed pH checks on preserved samples? (no VOAs) | |
| 12. | [ ] Yes | [X] No | [ ] N/A | Did any samples need to be preserved in the lab? | |
| **Bottle Conditions** | | | | | |
| 13. | [X] Yes | [ ] No | [ ] N/A | All bottles intact | |
| 14. | [X] Yes | [ ] No | [ ] N/A | Appropriate analytical bottles are used | |
| 15. | [X] Yes | [ ] No | [ ] N/A | Merit bottles used | |
| 16. | [X] Yes | [ ] No | [ ] N/A | Sufficient sample volume received | |
| 17. | [ ] Yes | [X] No | [ ] N/A | Samples require laboratory filtration | |
| 18. | [X] Yes | [ ] No | [ ] N/A | Samples submitted within holding time | |
| 19. | [ ] Yes | [ ] No | [X] N/A | Do water VOC or TOX bottles contain headspace | |

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

Client Review By: _____ Date: _____

Merit Laboratories, Inc.

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

C.O.C. PAGE # _____ OF _____ 141312

# CHAIN OF CUSTODY RECORD

## REPORT TO

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

## INVOICE TO

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

PROJECT NO./NAME: Racer PNC / 30167840.00005
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Samantha Szparachler / [signature]

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER _____

DELIVERABLES REQUIRED ☒ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER _____

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other _____

Special Instructions

| MERIT LAB NO. FOR LAB USE ONLY | YEAR DATE | YEAR TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | VOCs 8260 ASTM Full |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 562601.01 | 11/28/23 | 1450 | MWF16-06-GW_112823 | GW | 3 | | 3 | | | | | | X |
| .02 | 11/29/23 | 1120 | MWF16-12-GW_112923 | GW | 3 | | 3 | | | | | | X |
| .03 | 11/29/23 | 1245 | MWF16-18-GW_112923 | GW | 3 | | 3 | | | | | | X |
| .04 | 11/29/23 | 1448 | MWF16-17-GW_112923 | GW | 3 | | 3 | | | | | | X |

| RELINQUISHED BY: SIGNATURE/ORGANIZATION | ☐ Sampler | DATE | TIME |
|---|---|---|---|
| Samantha Szparachler | | 11/29/23 | 1520 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| Sommer Guy / Sommer Guy | | 11/29/23 | 1520 |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| [signature] | | 11/30/23 | 10:00 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| [signature] | | 11/30/23 | 1800 |

| RELINQUISHED BY: SIGNATURE/ORGANIZATION | DATE | TIME |
|---|---|---|
| Sommer Guy / Arcadis | 11/30/23 | 10:30 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | DATE | TIME |
| [signature] | 11/30/23 | 10:30 |

| SEAL NO. | SEAL INTACT YES ☐ NO ☐ | INITIALS |
|---|---|---|
| SEAL NO. | SEAL INTACT YES ☐ NO ☐ | INITIALS |

NOTES: TEMP. ON ARRIVAL 2.8

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

Rev. 5.18.12

# Analytical Laboratory Report

Report ID: S56262.01(01)
Generated on 12/05/2023

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

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S56262.01-S56262.06
Project: 30167840.00005 / RACER PNC
Collected Date(s): 11/28/2023 - 11/30/2023
Submitted Date/Time: 11/30/2023 16:00
Sampled by: Sommer Guy
P.O. #: 30167840.00005

Table of Contents

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

Maya Murshak
Technical Director

**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.
Starred (*) analytes are not NY 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.
All accreditations/certifications held by this laboratory are listed on page 3. Not all accreditations/certifications are applicable to this report.
For a specific list of accredited analytes, please feel free to contact the laboratory or visit https://www.meritlabs.com/certifications.

**Report Narrative**

There is no additional narrative for this analytical report

**Laboratory Accreditations (For Reference Only)**

| Authority | Accreditation ID |
|---|---|
| Michigan DEQ | #9956 |
| DOD ELAP & ISO/IEC 17025:2017 | #69699 PJLA Testing |
| WBENC | #2005110032 |
| Ohio VAP | #CL0002 |
| Indiana DOH | #C-MI-07 |
| New York NELAC | #11814 |
| North Carolina DENR | #680 |
| North Carolina DOH | #26702 |
| Pennsylvania DEP | #68-05884 |
| Wisconsin DNR | FID# 399147320 |

**Qualifier Descriptions**

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

**Glossary of Abbreviations**

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

**Method Summary**

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

**Sample Summary (6 samples)**

| Sample ID | Sample Tag | Matrix | Collected Date/Time |
|---|---|---|---|
| S56262.01 | MWF16-22_GW_112823 | Groundwater | 11/28/23 12:42 |
| S56262.02 | trip blank | Liquid | 11/28/23 00:01 |
| S56262.03 | MWF16-25_GW_112923 | Groundwater | 11/29/23 14:35 |
| S56262.04 | MWOS-08_GW_112923 | Groundwater | 11/29/23 15:23 |
| S56262.05 | MWOS-09R_GW_113023 | Groundwater | 11/30/23 10:23 |
| S56262.06 | DUP-03_GW_113023 | Groundwater | 11/30/23 00:01 |

**Lab Sample ID: S56262.01**
Sample Tag: MWF16-22_GW_112823
Collected Date/Time: 11/28/2023 12:42
Matrix: Groundwater
COC Reference: 141317

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 | 12/04/23 13:05 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 03:37, 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 | 2 | 1 | | ug/L | 1 | 156-60-5 | |
| 1,1-Dichloroethane | 5 | 1 | | ug/L | 1 | 75-34-3 | |
| cis-1,2-Dichloroethene | 54 | 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 | 5 | 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 | 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 | 285 | 1 | | ug/L | 1 | 127-18-4 | E |

E-Concentration exceeds calibration range

**Lab Sample ID: S56262.01 (continued)**
Sample Tag: MWF16-22_GW_112823

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 03:37, Analyst: KAG (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: 12/05/23 02:16, Analyst: KAG**

| 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 |

Y-Elevated reporting limit due to high target concentration

**Lab Sample ID: S56262.01 (continued)**
Sample Tag: MWF16-22_GW_112823

**Volatile Organics - DEQ List (Replicate 01), Method: SW5030C/8260C, Run Date: 12/05/23 02:16, Analyst: KAG (continued)**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| 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 | 50 | 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 | 210 | 10 | | ug/L | 10 | 127-18-4 | Y |
| 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 |

Y-Elevated reporting limit due to high target concentration

**Lab Sample ID: S56262.01 (continued)**
Sample Tag: MWF16-22_GW_112823

**Volatile Organics - DEQ List (Replicate 01), Method: SW5030C/8260C, Run Date: 12/05/23 02:16, Analyst: KAG (continued)**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| 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

**Lab Sample ID: S56262.02**
Sample Tag: trip blank
Collected Date/Time: 11/28/2023 00:01
Matrix: Liquid
COC Reference: 141317

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 | 12/04/23 13:05 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 01:16, 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 | 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 | |

**Lab Sample ID: S56262.02 (continued)**
Sample Tag: trip blank

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 01:16, 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 | |

**Lab Sample ID: S56262.03**
Sample Tag: MWF16-25_GW_112923
Collected Date/Time: 11/29/2023 14:35
Matrix: Groundwater
COC Reference: 141317

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 | 12/04/23 13:05 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 04:00, 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 | 4 | 1 | | ug/L | 1 | 156-60-5 | |
| 1,1-Dichloroethane | 3 | 1 | | ug/L | 1 | 75-34-3 | |
| cis-1,2-Dichloroethene | 41 | 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 | |

**Lab Sample ID: S56262.03 (continued)**
Sample Tag: MWF16-25_GW_112923

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 04:00, 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 | |

**Lab Sample ID: S56262.04**
Sample Tag: MWOS-08_GW_112923
Collected Date/Time: 11/29/2023 15:23
Matrix: Groundwater
COC Reference: 141317

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 | 12/04/23 13:05 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 04:24, 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 | 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 | 1 | 1 | | ug/L | 1 | 67-66-3 | |
| Bromochloromethane | Not detected | 1 | | ug/L | 1 | 74-97-5 | |
| 1,1,1-Trichloroethane | 6 | 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 | |

**Lab Sample ID: S56262.04 (continued)**
Sample Tag: MWOS-08_GW_112923

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 04:24, 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 | |

**Lab Sample ID: S56262.05**
Sample Tag: MWOS-09R_GW_113023
Collected Date/Time: 11/30/2023 10:23
Matrix: Groundwater
COC Reference: 141317

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 | 12/04/23 13:05 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 04:48, 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 | 2 | 1 | | ug/L | 1 | 156-60-5 | |
| 1,1-Dichloroethane | 4 | 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 | 5 | 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 | 14 | 1 | | ug/L | 1 | 127-18-4 | |
| trans-1,4-Dichloro-2-butene | Not detected | 1 | | ug/L | 1 | 110-57-6 | |

**Lab Sample ID: S56262.05 (continued)**
Sample Tag: MWOS-09R_GW_113023

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 04:48, 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 | |

**Lab Sample ID: S56262.06**
Sample Tag: DUP-03_GW_113023
Collected Date/Time: 11/30/2023 00:01
Matrix: Groundwater
COC Reference: 141317

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 | 12/04/23 13:05 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 05:12, 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 | 2 | 1 | | ug/L | 1 | 156-60-5 | |
| 1,1-Dichloroethane | 4 | 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 | 5 | 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 | 15 | 1 | | ug/L | 1 | 127-18-4 | |
| trans-1,4-Dichloro-2-butene | Not detected | 1 | | ug/L | 1 | 110-57-6 | |

**Lab Sample ID: S56262.06 (continued)**
Sample Tag: DUP-03_GW_113023

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 05:12, 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: S56262
Client: ARCADIS_NOVI (Arcadis US, Inc. - Novi)
Project: 30167840.00005 / RACER PNC
Submitted: 11/30/2023 16:00 Login User: MMC

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

Phone: 810-225-1909 FAX:
Email: Alexis.Crisp@arcadis.com

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

Merit Laboratories, Inc.

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

C.O.C. PAGE # 1 OF 1

141317

# CHAIN OF CUSTODY RECORD

## REPORT TO

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

## INVOICE TO

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

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

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

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

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

Special Instructions

| MERIT LAB NO. (FOR LAB USE ONLY) | YEAR DATE | YEAR TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | Full VOC's List Method 8260 | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 56262.01 | 11/29/23 | 1242 | MWF16-22_GW-112823 | GW | 3 | | X | | | | | | X | |
| .02 | — | — | trip blank | L | 1 | | X | | | | | | X | trip blank |
| .03 | 11/29/23 | 1435 | MWF16-25_GW-112923 | GW | 3 | | X | | | | | | X | |
| .04 | 11/29/23 | 1523 | MWOS-08_GW-112923 | GW | 3 | | X | | | | | | X | |
| .05 | 11/30/23 | 1023 | MWOS-09R_GW-113023 | GW | 3 | | X | | | | | | X | |
| .06 | 11/30/23 | — | DUP-03_GW-113023 | GW | 3 | | X | | | | | | X | |

| | | | |
|---|---|---|---|
| RELINQUISHED BY: SIGNATURE/ORGANIZATION: Sommer Guy / Sampler | DATE: 11/30/23 | TIME: 1630 | |
| RECEIVED BY: SIGNATURE/ORGANIZATION: | DATE: 11/30/23 | TIME: 1630 | |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION: | DATE: 11/30/23 | TIME: 1650 | |
| RECEIVED BY: SIGNATURE/ORGANIZATION: | DATE: 11/30/23 | TIME: 1800 | |

| | | | |
|---|---|---|---|
| RELINQUISHED BY: SIGNATURE/ORGANIZATION: | DATE: | TIME: | |
| RECEIVED BY: SIGNATURE/ORGANIZATION: | DATE: | TIME: | |

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 2.8

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

Rev. 5.18.12

# Analytical Laboratory Report

Report ID: S56263.01(01)
Generated on 12/06/2023

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

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S56263.01-S56263.08
Project: 30167840.00005 / RACER PNC
Collected Date(s): 11/28/2023 - 11/29/2023
Submitted Date/Time: 11/30/2023 16:00
Sampled by: Sommer Guy
P.O. #: 30167840.00005

Table of Contents

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



Maya Murshak
Technical Director

## 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.
Starred (*) analytes are not NY 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.
All accreditations/certifications held by this laboratory are listed on page 3. Not all accreditations/certifications are applicable to this report.
For a specific list of accredited analytes, please feel free to contact the laboratory or visit https://www.meritlabs.com/certifications.

## Report Narrative

There is no additional narrative for this analytical report

**Laboratory Accreditations (For Reference Only)**

| Authority | Accreditation ID |
|---|---|
| Michigan DEQ | #9956 |
| DOD ELAP & ISO/IEC 17025:2017 | #69699 PJLA Testing |
| WBENC | #2005110032 |
| Ohio VAP | #CL0002 |
| Indiana DOH | #C-MI-07 |
| New York NELAC | #11814 |
| North Carolina DENR | #680 |
| North Carolina DOH | #26702 |
| Pennsylvania DEP | #68-05884 |
| Wisconsin DNR | FID# 399147320 |

**Qualifier Descriptions**

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

**Glossary of Abbreviations**

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

**Method Summary**

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

**Sample Summary (8 samples)**

| Sample ID | Sample Tag | Matrix | Collected Date/Time |
|---|---|---|---|
| S56263.01 | MWF16-16_GW_112823 | Groundwater | 11/28/23 13:57 |
| S56263.02 | MW-16-22_GW_112923 | Groundwater | 11/29/23 10:40 |
| S56263.03 | MW-15-22_GW_112923 | Groundwater | 11/29/23 11:30 |
| S56263.04 | MW-14-22_GW_112923 | Groundwater | 11/29/23 12:45 |
| S56263.05 | MW-14-22_GW_112923 MS | Groundwater | 11/29/23 12:45 |
| S56263.06 | MW-14-22_GW_112923 MSD | Groundwater | 11/29/23 12:45 |
| S56263.07 | MW-13-22_GW_112923 | Groundwater | 11/29/23 13:40 |
| S56263.08 | DUP-02_GW_112923 | Groundwater | 11/29/23 00:01 |

**Lab Sample ID: S56263.01**
Sample Tag: MWF16-16_GW_112823
Collected Date/Time: 11/28/2023 13:57
Matrix: Groundwater
COC Reference: 141316

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 | 12/04/23 13:05 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 08:22, Analyst: KAG**

| 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 | Not detected | 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 | 440 | 10 | | ug/L | 10 | 127-18-4 | Y |

Y-Elevated reporting limit due to high target concentration

**Lab Sample ID: S56263.01 (continued)**
Sample Tag: MWF16-16_GW_112823

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 08:22, Analyst: KAG (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

**Lab Sample ID: S56263.02**
Sample Tag: MW-16-22_GW_112923
Collected Date/Time: 11/29/2023 10:40
Matrix: Groundwater
COC Reference: 141316

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 | 12/04/23 13:05 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 18:59, 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 | 1 | 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 | 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 | 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 | 94 | 1 | | ug/L | 1 | 127-18-4 | |
| trans-1,4-Dichloro-2-butene | Not detected | 1 | | ug/L | 1 | 110-57-6 | |

**Lab Sample ID: S56263.02 (continued)**
Sample Tag: MW-16-22_GW_112923

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/04/23 18:59, 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 | |

**Lab Sample ID: S56263.03**
Sample Tag: MW-15-22_GW_112923
Collected Date/Time: 11/29/2023 11:30
Matrix: Groundwater
COC Reference: 141316

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 | 12/04/23 13:05 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 05:35, 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 | 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 | |

**Lab Sample ID: S56263.03 (continued)**
Sample Tag: MW-15-22_GW_112923

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 05:35, 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 | |

**Lab Sample ID: S56263.04**
Sample Tag: MW-14-22_GW_112923
Collected Date/Time: 11/29/2023 12:45
Matrix: Groundwater
COC Reference: 141316

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 | 12/06/23 10:25 | NDK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/05/23 17:31, Analyst: KAG**

| 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 | 30 | 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 | 10 | 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 | 180 | 10 | | ug/L | 10 | 127-18-4 | Y |

Y-Elevated reporting limit due to high target concentration

**Lab Sample ID: S56263.04 (continued)**
Sample Tag: MW-14-22_GW_112923

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/05/23 17:31, Analyst: KAG (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 | 140 | 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

**Lab Sample ID: S56263.05**
Sample Tag: MW-14-22_GW_112923 MS
Collected Date/Time: 11/29/2023 12:45
Matrix: Groundwater
COC Reference: 141316

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 | 12/06/23 10:25 | NDK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/05/23 21:48, Analyst: KAG**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| Diethyl ether | 490 | 100 | | ug/L | 10 | 60-29-7 | Y1 |
| Acetone | 520 | 500 | | ug/L | 10 | 67-64-1 | Y1 |
| Methyl iodide | 500 | 10 | | ug/L | 10 | 74-88-4 | Y1 |
| Carbon disulfide | 460 | 50 | | ug/L | 10 | 75-15-0 | Y1 |
| tert-Methyl butyl ether (MTBE) | 510 | 50 | | ug/L | 10 | 1634-04-4 | Y1 |
| Acrylonitrile | 530 | 20 | | ug/L | 10 | 107-13-1 | Y1 |
| 2-Butanone (MEK) | 520 | 250 | | ug/L | 10 | 78-93-3 | Y1 |
| Dichlorodifluoromethane | 700 | 50 | | ug/L | 10 | 75-71-8 | Y1 |
| Chloromethane | 590 | 50 | | ug/L | 10 | 74-87-3 | Y1 |
| Vinyl chloride | 580 | 10 | | ug/L | 10 | 75-01-4 | Y1 |
| Bromomethane | 560 | 50 | | ug/L | 10 | 74-83-9 | Y1 |
| Chloroethane | 560 | 50 | | ug/L | 10 | 75-00-3 | Y1 |
| Trichlorofluoromethane | 550 | 10 | | ug/L | 10 | 75-69-4 | Y1 |
| 1,1-Dichloroethene | 500 | 10 | | ug/L | 10 | 75-35-4 | Y1 |
| Methylene chloride | 490 | 50 | | ug/L | 10 | 75-09-2 | Y1 |
| trans-1,2-Dichloroethene | 500 | 10 | | ug/L | 10 | 156-60-5 | Y1 |
| 1,1-Dichloroethane | 500 | 10 | | ug/L | 10 | 75-34-3 | Y1 |
| cis-1,2-Dichloroethene | 530 | 10 | | ug/L | 10 | 156-59-2 | Y1 |
| Tetrahydrofuran* | Not detected | 900 | | ug/L | 10 | 109-99-9 | Y1 |
| Chloroform | 490 | 10 | | ug/L | 10 | 67-66-3 | Y1 |
| Bromochloromethane | 480 | 10 | | ug/L | 10 | 74-97-5 | Y1 |
| 1,1,1-Trichloroethane | 500 | 10 | | ug/L | 10 | 71-55-6 | Y1 |
| 4-Methyl-2-pentanone (MIBK) | 510 | 500 | | ug/L | 10 | 108-10-1 | Y1 |
| 2-Hexanone | 520 | 500 | | ug/L | 10 | 591-78-6 | Y1 |
| Carbon tetrachloride | 460 | 10 | | ug/L | 10 | 56-23-5 | Y1 |
| Benzene | 480 | 10 | | ug/L | 10 | 71-43-2 | Y1 |
| 1,2-Dichloroethane | 480 | 10 | | ug/L | 10 | 107-06-2 | Y1 |
| Trichloroethene | 490 | 10 | | ug/L | 10 | 79-01-6 | Y1 |
| 1,2-Dichloropropane | 490 | 10 | | ug/L | 10 | 78-87-5 | Y1 |
| Bromodichloromethane | 490 | 10 | | ug/L | 10 | 75-27-4 | Y1 |
| Dibromomethane | 470 | 50 | | ug/L | 10 | 74-95-3 | Y1 |
| cis-1,3-Dichloropropene | 470 | 10 | | ug/L | 10 | 10061-01-5 | Y1 |
| Toluene | 480 | 10 | | ug/L | 10 | 108-88-3 | Y1 |
| trans-1,3-Dichloropropene | 480 | 10 | | ug/L | 10 | 10061-02-6 | Y1 |
| 1,1,2-Trichloroethane | 490 | 10 | | ug/L | 10 | 79-00-5 | Y1 |
| Tetrachloroethene | 640 | 10 | | ug/L | 10 | 127-18-4 | Y1 |

Y-Elevated reporting limit due to high target concentration 1-Spiked at 500ug/L

**Lab Sample ID: S56263.05 (continued)**
Sample Tag: MW-14-22_GW_112923 MS

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/05/23 21:48, Analyst: KAG (continued)**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| trans-1,4-Dichloro-2-butene | 510 | 10 | | ug/L | 10 | 110-57-6 | Y1 |
| Dibromochloromethane | 470 | 50 | | ug/L | 10 | 124-48-1 | Y1 |
| 1,2-Dibromoethane | 480 | 10 | | ug/L | 10 | 106-93-4 | Y1 |
| Chlorobenzene | 470 | 10 | | ug/L | 10 | 108-90-7 | Y1 |
| 1,1,1,2-Tetrachloroethane | 480 | 10 | | ug/L | 10 | 630-20-6 | Y1 |
| Ethylbenzene | 480 | 10 | | ug/L | 10 | 100-41-4 | Y1 |
| p,m-Xylene* | 960 | 20 | | ug/L | 10 | | Y1 |
| o-Xylene | 480 | 10 | | ug/L | 10 | 95-47-6 | Y1 |
| Styrene | 480 | 10 | | ug/L | 10 | 100-42-5 | Y1 |
| Isopropylbenzene | 480 | 50 | | ug/L | 10 | 98-82-8 | Y1 |
| Bromoform | 470 | 10 | | ug/L | 10 | 75-25-2 | Y1 |
| 1,1,2,2-Tetrachloroethane | 480 | 10 | | ug/L | 10 | 79-34-5 | Y1 |
| 1,2,3-Trichloropropane | 470 | 10 | | ug/L | 10 | 96-18-4 | Y1 |
| n-Propylbenzene | 480 | 10 | | ug/L | 10 | 103-65-1 | Y1 |
| Bromobenzene | 480 | 10 | | ug/L | 10 | 108-86-1 | Y1 |
| 1,3,5-Trimethylbenzene | 480 | 10 | | ug/L | 10 | 108-67-8 | Y1 |
| tert-Butylbenzene | 480 | 10 | | ug/L | 10 | 98-06-6 | Y1 |
| 1,2,4-Trimethylbenzene | 490 | 10 | | ug/L | 10 | 95-63-6 | Y1 |
| sec-Butylbenzene | 510 | 10 | | ug/L | 10 | 135-98-8 | Y1 |
| p-Isopropyltoluene | 500 | 50 | | ug/L | 10 | 99-87-6 | Y1 |
| 1,3-Dichlorobenzene | 490 | 10 | | ug/L | 10 | 541-73-1 | Y1 |
| 1,4-Dichlorobenzene | 490 | 10 | | ug/L | 10 | 106-46-7 | Y1 |
| 1,2-Dichlorobenzene | 490 | 10 | | ug/L | 10 | 95-50-1 | Y1 |
| 1,2,3-Trimethylbenzene | 510 | 10 | | ug/L | 10 | 526-73-8 | Y1 |
| n-Butylbenzene | 500 | 10 | | ug/L | 10 | 104-51-8 | Y1 |
| Hexachloroethane | 490 | 50 | | ug/L | 10 | 67-72-1 | Y1 |
| 1,2-Dibromo-3-chloropropane | 500 | 50 | | ug/L | 10 | 96-12-8 | Y1 |
| 1,2,4-Trichlorobenzene | 500 | 50 | | ug/L | 10 | 120-82-1 | Y1 |
| 1,2,3-Trichlorobenzene | 520 | 50 | | ug/L | 10 | 87-61-6 | Y1 |
| Naphthalene | 540 | 50 | | ug/L | 10 | 91-20-3 | Y1 |
| 2-Methylnaphthalene | 540 | 50 | | ug/L | 10 | 91-57-6 | Y1 |

Y-Elevated reporting limit due to high target concentration 1-Spiked at 500ug/L

**Lab Sample ID: S56263.06**
Sample Tag: MW-14-22_GW_112923 MSD
Collected Date/Time: 11/29/2023 12:45
Matrix: Groundwater
COC Reference: 141316

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 | 12/06/23 10:25 | NDK | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/05/23 22:07, Analyst: KAG**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| Diethyl ether | 490 | 100 | | ug/L | 10 | 60-29-7 | Y1 |
| Acetone | 510 | 500 | | ug/L | 10 | 67-64-1 | Y1 |
| Methyl iodide | 480 | 10 | | ug/L | 10 | 74-88-4 | Y1 |
| Carbon disulfide | 440 | 50 | | ug/L | 10 | 75-15-0 | Y1 |
| tert-Methyl butyl ether (MTBE) | 510 | 50 | | ug/L | 10 | 1634-04-4 | Y1 |
| Acrylonitrile | 510 | 20 | | ug/L | 10 | 107-13-1 | Y1 |
| 2-Butanone (MEK) | 500 | 250 | | ug/L | 10 | 78-93-3 | Y1 |
| Dichlorodifluoromethane | 650 | 50 | | ug/L | 10 | 75-71-8 | Y1 |
| Chloromethane | 570 | 50 | | ug/L | 10 | 74-87-3 | Y1 |
| Vinyl chloride | 550 | 10 | | ug/L | 10 | 75-01-4 | Y1 |
| Bromomethane | 540 | 50 | | ug/L | 10 | 74-83-9 | Y1 |
| Chloroethane | 530 | 50 | | ug/L | 10 | 75-00-3 | Y1 |
| Trichlorofluoromethane | 540 | 10 | | ug/L | 10 | 75-69-4 | Y1 |
| 1,1-Dichloroethene | 470 | 10 | | ug/L | 10 | 75-35-4 | Y1 |
| Methylene chloride | 470 | 50 | | ug/L | 10 | 75-09-2 | Y1 |
| trans-1,2-Dichloroethene | 490 | 10 | | ug/L | 10 | 156-60-5 | Y1 |
| 1,1-Dichloroethane | 490 | 10 | | ug/L | 10 | 75-34-3 | Y1 |
| cis-1,2-Dichloroethene | 510 | 10 | | ug/L | 10 | 156-59-2 | Y1 |
| Tetrahydrofuran* | Not detected | 900 | | ug/L | 10 | 109-99-9 | Y1 |
| Chloroform | 480 | 10 | | ug/L | 10 | 67-66-3 | Y1 |
| Bromochloromethane | 480 | 10 | | ug/L | 10 | 74-97-5 | Y1 |
| 1,1,1-Trichloroethane | 480 | 10 | | ug/L | 10 | 71-55-6 | Y1 |
| 4-Methyl-2-pentanone (MIBK) | 510 | 500 | | ug/L | 10 | 108-10-1 | Y1 |
| 2-Hexanone | Not detected | 500 | | ug/L | 10 | 591-78-6 | Y1 |
| Carbon tetrachloride | 460 | 10 | | ug/L | 10 | 56-23-5 | Y1 |
| Benzene | 470 | 10 | | ug/L | 10 | 71-43-2 | Y1 |
| 1,2-Dichloroethane | 480 | 10 | | ug/L | 10 | 107-06-2 | Y1 |
| Trichloroethene | 480 | 10 | | ug/L | 10 | 79-01-6 | Y1 |
| 1,2-Dichloropropane | 480 | 10 | | ug/L | 10 | 78-87-5 | Y1 |
| Bromodichloromethane | 490 | 10 | | ug/L | 10 | 75-27-4 | Y1 |
| Dibromomethane | 470 | 50 | | ug/L | 10 | 74-95-3 | Y1 |
| cis-1,3-Dichloropropene | 480 | 10 | | ug/L | 10 | 10061-01-5 | Y1 |
| Toluene | 470 | 10 | | ug/L | 10 | 108-88-3 | Y1 |
| trans-1,3-Dichloropropene | 480 | 10 | | ug/L | 10 | 10061-02-6 | Y1 |
| 1,1,2-Trichloroethane | 480 | 10 | | ug/L | 10 | 79-00-5 | Y1 |
| Tetrachloroethene | 640 | 10 | | ug/L | 10 | 127-18-4 | Y1 |

Y-Elevated reporting limit due to high target concentration 1-Spiked at 500ug/L

**Lab Sample ID: S56263.06 (continued)**
Sample Tag: MW-14-22_GW_112923 MSD

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/05/23 22:07, Analyst: KAG (continued)**

| Parameter | Result | RL | MDL | Units | Dilution | CAS# | Flags |
|---|---|---|---|---|---|---|---|
| trans-1,4-Dichloro-2-butene | 500 | 10 | | ug/L | 10 | 110-57-6 | Y1 |
| Dibromochloromethane | 470 | 50 | | ug/L | 10 | 124-48-1 | Y1 |
| 1,2-Dibromoethane | 480 | 10 | | ug/L | 10 | 106-93-4 | Y1 |
| Chlorobenzene | 470 | 10 | | ug/L | 10 | 108-90-7 | Y1 |
| 1,1,1,2-Tetrachloroethane | 480 | 10 | | ug/L | 10 | 630-20-6 | Y1 |
| Ethylbenzene | 470 | 10 | | ug/L | 10 | 100-41-4 | Y1 |
| p,m-Xylene* | 940 | 20 | | ug/L | 10 | | Y1 |
| o-Xylene | 470 | 10 | | ug/L | 10 | 95-47-6 | Y1 |
| Styrene | 480 | 10 | | ug/L | 10 | 100-42-5 | Y1 |
| Isopropylbenzene | 480 | 50 | | ug/L | 10 | 98-82-8 | Y1 |
| Bromoform | 470 | 10 | | ug/L | 10 | 75-25-2 | Y1 |
| 1,1,2,2-Tetrachloroethane | 470 | 10 | | ug/L | 10 | 79-34-5 | Y1 |
| 1,2,3-Trichloropropane | 460 | 10 | | ug/L | 10 | 96-18-4 | Y1 |
| n-Propylbenzene | 480 | 10 | | ug/L | 10 | 103-65-1 | Y1 |
| Bromobenzene | 470 | 10 | | ug/L | 10 | 108-86-1 | Y1 |
| 1,3,5-Trimethylbenzene | 490 | 10 | | ug/L | 10 | 108-67-8 | Y1 |
| tert-Butylbenzene | 470 | 10 | | ug/L | 10 | 98-06-6 | Y1 |
| 1,2,4-Trimethylbenzene | 490 | 10 | | ug/L | 10 | 95-63-6 | Y1 |
| sec-Butylbenzene | 490 | 10 | | ug/L | 10 | 135-98-8 | Y1 |
| p-Isopropyltoluene | 480 | 50 | | ug/L | 10 | 99-87-6 | Y1 |
| 1,3-Dichlorobenzene | 470 | 10 | | ug/L | 10 | 541-73-1 | Y1 |
| 1,4-Dichlorobenzene | 460 | 10 | | ug/L | 10 | 106-46-7 | Y1 |
| 1,2-Dichlorobenzene | 470 | 10 | | ug/L | 10 | 95-50-1 | Y1 |
| 1,2,3-Trimethylbenzene | 500 | 10 | | ug/L | 10 | 526-73-8 | Y1 |
| n-Butylbenzene | 480 | 10 | | ug/L | 10 | 104-51-8 | Y1 |
| Hexachloroethane | 470 | 50 | | ug/L | 10 | 67-72-1 | Y1 |
| 1,2-Dibromo-3-chloropropane | 480 | 50 | | ug/L | 10 | 96-12-8 | Y1 |
| 1,2,4-Trichlorobenzene | 490 | 50 | | ug/L | 10 | 120-82-1 | Y1 |
| 1,2,3-Trichlorobenzene | 510 | 50 | | ug/L | 10 | 87-61-6 | Y1 |
| Naphthalene | 510 | 50 | | ug/L | 10 | 91-20-3 | Y1 |
| 2-Methylnaphthalene | 510 | 50 | | ug/L | 10 | 91-57-6 | Y1 |

Y-Elevated reporting limit due to high target concentration 1-Spiked at 500ug/L

**Lab Sample ID: S56263.07**
Sample Tag: MW-13-22_GW_112923
Collected Date/Time: 11/29/2023 13:40
Matrix: Groundwater
COC Reference: 141316

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 | 12/04/23 13:05 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 05:59, 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 | |

**Lab Sample ID: S56263.07 (continued)**
Sample Tag: MW-13-22_GW_112923

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 05:59, 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 | |

**Lab Sample ID: S56263.08**
Sample Tag: DUP-02_GW_112923
Collected Date/Time: 11/29/2023 00:01
Matrix: Groundwater
COC Reference: 141316

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 | 12/04/23 13:05 | ASW | |

***Organics - Volatiles***

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 06:23, 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 | |

**Lab Sample ID: S56263.08 (continued)**
Sample Tag: DUP-02_GW_112923

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 12/02/23 06:23, 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: S56263
Client: ARCADIS_NOVI (Arcadis US, Inc. - Novi)
Project: 30167840.00005 / RACER PNC
Submitted: 11/30/2023 16:00 Login User: MMC

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

Phone: 810-225-1909 FAX:
Email: Alexis.Crisp@arcadis.com

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

Merit Laboratories, Inc.

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

C.O.C. PAGE # 1 OF 1

141316

# CHAIN OF CUSTODY RECORD

## REPORT TO

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

## INVOICE TO

CONTACT NAME: Accounts Payable ☐ SAME
COMPANY: Arcadis
ADDRESS: ~~285~~ SA 630 Plaza Dr #600
CITY: Highlands Ranch STATE: CO ZIP CODE: 80129
PHONE NO.: E-MAIL ADDRESS: accountspayable.administration@arcadis.com

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

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications: ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☐ NPDES

Project Locations: ☐ Detroit ☐ New York ☐ Other

Special Instructions

| MERIT LAB NO. (FOR LAB USE ONLY) | YEAR DATE | YEAR TIME | SAMPLE TAG IDENTIFICATION-DESCRIPTION | MATRIX | # OF BOTTLES | # Containers & Preservatives: NONE | HCl | $HNO_3$ | $H_2SO_4$ | NaOH | MeOH | OTHER | Full List VOC's Method 8260 | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 56263.01 | 11/28/23 | 1357 | MWF16-16_GW-112823 | GW | 3 | | X | | | | | | X | |
| .02 | 11/29/23 | 1040 | MW-16-22_GW-112923 | GW | 3 | | X | | | | | | X | |
| .03 | 11/29/23 | 1130 | MW-15-22_GW-112923 | GW | 3 | | X | | | | | | X | |
| .04/.05/.06 | 11/29/23 | 1245 | MW-14-22_GW-112923 | GW | 9 | | X | | | | | | X | Run MS/MSD |
| .07 | 11/29/23 | 1340 | MW-13-22_GW-112923 | GW | 3 | | X | | | | | | X | |
| .08 | 11/29/23 | — | DUP-02_GW-112923 | GW | 3 | | X | | | | | | X | |

| RELINQUISHED BY: SIGNATURE/ORGANIZATION | ☑ Sampler | DATE | TIME |
|---|---|---|---|
| Sommer Guy | | 11/30/23 | 1043 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| | | 11/30/23 | 10:31 |
| RELINQUISHED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| | | 11/30/23 | 16:00 |
| RECEIVED BY: SIGNATURE/ORGANIZATION | | DATE | TIME |
| | | 11/30/23 | 1800 |

| RELINQUISHED BY: SIGNATURE/ORGANIZATION | DATE | TIME |
|---|---|---|
| | | |
| RECEIVED BY: SIGNATURE/ORGANIZATION | DATE | TIME |
| | | |

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 2.8

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

Rev. 5.18.12

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12/6/2023
Ms. Lexi Crisp
Arcadis U.S., Inc.
7575 Huntington Park Drive
Suite 130
Columbus OH 43235

Project Name: Racer PNC
Project #: 30167840.00004
Workorder #: 2311638

Dear Ms. Lexi Crisp

The following report includes the data for the above referenced project for sample(s) received on 11/30/2023 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

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# WORK ORDER #: 2311638

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Ms. Lexi Crisp<br>Arcadis U.S., Inc.<br>7575 Huntington Park Drive<br>Suite 130<br>Columbus, OH 43235 | **BILL TO:** | Accounts Payable<br>Arcadis U.S., Inc.<br>630 Plaza Drive<br>Suite 600<br>Highlands Ranch, CO 80129 |
| **PHONE:** | | **P.O. #** | 30167840.00004 |
| **FAX:** | | **PROJECT #** | 30167840.00004 Racer PNC |
| **DATE RECEIVED:** | 11/30/2023 | **CONTACT:** | Jade White |
| **DATE COMPLETED:** | 12/05/2023 | | |

| FRACTION # | NAME | TEST | RECEIPT VAC./PRES. | FINAL PRESSURE |
|---|---|---|---|---|
| 01A | SV-02-21_SG-112723 | TO-15 | 4.1 "Hg | 10 psi |
| 02A | SV-01-21_SG-112723 | TO-15 | 5.3 "Hg | 9.9 psi |
| 03A | SV-06-21_SG-112723 | TO-15 | 4.3 "Hg | 9.9 psi |
| 04A | SV-05-21_SG-112723 | TO-15 | 4.1 "Hg | 10 psi |
| 05A | SV-04-21_SG-112723 | TO-15 | 4.5 "Hg | 10 psi |
| 06A | SV-03-21_SG-112723 | TO-15 | 4.3 "Hg | 10 psi |
| 07A | DUP-01_SG-112723 | TO-15 | 3.9 "Hg | 10 psi |
| 08A | Lab Blank | TO-15 | NA | NA |
| 08B | Lab Blank | TO-15 | NA | NA |
| 09A | CCV | TO-15 | NA | NA |
| 09B | CCV | TO-15 | NA | NA |
| 10A | LCS | TO-15 | NA | NA |
| 10AA | LCSD | TO-15 | NA | NA |
| 10B | LCS | TO-15 | NA | NA |
| 10BB | LCSD | TO-15 | NA | NA |

CERTIFIED BY:  DATE: 12/06/23

Technical Director

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.*

**LABORATORY NARRATIVE**
**EPA Method TO-15**
**Arcadis U.S., Inc.**
**Workorder# 2311638**

Seven 1 Liter Summa Canister samples were received on November 30, 2023. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

## Receiving Notes

The Chain of Custody (COC) information for sample SV-03-21_SG-112723 did not match the information on the canister with regard to canister barcode. The sample labeled C349 on the COC is labeled as LC349 on the canister. The client was notified of the discrepancy and the information on the canister was used to process and report the sample.

## 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

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

**Client Sample ID: SV-02-21_SG-112723**

**Lab ID#: 2311638-01A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 0.98 | 9.3 | 5.2 | 50 |
| Tetrachloroethene | 0.98 | 1.2 | 6.6 | 8.3 |

**Client Sample ID: SV-01-21_SG-112723**

**Lab ID#: 2311638-02A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 1.0 | 3.0 | 5.4 | 16 |
| Tetrachloroethene | 1.0 | 1.4 | 6.9 | 9.7 |

**Client Sample ID: SV-06-21_SG-112723**

**Lab ID#: 2311638-03A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 0.98 | 3.1 | 5.2 | 17 |

**Client Sample ID: SV-05-21_SG-112723**

**Lab ID#: 2311638-04A**

No Detections Were Found.

**Client Sample ID: SV-04-21_SG-112723**

**Lab ID#: 2311638-05A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 0.99 | 3.0 | 5.3 | 16 |

**Client Sample ID: SV-03-21_SG-112723**

**Lab ID#: 2311638-06A**

No Detections Were Found.

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

**Client Sample ID: DUP-01_SG-112723**

**Lab ID#: 2311638-07A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 0.96 | 9.5 | 5.2 | 51 |
| Tetrachloroethene | 0.96 | 1.2 | 6.5 | 8.1 |

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**Client Sample ID: SV-02-21_SG-112723**

**Lab ID#: 2311638-01A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **a120121** | **Date of Collection: 11/27/23 11:44:00 A** | |
| **Dil. Factor:** | **1.95** | **Date of Analysis: 12/2/23 01:58 AM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Vinyl Chloride | 0.98 | Not Detected | 2.5 | Not Detected |
| 1,1-Dichloroethene | 0.98 | Not Detected | 3.9 | Not Detected |
| cis-1,2-Dichloroethene | 0.98 | Not Detected | 3.9 | Not Detected |
| Trichloroethene | 0.98 | 9.3 | 5.2 | 50 |
| trans-1,2-Dichloroethene | 0.98 | Not Detected | 3.9 | Not Detected |
| Tetrachloroethene | 0.98 | 1.2 | 6.6 | 8.3 |

**Container Type: 1 Liter Summa Canister**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 1,2-Dichloroethane-d4 | 83 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

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**Client Sample ID: SV-01-21_SG-112723**

**Lab ID#: 2311638-02A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **a120122** | **Date of Collection: 11/27/23 12:03:00 P** | |
| **Dil. Factor:** | **2.03** | **Date of Analysis: 12/2/23 02:35 AM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Vinyl Chloride | 1.0 | Not Detected | 2.6 | Not Detected |
| 1,1-Dichloroethene | 1.0 | Not Detected | 4.0 | Not Detected |
| cis-1,2-Dichloroethene | 1.0 | Not Detected | 4.0 | Not Detected |
| Trichloroethene | 1.0 | 3.0 | 5.4 | 16 |
| trans-1,2-Dichloroethene | 1.0 | Not Detected | 4.0 | Not Detected |
| Tetrachloroethene | 1.0 | 1.4 | 6.9 | 9.7 |

**Container Type: 1 Liter Summa Canister**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |
| 1,2-Dichloroethane-d4 | 83 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

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**Client Sample ID: SV-06-21_SG-112723**

**Lab ID#: 2311638-03A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **a120123** | **Date of Collection: 11/27/23 12:35:00 P** | |
| **Dil. Factor:** | **1.95** | **Date of Analysis: 12/2/23 03:11 AM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Vinyl Chloride | 0.98 | Not Detected | 2.5 | Not Detected |
| 1,1-Dichloroethene | 0.98 | Not Detected | 3.9 | Not Detected |
| cis-1,2-Dichloroethene | 0.98 | Not Detected | 3.9 | Not Detected |
| Trichloroethene | 0.98 | 3.1 | 5.2 | 17 |
| trans-1,2-Dichloroethene | 0.98 | Not Detected | 3.9 | Not Detected |
| Tetrachloroethene | 0.98 | Not Detected | 6.6 | Not Detected |

**Container Type: 1 Liter Summa Canister**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 1,2-Dichloroethane-d4 | 84 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

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**Client Sample ID: SV-05-21_SG-112723**

**Lab ID#: 2311638-04A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **a120124** | **Date of Collection: 11/27/23 12:52:00 P** | |
| **Dil. Factor:** | **1.95** | **Date of Analysis: 12/2/23 03:48 AM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Vinyl Chloride | 0.98 | Not Detected | 2.5 | Not Detected |
| 1,1-Dichloroethene | 0.98 | Not Detected | 3.9 | Not Detected |
| cis-1,2-Dichloroethene | 0.98 | Not Detected | 3.9 | Not Detected |
| Trichloroethene | 0.98 | Not Detected | 5.2 | Not Detected |
| trans-1,2-Dichloroethene | 0.98 | Not Detected | 3.9 | Not Detected |
| Tetrachloroethene | 0.98 | Not Detected | 6.6 | Not Detected |

**Container Type: 1 Liter Summa Canister**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 1,2-Dichloroethane-d4 | 84 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

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**Client Sample ID: SV-04-21_SG-112723**

**Lab ID#: 2311638-05A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **a120125** | **Date of Collection: 11/27/23 1:28:00 PM** | |
| **Dil. Factor:** | **1.98** | **Date of Analysis: 12/2/23 04:25 AM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Vinyl Chloride | 0.99 | Not Detected | 2.5 | Not Detected |
| 1,1-Dichloroethene | 0.99 | Not Detected | 3.9 | Not Detected |
| cis-1,2-Dichloroethene | 0.99 | Not Detected | 3.9 | Not Detected |
| Trichloroethene | 0.99 | 3.0 | 5.3 | 16 |
| trans-1,2-Dichloroethene | 0.99 | Not Detected | 3.9 | Not Detected |
| Tetrachloroethene | 0.99 | Not Detected | 6.7 | Not Detected |

**Container Type: 1 Liter Summa Canister**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 1,2-Dichloroethane-d4 | 84 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

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**Client Sample ID: SV-03-21_SG-112723**

**Lab ID#: 2311638-06A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **a120409** | **Date of Collection: 11/27/23 1:41:00 PM** | |
| **Dil. Factor:** | **1.96** | **Date of Analysis: 12/4/23 03:53 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Vinyl Chloride | 0.98 | Not Detected | 2.5 | Not Detected |
| 1,1-Dichloroethene | 0.98 | Not Detected | 3.9 | Not Detected |
| cis-1,2-Dichloroethene | 0.98 | Not Detected | 3.9 | Not Detected |
| Trichloroethene | 0.98 | Not Detected | 5.3 | Not Detected |
| trans-1,2-Dichloroethene | 0.98 | Not Detected | 3.9 | Not Detected |
| Tetrachloroethene | 0.98 | Not Detected | 6.6 | Not Detected |

**Container Type: 1 Liter Summa Canister**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |
| 1,2-Dichloroethane-d4 | 84 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

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**Client Sample ID: DUP-01_SG-112723**

**Lab ID#: 2311638-07A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **a120410** | **Date of Collection: 11/27/23** | |
| **Dil. Factor:** | **1.93** | **Date of Analysis: 12/4/23 04:30 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Vinyl Chloride | 0.96 | Not Detected | 2.5 | Not Detected |
| 1,1-Dichloroethene | 0.96 | Not Detected | 3.8 | Not Detected |
| cis-1,2-Dichloroethene | 0.96 | Not Detected | 3.8 | Not Detected |
| Trichloroethene | 0.96 | 9.5 | 5.2 | 51 |
| trans-1,2-Dichloroethene | 0.96 | Not Detected | 3.8 | Not Detected |
| Tetrachloroethene | 0.96 | 1.2 | 6.5 | 8.1 |

**Container Type: 1 Liter Summa Canister**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 1,2-Dichloroethane-d4 | 85 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 2311638-08A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **a120113e** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/23 08:03 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 | 99 | 70-130 |
| 1,2-Dichloroethane-d4 | 85 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 2311638-08B**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **a120406d** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/4/23 11:22 AM** | |

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

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 1,2-Dichloroethane-d4 | 83 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

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**Client Sample ID: CCV**

**Lab ID#: 2311638-09A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **a120110** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/23 06:16 PM** | |

| Compound | %Recovery |
|---|---|
| Vinyl Chloride | 87 |
| 1,1-Dichloroethene | 95 |
| cis-1,2-Dichloroethene | 94 |
| Trichloroethene | 96 |
| trans-1,2-Dichloroethene | 94 |
| Tetrachloroethene | 101 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 1,2-Dichloroethane-d4 | 84 | 70-130 |
| 4-Bromofluorobenzene | 107 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: CCV**

**Lab ID#: 2311638-09B**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **a120403** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/4/23 09:36 AM** | |

| Compound | %Recovery |
|---|---|
| Vinyl Chloride | 88 |
| 1,1-Dichloroethene | 97 |
| cis-1,2-Dichloroethene | 93 |
| Trichloroethene | 97 |
| trans-1,2-Dichloroethene | 95 |
| Tetrachloroethene | 101 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |
| 1,2-Dichloroethane-d4 | 85 | 70-130 |
| 4-Bromofluorobenzene | 106 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 2311638-10A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **a120111** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/23 06:51 PM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Vinyl Chloride | 84 | 70-130 |
| 1,1-Dichloroethene | 90 | 70-130 |
| cis-1,2-Dichloroethene | 90 | 70-130 |
| Trichloroethene | 95 | 70-130 |
| trans-1,2-Dichloroethene | 91 | 70-130 |
| Tetrachloroethene | 99 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 1,2-Dichloroethane-d4 | 83 | 70-130 |
| 4-Bromofluorobenzene | 107 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 2311638-10AA**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **a120112** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/23 07:26 PM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Vinyl Chloride | 84 | 70-130 |
| 1,1-Dichloroethene | 90 | 70-130 |
| cis-1,2-Dichloroethene | 90 | 70-130 |
| Trichloroethene | 95 | 70-130 |
| trans-1,2-Dichloroethene | 89 | 70-130 |
| Tetrachloroethene | 98 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |
| 1,2-Dichloroethane-d4 | 84 | 70-130 |
| 4-Bromofluorobenzene | 106 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 2311638-10B**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **a120404** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/4/23 10:11 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Vinyl Chloride | 86 | 70-130 |
| 1,1-Dichloroethene | 90 | 70-130 |
| cis-1,2-Dichloroethene | 92 | 70-130 |
| Trichloroethene | 95 | 70-130 |
| trans-1,2-Dichloroethene | 91 | 70-130 |
| Tetrachloroethene | 99 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 1,2-Dichloroethane-d4 | 86 | 70-130 |
| 4-Bromofluorobenzene | 106 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 2311638-10BB**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **a120405** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/4/23 10:46 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Vinyl Chloride | 85 | 70-130 |
| 1,1-Dichloroethene | 91 | 70-130 |
| cis-1,2-Dichloroethene | 90 | 70-130 |
| Trichloroethene | 94 | 70-130 |
| trans-1,2-Dichloroethene | 91 | 70-130 |
| Tetrachloroethene | 98 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |
| 1,2-Dichloroethane-d4 | 84 | 70-130 |
| 4-Bromofluorobenzene | 106 | 70-130 |

# Appendix B

## Groundwater and Soil Vapor Sampling Logs

# Groundwater Sampling Form

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MW-06-20 | | | **Date** | 03/07/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 37.0 degrees F and Clear. NE 12 mph | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 26.82 | **Total Depth (ft-bmp)** | 29.21 | **Water Column (ft)** | 2.39 | **Gallons in Well** | 0.39 |
| **Purge Start** | 14:22 | **Pump Intake (ft-bmp)** | 28 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | | **Volumes Purged** | 6.41 | **Sample ID** | MW-06-20_GW-030723 | **Sampled by** | Sommer Guy |
| **Sample Time** | 14:58 | **Gallons Purged** | 2.50 | **Replicate/ Code No.** | DUP-01 | **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 |
| 14:24 | 0 | 0 | 150 | 26.85 | -- | 7.44 | 0.864 | 3.59 | 9.19 | 13.4 | 29.7 | -- | -- |
| 14:29 | 5 | 5 | 150 | 26.85 | -- | 7.24 | 0.842 | 1.51 | 7.93 | 13.6 | 28.3 | -- | -- |
| 14:34 | 5 | 10 | 150 | 26.85 | -- | 7.26 | 0.799 | 1.51 | 7.51 | 13.5 | 30.3 | -- | -- |
| 14:39 | 5 | 15 | 150 | 26.85 | -- | 7.27 | 0.792 | 1.24 | 7.29 | 13.7 | 32.6 | -- | -- |
| 14:44 | 5 | 20 | 150 | 26.85 | -- | 7.27 | 0.783 | 1.46 | 7.08 | 13.7 | 34.9 | -- | -- |
| 14:49 | 5 | 25 | 150 | 26.85 | -- | 7.27 | 0.778 | 0.94 | 6.83 | 13.6 | 37.7 | -- | -- |
| 14:54 | 5 | 30 | 150 | 26.85 | -- | 7.27 | 0.774 | 1.42 | 6.58 | 13.6 | 39.6 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| Full 8260 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: South Fiero
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-08-21 | | | **Date** | 03/07/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 36.0 degrees F and Clear. The wind is blowing N/NE at 17.2 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 27.60 | **Total Depth (ft-bmp)** | 30.29 | **Water Column (ft)** | 2.69 | **Gallons in Well** | 0.44 |
| **Purge Start** | 13:08 | **Pump Intake (ft-bmp)** | 28.5 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 13:57 | **Volumes Purged** | 5.68 | **Sample ID** | MW-08-21_GW-030723 | **Sampled by** | Sommer Guy |
| **Sample Time** | 13:55 | **Gallons Purged** | 2.50 | **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 |
| 13:10 | 0 | 0 | 150 | 27.62 | -- | 7.68 | 0.803 | 3.71 | 2.26 | 13.4 | 0.807 | -- | -- |
| 13:15 | 5 | 5 | 150 | 27.62 | -- | 7.38 | 0.757 | 1.55 | 1.46 | 13.7 | 0.3 | -- | -- |
| 13:20 | 5 | 10 | 150 | 27.62 | -- | 7.39 | 0.748 | 1.85 | 1.84 | 13.6 | 0.7 | -- | -- |
| 13:25 | 5 | 15 | 150 | 27.62 | -- | 7.39 | 0.742 | 1.97 | 1.66 | 13.5 | 4.2 | -- | -- |
| 13:30 | 5 | 20 | 150 | 27.62 | -- | 7.39 | 0.744 | 1.57 | 1.62 | 13.3 | 7.3 | -- | -- |
| 13:35 | 5 | 25 | 150 | 27.62 | -- | 7.39 | 0.74 | 1.22 | 1.29 | 13.4 | 10.9 | -- | -- |
| 13:40 | 5 | 30 | 150 | 27.62 | -- | 7.39 | 0.739 | 1.5 | 1.14 | 13.4 | 13.6 | -- | -- |
| 13:45 | 5 | 35 | 150 | 27.62 | -- | 7.39 | 0.742 | 1.33 | 1.09 | 13.4 | 15.9 | -- | -- |
| 13:50 | 5 | 40 | 150 | 27.62 | -- | 7.39 | 0.742 | 1.67 | 1.04 | 13.4 | 18.5 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| Full 8260 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:
Condition of Well: Good condition,Missing bolts
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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MW-09-22 | | | **Date** | 03/06/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 36.0 degrees F and Cloudy. The wind is blowing E at 13.9 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 21.84 | **Total Depth (ft-bmp)** | 32.82 | **Water Column (ft)** | 10.98 | **Gallons in Well** | 1.78 |
| **Purge Start** | 13:09 | **Pump Intake (ft-bmp)** | 27.32 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 13:51 | **Volumes Purged** | 0.82 | **Sample ID** | MW-09-22_GW-030623 | **Sampled by** | Leticia Ferreira |
| **Sample Time** | 13:18 | **Gallons Purged** | 1.47 | **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 |
| 13:10 | 0 | 0 | 300 | 21.84 | -- | 6.92 | 0.582 | 4.6 | 1.51 | 11.1 | 195.6 | -- | -- |
| 13:15 | 5 | 5 | 150 | 21.84 | -- | 6.86 | 0.002 | 3.73 | 11.5 | 10 | 153.3 | -- | -- |
| 13:20 | 5 | 10 | 150 | 21.84 | -- | 7.31 | 0.006 | 3.59 | 10.2 | 11.5 | 187.6 | -- | -- |
| 13:25 | 5 | 15 | 150 | 21.84 | -- | 6.98 | 0.621 | 3.97 | 0.54 | 11.7 | 185.7 | -- | -- |
| 13:30 | 5 | 20 | 150 | 21.84 | -- | 7.12 | 0.623 | 3.47 | 0.49 | 11.7 | 180.5 | -- | -- |
| 13:35 | 5 | 25 | 150 | 21.84 | -- | 7.12 | 0.623 | 3.25 | 0.47 | 11.5 | 180 | -- | -- |
| 13:40 | 5 | 30 | 150 | 21.84 | -- | 7.13 | 0.623 | 3.2 | 0.47 | 11.6 | 180 | -- | -- |
| 13:45 | 5 | 35 | 150 | 21.84 | -- | 7.12 | 0.623 | 3.4 | 0.44 | 11.6 | 181.1 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| Full 8260 VOCs List | 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 North

Condition of Well: Good condition

Well Completion: Flush mount

Well Locked at Arrival: yes

Well Locked at Departure: yes

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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MW-13-22 | | | **Date** | 03/07/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 22.84 | **Total Depth (ft-bmp)** | 26.72 | **Water Column (ft)** | 3.88 | **Gallons in Well** | 0.63 |
| **Purge Start** | 12:14 | **Pump Intake (ft-bmp)** | 24.74 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 12:54 | **Volumes Purged** | 2.31 | **Sample ID** | MW-23-22_GW-030723 | **Sampled by** | Leticia Ferreira |
| **Sample Time** | 12:51 | **Gallons Purged** | 1.45 | **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 |
| 12:15 | 0 | 0 | 300 | 22.84 | -- | 6.39 | 0.86 | 14.3 | 1 | 10.2 | -56.1 | -- | -- |
| 12:20 | 5 | 5 | 150 | 22.84 | -- | 10.4 | 0.9 | 11.2 | 0.71 | 10.5 | -74.9 | -- | -- |
| 12:25 | 5 | 10 | 150 | 22.84 | -- | 6.58 | 0.91 | 10.5 | 0.37 | 10.5 | -85.5 | -- | -- |
| 12:30 | 5 | 15 | 150 | 22.84 | -- | 6.62 | 0.92 | 9.5 | 0.29 | 10.5 | -93.7 | -- | -- |
| 12:35 | 5 | 20 | 150 | 22.84 | -- | 6.63 | 0.93 | 7.74 | 0.25 | 10.8 | -96.3 | -- | -- |
| 12:40 | 5 | 25 | 150 | 22.84 | -- | 6.64 | 0.93 | 5.07 | 0.26 | 10.8 | -98.6 | -- | -- |
| 12:45 | 5 | 30 | 150 | 22.84 | -- | 6.64 | 0.93 | 5.67 | 0.25 | 10.8 | -99.7 | -- | -- |
| 12:50 | 5 | 35 | 150 | 22.84 | -- | 6.64 | 0.92 | 4.9 | 0.26 | 10.9 | -100.8 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| Full 8260 VOCs list | 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: Racer Pontiac MI

Condition of Well: Good condition

Well Completion: NA

Well Locked at Arrival: yes

Well Locked at Departure: yes

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** | 03/07/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 33.1 degrees F and Clear. The wind is blowing N at 15.0 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 23.38 | **Total Depth (ft-bmp)** | 34.63 | **Water Column (ft)** | 11.25 | **Gallons in Well** | 1.83 |
| **Purge Start** | 10:51 | **Pump Intake (ft-bmp)** | 29.13 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 11:44 | **Volumes Purged** | 0.91 | **Sample ID** | MW-14-22_GW-030723 | **Sampled by** | Leticia Ferreira |
| **Sample Time** | 11:52 | **Gallons Purged** | 1.66 | **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 |
| 10:52 | 0 | 0 | 300 | 23.38 | -- | 9.12 | 125.7 | 34.3 | 6.48 | 11.2 | 127.1 | -- | -- |
| 10:57 | 5 | 5 | 150 | 23.38 | -- | 8.71 | 0.537 | 27.8 | 7.05 | 11.3 | 142.7 | -- | -- |
| 11:02 | 5 | 10 | 150 | 23.38 | -- | 8.56 | 0.543 | 22.3 | 7.61 | 11.41 | 144.9 | -- | -- |
| 11:07 | 5 | 15 | 150 | 23.38 | -- | 8.2 | 0.561 | 17.5 | 8.61 | 11.6 | 143.9 | -- | -- |
| 11:12 | 5 | 20 | 150 | 23.38 | -- | 7.79 | 0.581 | 14.2 | 7.91 | 11.5 | 143.5 | -- | -- |
| 11:17 | 5 | 25 | 150 | 23.38 | -- | 7.58 | 0.593 | 8.5 | 7.95 | 11.5 | 144.5 | -- | -- |
| 11:22 | 5 | 30 | 150 | 23.38 | -- | 7.5 | 0.603 | 7.93 | 8 | 11.5 | 144.9 | -- | -- |
| 11:27 | 5 | 35 | 150 | 23.38 | -- | 7.46 | 0.602 | 7.63 | 7.98 | 11.6 | 145 | -- | -- |
| 11:32 | 5 | 40 | 150 | 23.38 | -- | 7.45 | 0.614 | 7.51 | 7.98 | 11.5 | 144.9 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| Full 8260 VOCs list | 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: | Racer Pontiac MI | Well Locked at Arrival: | yes |
| Condition of Well: | Good condition | Well Locked at Departure: | yes |
| Well Completion: | NA | 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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MW-15-22 | | | **Date** | 03/07/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | | **Weather(°F)** | 36F, Sunny, NE 14 mph | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 23.48 | **Total Depth (ft-bmp)** | 35.94 | **Water Column (ft)** | 12.46 | **Gallons in Well** | 2.02 |
| **Purge Start** | 12:08 | **Pump Intake (ft-bmp)** | 33.5 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 12:48 | **Volumes Purged** | 1.24 | **Sample ID** | MW-15-22_GW-030723 | **Sampled by** | Sommer Guy |
| **Sample Time** | 12:45 | **Gallons Purged** | 2.50 | **Replicate/ Code No.** | DUP-02 | **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 |
| 12:10 | 0 | 0 | 150 | 23.49 | -- | 7.21 | 0.823 | 8.91 | 0.92 | 12.1 | -54.4 | -- | -- |
| 12:15 | 5 | 5 | 150 | 23.49 | -- | 7.12 | 0.785 | 7.55 | 0.42 | 13.1 | -86.7 | -- | -- |
| 12:20 | 5 | 10 | 150 | 23.49 | -- | 7.12 | 0.784 | 8.22 | 0.43 | 13.1 | -95.7 | -- | -- |
| 12:25 | 5 | 15 | 150 | 23.49 | -- | 7.1 | 0.78 | 6.37 | 0.24 | 13.2 | -99.8 | -- | -- |
| 12:30 | 5 | 20 | 150 | 23.49 | -- | 7.09 | 0.778 | 7.13 | 0.18 | 13.3 | -102.9 | -- | -- |
| 12:35 | 5 | 25 | 150 | 23.49 | -- | 7.09 | 0.776 | 7.16 | 0.19 | 13.5 | -105.4 | -- | -- |
| 12:40 | 5 | 30 | 150 | 23.49 | -- | 7.09 | 0.779 | 7.45 | 0.19 | 13.4 | -106.4 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| Full 8260 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: South Fiero
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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MWF16-05 | | | **Date** | 03/08/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 34.0 degrees F and Mostly Cloudy. The wind is blowing N/NE at 13.9 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 21.31 | **Total Depth (ft-bmp)** | 22.77 | **Water Column (ft)** | 1.46 | **Gallons in Well** | 0.24 |
| **Purge Start** | 11:00 | **Pump Intake (ft-bmp)** | 22 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 12:12 | **Volumes Purged** | 11.39 | **Sample ID** | MWF16-05_GW-030823 | **Sampled by** | Leticia Ferreira |
| **Sample Time** | 12:08 | **Gallons Purged** | 2.73 | **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 |
| 11:02 | 0 | 0 | 300 | 21.31 | -- | 8.78 | 0.395 | 404 | 7.87 | 8.7 | 119.9 | -- | -- |
| 11:07 | 5 | 5 | 150 | 21.31 | -- | 8.07 | 0.78 | 587 | 4.85 | 8.5 | 125.1 | -- | -- |
| 11:12 | 5 | 10 | 150 | 21.31 | -- | 7.74 | 1.01 | 1100 | 2.73 | 8.8 | 131.6 | -- | -- |
| 11:17 | 5 | 15 | 150 | 21.31 | -- | 7.6 | 1.1 | 404 | 2.33 | 8.7 | 133.3 | -- | -- |
| 11:22 | 5 | 20 | 150 | 21.31 | -- | 7.56 | 1.1 | 226 | 2.28 | 9.1 | 134.4 | -- | -- |
| 11:27 | 5 | 25 | 150 | 21.31 | -- | 7.5 | 1.19 | 122 | 2.09 | 8.9 | 133.1 | -- | -- |
| 11:32 | 5 | 30 | 150 | 21.31 | -- | 7.47 | 1.17 | 76.3 | 2.11 | 9.6 | 132.7 | -- | -- |
| 11:37 | 5 | 35 | 150 | 21.31 | -- | 7.45 | 1.18 | 57.1 | 2.15 | 9.6 | 132.6 | -- | -- |
| 11:42 | 5 | 40 | 150 | 21.31 | -- | 7.49 | 1.15 | 22.7 | 2.15 | 9.3 | 130.4 | -- | -- |
| 11:47 | 5 | 45 | 150 | 21.31 | -- | 7.48 | 1.16 | 13.3 | 2.11 | 9.3 | 130.3 | -- | -- |
| 11:52 | 5 | 50 | 150 | 21.31 | -- | 7.48 | 1.15 | 13 | 2.19 | 9.3 | 130.1 | -- | -- |
| 11:57 | 5 | 55 | 150 | 21.31 | -- | 7.44 | 1.17 | 9.9 | 2.16 | 9.3 | 130.1 | -- | -- |
| 12:02 | 5 | 60 | 150 | 21.31 | -- | 7.44 | 1.17 | 10 | 2.16 | 9.3 | 130.1 | -- | -- |
| 12:07 | 5 | 65 | 150 | 21.31 | -- | 7.44 | 1.17 | 10.9 | 2.16 | 9.3 | 130.1 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| Full 8260 VOCs list | 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: Racer Pontiac MI

Well Locked at Arrival: no

Condition of Well:

Well Locked at Departure: no

Well Completion: NA

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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MWF16-16 | | | **Date** | 03/06/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 36.0 degrees F and Cloudy. The wind is blowing E at 13.9 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 23.31 | **Total Depth (ft-bmp)** | 31.25 | **Water Column (ft)** | 7.94 | **Gallons in Well** | 1.29 |
| **Purge Start** | 12:56 | **Pump Intake (ft-bmp)** | 19 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 13:39 | **Volumes Purged** | 1.94 | **Sample ID** | MWF16-16_GW-030623 | **Sampled by** | Sommer Guy |
| **Sample Time** | 13:37 | **Gallons Purged** | 2.50 | **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 |
| 12:58 | 0 | 0 | 150 | 23.31 | -- | 7.6 | 0.879 | 23.2 | 10.54 | 11 | 176.3 | -- | -- |
| 13:03 | 5 | 5 | 150 | 23.31 | -- | 7.63 | 0.794 | 8.92 | 3.32 | 12.3 | 151 | -- | -- |
| 13:08 | 5 | 10 | 150 | 23.31 | -- | 7.62 | 0.777 | 7.24 | 3.9 | 12.5 | 143.7 | -- | -- |
| 13:13 | 5 | 15 | 150 | 23.31 | -- | 7.6 | 0.75 | 5.84 | 3.94 | 12.6 | 141.6 | -- | -- |
| 13:18 | 5 | 20 | 150 | 23.31 | -- | 7.58 | 0.73 | 5.81 | 3.94 | 12.7 | 141.3 | -- | -- |
| 13:23 | 5 | 25 | 150 | 23.31 | -- | 7.56 | 0.699 | 4.41 | 3.68 | 12.7 | 141.9 | -- | -- |
| 13:28 | 5 | 30 | 150 | 23.31 | -- | 7.56 | 0.694 | 4.79 | 3.33 | 12.8 | 143.6 | -- | -- |
| 13:33 | 5 | 35 | 150 | 23.31 | -- | 7.57 | 0.692 | 5.2 | 3.52 | 12.7 | 145.4 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| Full 8260 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: Ferio North

Condition of Well: Good condition,Missing bolts

Well Completion: Flush mount

Well Locked at Arrival:

Well Locked at Departure:

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** | 03/08/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 34.0 degrees F and Mostly Cloudy. The wind is blowing N/NE at 13.9 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 21.80 | **Total Depth (ft-bmp)** | 31.95 | **Water Column (ft)** | 10.15 | **Gallons in Well** | 1.65 |
| **Purge Start** | 10:52 | **Pump Intake (ft-bmp)** | 29.55 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 11:37 | **Volumes Purged** | 1.52 | **Sample ID** | MWF16-18_GW-030823 | **Sampled by** | Sommer Guy |
| **Sample Time** | 11:35 | **Gallons Purged** | 2.50 | **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 |
| 10:54 | 0 | 0 | 150 | 21.82 | -- | 7.22 | 0.944 | 5.91 | 1.52 | 11.2 | 161.3 | -- | -- |
| 10:59 | 5 | 5 | 150 | 21.82 | -- | 7.15 | 0.859 | 1.18 | 1.45 | 11.9 | 155.3 | -- | -- |
| 11:04 | 5 | 10 | 150 | 21.82 | -- | 7.15 | 0.847 | 2.15 | 1.18 | 11.9 | 155.2 | -- | -- |
| 11:09 | 5 | 15 | 150 | 21.82 | -- | 7.16 | 0.831 | 2.22 | 1.01 | 11.8 | 155.7 | -- | -- |
| 11:14 | 5 | 20 | 150 | 21.82 | -- | 7.15 | 0.835 | 2.14 | 0.97 | 11.8 | 156.6 | -- | -- |
| 11:19 | 5 | 25 | 150 | 21.82 | -- | 7.16 | 0.838 | 0.46 | 0.89 | 11.7 | 156.3 | -- | -- |
| 11:24 | 5 | 30 | 150 | 21.82 | -- | 7.15 | 0.841 | 0.62 | 0.88 | 11.8 | 155.5 | -- | -- |
| 11:29 | 5 | 35 | 150 | 21.82 | -- | 7.15 | 0.836 | 0.9 | 0.87 | 12 | 153.4 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| Full 8260 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: North Fiero

Condition of Well: Good condition

Well Completion: Flush mount

Well Locked at Arrival:

Well Locked at Departure:

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** | 03/07/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 37.0 degrees F and Clear. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 24.82 | **Total Depth (ft-bmp)** | 30.4 | **Water Column (ft)** | 5.58 | **Gallons in Well** | 0.91 |
| **Purge Start** | 13:50 | **Pump Intake (ft-bmp)** | 27.3 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 14:24 | **Volumes Purged** | 1.39 | **Sample ID** | MW-16-23_GW-030723 | **Sampled by** | Leticia Ferreira |
| **Sample Time** | 14:22 | **Gallons Purged** | 1.27 | **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 |
| 13:51 | 0 | 0 | 300 | 24.82 | -- | 7.23 | 0.503 | 20.4 | 1.69 | 13.7 | -0.6 | -- | -- |
| 13:56 | 5 | 5 | 150 | 24.82 | -- | 7.35 | 0.503 | 9.19 | 1.36 | 13.7 | -7.3 | -- | -- |
| 14:01 | 5 | 10 | 150 | 24.82 | -- | 7.3 | 0.526 | 10.3 | 1.27 | 14 | 0.2 | -- | -- |
| 14:06 | 5 | 15 | 150 | 24.82 | -- | 7.28 | 0.531 | 7.38 | 1.14 | 14.2 | 3.9 | -- | -- |
| 14:11 | 5 | 20 | 150 | 24.82 | -- | 7.24 | 0.55 | 5.1 | 1.04 | 14.1 | 9.6 | -- | -- |
| 14:16 | 5 | 25 | 150 | 24.82 | -- | 7.21 | 0.56 | 4.45 | 1.03 | 14 | 10 | -- | -- |
| 14:21 | 5 | 30 | 150 | 24.82 | -- | 7.24 | 0.559 | 5.1 | 1.01 | 14.1 | 17.1 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| Full 8260 VOCs list | 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: Racer Pontiac MI
Well Locked at Arrival: yes
Condition of Well: Good condition
Well Locked at Departure: yes
Well Completion: NA
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** | 03/08/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 37.9 degrees F and Mostly Cloudy. The wind is blowing N at 15.0 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 26.85 | **Total Depth (ft-bmp)** | 28.8 | **Water Column (ft)** | 1.95 | **Gallons in Well** | 0.32 |
| **Purge Start** | 12:45 | **Pump Intake (ft-bmp)** | 27.8 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 13:18 | **Volumes Purged** | | **Sample ID** | MWOS-08_GW-030823 | **Sampled by** | Leticia Ferreira |
| **Sample Time** | 13:17 | **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 |
| 12:46 | 0 | 0 | 300 | 26.85 | -- | 7.04 | 0.77 | 184 | 4.63 | 11.1 | 122.7 | -- | -- |
| 12:51 | 5 | 5 | 150 | 26.85 | -- | 7.11 | 0.78 | 10.2 | 4.22 | 11.6 | 119.9 | -- | -- |
| 12:56 | 5 | 10 | 150 | 26.85 | -- | 7.12 | 0.77 | 1.94 | 4.05 | 11.5 | 121.9 | -- | -- |
| 13:01 | 5 | 15 | 150 | 26.85 | -- | 7.07 | 0.76 | 1.09 | 3.82 | 11.6 | 126.3 | -- | -- |
| 13:06 | 5 | 20 | 150 | 26.85 | -- | 7.05 | 0.76 | 1.26 | 3.78 | 11.6 | 128.6 | -- | -- |
| 13:11 | 5 | 25 | 150 | 26.85 | -- | 7.03 | 0.76 | 0.9 | 3.78 | 11.3 | 130.4 | -- | -- |
| 13:16 | 5 | 30 | 150 | 26.85 | -- | 7.05 | 0.76 | 0.94 | 3.8 | 11.3 | 131.1 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| Full 8260 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: Racer Pontiac MI

Well Locked at Arrival: yes

Condition of Well: Good condition

Well Locked at Departure: yes

Well Completion: NA

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** | 03/07/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 39.0 degrees F and Clear. The wind is blowing N at 15.0 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 28.11 | **Total Depth (ft-bmp)** | 32.2 | **Water Column (ft)** | 4.09 | **Gallons in Well** | 0.66 |
| **Purge Start** | 15:06 | **Pump Intake (ft-bmp)** | 30.11 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 15:40 | **Volumes Purged** | | **Sample ID** | MWOS-09R_GW-030723 | **Sampled by** | Leticia Ferreira |
| **Sample Time** | 15:38 | **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 |
| 15:07 | 0 | 0 | 300 | 28.11 | -- | 6.9 | 0.81 | 17.1 | 0.41 | 12.2 | 94.7 | -- | -- |
| 15:12 | 5 | 5 | 300 | 28.11 | -- | 6.84 | 0.006 | 11.4 | 1.04 | 11.6 | 102.2 | -- | -- |
| 15:17 | 5 | 10 | 300 | 28.11 | -- | 6.89 | 0.8 | 91.89 | 0.29 | 11.4 | 89.1 | -- | -- |
| 15:22 | 5 | 15 | 300 | 28.11 | -- | 6.92 | 0.79 | 13.7 | 0.25 | 11.5 | 88.5 | -- | -- |
| 15:27 | 5 | 20 | 300 | 28.11 | -- | 6.95 | 0.79 | 9.9 | 0.24 | 10.9 | 87.1 | -- | -- |
| 15:32 | 5 | 25 | 300 | 28.11 | -- | 6.95 | 0.79 | 10 | 0.24 | 11.1 | 86 | -- | -- |
| 15:37 | 5 | 30 | 300 | 28.11 | -- | 6.97 | 0.79 | 9 | 0.22 | 10.9 | 85.9 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| Full 8260 VOCs list | 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: Racer Pontiac MI
Well Locked at Arrival: yes
Condition of Well: Good condition
Well Locked at Departure: yes
Well Completion: NA
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** | 03/07/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 37.9 degrees F and Clear. The wind is blowing N at 17.2 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 29.25 | **Total Depth (ft-bmp)** | 32.74 | **Water Column (ft)** | 3.49 | **Gallons in Well** | 0.57 |
| **Purge Start** | 15:17 | **Pump Intake (ft-bmp)** | 31 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 15:57 | **Volumes Purged** | 4.39 | **Sample ID** | MWOS-10_GW-030723 | **Sampled by** | Sommer Guy |
| **Sample Time** | 15:55 | **Gallons Purged** | 2.50 | **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 |
| 15:20 | 0 | 0 | 150 | 29.25 | -- | 7.38 | 0.971 | 24.3 | 7.96 | 10.4 | 48.3 | -- | -- |
| 15:25 | 5 | 5 | 150 | 29.25 | -- | 7.32 | 0.977 | 21.8 | 6.91 | 10 | 49.9 | -- | -- |
| 15:30 | 5 | 10 | 150 | 29.25 | -- | 7.33 | 0.939 | 23.1 | 5.32 | 10 | 52.6 | -- | -- |
| 15:35 | 5 | 15 | 150 | 29.25 | -- | 7.33 | 0.94 | 12.9 | 5.52 | 9.8 | 52.5 | -- | -- |
| 15:40 | 5 | 20 | 150 | 29.25 | -- | 7.33 | 0.944 | 7.6 | 5.46 | 10 | 53.1 | -- | -- |
| 15:45 | 5 | 25 | 150 | 29.25 | -- | 7.33 | 0.94 | 7.71 | 5.51 | 10 | 53.6 | -- | -- |
| 15:50 | 5 | 30 | 150 | 29.25 | -- | 7.32 | 0.94 | 7.38 | 5.04 | 10.1 | 53.9 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| Full 8260 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: In sidewalk offsite
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** | 04/07/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 36.0 degrees F and Mostly Clear. The wind is blowing N at 9.2 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **Screen Setting (ft-bmp)** | -- | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 27.03 | **Total Depth (ft-bmp)** | 34.49 | **Water Column(ft)** | 7.46 | **Gallons in Well** | 1.21 |
| **MP Elevation** | | **Pump Intake (ft-bmp)** | 32 | **Purge Method** | Low-Flow | **Sample Method** | |
| **Sample Time** | 11:48 | **Volumes Purged** | 3.31 | **Sample ID** | MW-16-22_GW-040723 | **Sampled by** | Sommer Guy |
| **Purge Start** | 10:53 | **Gallons Purged** | 4.00 | **Replicate/ Code No.** | | | |
| **Purge End** | 10:51 | | | | | | |

| 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 |
| 10:55 | 0 | 0 | 150 | 27.04 | 0.00 | 7.38 | 0.73 | 184 | 1.46 | 11.1 | 217.7 | Clear | None |
| 11:00 | 5 | 5 | 150 | 27.05 | 0.00 | 7.4 | 0.67 | 149 | 0.78 | 11.8 | 174.2 | Clear | None |
| 11:05 | 5 | 10 | 150 | 27.05 | 0.00 | 7.42 | 0.655 | 81.9 | 0.94 | 12 | 169 | Clear | None |
| 11:10 | 5 | 15 | 150 | 27.05 | 0.00 | 7.41 | 0.654 | 58.6 | 0.31 | 12 | 164.3 | Clear | None |
| 11:15 | 5 | 20 | 150 | 27.05 | 0.00 | 7.39 | 0.653 | 38.2 | 0.65 | 12.2 | 157.5 | Clear | None |
| 11:20 | 5 | 25 | 150 | 27.05 | 0.00 | 7.39 | 0.655 | 19.3 | 0.53 | 12.3 | 152.8 | Clear | None |
| 11:25 | 5 | 30 | 150 | 27.05 | 0.00 | 7.39 | 0.655 | 15 | 0.47 | 12.2 | 149.2 | Clear | None |
| 11:30 | 5 | 35 | 150 | 27.05 | 0.00 | 7.39 | 0.657 | 12.1 | 0.42 | 12.3 | 145.9 | Clear | None |
| 11:35 | 5 | 40 | 150 | 27.05 | 0.00 | 7.39 | 0.658 | 7.42 | 0.4 | 12.3 | 142.7 | Clear | None |
| 11:40 | 5 | 45 | 150 | 27.05 | 0.00 | 7.38 | 0.659 | 7.3 | 0.38 | 12.3 | 140.3 | Clear | None |
| 11:45 | 5 | 50 | 150 | 27.05 | 0.00 | 7.37 | 0.66 | 6.83 | 0.37 | 12.3 | 138.4 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| Full 8260 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:

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

# Soil Vapor Collection Log Sheet



| | | | |
|---|---|---|---|
| Office Name & Address (Reporting Information): Novi, MI 28550 Cabot Dr #500 | | | Project Name: RACER Pontiac North Campus 2023 |
| Field Manager: Alexis Crisp | | | Project Number: 30167840 |
| Phone: 937-206-4005 | Special Instructions: VOCs | | Site Address: 200 E Montcalm Pontiac MI 48340 US |
| Email Address for Result Reporting: Alexis.crisp@arcadis.com | | | Sampler Name: Sommer Guy / Phone Number:947-465-3421 |
| | | | 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-04-21_SG-032021 | In sidewalk | 03/20/2023 | Pass | 0 | 42.7 | Pass | 334.83 | 200 | 1134 | 2243 | 14:26 | -28 | 14:32 | -6 | N/A |
| SV-03-21_SG-032023 | In sidewalk | 03/20/2023 | Pass | 0 | 42.8 | Pass | 187.5 | 200 | 3445 | 2242 | 13:09 | -28 | 13:14 | -6 | N/A |
| DUP-01_SG-032023 | In grass | 03/20/2023 | Pass | 3400 | 40.5 | Pass | 328.14 | 200 | 2332 | 2217 | 12:17 | -28 | 12:24 | -6 | N/A |
| SV-05-21_SG-032023 | In sidewalk | 03/20/2023 | Pass | 0 | 46.3 | Pass | 187.5 | 200 | 748 | 2242 | 14:03 | -28 | 14:09 | -6 | N/A |
| SV-06-21_SG-032023 | In sidewalk | 03/20/2023 | Pass | 325 | 45.8 | Pass | 334.83 | 200 | 2405 | 23217 | 14:48 | -28 | 14:54 | -6 | N/A |
| SV-01-21_SG-032023 | In grass | 03/20/2023 | Pass | 0 | 40.3 | Pass | 207.6 | 200 | 1803 | 2150 | 11:46 | -28 | 11:51 | -6 | N/A |
| SV-02-21_SG-032023 | In grass | 03/20/2023 | Pass | 3400 | 40.5 | Pass | 328.14 | 200 | 3038 | 2228 | 12:17 | -28 | 12:24 | -6 | N/A |

**Meteorological Data**

| Date | Time | Temp | | Relative Humidity (%) | Barometric Pressure (in.Hg) | Weather source |
|---|---|---|---|---|---|---|
| | | Indoor | Outdoor | | | |

**General Notes or Observations**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 03/20/2023 | 10:53 | N/A | 37 | 35 | 30 | 37.0 degrees F and Clear. The wind is blowing undefined at 16.1 mph. | N/A |
| 03/20/2023 | 10:53 | N/A | 37 | 35 | 30 | 37.0 degrees F and Clear. The wind is blowing undefined at 16.1 mph. | |
| 03/20/2023 | 10:53 | N/A | 37 | 35 | 30 | 37.0 degrees F and Clear. The wind is blowing undefined at 16.1 mph. | |
| 03/20/2023 | 10:53 | N/A | 37 | 35 | 30 | 37.0 degrees F and Clear. The wind is blowing undefined at 16.1 mph. | |
| 03/20/2023 | 10:53 | N/A | 37 | 35 | 30 | 37.0 degrees F and Clear. The wind is blowing undefined at 16.1 mph. | |
| 03/20/2023 | 10:53 | N/A | 37 | 35 | 30 | 37.0 degrees F and Clear. The wind is blowing undefined at 16.1 mph. | |

**Air Parameters (completed after sample collection)**

| Location ID | CH4 % | CH4 LEL % | O2 % | PID (ppm) | Differential Pressure (in. Water Column) |
|---|---|---|---|---|---|
| SV-04-21 | 0.1 | NM | 13.5 | NM | NM |
| SV-03-21 | 0 | NM | 15.4 | NM | NM |
| -- | 0.2 | NM | 20.4 | NM | NM |
| SV-05-21 | 0.1 | NM | 14 | NM | NM |
| SV-06-21 | 0 | NM | 13.5 | NM | NM |
| SV-01-21 | 0.1 | NM | 17 | NM | NM |
| SV-02-21 | 0.2 | NM | 20.4 | NM | NM |

# 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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 25.84 | **Total Depth (ft-bmp)** | 29.71 | **Water Column (ft)** | 3.87 | **Gallons in Well** | 0.63 |
| **Purge Start** | 10:09 | **Pump Intake (ft-bmp)** | 27.21 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 10:51 | **Volumes Purged** | | **Sample ID** | MW-02-17_GW-060623 | **Sampled by** | Samantha Hindle |
| **Sample Time** | 10:50 | **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 |
| 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

Condition of Well: Good condition

Well Completion: Flush mount

Well Locked at Arrival: yes

Well Locked at Departure: yes

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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 27.21 | **Total Depth (ft-bmp)** | 33.58 | **Water Column (ft)** | 6.37 | **Gallons in Well** | 1.04 |
| **Purge Start** | 12:11 | **Pump Intake (ft-bmp)** | 31.08 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 12:48 | **Volumes Purged** | | **Sample ID** | MW-05-18_GW-060623 | **Sampled by** | Samantha Hindle |
| **Sample Time** | 12:45 | **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 |
| 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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 26.05 | **Total Depth (ft-bmp)** | 29.22 | **Water Column (ft)** | 3.17 | **Gallons in Well** | 0.52 |
| **Purge Start** | 13:34 | **Pump Intake (ft-bmp)** | 26.72 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 13:36 | **Volumes Purged** | | **Sample ID** | MW-06-20_GW-060623 | **Sampled by** | Samantha Hindle |
| **Sample Time** | 14:48 | **Gallons Purged** | 0.00 | **Replicate/ Code No.** | DUP-01 | **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
Condition of Well: Good condition
Well Completion: Flush mount
Well Locked at Arrival: yes
Well Locked at Departure: yes
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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 26.62 | **Total Depth (ft-bmp)** | 30.15 | **Water Column (ft)** | 3.53 | **Gallons in Well** | 0.57 |
| **Purge Start** | 11:14 | **Pump Intake (ft-bmp)** | 27.65 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 11:48 | **Volumes Purged** | | **Sample ID** | MW-07-20_GW-060623 | **Sampled by** | Samantha Hindle |
| **Sample Time** | 11:45 | **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 |
| 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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 26.84 | **Total Depth (ft-bmp)** | 30.28 | **Water Column (ft)** | 3.44 | **Gallons in Well** | 0.56 |
| **Purge Start** | 09:50 | **Pump Intake (ft-bmp)** | 27.78 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 10:52 | **Volumes Purged** | | **Sample ID** | MW-08-21_GW-060823 | **Sampled by** | Samantha Hindle |
| **Sample Time** | 10:52 | **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 |
| 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
Condition of Well: Broken thread tabs
Well Completion: Flush mount
Well Locked at Arrival: no
Well Locked at Departure: no
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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 21.23 | **Total Depth (ft-bmp)** | 32.83 | **Water Column (ft)** | 11.6 | **Gallons in Well** | 1.88 |
| **Purge Start** | 15:50 | **Pump Intake (ft-bmp)** | 30 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 16:34 | **Volumes Purged** | | **Sample ID** | MW-09-22_GW-060823 | **Sampled by** | Sierra Sider |
| **Sample Time** | 16:30 | **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 |
| 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

Condition of Well: Good condition

Well Completion: Flush mount

Well Locked at Arrival: yes

Well Locked at Departure: yes

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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 21.95 | **Total Depth (ft-bmp)** | 26.72 | **Water Column (ft)** | 4.77 | **Gallons in Well** | 0.78 |
| **Purge Start** | 13:11 | **Pump Intake (ft-bmp)** | 24.2 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 13:47 | **Volumes Purged** | 3.85 | **Sample ID** | MW-13-22_GW-060623 | **Sampled by** | Sommer Guy |
| **Sample Time** | 13:45 | **Gallons Purged** | 3.00 | **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 |
| 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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 22.50 | **Total Depth (ft-bmp)** | 34.62 | **Water Column (ft)** | 12.12 | **Gallons in Well** | 1.97 |
| **Purge Start** | 14:03 | **Pump Intake (ft-bmp)** | 32.2 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 14:48 | **Volumes Purged** | | **Sample ID** | MW-14-22_GW-060623 | **Sampled by** | Sommer Guy |
| **Sample Time** | 14:40 | **Gallons Purged** | | **Replicate/ Code No.** | MW-14-22_GW-060623 | **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
Condition of Well: Good condition
Well Completion: Flush mount
Well Locked at Arrival:
Well Locked at Departure:
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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 22.63 | **Total Depth (ft-bmp)** | 35.93 | **Water Column (ft)** | 13.3 | **Gallons in Well** | 2.16 |
| **Purge Start** | 09:19 | **Pump Intake (ft-bmp)** | 33.4 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 10:05 | **Volumes Purged** | 1.39 | **Sample ID** | MW-15-22_GW-060623 | **Sampled by** | Sommer Guy |
| **Sample Time** | 10:00 | **Gallons Purged** | 3.00 | **Replicate/ Code No.** | DUP-02_GW-060623 | **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
Condition of Well: Good condition
Well Completion: Flush mount
Well Locked at Arrival:
Well Locked at Departure:
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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 26.59 | **Total Depth (ft-bmp)** | 34.52 | **Water Column (ft)** | 7.93 | **Gallons in Well** | 1.29 |
| **Purge Start** | 15:20 | **Pump Intake (ft-bmp)** | 32 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 16:02 | **Volumes Purged** | 2.33 | **Sample ID** | MW-16-22_GW-060623 | **Sampled by** | Sommer Guy |
| **Sample Time** | 16:00 | **Gallons Purged** | 3.00 | **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 |
| 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
Condition of Well: Good condition
Well Completion: Stick-up
Well Locked at Arrival:
Well Locked at Departure:
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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 18.73 | **Total Depth (ft-bmp)** | 28.78 | **Water Column (ft)** | 10.05 | **Gallons in Well** | 1.63 |
| **Purge Start** | 15:56 | **Pump Intake (ft-bmp)** | 21.9 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 17:00 | **Volumes Purged** | | **Sample ID** | MWF15-01_GW-060723 | **Sampled by** | Samantha Hindle |
| **Sample Time** | 16:58 | **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 |
| 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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 20.57 | **Total Depth (ft-bmp)** | 22.81 | **Water Column (ft)** | 2.24 | **Gallons in Well** | 0.36 |
| **Purge Start** | 12:59 | **Pump Intake (ft-bmp)** | 21.3 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 14:20 | **Volumes Purged** | | **Sample ID** | MWF16-05 | **Sampled by** | Sierra Sider |
| **Sample Time** | 14:15 | **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 |
| 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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 14.64 | **Total Depth (ft-bmp)** | 28.85 | **Water Column (ft)** | 14.21 | **Gallons in Well** | 2.31 |
| **Purge Start** | 11:38 | **Pump Intake (ft-bmp)** | 26.35 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 12:29 | **Volumes Purged** | | **Sample ID** | MWF16-06_GW-060923 | **Sampled by** | Samantha Hindle |
| **Sample Time** | | **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 |
| 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
Condition of Well: Good condition
Well Completion: Flush mount
Well Locked at Arrival: yes
Well Locked at Departure: yes
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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 4.58 | **Total Depth (ft-bmp)** | 17.48 | **Water Column (ft)** | 12.9 | **Gallons in Well** | 2.1 |
| **Purge Start** | 10:49 | **Pump Intake (ft-bmp)** | 14.98 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 11:48 | **Volumes Purged** | | **Sample ID** | MWF16-07_GW-060723 | **Sampled by** | Samantha Hindle |
| **Sample Time** | 11:45 | **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 |
| 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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 14.13 | **Total Depth (ft-bmp)** | 18.89 | **Water Column (ft)** | 4.76 | **Gallons in Well** | 0.77 |
| **Purge Start** | 14:54 | **Pump Intake (ft-bmp)** | 16.39 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 16:02 | **Volumes Purged** | | **Sample ID** | MWF16-12 | **Sampled by** | Samantha Hindle |
| **Sample Time** | 15:58 | **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 |
| 14:56 | 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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 21.98 | **Total Depth (ft-bmp)** | 35.48 | **Water Column (ft)** | 13.5 | **Gallons in Well** | 2.19 |
| **Purge Start** | 12:04 | **Pump Intake (ft-bmp)** | 32.98 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 13:01 | **Volumes Purged** | | **Sample ID** | MWF16-15_GW-060723 | **Sampled by** | Samantha Hindle |
| **Sample Time** | 12:57 | **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 |
| 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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 22.60 | **Total Depth (ft-bmp)** | 31.28 | **Water Column (ft)** | 8.68 | **Gallons in Well** | 1.41 |
| **Purge Start** | 12:56 | **Pump Intake (ft-bmp)** | 28.78 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 13:36 | **Volumes Purged** | | **Sample ID** | MWF16-16_GW-060923 | **Sampled by** | Samantha Hindle |
| **Sample Time** | 13:32 | **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 |
| 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
Condition of Well: Missing bolts
Well Completion: Flush mount
Well Locked at Arrival: yes
Well Locked at Departure: yes
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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 20.16 | **Total Depth (ft-bmp)** | 31.81 | **Water Column (ft)** | 11.65 | **Gallons in Well** | 1.89 |
| **Purge Start** | 13:38 | **Pump Intake (ft-bmp)** | 29.31 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 14:35 | **Volumes Purged** | | **Sample ID** | MWF16-17 | **Sampled by** | Samantha Hindle |
| **Sample Time** | 14:33 | **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 |
| 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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 22.40 | **Total Depth (ft-bmp)** | 33.92 | **Water Column (ft)** | 11.52 | **Gallons in Well** | 1.87 |
| **Purge Start** | 14:05 | **Pump Intake (ft-bmp)** | 31.42 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 14:42 | **Volumes Purged** | | **Sample ID** | MWF16-16 | **Sampled by** | Samantha Hindle |
| **Sample Time** | 14:38 | **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 |
| 14:06 | 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
Condition of Well: Missing bolts
Well Completion: Flush mount
Well Locked at Arrival: no
Well Locked at Departure: no
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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 23.99 | **Total Depth (ft-bmp)** | 30.44 | **Water Column (ft)** | 6.45 | **Gallons in Well** | 1.05 |
| **Purge Start** | 15:24 | **Pump Intake (ft-bmp)** | 27.94 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 16:02 | **Volumes Purged** | | **Sample ID** | MWF16-23_GW-060623 | **Sampled by** | Samantha Hindle |
| **Sample Time** | 15:58 | **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 |
| 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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 26.10 | **Total Depth (ft-bmp)** | 37.19 | **Water Column (ft)** | 11.09 | **Gallons in Well** | 1.8 |
| **Purge Start** | 12:17 | **Pump Intake (ft-bmp)** | 34.69 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 12:58 | **Volumes Purged** | | **Sample ID** | MWF16-25 | **Sampled by** | Samantha Hindle |
| **Sample Time** | 12:58 | **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 |
| 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

Condition of Well: Good condition

Well Completion: Flush mount

Well Locked at Arrival: yes

Well Locked at Departure: yes

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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 19.42 | **Total Depth (ft-bmp)** | 22.62 | **Water Column (ft)** | 3.2 | **Gallons in Well** | 0.52 |
| **Purge Start** | 13:23 | **Pump Intake (ft-bmp)** | 20.12 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 14:21 | **Volumes Purged** | | **Sample ID** | MWF7-02 | **Sampled by** | Samantha Hindle |
| **Sample Time** | 14:11 | **Gallons Purged** | 0.00 | **Replicate/ Code No.** | MS/MSD | **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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 26.07 | **Total Depth (ft-bmp)** | 28.8 | **Water Column (ft)** | 2.73 | **Gallons in Well** | 0.44 |
| **Purge Start** | 11:44 | **Pump Intake (ft-bmp)** | 26.3 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 12:29 | **Volumes Purged** | | **Sample ID** | MWOOS-08_GW-060823 | **Sampled by** | Sierra Sider |
| **Sample Time** | 12:20 | **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 |
| 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

Condition of Well: Missing bolts

Well Completion: Flush mount

Well Locked at Arrival: yes

Well Locked at Departure: yes

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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 27.33 | **Total Depth (ft-bmp)** | 32.25 | **Water Column (ft)** | 4.92 | **Gallons in Well** | 0.8 |
| **Purge Start** | 10:17 | **Pump Intake (ft-bmp)** | 29.75 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 11:18 | **Volumes Purged** | | **Sample ID** | MWOS-09R_GW060823 | **Sampled by** | Sierra Sider |
| **Sample Time** | 11:10 | **Gallons Purged** | 0.00 | **Replicate/ Code No.** | DUP-03_GW060823 | **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

Condition of Well: Good condition

Well Completion: Flush mount

Well Locked at Arrival: yes

Well Locked at Departure: yes

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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 28.53 | **Total Depth (ft-bmp)** | 32.77 | **Water Column (ft)** | 4.24 | **Gallons in Well** | 0.69 |
| **Purge Start** | 11:31 | **Pump Intake (ft-bmp)** | 30.27 | **Purge Method** | Low-Flow | **Purge Equipment** | Submersible |
| **Purge End** | 12:35 | **Volumes Purged** | | **Sample ID** | MWOS-10_GW-061223 | **Sampled by** | Samantha Hindle |
| **Sample Time** | 12:33 | **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 |
| 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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **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 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 22.96 | **Total Depth (ft-bmp)** | 37.7 | **Water Column (ft)** | 14.74 | **Gallons in Well** | 0.6 |
| **Purge Start** | 16:31 | **Pump Intake (ft-bmp)** | 32.75 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 17:37 | **Volumes Purged** | | **Sample ID** | TW-12-22 | **Sampled by** | Samantha Hindle |
| **Sample Time** | 17:35 | **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 |
| 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

# 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: Alexis.crisp@arcadis.com | | Sampler Name: Sommer Guy | Phone Number:947-465-3421 |
| | | 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**

| 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. |

**General Notes or Observations**

N/A

# 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 |

# Groundwater Sampling Form

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MW-06-20 | | | **Date** | 08/29/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 73.0 degrees F and Mostly Cloudy. The wind is blowing W/SW at 11.4 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 26.02 | **Total Depth (ft-bmp)** | 29.55 | **Water Column (ft)** | 3.53 | **Gallons in Well** | 0.57 |
| **Purge Start** | 12:50 | **Pump Intake (ft-bmp)** | 27.5 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | | **Volumes Purged** | 3.71 | **Sample ID** | MW-06-20_GW-082923 | **Sampled by** | Kaylee DeRoo |
| **Sample Time** | 13:30 | **Gallons Purged** | 2.11 | **Replicate/ Code No.** | DUP-01_GW-082923 | **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 |
| 12:55 | 0 | 0 | 200 | 26.02 | 0.26 | 7.45 | 0.85 | 0.49 | 1.45 | 17 | 102 | -- | -- |
| 13:00 | 5 | 5 | 200 | 26.02 | 0.53 | 7.45 | 0.85 | 0.43 | 1.39 | 16.9 | 86.1 | -- | -- |
| 13:05 | 5 | 10 | 200 | 26.02 | 7.93 | 7.48 | 0.86 | 0.02 | 1.27 | 16.9 | 28 | -- | -- |
| 13:10 | 5 | 15 | 200 | 26.02 | 1.06 | 7.48 | 0.87 | 0.02 | 1.21 | 16.7 | 2 | -- | -- |
| 13:15 | 5 | 20 | 200 | 26.02 | 1.32 | 7.48 | 0.86 | 0.02 | 1.14 | 16.7 | -10.4 | -- | -- |
| 13:20 | 5 | 25 | 200 | 26.02 | 1.59 | 7.48 | 0.87 | 0.02 | 1.1 | 16.7 | -16.3 | -- | -- |
| 13:25 | 5 | 30 | 200 | 26.02 | 1.85 | 7.48 | 0.87 | 0.02 | 1.13 | 16.6 | -18.9 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|

**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: In residential area.
Condition of Well: Good condition
Well Completion: Flush mount
Well Locked at Arrival: yes
Well Locked at Departure: yes
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** | 08/28/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 72.0 degrees F and Mostly Clear. The wind is blowing at 5.8 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 26.83 | **Total Depth (ft-bmp)** | 30.7 | **Water Column (ft)** | 3.87 | **Gallons in Well** | 0.63 |
| **Purge Start** | 15:20 | **Pump Intake (ft-bmp)** | 28 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | | **Volumes Purged** | 3.35 | **Sample ID** | MW-08-21 | **Sampled by** | Kaylee DeRoo |
| **Sample Time** | 16:00 | **Gallons Purged** | 2.11 | **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 |
| 15:25 | 0 | 0 | 200 | 26.83 | 0.26 | 7.39 | 1.17 | 1.78 | 7.97 | 16.8 | 105.4 | -- | -- |
| 15:30 | 5 | 5 | 200 | 26.83 | 0.53 | 7.4 | 1.15 | | 4.69 | 16.9 | 83.3 | -- | -- |
| 15:35 | 5 | 10 | 200 | 26.83 | 0.79 | 7.4 | 1.17 | 0.31 | 1.16 | 17 | 63.6 | -- | -- |
| 15:40 | 5 | 15 | 200 | 26.83 | 10.57 | 7.4 | 1.17 | 0.18 | 4.37 | 17.1 | 59.1 | -- | -- |
| 15:45 | 5 | 20 | 200 | 26.83 | 1.32 | 7.39 | 1.16 | 0.02 | 4.21 | 16.9 | 51 | -- | -- |
| 15:50 | 5 | 25 | 200 | 26.83 | 1.59 | 7.39 | 1.16 | 0.02 | 4.01 | 17 | 43.4 | -- | -- |
| 15:55 | 5 | 30 | 200 | 26.83 | 1.85 | 7.39 | 1.16 | 0.02 | 3.93 | 16.8 | 41.3 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|

**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: | In residential area. | 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** | MW-13-22 | | | **Date** | 08/30/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 21.20 | **Total Depth (ft-bmp)** | 27.5 | **Water Column (ft)** | 6.3 | **Gallons in Well** | 1.02 |
| **Purge Start** | 09:55 | **Pump Intake (ft-bmp)** | 25 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | | **Volumes Purged** | 1.81 | **Sample ID** | MW-13-22_GW-083023 | **Sampled by** | Kaylee DeRoo |
| **Sample Time** | 10:30 | **Gallons Purged** | 1.85 | **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 |
| 10:00 | 0 | 0 | 200 | 21.20 | 0.26 | 6.78 | 0.94 | 4.83 | 0.45 | 14 | -53.3 | -- | -- |
| 10:05 | 5 | 5 | 200 | 21.20 | 0.53 | 6.83 | 0.95 | 3.76 | 1.05 | 13.9 | -90.8 | -- | -- |
| 10:10 | 5 | 10 | 200 | 21.20 | 0.79 | 6.84 | 0.95 | 0.62 | 1.01 | 14 | -93.9 | -- | -- |
| 10:15 | 5 | 15 | 200 | 21.20 | 1.06 | 6.85 | 0.95 | 0.02 | 0.98 | 14.1 | -102.6 | -- | -- |
| 10:20 | 5 | 20 | 200 | 21.20 | 1.32 | 6.85 | 0.95 | 0.02 | 0.95 | 14 | -105.9 | -- | -- |
| 10:25 | 5 | 25 | 200 | 21.20 | 1.59 | 6.86 | 0.95 | 0.02 | 0.93 | 14 | -107.8 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|

**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: In fenced in area.

Condition of Well: Good condition

Well Completion: Flush mount

Well Locked at Arrival: no

Well Locked at Departure: no

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** | 08/30/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 55.9 degrees F and Cloudy. The wind is blowing N/NW at 13.9 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 27.20 | **Total Depth (ft-bmp)** | 35.2 | **Water Column (ft)** | 8 | **Gallons in Well** | 1.3 |
| **Purge Start** | 10:55 | **Pump Intake (ft-bmp)** | 32.5 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | | **Volumes Purged** | 1.22 | **Sample ID** | MW-14-22_GW-083023 | **Sampled by** | Kaylee DeRoo |
| **Sample Time** | 11:25 | **Gallons Purged** | 1.59 | **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 |
| 11:00 | 0 | 0 | 200 | 27.20 | 0.26 | 7.6 | 0.586 | 1.22 | 0.97 | 14 | -47.2 | -- | -- |
| 11:05 | 5 | 5 | 200 | 27.20 | 0.53 | 7.6 | 0.586 | 0.02 | 1.77 | 14 | -50.3 | -- | -- |
| 11:10 | 5 | 10 | 200 | 27.20 | 0.79 | 7.6 | 0.588 | 0.02 | 1.45 | 14 | -51.8 | -- | -- |
| 11:15 | 5 | 15 | 200 | 27.20 | 1.06 | 7.6 | 0.59 | 0.02 | 1.46 | 14 | -52.9 | -- | -- |
| 11:20 | 5 | 20 | 200 | 27.20 | 1.32 | 7.59 | 0.598 | 0.02 | 1.42 | 14 | -55.9 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|

**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: In fenced in area.

Condition of Well: Good condition

Well Completion: Flush mount

Well Locked at Arrival: no

Well Locked at Departure: no

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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MW-15-22 | | | **Date** | 08/29/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 75.0 degrees F and Cloudy. The wind is blowing W/SW at 9.2 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 23.40 | **Total Depth (ft-bmp)** | 36.5 | **Water Column (ft)** | 13.1 | **Gallons in Well** | 2.13 |
| **Purge Start** | 15:05 | **Pump Intake (ft-bmp)** | 32 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | | **Volumes Purged** | 0.87 | **Sample ID** | MW-15-22_GW-082923 | **Sampled by** | Kaylee DeRoo |
| **Sample Time** | 15:40 | **Gallons Purged** | 1.85 | **Replicate/ Code No.** | DUP-02_GW-082923 | **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 |
| 15:10 | 0 | 0 | 200 | 23.40 | 0.26 | 8.37 | 0.34 | 7.84 | 5.99 | 15.8 | 73.4 | -- | -- |
| 15:15 | 5 | 5 | 200 | 23.40 | 0.53 | 7.24 | 0.72 | 8.52 | 4.04 | 15.5 | -41.4 | -- | -- |
| 15:20 | 5 | 10 | 200 | 23.40 | 0.79 | 7.24 | 0.73 | 8.37 | 3.85 | 15.6 | -87 | -- | -- |
| 15:25 | 5 | 15 | 200 | 23.40 | 1.06 | 7.24 | 0.74 | 9.37 | 3.39 | 15.4 | -110.8 | -- | -- |
| 15:30 | 5 | 20 | 200 | 23.40 | 1.32 | 7.24 | 0.74 | 8.7 | 3.46 | 15.4 | -116.8 | -- | -- |
| 15:35 | 5 | 25 | 200 | 23.40 | 1.59 | 7.24 | 0.75 | 8.7 | 3.49 | 15.3 | -119.2 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|

**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: Within Racer property.

Condition of Well: Good condition,Missing lock

Well Completion: Flush mount

Well Locked at Arrival: no

Well Locked at Departure: no

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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MWF16-23 | | | **Date** | 08/29/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 73.0 degrees F and Mostly Cloudy. The wind is blowing S/SW at 8.1 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 23.20 | **Total Depth (ft-bmp)** | 30.75 | **Water Column (ft)** | 7.55 | **Gallons in Well** | 1.23 |
| **Purge Start** | 14:05 | **Pump Intake (ft-bmp)** | 26.5 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | | **Volumes Purged** | 1.50 | **Sample ID** | MWF16-23_GW-082923. | **Sampled by** | Kaylee DeRoo |
| **Sample Time** | 14:40 | **Gallons Purged** | 1.85 | **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 |
| 14:10 | 0 | 0 | 200 | 23.83 | 0.26 | 7.09 | 0.9 | 1.88 | 4.04 | 17.2 | 57.4 | -- | -- |
| 14:15 | 5 | 5 | 200 | 23.85 | 0.53 | 7.12 | 0.9 | 1.06 | 3.73 | 17.3 | -3.1 | -- | -- |
| 14:20 | 5 | 10 | 200 | 23.90 | 0.79 | 7.13 | 0.92 | 0.69 | 2.71 | 16.8 | -20.2 | -- | -- |
| 14:25 | 5 | 15 | 200 | 23.90 | 1.06 | 7.13 | 0.91 | 0.34 | 2.59 | 16.9 | -31 | -- | -- |
| 14:30 | 5 | 20 | 200 | 23.90 | 1.32 | 7.14 | 0.9 | 0.17 | 2.5 | 17 | -35.6 | -- | -- |
| 14:35 | 5 | 25 | 200 | 23.90 | 1.59 | 7.14 | 0.9 | 0.02 | 2.41 | 17.1 | -39.1 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|

**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<br>1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65 |

**Well Information**

| | | | |
|---|---|---|---|
| Well Location: | In residential area. | 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** | 08/29/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 61.0 degrees F and Partly Cloudy. The wind is blowing SW at 5.8 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 26.01 | **Total Depth (ft-bmp)** | 29.15 | **Water Column (ft)** | 3.14 | **Gallons in Well** | 0.51 |
| **Purge Start** | 10:20 | **Pump Intake (ft-bmp)** | 27 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | | **Volumes Purged** | 2.59 | **Sample ID** | MWOS-08_GW-082923 | **Sampled by** | Kaylee DeRoo |
| **Sample Time** | 10:45 | **Gallons Purged** | 1.32 | **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 |
| 10:25 | 0 | 0 | 200 | 26.03 | 0.26 | 7.31 | 0.75 | 0.4 | 2.62 | 15.4 | 49.1 | -- | -- |
| 10:30 | 5 | 5 | 200 | 26.03 | 0.53 | 7.34 | 0.74 | 0.02 | 2.45 | 15.3 | 48 | -- | -- |
| 10:35 | 5 | 10 | 200 | 26.04 | 0.79 | 7.35 | 0.73 | 0.02 | 2.33 | 15.4 | 47 | -- | -- |
| 10:40 | 5 | 15 | 200 | 26.04 | 1.06 | 7.36 | 0.73 | 0.02 | 2.31 | 15.3 | 43.3 | Clear | Mild |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|

**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: In residential area.

Condition of Well: Good condition,Missing bolts

Well Completion: Flush mount

Well Locked at Arrival: yes

Well Locked at Departure: yes

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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MWOS-09R | | | **Date** | 08/29/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 69.1 degrees F and Mostly Cloudy. The wind is blowing SW at 11.4 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 27.50 | **Total Depth (ft-bmp)** | 29.8 | **Water Column (ft)** | 2.3 | **Gallons in Well** | 0.37 |
| **Purge Start** | 11:25 | **Pump Intake (ft-bmp)** | 28 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | | **Volumes Purged** | 6.43 | **Sample ID** | MWOS-09R_GW-082923 | **Sampled by** | Kaylee DeRoo |
| **Sample Time** | 12:10 | **Gallons Purged** | 2.38 | **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 |
| 11:30 | 0 | 0 | 200 | 27.25 | 0.26 | 7.26 | 0.99 | 2.34 | 0.57 | 16.6 | 123.3 | -- | -- |
| 11:35 | 5 | 5 | 200 | 27.27 | 0.53 | 7.29 | 1.03 | 3.44 | 0.39 | 16.4 | 45.2 | -- | -- |
| 11:40 | 5 | 10 | 200 | 27.27 | 0.79 | 7.29 | 1.06 | 8.35 | 0.52 | 16.3 | 0.8 | -- | -- |
| 11:45 | 5 | 15 | 200 | 27.27 | 1.06 | 7.28 | 1.07 | 6.92 | 0.52 | 16.3 | -10.5 | -- | -- |
| 11:50 | 5 | 20 | 200 | 27.27 | 1.32 | 7.29 | 1.07 | 5.13 | 0.53 | 16.2 | -32.4 | -- | -- |
| 11:55 | 5 | 25 | 200 | 27.27 | 1.59 | 7.29 | 1.07 | 3.92 | 0.52 | 16.4 | -52.4 | -- | -- |
| 12:00 | 5 | 30 | 200 | 27.27 | 1.85 | 7.29 | 1.07 | 4.33 | 0.52 | 16.5 | -50.5 | -- | -- |
| 12:05 | 5 | 35 | 200 | 27.27 | 2.11 | 7.29 | 1.07 | 3.95 | 0.53 | 16.3 | -48.7 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|

**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: In residential area.
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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MWOS-10 | | | **Date** | 08/28/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 69.1 degrees F and Mostly Clear. The wind is blowing N at 9.2 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 28.55 | **Total Depth (ft-bmp)** | 31.5 | **Water Column (ft)** | 2.95 | **Gallons in Well** | 0.48 |
| **Purge Start** | 13:10 | **Pump Intake (ft-bmp)** | 29 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | | **Volumes Purged** | 11.01 | **Sample ID** | MWOS-10_GW-082823 | **Sampled by** | Kaylee DeRoo |
| **Sample Time** | 14:50 | **Gallons Purged** | 5.28 | **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 |
| 13:15 | 0 | 0 | 200 | 27.55 | 0.26 | 7.35 | 0.92 | 47.5 | 2.29 | 16 | 143.3 | -- | -- |
| 13:20 | 5 | 5 | 200 | 27.55 | 0.53 | 7.36 | 0.94 | 35.7 | 2.4 | 15.8 | 140.6 | -- | -- |
| 13:25 | 5 | 10 | 200 | 27.55 | 0.79 | 7.37 | 0.93 | 29.1 | 2.4 | 15.9 | 92.8 | -- | -- |
| 13:30 | 5 | 15 | 200 | 27.55 | 1.06 | 7.37 | 0.93 | | 2.39 | 15.8 | 71.2 | -- | -- |
| 13:35 | 5 | 20 | 200 | 27.55 | 1.32 | 7.38 | 0.95 | 17.6 | 1.25 | 15.8 | 79.6 | -- | -- |
| 13:40 | 5 | 25 | 200 | 27.55 | 1.59 | 7.37 | 0.93 | 13.3 | 1.3 | 15.7 | 70.3 | -- | -- |
| 13:45 | 5 | 30 | 200 | 27.55 | 1.85 | 7.38 | 0.92 | 10.8 | 1.35 | 15.7 | 65.4 | -- | -- |
| 13:50 | 5 | 35 | 200 | 27.55 | 2.11 | 7.37 | 0.92 | 8.06 | 1.71 | 15.7 | 66.8 | -- | -- |
| 13:55 | 5 | 40 | 200 | 28.55 | 2.38 | 7.37 | 0.92 | 36.5 | 1.48 | 15.9 | 64.9 | -- | -- |
| 14:00 | 5 | 45 | 200 | 28.55 | 2.64 | 7.37 | 0.93 | 34.2 | 2.32 | 15.5 | 66.7 | -- | -- |
| 14:05 | 5 | 50 | 200 | 28.55 | 2.91 | 7.37 | 0.92 | 31.9 | 2.24 | 15.6 | 63.6 | -- | -- |
| 14:10 | 5 | 55 | 200 | 28.55 | 3.17 | 7.37 | 0.92 | 30.5 | 2.12 | 15.6 | 62.8 | -- | -- |
| 14:15 | 5 | 60 | 200 | 28.55 | 3.43 | 7.37 | 0.92 | 30.2 | 2.07 | 15.6 | 64 | -- | -- |
| 14:20 | 5 | 65 | 200 | 28.55 | 3.70 | 7.37 | 0.92 | 24.5 | 0.92 | 15.7 | 63.8 | -- | -- |
| 14:25 | 5 | 70 | 200 | 28.55 | 3.96 | 7.37 | 0.92 | 21.4 | 0.92 | 15.7 | 63.8 | -- | -- |
| 14:30 | 5 | 75 | 200 | 28.55 | 4.23 | 7.37 | 0.92 | 18.9 | 0.92 | 15.7 | 63.2 | -- | -- |
| 14:35 | 5 | 80 | 200 | 28.55 | 4.49 | 7.37 | 0.92 | 16.7 | 0.92 | 15.7 | 62.7 | -- | -- |
| 14:40 | 5 | 85 | 200 | 28.55 | 4.76 | 7.37 | 0.92 | 15.1 | 0.92 | 15.7 | 62.4 | -- | -- |
| 14:45 | 5 | 90 | 200 | 28.55 | 5.02 | 7.37 | 0.92 | 11.4 | 0.92 | 15.7 | 63.8 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|

**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

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 Information**

| | | | |
|---|---|---|---|
| Well Location: | In residential area. | 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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MW-09-22 | | | **Date** | 9/7/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 71.1 degrees F and Haze. The wind is blowing W at 5.8 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 20.90 | **Total Depth (ft-bmp)** | 33.37 | **Water Column (ft)** | 12.47 | **Gallons in Well** | 2.03 |
| **Purge Start** | 12:41 | **Pump Intake (ft-bmp)** | 30.8 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 13:19 | **Volumes Purged** | 1.23 | **Sample ID** | MW-09-22_GW-090723 | **Sampled by** | Sommer Guy |
| **Sample Time** | 13:17 | **Gallons Purged** | 2.5 | **Replicate/ Code No.** | NA | **Sample Type** | Grab |

| Time | Minutes Elapsed | Total Elapsed Minutes | Rate mL/min | Depth to Water (ft) | Gallon Purged | pH (standard units) | Conductivity (mS/cm) | Turbidity (NTU) | Dissolved Oxygen (mg/L) | Temperature °C | Redox (mV) | Appearance | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | Color | Odor |
| 12:43 | 0 | 0 | 130 | 20.91 | 0.00 | 7.3 | 0.79 | 5.72 | 2.25 | 16.5 | 163.6 | Clear | None |
| 12:48 | 5 | 5 | 130 | 20.91 | 0.00 | 7.32 | 0.71 | 8.21 | 0.49 | 16.4 | 141.7 | Clear | None |
| 12:53 | 5 | 10 | 130 | 20.91 | 0.00 | 7.35 | 0.73 | 10.1 | 0.35 | 16.6 | 123.6 | Clear | None |
| 12:58 | 5 | 15 | 130 | 20.91 | 0.00 | 7.36 | 0.74 | 8.55 | 0.3 | 16.6 | 110.5 | Clear | None |
| 13:03 | 5 | 20 | 130 | 20.91 | 0.00 | 7.34 | 0.75 | 9.15 | 0.28 | 16.4 | 104.9 | Clear | None |
| 13:08 | 5 | 25 | 130 | 20.91 | 0.00 | 7.35 | 0.76 | 8.97 | 0.27 | 16.5 | 102.7 | Clear | None |
| 13:13 | 5 | 30 | 130 | 20.91 | 0.00 | 7.36 | 0.76 | 8.26 | 0.27 | 16.8 | 97.5 | 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 property
Condition of Well: Good condition
Well Completion: Flush mount
Well Locked at Arrival:
Well Locked at Departure:
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** | 9/7/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 70.0 degrees F and Light Drizzle and Fog/Mist. The wind is blowing NW at 9.2 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 26.28 | **Total Depth (ft-bmp)** | 34.76 | **Water Column (ft)** | 8.48 | **Gallons in Well** | 1.38 |
| **Purge Start** | 14:01 | **Pump Intake (ft-bmp)** | 32.2 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 14:44 | **Volumes Purged** | 1.81 | **Sample ID** | MW-16-22_GW-090723 | **Sampled by** | Sommer Guy |
| **Sample Time** | 14:43 | **Gallons Purged** | 2.5 | **Replicate/ Code No.** | NA | **Sample Type** | Grab |

| Time | Minutes Elapsed | Total Elapsed Minutes | Rate mL/min | Depth to Water (ft) | Gallon Purged | pH (standard units) | Conductivity (mS/cm) | Turbidity (NTU) | Dissolved Oxygen (mg/L) | Temperature °C | Redox (mV) | Appearance | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | Color | Odor |
| 14:03 | 0 | 0 | 130 | 26.29 | 0.00 | 7.29 | 0.73 | 2.2 | 1.05 | 17.6 | 76.4 | Clear | None |
| 14:08 | 5 | 5 | 130 | 26.29 | 0.00 | 7.27 | 0.73 | 6.32 | 0.35 | 17.7 | 15 | Clear | None |
| 14:13 | 5 | 10 | 130 | 26.29 | 0.00 | 7.33 | 0.73 | 7.91 | 0.22 | 17.7 | -6.5 | Clear | None |
| 14:18 | 5 | 15 | 130 | 26.29 | 0.00 | 7.35 | 0.73 | 5.5 | 0.19 | 18 | -22 | Clear | None |
| 14:23 | 5 | 20 | 130 | 26.29 | 0.00 | 7.33 | 0.73 | 7.25 | 0.23 | 17.6 | -33.6 | Clear | None |
| 14:28 | 5 | 25 | 130 | 26.29 | 0.00 | 7.32 | 0.73 | 5 | 0.17 | 17.5 | -39.8 | Clear | None |
| 14:33 | 5 | 30 | 130 | 26.29 | 0.00 | 7.34 | 0.73 | 4.92 | 0.18 | 17.3 | -45.3 | Clear | None |
| 14:38 | 5 | 35 | 130 | 26.29 | 0.00 | 7.34 | 0.73 | 4.58 | 0.18 | 17.3 | -49.5 | 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:
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** | MWF16-05 | | | **Date** | 9/7/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 66.9 degrees F and Fog/Mist. The wind is blowing SW at 5.8 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 20.11 | **Total Depth (ft-bmp)** | 23 | **Water Column (ft)** | 2.89 | **Gallons in Well** | 0.47 |
| **Purge Start** | 09:36 | **Pump Intake (ft-bmp)** | 22 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 10:38 | **Volumes Purged** | 5.32 | **Sample ID** | MWF16-05_GW-090723 | **Sampled by** | Sommer Guy |
| **Sample Time** | 10:35 | **Gallons Purged** | 2.5 | **Replicate/ Code No.** | NA | **Sample Type** | Grab |

| Time | Minutes Elapsed | Total Elapsed Minutes | Rate mL/min | Depth to Water (ft) | Gallon Purged | pH (standard units) | Conductivity (mS/cm) | Turbidity (NTU) | Dissolved Oxygen (mg/L) | Temperature °C | Redox (mV) | Appearance | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | Color | Odor |
| 09:38 | 0 | 0 | 120 | 20.25 | 0.00 | 7.38 | 0.95 | 116 | 9.41 | 16.9 | 171.6 | Clear | None |
| 09:43 | 5 | 5 | 120 | 20.21 | 0.00 | 7.34 | 1.25 | 180 | 7.24 | 16.2 | 156 | Clear | None |
| 09:48 | 5 | 10 | 120 | 20.21 | 0.00 | 7.37 | 1.26 | 86.6 | 6.04 | 15.9 | 141.3 | Clear | None |
| 09:53 | 5 | 15 | 120 | 20.21 | 0.00 | 7.38 | 1.23 | 35.2 | 5.77 | 15.9 | 132.1 | Clear | None |
| 09:58 | 5 | 20 | 120 | 20.21 | 0.00 | 7.38 | 1.21 | 25 | 5.45 | 15.7 | 126.4 | Clear | None |
| 10:03 | 5 | 25 | 120 | 20.21 | 0.00 | 7.39 | 1.18 | 22.6 | 5.24 | 15.7 | 121.3 | Clear | None |
| 10:08 | 5 | 30 | 120 | 20.21 | 0.00 | 7.38 | 1.17 | 14.7 | 5.03 | 15.6 | 118.5 | Clear | None |
| 10:13 | 5 | 35 | 120 | 20.21 | 0.00 | 7.4 | 1.15 | 16.3 | 4.99 | 15.5 | 115.5 | Clear | None |
| 10:18 | 5 | 40 | 120 | 20.21 | 0.00 | 7.4 | 1.15 | 10.8 | 4.9 | 15.5 | 113.3 | Clear | None |
| 10:23 | 5 | 45 | 120 | 20.21 | 0.00 | 7.4 | 1.12 | 8.44 | 4.73 | 15.6 | 110.2 | Clear | None |
| 10:28 | 5 | 50 | 120 | 20.21 | 0.00 | 7.4 | 1.12 | 8.93 | 4.85 | 15.5 | 109.5 | Clear | None |
| 10:33 | 5 | 55 | 120 | 20.21 | 0.00 | 7.4 | 1.1 | 8.45 | 4.65 | 15.5 | 107.2 | 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: GFL property
Condition of Well:
Well Completion: Flush mount
Well Locked at Arrival:
Well Locked at Departure:
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** | 9/7/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 68.0 degrees F and Fog/Mist. The wind is blowing W/NW at 8.1 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 22.22 | **Total Depth (ft-bmp)** | 31.25 | **Water Column (ft)** | 9.03 | **Gallons in Well** | 1.47 |
| **Purge Start** | 11:43 | **Pump Intake (ft-bmp)** | 28.75 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 12:27 | **Volumes Purged** | 1.70 | **Sample ID** | MWF16-16_GW-090723 | **Sampled by** | Sommer Guy |
| **Sample Time** | 12:25 | **Gallons Purged** | 2.5 | **Replicate/ Code No.** | NA | **Sample Type** | Grab |

| Time | Minutes Elapsed | Total Elapsed Minutes | Rate mL/min | Depth to Water (ft) | Gallon Purged | pH (standard units) | Conductivity (mS/cm) | Turbidity (NTU) | Dissolved Oxygen (mg/L) | Temperature °C | Redox (mV) | Appearance | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | Color | Odor |
| 11:45 | 0 | 0 | 130 | 22.22 | 0.00 | 7.36 | 0.83 | 8.96 | 1.82 | 16 | 174.2 | Clear | None |
| 11:50 | 5 | 5 | 130 | 22.22 | 0.00 | 7.32 | 0.83 | 7.99 | 0.39 | 16.1 | 154.7 | Clear | None |
| 11:55 | 5 | 10 | 130 | 22.22 | 0.00 | 7.35 | 0.83 | 5.66 | 0.26 | 15.9 | 137.4 | Clear | None |
| 12:00 | 5 | 15 | 130 | 22.22 | 0.00 | 7.38 | 0.84 | 7.89 | 0.19 | 15.8 | 125.4 | Clear | None |
| 12:05 | 5 | 20 | 130 | 22.22 | 0.00 | 7.41 | 0.85 | 0.95 | 0.21 | 15.9 | 114.1 | Clear | None |
| 12:10 | 5 | 25 | 130 | 22.22 | 0.00 | 7.4 | 0.83 | 4.12 | 0.19 | 16 | 108.2 | Clear | None |
| 12:15 | 5 | 30 | 130 | 22.22 | 0.00 | 7.39 | 0.84 | 3.56 | 0.18 | 15.8 | 103.4 | Clear | None |
| 12:20 | 5 | 35 | 130 | 22.22 | 0.00 | 7.42 | 0.84 | 3.2 | 0.18 | 15.9 | 101.9 | 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 property
Condition of Well: Good condition,Missing bolts
Well Completion: Flush mount
Well Locked at Arrival:
Well Locked at Departure:
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** | 9/7/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 66.9 degrees F and Fog/Mist. The wind is blowing W at 5.8 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 20.51 | **Total Depth (ft-bmp)** | 32 | **Water Column (ft)** | 11.49 | **Gallons in Well** | 1.87 |
| **Purge Start** | 10:52 | **Pump Intake (ft-bmp)** | 29.5 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 11:30 | **Volumes Purged** | 1.34 | **Sample ID** | MWF16-18_GW-090723 | **Sampled by** | Sommer Guy |
| **Sample Time** | 11:28 | **Gallons Purged** | 2.5 | **Replicate/ Code No.** | NA | **Sample Type** | Grab |

| Time | Minutes Elapsed | Total Elapsed Minutes | Rate mL/min | Depth to Water (ft) | Gallon Purged | pH (standard units) | Conductivity (mS/cm) | Turbidity (NTU) | Dissolved Oxygen (mg/L) | Temperature °C | Redox (mV) | Appearance | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | Color | Odor |
| 10:54 | 0 | 0 | 120 | 20.52 | 0.00 | 7.05 | 0.92 | 0.73 | 5.17 | 16.6 | 144.4 | Clear | None |
| 10:59 | 5 | 5 | 120 | 20.52 | 0.00 | 7.02 | 0.9 | 2.62 | 3.96 | 16.1 | 125.5 | Clear | None |
| 11:04 | 5 | 10 | 120 | 20.52 | 0.00 | 7.06 | 0.9 | 2.89 | 3.87 | 16 | 108.6 | Clear | None |
| 11:09 | 5 | 15 | 120 | 20.52 | 0.00 | 7.09 | 0.9 | 0.61 | 3.43 | 16.2 | 99.1 | Clear | None |
| 11:14 | 5 | 20 | 120 | 20.52 | 0.00 | 7.08 | 0.9 | 0.18 | 3.25 | 16.1 | 95.5 | Clear | None |
| 11:19 | 5 | 25 | 120 | 20.52 | 0.00 | 7.09 | 0.9 | 0.02 | 3.15 | 16.2 | 93.4 | Clear | None |
| 11:24 | 5 | 30 | 120 | 20.52 | 0.00 | 7.09 | 0.9 | 0.02 | 3.18 | 16.1 | 92.1 | 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 property
Well Locked at Arrival:
Condition of Well: Good condition,Missing bolts
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

# Soil Vapor Collection Log Sheet



| | | | |
|---|---|---|---|
| Office Name & Address (Reporting Information): Novi, MI 28550 Cabot Dr #500 Novi, MI | | | Project Name: RACER Pontiac North Campus 2023 |
| Field Manager: Alexis Crisp | | | Project Number: 30167840 |
| Phone: 937-206-4005 | Special Instructions: TO-15 | | Site Address: 200 E Montcalm St Pontiac MI 48340 US |
| Email Address for Result Reporting: Alexis.crisp@arcadis.com | | Sampler Name: Sommer Guy | Phone Number:947-465-3421 |
| | | 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-082823 | Eastern ROW of St. Clair | 08/28/2023 | Pass | 0 | 42.2 | Pass | 334.83 | 100 | 3658 | 25204 | 13:39 | -29 | 13:47 | -5 | N/A |
| SV-05-21_SG-082823 | Western ROW of St. Clair | 08/28/2023 | Pass | 0 | 51.5 | Pass | 174.12 | 100 | 2055 | 23525 | 14:42 | -29 | 14:49 | -5 | N/A |
| SV-04-21_SG-082823 | Western ROW of St. Clair | 08/28/2023 | Pass | 0 | 46.6 | Pass | 321.45001 | 100 | 2036 | 23796 | 14:23 | -29 | 14:30 | -5 | N/A |
| SV-03-21_SG-082821 | Western ROW of St. Clair | 08/28/2023 | Pass | 0 | 52.8 | Pass | 174.12 | 100 | 3698 | 25237 | 14:08 | -29 | 14:15 | -5 | N/A |
| SV-06-21_SG-082823 | Western ROW of St. Clair | 08/28/2023 | Pass | 0 | 46.3 | Pass | 321.45001 | 100 | 2825 | 23826 | 15:00 | -29 | 15:06 | -5 | N/A |
| SV-01-21_SG-082823 | Eastern ROW of St. Clair | 08/28/2023 | Pass | 0 | 45.2 | Pass | 200.91 | 100 | 3775 | 23425 | 13:18 | -29 | 13:26 | -5 | N/A |
| DUP-01_SG-082823 | Eastern ROW of St. Clair | 08/28/2023 | Pass | 0 | 42.2 | Pass | 334.83 | 100 | 2480 | 24501 | 13:39 | -29 | 13:48 | -5 | N/A |

**Meteorological Data**

| Date | Time | Temp | | Relative Humidity (%) | Barometric Pressure (in.Hg) | Weather source |
|---|---|---|---|---|---|---|
| | | Indoor | Outdoor | | | |
| 08/28/2023 | 11:53 | | 69 | 51 | 30 | 69.1 degrees F and Mostly Clear. The wind is blowing N at 9.2 mph. |

**General Notes or Observations**

N/A

**Air Parameters (completed after sample collection)**

| Location ID | CH4 % | CH4 LEL % | O2 % | PID (ppm) | Differential Pressure (in. Water Column) |
|---|---|---|---|---|---|
| SV-02-21 | 0 | NM | 14.3 | NM | NM |
| SV-05-21 | 0 | NM | 10.7 | NM | NM |
| SV-04-21 | 0 | NM | 12.8 | NM | NM |
| SV-03-21 | 0 | NM | 10.5 | NM | NM |

| | | | | | |
|---|---|---|---|---|---|
| SV-06-21 | 0 | NM | 12.8 | NM | NM |
| SV-01-21 | 0 | NM | 13.3 | NM | NM |
| -- | 0 | NM | 14.3 | NM | NM |

# Groundwater Sampling Form

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MW-02-17 | | | **Date** | 12/01/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | | **Weather(°F)** | 40 and rainy | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 25.84 | **Total Depth (ft-bmp)** | 29.73 | **Water Column (ft)** | 3.89 | **Gallons in Well** | 0.63 |
| **Purge Start** | 10:01 | **Pump Intake (ft-bmp)** | 27.2 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | | **Volumes Purged** | | **Sample ID** | MW-02-17_GW-120123 | **Sampled by** | Alaina Pitera |
| **Sample Time** | 10:35 | **Gallons Purged** | | **Replicate/ Code No.** | NA | **Sample Type** | Grab |

| Time | Minutes Elapsed | Total Elapsed Minutes | Rate | 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 |
| 10:06 | 0 | 0 | -- | 25.84 | -- | 7.32 | 0.6 | 15 | 3.42 | 12.4 | -57.2 | -- | -- |
| 10:11 | 5 | 5 | -- | 25.84 | -- | 7.24 | 0.556 | 0.78 | 2.45 | 12.2 | -56.5 | -- | -- |
| 10:16 | 5 | 10 | -- | 25.84 | -- | 7.23 | 0.539 | 3.99 | 2.58 | 12.1 | -56.8 | -- | -- |
| 10:21 | 5 | 15 | -- | 25.84 | -- | 7.25 | 0.517 | 2.41 | 2.44 | 12 | -56.7 | -- | -- |
| 10:26 | 10 | 20 | -- | 25.84 | -- | 7.24 | 0.516 | 2.34 | 2.51 | 11.9 | -59 | -- | -- |
| 10:31 | 5 | 25 | -- | 25.84 | -- | 7.25 | 0.517 | 1.76 | 2.53 | 11.9 | -58.1 | Clear | |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|

**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: _____ Well Locked at Arrival: _____

Condition of Well: _____ Well Locked at Departure: _____

Well Completion: NA _____ 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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MW-05-18 | | | **Date** | 12/01/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | | **Weather(°F)** | 40 and rainy | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | | **Well Casing Material** | NA |
| **Static Water Level (ft-bmp)** | 27.24 | **Total Depth (ft-bmp)** | 33.61 | **Water Column (ft)** | 6.37 | **Gallons in Well** | |
| **Purge Start** | 12:19 | **Pump Intake (ft-bmp)** | 31.1 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | | **Volumes Purged** | | **Sample ID** | MW-05-18_GW-120123 | **Sampled by** | Alaina Pitera |
| **Sample Time** | 12:55 | **Gallons Purged** | | **Replicate/ Code No.** | NA | **Sample Type** | |

| Time | Minutes Elapsed | Total Elapsed Minutes | Rate | 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 |
| 12:22 | 0 | 0 | -- | 27.24 | -- | 7.49 | 0.346 | 8.34 | 3.03 | 12.1 | -1.7 | -- | -- |
| 12:27 | 5 | 5 | -- | 27.24 | -- | 7.42 | 0.339 | 6.82 | 0.78 | 12.1 | -9 | -- | -- |
| 12:32 | 5 | 10 | -- | 27.24 | -- | 7.45 | 0.327 | 4.8 | 0.48 | 11.6 | -6.8 | -- | -- |
| 12:37 | 5 | 15 | -- | 27.24 | -- | 7.4 | 0.322 | 2.8 | 0.45 | 11.4 | -6 | -- | -- |
| 12:42 | 5 | 20 | -- | 27.24 | -- | 7.4 | 0.323 | 0.02 | 0.44 | 11.4 | -5.8 | -- | -- |
| 12:47 | 5 | 25 | -- | 27.24 | -- | 7.4 | 0.322 | 0.02 | 0.41 | 11.4 | -5.6 | -- | -- |
| 12:52 | 5 | 30 | -- | 27.24 | -- | 7.4 | 0.33 | 0.02 | 0.42 | 11.4 | -5.3 | | |

**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: _____ Well Locked at Arrival: _____

Condition of Well: _____ Well Locked at Departure: _____

Well Completion: NA 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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MW-06-20 | | | **Date** | 11/30/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | | **Weather(°F)** | 28 sunny | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 26.09 | **Total Depth (ft-bmp)** | 29.24 | **Water Column (ft)** | 3.15 | **Gallons in Well** | 0.51 |
| **Purge Start** | 10:11 | **Pump Intake (ft-bmp)** | 27 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | | **Volumes Purged** | | **Sample ID** | MW-06-20_GW-113023 | **Sampled by** | Alaina Pitera |
| **Sample Time** | 10:50 | **Gallons Purged** | | **Replicate/ Code No.** | NA | **Sample Type** | Grab |

| Time | Minutes Elapsed | Total Elapsed Minutes | Rate | 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 |
| 10:18 | 0 | 0 | -- | 26.09 | -- | 7.6 | 0.44 | 8.04 | 2.6 | 12.5 | 175.1 | -- | -- |
| 10:23 | 5 | 5 | -- | 26.09 | -- | 7.37 | 0.407 | 5.17 | 2.05 | 12.9 | 145.2 | -- | -- |
| 10:28 | 5 | 10 | -- | 26.09 | -- | 7.58 | 0.398 | 2.97 | 1.85 | 13.2 | 124.6 | -- | -- |
| 10:33 | 5 | 15 | -- | 26.09 | -- | 7.62 | 0.396 | 2.97 | 1.68 | 13.4 | 114.8 | -- | -- |
| 10:38 | 5 | 20 | -- | 26.09 | -- | 7.5 | 0.396 | 1.32 | 1.7 | 13.7 | 103.1 | -- | -- |
| 10:43 | 5 | 25 | -- | 26.09 | -- | 7.47 | 0.395 | 1.47 | 1.56 | 13.5 | 93.9 | -- | -- |
| 10:48 | 5 | 30 | -- | 26.09 | -- | 7.47 | 0.396 | 1.4 | 1.57 | 13.5 | 93.8 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| NA | NA | 3 | NA |

**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:

Condition of Well:

Well Completion: NA

Well Locked at Arrival: yes

Well Locked at Departure: yes

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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MW-07-20 | | | **Date** | 12/01/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | | **Weather(°F)** | 40 and rainy | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | | **Well Casing Material** | NA |
| **Static Water Level (ft-bmp)** | 26.67 | **Total Depth (ft-bmp)** | 30.18 | **Water Column (ft)** | 3.51 | **Gallons in Well** | |
| **Purge Start** | | **Pump Intake (ft-bmp)** | 27.7 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | | **Volumes Purged** | | **Sample ID** | MW-07-20_GW-120123 | **Sampled by** | Alaina Pitera |
| **Sample Time** | 11:45 | **Gallons Purged** | | **Replicate/ Code No.** | NA | **Sample Type** | |

| Time | Minutes Elapsed | Total Elapsed Minutes | Rate | 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 |
| 11:07 | 0 | 0 | -- | 26.67 | -- | 7.72 | 0.34 | 1.46 | 3.75 | 8.7 | -23.6 | -- | -- |
| 11:12 | 5 | 5 | -- | 26.67 | -- | 7.8 | 0.56 | 0.98 | 2.8 | 8.5 | -23.5 | -- | -- |
| 11:17 | 5 | 10 | -- | 26.67 | -- | 7.8 | 0.56 | 0.76 | 2.9 | 8.8 | -24.1 | -- | -- |
| 11:22 | 5 | 15 | -- | 26.67 | -- | 7.8 | 0.57 | 0.02 | 2.56 | 8.9 | -24.3 | -- | -- |
| 11:27 | 5 | 20 | -- | 26.67 | -- | 7.7 | 0.33 | 0.02 | 2.8 | 8.2 | -28.8 | -- | -- |
| 11:32 | 5 | 25 | -- | 26.67 | -- | 7.7 | 0.327 | 0.02 | 2.7 | 7.7 | -28.8 | -- | -- |
| 11:37 | 5 | 30 | -- | 26.67 | -- | 7.68 | 0.322 | 0.02 | 2.7 | 7.7 | -27.3 | -- | -- |
| 11:42 | 5 | 35 | -- | 26.67 | -- | 7.68 | 0.324 | 0.02 | 2.68 | 7.75 | -27.4 | | |

**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: _____ Well Locked at Arrival: _____

Condition of Well: _____ Well Locked at Departure: _____

Well Completion: NA _____ 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** | 11/30/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 28.9 degrees F and Mostly Cloudy. The wind is blowing S/SW at 4.7 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 26.82 | **Total Depth (ft-bmp)** | 30.3 | **Water Column (ft)** | 3.48 | **Gallons in Well** | 0.57 |
| **Purge Start** | 11:38 | **Pump Intake (ft-bmp)** | 28 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 12:15 | **Volumes Purged** | 4.39 | **Sample ID** | MW-08-21_GW-113023 | **Sampled by** | Sommer Guy |
| **Sample Time** | 12:13 | **Gallons Purged** | 2.50 | **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 |
| 11:40 | 0 | 0 | 125 | 26.85 | -- | 7.56 | 1.39 | 0.02 | 6.25 | 13.3 | 102.7 | -- | -- |
| 11:45 | 5 | 5 | 125 | 26.85 | -- | 7.52 | 1.5 | 0.02 | 7.92 | 13 | 99 | -- | -- |
| 11:50 | 5 | 10 | 125 | 26.85 | -- | 7.49 | 1.55 | 0.02 | 7.28 | 13 | 97.6 | -- | -- |
| 11:55 | 5 | 15 | 125 | 26.85 | -- | 7.47 | 1.55 | 0.02 | 7.04 | 13 | 95.9 | -- | -- |
| 12:00 | 5 | 20 | 125 | 26.85 | -- | 7.46 | 1.54 | 0.02 | 6.57 | 12.8 | 95.1 | -- | -- |
| 12:05 | 5 | 25 | 125 | 26.85 | -- | 7.46 | 1.53 | 0.02 | 6.32 | 12.9 | 94.1 | -- | -- |
| 12:10 | 5 | 30 | 125 | 26.85 | -- | 7.44 | 1.54 | 0.02 | 6.1 | 13.1 | 93.8 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| VOCs SW-846 8260B | 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 powerhouse
Condition of Well: Good condition
Well Completion: Flush mount
Well Locked at Arrival:
Well Locked at Departure:
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** | 11/30/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 39.9 degrees F and Mostly Cloudy. The wind is blowing S/SW at 9.2 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 21.21 | **Total Depth (ft-bmp)** | 32.82 | **Water Column (ft)** | 11.61 | **Gallons in Well** | 1.89 |
| **Purge Start** | 12:54 | **Pump Intake (ft-bmp)** | 30.2 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 13:38 | **Volumes Purged** | 1.32 | **Sample ID** | MW-09-22_GW-113023 | **Sampled by** | Sommer Guy |
| **Sample Time** | 13:35 | **Gallons Purged** | 2.50 | **Replicate/ Code No.** | DUP-01_GW-113023 | **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 |
| 12:55 | 0 | 0 | 125 | 21.22 | -- | 7.55 | 0.618 | 12.6 | 4.29 | 13.2 | 52.8 | -- | -- |
| 13:00 | 5 | 5 | 125 | 21.22 | -- | 7.5 | 0.637 | 11.8 | 3.71 | 13.1 | 55.2 | -- | -- |
| 13:05 | 5 | 10 | 125 | 21.22 | -- | 7.48 | 0.65 | 10.8 | 3.46 | 12.9 | 56.3 | -- | -- |
| 13:10 | 5 | 15 | 125 | 21.22 | -- | 7.45 | 0.69 | 4.84 | 3.34 | 12.9 | 58 | -- | -- |
| 13:15 | 5 | 20 | 125 | 21.22 | -- | 7.43 | 0.72 | 4.08 | 3.12 | 12.9 | 60 | -- | -- |
| 13:20 | 5 | 25 | 125 | 21.22 | -- | 7.41 | 0.74 | 1.92 | 2.45 | 12.9 | 61.9 | -- | -- |
| 13:25 | 5 | 30 | 125 | 21.22 | -- | 7.4 | 0.75 | 1.49 | 2.37 | 12.7 | 63.4 | -- | -- |
| 13:30 | 5 | 35 | 125 | 21.22 | -- | 7.4 | 0.76 | 1.2 | 2.25 | 12.7 | 64.2 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| VOCs SW-846 8260B | 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: GFL
Condition of Well: Good condition
Well Completion: Flush mount
Well Locked at Arrival:
Well Locked at Departure:
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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MW-13-22 | | | **Date** | 11/29/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 26.1 degrees F and Cloudy. The wind is blowing SW at 11.4 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 21.33 | **Total Depth (ft-bmp)** | 26.72 | **Water Column (ft)** | 5.39 | **Gallons in Well** | 0.88 |
| **Purge Start** | 13:04 | **Pump Intake (ft-bmp)** | 24.2 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 13:42 | **Volumes Purged** | 2.84 | **Sample ID** | MW-13-22_GW-112923 | **Sampled by** | Sommer Guy |
| **Sample Time** | 13:40 | **Gallons Purged** | 2.50 | **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 |
| 13:06 | 0 | 0 | 125 | 21.63 | -- | 6.95 | 0.89 | 2.96 | 9.95 | 11.3 | 32 | -- | -- |
| 13:11 | 5 | 5 | 125 | 21.62 | -- | 6.86 | 0.92 | 4 | 9.61 | 11.6 | 27.9 | -- | -- |
| 13:16 | 5 | 10 | 125 | 21.62 | -- | 6.84 | 0.95 | 4.4 | 0.95 | 11.7 | 25.7 | -- | -- |
| 13:21 | 5 | 15 | 125 | 21.62 | -- | 6.83 | 0.96 | 3.18 | 9.02 | 11.8 | 23.1 | -- | -- |
| 13:26 | 5 | 20 | 125 | 21.62 | -- | 6.83 | 0.96 | 1.82 | 8.69 | 12 | 20.5 | -- | -- |
| 13:31 | 5 | 25 | 125 | 21.62 | -- | 6.83 | 0.96 | 1.25 | 8.48 | 12.2 | 18.5 | -- | -- |
| 13:36 | 5 | 30 | 125 | 21.62 | -- | 6.83 | 0.96 | 1.2 | 8.22 | 12.2 | 16.3 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| VOCs SW-846 8260B | 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 powerhouse

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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MW-14-22 | | | **Date** | 11/29/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 25.0 degrees F and Cloudy. The wind is blowing S/SW at 8.1 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 22.51 | **Total Depth (ft-bmp)** | 34.66 | **Water Column (ft)** | 12.15 | **Gallons in Well** | 1.97 |
| **Purge Start** | 12:08 | **Pump Intake (ft-bmp)** | 32.1 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 12:50 | **Volumes Purged** | 1.27 | **Sample ID** | MW-14-22_GW-112923 | **Sampled by** | Sommer Guy |
| **Sample Time** | 12:45 | **Gallons Purged** | 2.50 | **Replicate/ Code No.** | MW-14-22_GW-112923 | **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 |
| 12:09 | 0 | 0 | 125 | 22.52 | -- | 7.66 | 0.488 | 6.95 | 10.06 | 10.5 | 47.2 | -- | -- |
| 12:14 | 5 | 5 | 125 | 22.52 | -- | 7.63 | 0.528 | 5.02 | 10.43 | 10.6 | 39.2 | -- | -- |
| 12:19 | 5 | 10 | 125 | 22.52 | -- | 7.6 | 0.566 | 5.91 | 9.73 | 11 | 35 | -- | -- |
| 12:24 | 5 | 15 | 125 | 22.52 | -- | 7.6 | 0.581 | 5.19 | 9.79 | 10.9 | 33.4 | -- | -- |
| 12:29 | 5 | 20 | 125 | 22.52 | -- | 7.59 | 0.584 | 2.33 | 9.53 | 11 | 31.8 | -- | -- |
| 12:34 | 5 | 25 | 125 | 22.52 | -- | 7.59 | 0.584 | 2.47 | 9.1 | 11.1 | 30.3 | -- | -- |
| 12:39 | 5 | 30 | 125 | 22.52 | -- | 7.58 | 0.585 | 2.2 | 9.01 | 11.3 | 29.2 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| VOCs SW-846 8260B | 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 powerhouse
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** | 11/29/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 21.9 degrees F and Cloudy. The wind is blowing S/SW 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)** | 22.65 | **Total Depth (ft-bmp)** | 35.96 | **Water Column (ft)** | 13.31 | **Gallons in Well** | 2.16 |
| **Purge Start** | 10:56 | **Pump Intake (ft-bmp)** | 33.4 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 11:34 | **Volumes Purged** | 1.16 | **Sample ID** | MW-15-22_GW-112923 | **Sampled by** | Sommer Guy |
| **Sample Time** | 11:30 | **Gallons Purged** | 2.50 | **Replicate/ Code No.** | DUP-02_GW-112923 | **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 |
| 10:57 | 0 | 0 | 125 | 22.65 | -- | 7.17 | 0.568 | 0.74 | 2.5 | 10.7 | 52.3 | -- | -- |
| 11:02 | 5 | 5 | 125 | 22.65 | -- | 7.17 | 0.7 | 2.52 | 1.56 | 10.9 | 45 | -- | -- |
| 11:07 | 5 | 10 | 125 | 22.65 | -- | 7.14 | 0.71 | 1.2 | 1.43 | 11 | 40.8 | -- | -- |
| 11:12 | 5 | 15 | 125 | 22.65 | -- | 7.13 | 0.73 | 0.38 | 1.21 | 11.2 | 34.5 | -- | -- |
| 11:17 | 5 | 20 | 125 | 22.65 | -- | 7.13 | 0.73 | 0.02 | 1.16 | 11.2 | 32.4 | -- | -- |
| 11:22 | 5 | 25 | 125 | 22.65 | -- | 7.14 | 0.73 | 0.02 | 1.15 | 11.2 | 28.9 | -- | -- |
| 11:27 | 5 | 30 | 125 | 22.65 | -- | 7.14 | 0.73 | 0.02 | 1.2 | 11.1 | 25.9 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| VOCs SW-846 8260B | 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 powerhouse

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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MW-16-22 | | | **Date** | 11/29/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 21.0 degrees F and Cloudy. The wind is blowing S/SW 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)** | 26.62 | **Total Depth (ft-bmp)** | 34.49 | **Water Column (ft)** | 7.87 | **Gallons in Well** | 1.28 |
| **Purge Start** | 10:05 | **Pump Intake (ft-bmp)** | 32 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 10:42 | **Volumes Purged** | 1.95 | **Sample ID** | MW-16-22_GW-112923 | **Sampled by** | Sommer Guy |
| **Sample Time** | 10:40 | **Gallons Purged** | 2.50 | **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 |
| 10:07 | 0 | 0 | 125 | 26.62 | -- | 7.53 | 0.638 | 9.21 | 6.89 | 8.5 | 90 | -- | -- |
| 10:12 | 5 | 5 | 125 | 26.62 | -- | 7.52 | 0.65 | 5.08 | 6.76 | 8.6 | 75 | -- | -- |
| 10:17 | 5 | 10 | 125 | 26.62 | -- | 7.52 | 0.676 | 3.33 | 6.73 | 8.5 | 67.1 | -- | -- |
| 10:22 | 5 | 15 | 125 | 26.62 | -- | 7.51 | 0.644 | 4 | 6.49 | 8.8 | 63.3 | -- | -- |
| 10:27 | 5 | 20 | 125 | 26.62 | -- | 7.51 | 0.643 | 3.89 | 6.4 | 8.9 | 62.3 | -- | -- |
| 10:32 | 5 | 25 | 125 | 26.62 | -- | 7.5 | 0.64 | 3.68 | 6.16 | 9 | 60.9 | -- | -- |
| 10:37 | 5 | 30 | 125 | 26.62 | -- | 7.5 | 0.645 | 3.2 | 6 | 8.9 | 59.9 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| VOCs SW-846 8260B | 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 powerhouse

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** | 12/04/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 33.1 degrees F and Cloudy. The wind is blowing NW at 9.2 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 18.92 | **Total Depth (ft-bmp)** | 28.75 | **Water Column (ft)** | 9.83 | **Gallons in Well** | 1.6 |
| **Purge Start** | 13:03 | **Pump Intake (ft-bmp)** | 20.3 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | | **Volumes Purged** | 0.63 | **Sample ID** | MWF15-01_GW-120423 | **Sampled by** | Garrett Link |
| **Sample Time** | 14:07 | **Gallons Purged** | 1.00 | **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 |
| 13:05 | 0 | 0 | 115 | 18.92 | -- | 7.41 | 1.18 | 31.2 | 2.06 | 10.1 | 34.6 | -- | -- |
| 13:10 | 5 | 5 | 115 | 18.92 | -- | 7.34 | 1.23 | 18.6 | 0.63 | 10.2 | 39.7 | -- | -- |
| 13:15 | 5 | 10 | 115 | 18.92 | -- | 7.34 | 1.24 | 10.4 | 0.54 | 10.4 | 39.5 | -- | -- |
| 13:20 | 5 | 15 | 115 | 18.92 | -- | 7.35 | 1.25 | 5.81 | 0.5 | 10.7 | 38.1 | -- | -- |
| 13:25 | 5 | 20 | 115 | 18.92 | -- | 7.32 | 1.23 | 2.99 | 0.42 | 10.8 | 37.6 | -- | -- |
| 13:30 | 5 | 25 | 115 | 18.92 | -- | 7.35 | 1.21 | 2.03 | 0.41 | 10.8 | 36.8 | -- | -- |
| 13:35 | 5 | 30 | 115 | 18.92 | -- | 7.35 | 1.17 | 2.65 | 0.37 | 10.9 | 36.2 | -- | -- |
| 13:40 | 5 | 35 | 115 | 18.92 | -- | 7.35 | 1.15 | 2.52 | 0.39 | 10.8 | 35.3 | -- | -- |
| 13:45 | 5 | 40 | 115 | 18.92 | -- | 7.35 | 1.13 | 2.97 | 0.39 | 11 | 34.6 | -- | -- |
| 13:50 | 5 | 45 | 115 | 18.92 | -- | 7.36 | 1.1 | 2.45 | 0.36 | 11.2 | 33.5 | -- | -- |
| 13:55 | 5 | 50 | 115 | 18.92 | -- | 7.36 | 1.08 | 1.14 | 0.35 | 10.8 | 32.8 | -- | -- |
| 14:00 | 5 | 55 | 115 | 18.92 | -- | 7.37 | 1.05 | 0.71 | 0.3 | 11.1 | 31.7 | -- | -- |
| 14:05 | 5 | 60 | 115 | 18.92 | -- | 7.38 | 1.01 | 0.02 | 0.29 | 11.2 | 29.7 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| VOCs | 40 mL Glass | 3 | HCL |

**Comments:** Some blockage encounter in well casing at 5' and 20.5' - well cannot be sampled 2.5' from the bottom of the screened interval.

**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: | Powerhouse | 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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MWF16-06 | | | **Date** | 11/28/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 25.0 degrees F and Partly Cloudy. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 14.92 | **Total Depth (ft-bmp)** | 28.66 | **Water Column (ft)** | 13.74 | **Gallons in Well** | 2.23 |
| **Purge Start** | 14:07 | **Pump Intake (ft-bmp)** | 26.65 | **Purge Method** | Low-Flow | **Purge Equipment** | Submersible |
| **Purge End** | 14:52 | **Volumes Purged** | | **Sample ID** | MWF16-06-GW_112823 | **Sampled by** | Samantha Szpaichler |
| **Sample Time** | 14:50 | **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 |
| 14:11 | 0 | 0 | 110 | 15.12 | -- | 8.21 | 0.23 | 9.1 | 13.2 | 6.4 | 97.5 | -- | -- |
| 14:16 | 5 | 5 | 110 | 15.12 | -- | 8.14 | 0.234 | 10.9 | 5.83 | 6.7 | 97.7 | -- | -- |
| 14:21 | 5 | 10 | 110 | 15.12 | -- | 8.24 | 0.232 | 10.2 | 5.46 | 7.5 | 97.1 | -- | -- |
| 14:26 | 5 | 15 | 110 | 15.04 | -- | 7.96 | 0.23 | 12.7 | 4.71 | 8.1 | 95.9 | -- | -- |
| 14:31 | 5 | 20 | 110 | 15.14 | -- | 8.05 | 0.227 | 11.9 | 4.73 | 8.4 | 94.4 | -- | -- |
| 14:36 | 5 | 25 | 110 | 15.14 | -- | 8.09 | 0.226 | 2.51 | 4.71 | 8.9 | 92 | -- | -- |
| 14:41 | 5 | 30 | 110 | 15.14 | -- | 8.07 | 0.227 | 2.5 | 4.8 | 8.8 | 90.7 | -- | -- |
| 14:46 | 5 | 35 | 110 | 15.14 | -- | 8.05 | 0.229 | 0.02 | 4.8 | 9 | 89.2 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| VOCs SW-846 8260B | 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, SE

Condition of Well: Okay condition

Well Completion: Flush mount

Well Locked at Arrival: yes

Well Locked at Departure: yes

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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MWF16-07 | | | **Date** | 12/05/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | | **Weather(°F)** | 33.1 degrees F and Light Snow and Fog/Mist. The wind is blowing S at 3.4 mph. | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 5.13 | **Total Depth (ft-bmp)** | 17.46 | **Water Column (ft)** | 12.33 | **Gallons in Well** | 2 |
| **Purge Start** | 09:23 | **Pump Intake (ft-bmp)** | 15 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 10:50 | **Volumes Purged** | 1.25 | **Sample ID** | MWF16-07_GW-120523 | **Sampled by** | Garrett Link |
| **Sample Time** | 10:45 | **Gallons Purged** | 2.50 | **Replicate/ Code No.** | MWF16-07_GW-120523 | **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 |
| 09:27 | 0 | 0 | 145 | 5.92 | -- | 6.4 | 1.11 | 5.47 | 0.58 | 10.5 | 9.9 | -- | -- |
| 09:32 | 5 | 5 | 145 | 6.46 | -- | 6.38 | 1.11 | 5.04 | 0.31 | 10.6 | -1.5 | -- | -- |
| 09:37 | 5 | 10 | 120 | 6.96 | -- | 6.39 | 1.08 | 6.62 | 0.45 | 10.4 | -7 | -- | -- |
| 09:42 | 5 | 15 | 120 | 7.48 | -- | 6.39 | 1.07 | 8.01 | 0.19 | 10.4 | -10.4 | -- | -- |
| 09:47 | 5 | 20 | 120 | 7.85 | -- | 6.4 | 1.04 | 11.4 | 0.16 | 10.5 | -12.4 | -- | -- |
| 09:52 | 5 | 25 | 120 | 7.96 | -- | 6.39 | 1 | 18.8 | 0.16 | 10.8 | -13.2 | -- | -- |
| 09:57 | 5 | 30 | 115 | 8.10 | -- | 6.41 | 0.9 | 26.8 | 0.16 | 10.7 | -11.7 | -- | -- |
| 10:02 | 5 | 35 | 100 | 8.22 | -- | 6.39 | 0.575 | 29.2 | 0.14 | 10.2 | -12.3 | -- | -- |
| 10:07 | 5 | 40 | 100 | 8.36 | -- | 6.43 | 0.488 | 27.7 | 0.14 | 10 | -11.1 | -- | -- |
| 10:12 | 5 | 45 | 100 | 8.47 | -- | 6.39 | 0.43 | 25.2 | 0.14 | 10 | -9 | -- | -- |
| 10:17 | 5 | 50 | 100 | 8.61 | -- | 6.4 | 0.4 | 23.4 | 0.14 | 9.9 | -7.3 | -- | -- |
| 10:22 | 5 | 55 | 100 | 8.74 | -- | 6.39 | 0.413 | 25.3 | 0.14 | 10 | -6.6 | -- | -- |
| 10:27 | 5 | 60 | 100 | 8.90 | -- | 6.38 | 0.397 | 20.1 | 0.12 | 10.4 | -6.1 | -- | -- |
| 10:32 | 5 | 65 | 100 | 9.02 | -- | 6.37 | 0.392 | 18.9 | 0.11 | 10.5 | -6.2 | -- | -- |
| 10:37 | 5 | 70 | 100 | 9.15 | -- | 6.35 | 0.386 | 20.9 | 0.11 | 10.6 | -6.5 | -- | -- |
| 10:42 | 5 | 75 | 100 | 9.26 | -- | 6.34 | 0.385 | 16.9 | 0.11 | 10.5 | -6.8 | Clear | Mild |

| 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: Powerhouse

Well Locked at Arrival: yes

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

| | | | |
|---|---|---|---|
| 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** | MWF16-12 | | | **Date** | 11/28/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 24.1 degrees F and Mostly Clear. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 13.94 | **Total Depth (ft-bmp)** | 18.95 | **Water Column (ft)** | 5.01 | **Gallons in Well** | 0.81 |
| **Purge Start** | 12:59 | **Pump Intake (ft-bmp)** | 16.95 | **Purge Method** | Low-Flow | **Purge Equipment** | Submersible |
| **Purge End** | 13:50 | **Volumes Purged** | | **Sample ID** | MWF16-12-GW_112923 | **Sampled by** | Samantha Szpaichler |
| **Sample Time** | 11:20 | **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 |
| 13:02 | 0 | 0 | 130 | 13.94 | -- | 8.23 | 0.197 | 111 | 12.72 | 7.5 | 142.7 | -- | -- |
| 13:07 | 5 | 5 | 130 | 14.50 | -- | 8.2 | 0.191 | 73.9 | 1.19 | 7.5 | 130.6 | -- | -- |
| 13:12 | 5 | 10 | 130 | 16.80 | -- | 8.05 | 0.189 | 68.9 | 1.41 | 7.5 | 119.4 | -- | -- |
| 13:17 | 5 | 15 | 110 | 17.10 | -- | 8.25 | 0.187 | 90.2 | 1.53 | 7.3 | 110.4 | -- | -- |
| 13:22 | 5 | 20 | 110 | 17.49 | -- | 8.39 | 0.186 | 80.5 | 1.41 | 6.8 | 107.1 | -- | -- |
| 13:27 | 5 | 25 | 110 | 18.02 | -- | 8.24 | 0.184 | 140 | 0.6 | 7.2 | 100.9 | -- | -- |
| 13:32 | 5 | 30 | 110 | 18.10 | -- | 8.17 | 0.184 | 125 | 0.59 | 6.6 | 97.6 | -- | -- |
| 13:37 | 5 | 35 | 110 | 18.43 | -- | 8.3 | 0.184 | 105 | 0.95 | 7.2 | 94.3 | -- | -- |
| 13:42 | 5 | 40 | 110 | 18.71 | -- | 8.37 | 0.198 | | 0.96 | 7.2 | 90 | -- | -- |
| 13:47 | 5 | 45 | 110 | 18.90 | -- | 8.25 | 0.196 | 150 | 11 | 6.4 | 83.3 | Turbid, cloudy | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| VOCs SW-846 8260B | 40 mL Glass | 3 | HCL |

**Comments:** Parking lot was re-graveled and graveled over well, barrel cone was pushed away and 5 gallon bucket full of rock was crushed when snow was plowed.
Placed barrel cone over well when left.

When sampling, at 20 minutes, needed to lower tubing.lowered tubing again at 1:30. At 1:40 lowered to bottom of well. Went dry at 1:46 pm. Kept tubing in well, will come back tomorrow to sample.

Came back to well on 11/29/23: barrel cone and 5 gallons bucket was moved off of well upon arrival.
Well still intact.

**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 parking lot
Condition of Well: Missing bolts
Well Completion: Flush mount
Well Locked at Arrival: yes
Well Locked at Departure: yes
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** | 12/04/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 34.0 degrees F and Fog/Mist. The wind is blowing NW at 8.1 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 22.12 | **Total Depth (ft-bmp)** | 35.49 | **Water Column (ft)** | 13.37 | **Gallons in Well** | 2.17 |
| **Purge Start** | 10:01 | **Pump Intake (ft-bmp)** | 33 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 11:09 | **Volumes Purged** | 1.15 | **Sample ID** | MWF16-15_GW-120423 | **Sampled by** | Garrett Link |
| **Sample Time** | 11:05 | **Gallons Purged** | 2.50 | **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 |
| 10:04 | 0 | 0 | 125 | 22.13 | -- | 7.38 | 1.34 | 0.26 | 0.56 | 11.4 | 180.1 | -- | -- |
| 10:09 | 5 | 5 | 125 | 22.13 | -- | 7.29 | 1.31 | 0.72 | 0.35 | 12.1 | 159.8 | -- | -- |
| 10:14 | 5 | 10 | 125 | 22.13 | -- | 7.33 | 1.23 | 1.14 | 0.34 | 12.4 | 144.4 | -- | -- |
| 10:19 | 5 | 15 | 125 | 22.13 | -- | 7.33 | 1.15 | 0.84 | 0.21 | 12.5 | 131.2 | -- | -- |
| 10:24 | 5 | 20 | 125 | 22.13 | -- | 7.34 | 1.12 | 0.48 | 0.26 | 12.5 | 123.5 | -- | -- |
| 10:29 | 5 | 25 | 125 | 22.12 | -- | 7.34 | 1.11 | 0.34 | 0.49 | 12.5 | 114.1 | -- | -- |
| 10:34 | 5 | 30 | 125 | 22.12 | -- | 7.32 | 1.11 | 0.02 | 0.2 | 12.5 | 105.2 | -- | -- |
| 10:39 | 5 | 35 | 175 | 22.12 | -- | 7.33 | 1.1 | 0.89 | 0.18 | 12.6 | 99.7 | -- | -- |
| 10:44 | 5 | 40 | 175 | 22.12 | -- | 7.34 | 1.1 | 0.24 | 0.19 | 12.6 | 93.4 | -- | -- |
| 10:49 | 5 | 45 | 175 | 22.12 | -- | 7.33 | 1.1 | 0.02 | 0.19 | 12.5 | 71.9 | -- | -- |
| 10:54 | 5 | 50 | 175 | 22.12 | -- | 7.32 | 1.1 | 0.02 | 0.17 | 12.7 | 74.4 | -- | -- |
| 10:59 | 5 | 55 | 175 | 22.12 | -- | 7.35 | 1.09 | 0.15 | 0.17 | 12.7 | 72.8 | -- | -- |
| 11:04 | 5 | 60 | 175 | 22.12 | -- | 7.3 | 1.09 | 0.02 | 0.17 | 12.7 | 70.1 | 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: Powerhouse

Condition of Well:

Well Completion: Flush mount

Well Locked at Arrival: yes

Well Locked at Departure: yes

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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MWF16-16 | | | **Date** | 11/28/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 24.1 degrees F and Mostly Clear. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 22.65 | **Total Depth (ft-bmp)** | 31.25 | **Water Column (ft)** | 8.6 | **Gallons in Well** | 1.4 |
| **Purge Start** | 13:11 | **Pump Intake (ft-bmp)** | 28.75 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 13:59 | **Volumes Purged** | 1.79 | **Sample ID** | MWF16-16_GW-112823 | **Sampled by** | Sommer Guy |
| **Sample Time** | 13:57 | **Gallons Purged** | 2.50 | **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 |
| 13:13 | 0 | 0 | 125 | 22.65 | -- | 7.44 | 0.93 | 4.86 | 1.8 | 11.7 | 63.1 | -- | -- |
| 13:18 | 5 | 5 | 125 | 22.65 | -- | 7.48 | 0.93 | 3.74 | 0.8 | 11.8 | 61.2 | -- | -- |
| 13:23 | 5 | 10 | 125 | 22.65 | -- | 7.54 | 0.9 | 3.24 | 0.56 | 11.9 | 57.1 | -- | -- |
| 13:28 | 5 | 15 | 125 | 22.65 | -- | 7.55 | 0.85 | 2.76 | 0.49 | 12.2 | 56.1 | -- | -- |
| 13:33 | 5 | 20 | 125 | 22.65 | -- | 7.55 | 0.84 | 2.2 | 0.73 | 12.7 | 56.1 | -- | -- |
| 13:38 | 5 | 25 | 125 | 22.65 | -- | 7.51 | 0.81 | 1.79 | 0.97 | 11.9 | 54.9 | -- | -- |
| 13:43 | 5 | 30 | 125 | 22.65 | -- | 7.52 | 0.81 | 1.25 | 0.65 | 12 | 53.7 | -- | -- |
| 13:48 | 5 | 35 | 125 | 22.65 | -- | 7.52 | 0.81 | 0.88 | 0.64 | 12.1 | 53.4 | -- | -- |
| 13:53 | 5 | 40 | 125 | 22.65 | -- | 7.51 | 0.8 | 0.7 | 0.7 | 11.9 | 53.2 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| VOCs SW-846 8260B | 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

Well Locked at Arrival:

Condition of Well: Good condition,Missing bolts

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** | MWF16-17 | | | **Date** | 11/29/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 28.9 degrees F and Partly Cloudy. The wind is blowing SW at 6.9 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 20.17 | **Total Depth (ft-bmp)** | 31.81 | **Water Column (ft)** | 11.64 | **Gallons in Well** | 1.89 |
| **Purge Start** | 13:31 | **Pump Intake (ft-bmp)** | 29.81 | **Purge Method** | Low-Flow | **Purge Equipment** | Submersible |
| **Purge End** | 14:51 | **Volumes Purged** | | **Sample ID** | MWF16-17-GW_112923 | **Sampled by** | Samantha Szpaichler |
| **Sample Time** | 14:48 | **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 |
| 13:33 | 0 | 0 | 110 | 20.16 | -- | 7.24 | 0.72 | 12.9 | 4.7 | 9.5 | 34.4 | -- | -- |
| 13:38 | 5 | 5 | 110 | 20.16 | -- | 7.35 | 0.707 | 10.3 | 3.18 | 9.5 | 33.7 | -- | -- |
| 13:43 | 5 | 10 | 110 | 20.16 | -- | 7.24 | 0.699 | 10.8 | 2.42 | 9.2 | 32.2 | -- | -- |
| 13:48 | 5 | 15 | 110 | 20.16 | -- | 7.19 | 0.692 | 11.5 | 2.36 | 9.2 | 31.7 | -- | -- |
| 13:53 | 5 | 20 | 110 | 20.16 | -- | 7.17 | 0.678 | 10.9 | 3.2 | 9.5 | 28.6 | -- | -- |
| 13:58 | 5 | 25 | 110 | 20.16 | -- | 7.18 | 0.678 | 12.1 | 3.31 | 9.6 | 29.4 | -- | -- |
| 14:03 | 5 | 30 | 110 | 20.16 | -- | 7.19 | 0.68 | 9.14 | 1.98 | 9.5 | 28.8 | -- | -- |
| 14:08 | 5 | 35 | 110 | 20.16 | -- | 7.2 | 0.678 | 7.13 | 2.38 | 9.7 | 28 | -- | -- |
| 14:13 | 5 | 40 | 110 | 20.16 | -- | 7.22 | 0.677 | 7.13 | 1.7 | 9.7 | 26.7 | -- | -- |
| 14:18 | 5 | 45 | 110 | 20.16 | -- | 7.16 | 0.679 | 7.2 | 1.6 | 9.7 | 26.3 | -- | -- |
| 14:23 | 5 | 50 | 110 | 20.16 | -- | 7.21 | 0.675 | 5.95 | 1.57 | 9.5 | 25 | -- | -- |
| 14:28 | 5 | 55 | 110 | 20.16 | -- | 7.25 | 0.675 | 4.6 | 1.07 | 9.6 | 24.7 | -- | -- |
| 14:33 | 5 | 60 | 110 | 20.16 | -- | 7.2 | 0.673 | 4.8 | 1.04 | 9.7 | 23.4 | -- | -- |
| 14:38 | 5 | 65 | 110 | 20.16 | -- | 7.23 | 0.673 | 4.43 | 0.96 | 9.6 | 22.4 | -- | -- |
| 14:43 | 5 | 70 | 110 | 20.16 | -- | 7.22 | 0.674 | 4.2 | 0.95 | 9.6 | 22.7 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| VOCs SW-846 8260B | 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, NE

Well Locked at Arrival: yes

Condition of Well: Good condition

Well Locked at Departure: yes

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** | MWF16-18 | | | **Date** | 11/29/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 25.0 degrees F and Cloudy. The wind is blowing S/SW at 8.1 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 21.04 | **Total Depth (ft-bmp)** | 31.98 | **Water Column (ft)** | 10.94 | **Gallons in Well** | 1.78 |
| **Purge Start** | 11:52 | **Pump Intake (ft-bmp)** | 29.98 | **Purge Method** | Low-Flow | **Purge Equipment** | Submersible |
| **Purge End** | 12:47 | **Volumes Purged** | | **Sample ID** | MWF16-18-GW_112923 | **Sampled by** | Samantha Szpaichler |
| **Sample Time** | 12:45 | **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 |
| 11:53 | 0 | 0 | 110 | 21.00 | -- | 7.33 | 0.445 | 1.85 | 16.16 | 7.7 | 84.7 | -- | -- |
| 11:58 | 5 | 5 | 110 | 21.00 | -- | 7.22 | 0.432 | 3.3 | 3.14 | 7.7 | 80.1 | -- | -- |
| 12:03 | 5 | 10 | 110 | 21.00 | -- | 7.2 | 0.421 | 2.8 | 3.97 | 8.2 | 72.5 | -- | -- |
| 12:08 | 5 | 15 | 110 | 21.00 | -- | 7.14 | 0.409 | 1.6 | 2.76 | 8.6 | 65.8 | -- | -- |
| 12:13 | 5 | 20 | 110 | 21.00 | -- | 7.14 | 0.404 | 1.5 | 2.88 | 8.7 | 63.7 | -- | -- |
| 12:18 | 5 | 25 | 110 | 21.00 | -- | 7.2 | 0.396 | 1.65 | 3.5 | 8.8 | 59.8 | -- | -- |
| 12:23 | 5 | 30 | 110 | 21.00 | -- | 7.19 | 0.391 | 1.47 | 0.4 | 8.9 | 55.7 | -- | -- |
| 12:28 | 5 | 35 | 110 | 21.00 | -- | 7.19 | 0.389 | 1.45 | 0.26 | 9 | 52.7 | -- | -- |
| 12:33 | 5 | 40 | 110 | 21.00 | -- | 7.2 | 0.385 | 1.6 | 0.27 | 9.1 | 48.3 | -- | -- |
| 12:38 | 5 | 45 | 110 | 21.00 | -- | 7.2 | 0.388 | 1.4 | 0.28 | 9.1 | 48 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| VOCs SW-846 8260B | 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, SE | 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** | MWF16-22 | | | **Date** | 11/28/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 21.9 degrees F and Mostly Clear. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 23.48 | **Total Depth (ft-bmp)** | 33.9 | **Water Column (ft)** | 10.42 | **Gallons in Well** | 1.69 |
| **Purge Start** | 11:55 | **Pump Intake (ft-bmp)** | 31.4 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 12:44 | **Volumes Purged** | 1.48 | **Sample ID** | MWF16-22_GW-112823 | **Sampled by** | Sommer Guy |
| **Sample Time** | 12:42 | **Gallons Purged** | 2.50 | **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 |
| 11:58 | 0 | 0 | 200 | 23.48 | -- | 7.42 | 0.626 | 21.6 | 2.54 | 12.1 | 89.8 | -- | -- |
| 12:03 | 5 | 5 | 125 | 23.48 | -- | 7.43 | 0.626 | 23.5 | 1.35 | 12.8 | 75.7 | -- | -- |
| 12:08 | 5 | 10 | 125 | 23.48 | -- | 7.43 | 0.625 | 17.7 | 1.15 | 11.9 | 69.5 | -- | -- |
| 12:13 | 5 | 15 | 125 | 23.48 | -- | 7.46 | 0.622 | 16.1 | 1.64 | 12.1 | 63.4 | -- | -- |
| 12:18 | 5 | 20 | 125 | 23.48 | -- | 7.47 | 0.624 | 14.5 | 1.58 | 12.2 | 59.9 | -- | -- |
| 12:23 | 5 | 25 | 125 | 23.48 | -- | 7.47 | 0.618 | 12.5 | 1.62 | 12 | 57.9 | -- | -- |
| 12:28 | 5 | 30 | 125 | 23.48 | -- | 7.49 | 0.614 | 8.29 | 1.97 | 12.2 | 55.1 | -- | -- |
| 12:33 | 5 | 35 | 125 | 23.48 | -- | 7.5 | 0.613 | 8.24 | 1.95 | 12.1 | 53.8 | -- | -- |
| 12:38 | 5 | 40 | 125 | 23.48 | -- | 7.51 | 0.609 | 8.03 | 2.01 | 12.2 | 52.5 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| VOCs SW-846 8260B | 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

Condition of Well: Bolts missing,Good condition

Well Completion: Flush mount

Well Locked at Arrival: no

Well Locked at Departure: no

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** | 11/30/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | | **Weather(°F)** | 28 sunny | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 24.05 | **Total Depth (ft-bmp)** | 30.53 | **Water Column (ft)** | 6.48 | **Gallons in Well** | 1.05 |
| **Purge Start** | 11:26 | **Pump Intake (ft-bmp)** | 28.03 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | | **Volumes Purged** | | **Sample ID** | MWF16-23_GW-113023 | **Sampled by** | Alaina Pitera |
| **Sample Time** | 12:05 | **Gallons Purged** | | **Replicate/ Code No.** | NA | **Sample Type** | Grab |

| Time | Minutes Elapsed | Total Elapsed Minutes | Rate | 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 |
| 11:30 | 0 | 0 | -- | 24.05 | -- | 7.26 | 0.358 | 27.2 | 2.56 | 12.7 | 53.9 | -- | -- |
| 11:35 | 5 | 5 | -- | 24.05 | -- | 7.06 | 0.345 | 21.6 | 1.08 | 12 | 34.2 | -- | -- |
| 11:40 | 5 | 10 | -- | 24.05 | -- | 7.22 | 0.339 | 17.6 | 0.85 | 12.5 | 31.2 | -- | -- |
| 11:45 | 5 | 15 | -- | 24.05 | -- | 7.06 | 0.334 | 15 | 0.56 | 12.6 | 33 | -- | -- |
| 11:50 | 5 | 20 | -- | 24.05 | -- | 7.15 | 0.332 | 9.5 | 0.37 | 12.6 | 29.1 | -- | -- |
| 11:55 | 5 | 25 | -- | 24.05 | -- | 7.23 | 0.333 | 9.4 | 0.36 | 12.6 | 29.9 | -- | -- |
| 11:55 | 1440 | 25 | -- | 24.05 | -- | 7.22 | 0.334 | 8.5 | 0.36 | 12.7 | 26.4 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| NA | NA | 3 | NA |

**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:
Condition of Well: Missing bolts
Well Completion: NA
Well Locked at Arrival: yes
Well Locked at Departure: yes
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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MWF16-25 | | | **Date** | 11/29/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 28.9 degrees F and Partly Cloudy. The wind is blowing SW at 6.9 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 26.11 | **Total Depth (ft-bmp)** | 37.22 | **Water Column (ft)** | 11.11 | **Gallons in Well** | 1.81 |
| **Purge Start** | 14:00 | **Pump Intake (ft-bmp)** | 34.7 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 14:37 | **Volumes Purged** | 1.38 | **Sample ID** | MWF16-25_GW-112923 | **Sampled by** | Sommer Guy |
| **Sample Time** | 14:35 | **Gallons Purged** | 2.50 | **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 |
| 14:02 | 0 | 0 | 125 | 26.12 | -- | 7.43 | 0.604 | 30.2 | 6.82 | 12 | 22 | -- | -- |
| 14:07 | 5 | 5 | 125 | 26.12 | -- | 7.39 | 0.622 | 17.4 | 6.37 | 12.1 | 19.3 | -- | -- |
| 14:12 | 5 | 10 | 125 | 26.12 | -- | 7.39 | 0.627 | 11.8 | 3.76 | 12.4 | 16.9 | -- | -- |
| 14:17 | 5 | 15 | 125 | 26.12 | -- | 7.38 | 0.63 | 9.55 | 3.65 | 12.6 | 15.8 | -- | -- |
| 14:22 | 5 | 20 | 125 | 26.12 | -- | 7.38 | 0.632 | 8.41 | 3.54 | 12.4 | 15.2 | -- | -- |
| 14:27 | 5 | 25 | 125 | 26.12 | -- | 7.38 | 0.63 | 8.5 | 3.49 | 12.6 | 14.4 | -- | -- |
| 14:32 | 5 | 30 | 125 | 26.12 | -- | 7.38 | 0.631 | 8.15 | 3.47 | 12.7 | 14.7 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| VOCs SW-846 8260B | 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: Kennet St North ROW
Well Locked at Arrival:
Condition of Well: Good condition,Missing bolts
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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MWF16-25 | | | **Date** | 11/30/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | | **Weather(°F)** | 28 sunny | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 20.61 | **Total Depth (ft-bmp)** | 22.8 | **Water Column (ft)** | 2.19 | **Gallons in Well** | 0.36 |
| **Purge Start** | 12:59 | **Pump Intake (ft-bmp)** | 21 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | | **Volumes Purged** | | **Sample ID** | MWF16-25_GW-113023 | **Sampled by** | Alaina Pitera |
| **Sample Time** | 14:20 | **Gallons Purged** | | **Replicate/ Code No.** | NA | **Sample Type** | Grab |

| Time | Minutes Elapsed | Total Elapsed Minutes | Rate | 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 |
| 13:06 | 0 | 0 | -- | 20.61 | -- | 8.15 | 0.13 | 592 | 6.87 | 13.3 | 15.7 | -- | -- |
| 13:11 | 5 | 5 | -- | 20.61 | -- | 7.57 | 0.432 | 1080 | 1.81 | 12.3 | 13.2 | -- | -- |
| 13:16 | 5 | 10 | -- | 20.61 | -- | 7.52 | 0.451 | 921 | 1.51 | 12.1 | 11.8 | -- | -- |
| 13:21 | 5 | 15 | -- | 20.61 | -- | 7.4 | 0.459 | 728 | 1.54 | 11.7 | 11.8 | -- | -- |
| 13:26 | 5 | 20 | -- | 20.61 | -- | 7.52 | 0.46 | 432 | 1.55 | 11.2 | 11.8 | -- | -- |
| 13:31 | 5 | 25 | -- | 20.61 | -- | 7.61 | 0.465 | 250 | 1.38 | 11.4 | 11.8 | -- | -- |
| 13:36 | 5 | 30 | -- | 20.61 | -- | 7.56 | 0.469 | 194 | 1.5 | 11.4 | 9.3 | -- | -- |
| 13:41 | 5 | 35 | -- | 20.61 | -- | 7.49 | 0.472 | 113 | 1.6 | 11.2 | 9.2 | -- | -- |
| 13:46 | 5 | 40 | -- | 20.61 | -- | 7.44 | 0.476 | 68 | 1.71 | 11.2 | 9.2 | -- | -- |
| 13:51 | 5 | 45 | -- | 20.61 | -- | 7.57 | 0.477 | 49 | 1.63 | 11.1 | 10.1 | -- | -- |
| 13:56 | 5 | 50 | -- | 20.61 | -- | 7.6 | 0.477 | 28 | 1.85 | 11.1 | 10.1 | -- | -- |
| 14:01 | 5 | 55 | -- | 20.61 | -- | 7.6 | 0.478 | 19 | 1.85 | 11.1 | 10.1 | -- | -- |
| 14:06 | 5 | 60 | -- | 20.61 | -- | 7.6 | 0.477 | 9.7 | 1.86 | 11.1 | 10.1 | -- | -- |
| 14:11 | 5 | 65 | -- | 20.61 | -- | 7.6 | 0.478 | 9.8 | 1.86 | 11.1 | 10.2 | -- | -- |
| 14:16 | 5 | 70 | -- | 20.61 | -- | 7.6 | 0.479 | 9.3 | 1.88 | 11.1 | 10.4 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| NA | NA | 3 | NA |

**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:

Well Locked at Arrival: yes

Condition of Well: Missing bolts

Well Locked at Departure: yes

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: NA

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** | 11/29/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 28.9 degrees F and Partly Cloudy. The wind is blowing SW at 6.9 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 26.07 | **Total Depth (ft-bmp)** | 28.8 | **Water Column (ft)** | 2.73 | **Gallons in Well** | 0.44 |
| **Purge Start** | 14:48 | **Pump Intake (ft-bmp)** | 27.2 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 15:25 | **Volumes Purged** | 5.68 | **Sample ID** | MWOS-08_GW-112923 | **Sampled by** | Sommer Guy |
| **Sample Time** | 15:23 | **Gallons Purged** | 2.50 | **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 |
| 14:50 | 0 | 0 | 125 | 26.08 | -- | 7.37 | 0.608 | 8.97 | 3.92 | 11.7 | 21.3 | -- | -- |
| 14:55 | 5 | 5 | 125 | 26.09 | -- | 7.35 | 0.642 | 3.87 | 3.62 | 11.3 | 21.7 | -- | -- |
| 15:00 | 5 | 10 | 125 | 26.09 | -- | 7.33 | 0.653 | 3.59 | 3.21 | 11.6 | 23.7 | -- | -- |
| 15:05 | 5 | 15 | 125 | 26.09 | -- | 7.33 | 0.663 | 1.78 | 3.12 | 11.6 | 24.6 | -- | -- |
| 15:10 | 5 | 20 | 125 | 26.09 | -- | 7.33 | 0.671 | 0.18 | 3.02 | 11.4 | 24.7 | -- | -- |
| 15:15 | 5 | 25 | 125 | 26.09 | -- | 7.33 | 0.673 | 0.02 | 3.19 | 11.4 | 23.7 | -- | -- |
| 15:20 | 5 | 30 | 125 | 26.09 | -- | 7.33 | 0.68 | 0.02 | 3.3 | 11.2 | 23.8 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| VOCs SW-846 8260B | 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: Kennett St south ROW
Well Locked at Arrival:
Condition of Well: Good condition,Missing bolts
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** | MWOS-09R | | | **Date** | 11/30/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 27.0 degrees F and Fog. The wind is blowing S at 4.7 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 27.32 | **Total Depth (ft-bmp)** | 32.21 | **Water Column (ft)** | 4.89 | **Gallons in Well** | 0.79 |
| **Purge Start** | 09:46 | **Pump Intake (ft-bmp)** | 29.7 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 10:27 | **Volumes Purged** | 3.16 | **Sample ID** | MWOS-09R_GW-113023 | **Sampled by** | Sommer Guy |
| **Sample Time** | 10:23 | **Gallons Purged** | 2.50 | **Replicate/ Code No.** | DUP-03_GW-113023 | **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 |
| 09:50 | 0 | 0 | 125 | 27.32 | -- | 7.35 | 0.8 | 15.4 | 8.98 | 10.2 | 98.3 | -- | -- |
| 09:55 | 5 | 5 | 125 | 27.32 | -- | 7.33 | 0.82 | 15.9 | 8.03 | 9.3 | 80.9 | -- | -- |
| 10:00 | 5 | 10 | 125 | 27.32 | -- | 7.32 | 0.82 | 11.1 | 7.48 | 9.9 | 72.4 | -- | -- |
| 10:05 | 5 | 15 | 125 | 27.32 | -- | 7.32 | 0.83 | 5.71 | 7.42 | 9.9 | 68.9 | -- | -- |
| 10:10 | 5 | 20 | 125 | 27.32 | -- | 7.32 | 0.83 | 4.65 | 7.02 | 10.2 | 66.5 | -- | -- |
| 10:15 | 5 | 25 | 125 | 27.32 | -- | 7.32 | 0.83 | 4.58 | 6.77 | 10.3 | 65.1 | -- | -- |
| 10:20 | 5 | 30 | 125 | 27.32 | -- | 7.32 | 0.84 | 4.71 | 6.58 | 10.3 | 64.3 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| VOCs SW-846 8260B | 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: Western Sidewalk
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

ARCADIS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Number** | 30167840 | **Well ID** | MWOS-10 | | | **Date** | 11/30/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 27.0 degrees F and Fog. The wind is blowing S at 4.7 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 28.50 | **Total Depth (ft-bmp)** | 32.79 | **Water Column (ft)** | 4.29 | **Gallons in Well** | 0.7 |
| **Purge Start** | 10:39 | **Pump Intake (ft-bmp)** | 30.2 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 11:24 | **Volumes Purged** | 3.57 | **Sample ID** | MWOS-10_GW-113023 | **Sampled by** | Sommer Guy |
| **Sample Time** | 11:22 | **Gallons Purged** | 2.50 | **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 |
| 10:43 | 0 | 0 | 125 | 28.50 | -- | 7.51 | 0.421 | 52.3 | 9.02 | 7.4 | 76.7 | -- | -- |
| 10:48 | 5 | 5 | 125 | 28.50 | -- | 7.41 | 0.88 | 44.1 | 8.54 | 9.3 | 75.5 | -- | -- |
| 10:53 | 5 | 10 | 125 | 28.50 | -- | 7.39 | 0.9 | 29.3 | 8.45 | 9.3 | 75.3 | -- | -- |
| 10:58 | 5 | 15 | 125 | 28.50 | -- | 7.39 | 0.92 | 22.6 | 8.25 | 9.7 | 76.2 | -- | -- |
| 11:03 | 5 | 20 | 125 | 28.50 | -- | 7.39 | 0.92 | 16.3 | 7.84 | 10 | 76.5 | -- | -- |
| 11:08 | 5 | 25 | 125 | 28.50 | -- | 7.38 | 0.94 | 8.5 | 7.58 | 10.4 | 76.9 | -- | -- |
| 11:13 | 5 | 30 | 125 | 28.50 | -- | 7.38 | 0.94 | 8.73 | 7.3 | 10.5 | 76.6 | -- | -- |
| 11:18 | 5 | 35 | 125 | 28.50 | -- | 7.37 | 0.95 | 8.28 | 7.24 | 10.5 | 76.4 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| VOCs SW-846 8260B | 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: Western sidewalk of St. Clair

Condition of Well: Good condition

Well Completion: Flush mount

Well Locked at Arrival:

Well Locked at Departure:

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** | 11/30/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 46.0 degrees F and Mostly Cloudy. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 1 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 23.05 | **Total Depth (ft-bmp)** | 32.69 | **Water Column (ft)** | 9.64 | **Gallons in Well** | 0.39 |
| **Purge Start** | 13:55 | **Pump Intake (ft-bmp)** | 30.1 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 15:32 | **Volumes Purged** | 6.41 | **Sample ID** | TW-12-22_GW-113023 | **Sampled by** | Sommer Guy |
| **Sample Time** | 15:30 | **Gallons Purged** | 2.50 | **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 |
| 13:56 | 0 | 0 | 125 | 23.05 | -- | 8.7 | 31.02 | 643 | 8.85 | 13 | 157.2 | -- | -- |
| 14:01 | 5 | 5 | 125 | 23.05 | -- | 8.98 | 22.01 | 386 | 9.13 | 13 | 136.5 | -- | -- |
| 14:06 | 5 | 10 | 125 | 23.05 | -- | 8.93 | 16.28 | 227 | 9.02 | 12.9 | 131.9 | -- | -- |
| 14:11 | 5 | 15 | 125 | 23.05 | -- | 8.93 | 13.22 | 212 | 8.85 | 12.8 | 124.8 | -- | -- |
| 14:16 | 5 | 20 | 125 | 23.05 | -- | 8.92 | 11.58 | 159 | 8.72 | 12.8 | 121.3 | -- | -- |
| 14:21 | 5 | 25 | 125 | 23.05 | -- | 8.87 | 10.2 | 127 | 8.63 | 12.7 | 120.3 | -- | -- |
| 14:26 | 5 | 30 | 125 | 23.05 | -- | 8.85 | 9.14 | 96.2 | 8.49 | 12.7 | 117.8 | -- | -- |
| 14:31 | 5 | 35 | 125 | 23.05 | -- | 8.82 | 8.5 | 86.8 | 8.28 | 12.6 | 117 | -- | -- |
| 14:36 | 5 | 40 | 125 | 23.05 | -- | 8.79 | 8.1 | 77.4 | 8.17 | 12.5 | 116.2 | -- | -- |
| 14:41 | 5 | 45 | 125 | 23.05 | -- | 8.78 | 7.61 | 61 | 7.95 | 12.6 | 113.9 | -- | -- |
| 14:46 | 5 | 50 | 125 | 23.05 | -- | 7.79 | 7.11 | 55.7 | 7.78 | 12.6 | 110.3 | -- | -- |
| 14:51 | 5 | 55 | 125 | 23.05 | -- | 8.74 | 6.83 | 53.4 | 7.63 | 12.6 | 112.2 | -- | -- |
| 14:56 | 5 | 60 | 125 | 23.05 | -- | 8.73 | 6.58 | 48.5 | 8.15 | 12.6 | 112.6 | -- | -- |
| 15:01 | 5 | 65 | 125 | 23.05 | -- | 8.72 | 6.26 | 38.7 | 7.33 | 12.6 | 111.2 | -- | -- |
| 15:06 | 5 | 70 | 125 | 23.05 | -- | 8.7 | 5.98 | 36.8 | 7.13 | 12.6 | 110.4 | -- | -- |
| 15:11 | 5 | 75 | 125 | 23.05 | -- | 8.72 | 5.7 | 32 | 6.98 | 12.6 | 108.3 | -- | -- |
| 15:16 | 5 | 80 | 125 | 23.05 | -- | 8.7 | 5.46 | 31.1 | 6.85 | 12.6 | 106.9 | -- | -- |
| 15:21 | 5 | 85 | 125 | 23.05 | -- | 8.71 | 5.15 | 27.1 | 6.69 | 12.6 | 106.6 | -- | -- |
| 15:26 | 5 | 90 | 125 | 23.05 | -- | 8.73 | 4.64 | 24.6 | 6.51 | 12.9 | 104.8 | Clear | None |

| Constituent Sampled | Container | Number | Preservative |
|---|---|---|---|
| VOCs SW-846 8260B | 40 mL Glass | 3 | HCL |

**Comments:**

**Well Casing Volume Conversion**

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 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: | |
| 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** | UNKNOWN-01 | | | **Date** | 12/04/2023 |
| **Project Name/Location** | RACER Pontiac North Campus 2023 | **Weather(°F)** | 34.0 degrees F and Fog/Mist. The wind is blowing NW at 8.1 mph. | | | | |
| **Measuring Pt. Description** | Top of Inner Casing | **MP Elevation** | | **Casing Diameter (in)** | 2 | **Well Casing Material** | PVC |
| **Static Water Level (ft-bmp)** | 18.72 | **Total Depth (ft-bmp)** | 24.09 | **Water Column (ft)** | 5.37 | **Gallons in Well** | 0.87 |
| **Purge Start** | 11:29 | **Pump Intake (ft-bmp)** | 21.5 | **Purge Method** | Low-Flow | **Purge Equipment** | Peristaltic |
| **Purge End** | 12:27 | **Volumes Purged** | 2.30 | **Sample ID** | UNKNOWN-01_GW-120423 | **Sampled by** | Garrett Link |
| **Sample Time** | 12:20 | **Gallons Purged** | 2.00 | **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 |
| 11:32 | 0 | 0 | 130 | 18.83 | -- | 7.19 | 1.33 | 1.09 | 2.4 | 11.7 | 54.3 | -- | -- |
| 11:37 | 5 | 5 | 130 | 18.84 | -- | 7.12 | 1.36 | 0.02 | 1.61 | 12.1 | 60.6 | -- | -- |
| 11:42 | 5 | 10 | 130 | 18.84 | -- | 7.12 | 1.33 | 0.02 | 1.34 | 12.1 | 59 | -- | -- |
| 11:47 | 5 | 15 | 130 | 18.85 | -- | 7.12 | 1.3 | 0.02 | 1.25 | 12 | 53.5 | -- | -- |
| 11:52 | 5 | 20 | 130 | 18.85 | -- | 7.15 | 1.28 | 0.02 | 1.18 | 12.2 | 50.3 | -- | -- |
| 11:57 | 5 | 25 | 130 | 18.85 | -- | 7.14 | 1.27 | 0.02 | 1.08 | 12.4 | 46.2 | -- | -- |
| 12:02 | 5 | 30 | 130 | 18.85 | -- | 7.12 | 1.25 | 0.02 | 1 | 12.3 | 43.3 | -- | -- |
| 12:07 | 5 | 35 | 130 | 18.85 | -- | 7.13 | 1.24 | 0.02 | 1.02 | 11.9 | 40.3 | -- | -- |
| 12:12 | 5 | 40 | 130 | 18.85 | -- | 7.13 | 1.22 | 0.02 | 0.98 | 11.8 | 35.8 | -- | -- |
| 12:17 | 5 | 45 | 130 | 18.85 | -- | 7.14 | 1.21 | 0.02 | 0.99 | 11.9 | 33.7 | 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: Powerhouse
Condition of Well: Good condition
Well Completion: Flush mount
Well Locked at Arrival: no
Well Locked at Departure: no
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

# Soil Vapor Collection Log Sheet



| | | | |
|---|---|---|---|
| Office Name & Address (Reporting Information): Novi, MI 28550 Cabot Dr #500 | | | Project Name: RACER Pontiac North Campus 2023 |
| Field Manager: Alexis Crisp | | | Project Number: 30167840 |
| Phone: 937-206-4005 | Special Instructions: TO-15 | | Site Address: 200 E Montcalm Pontiac MI 48340 US |
| Email Address for Result Reporting: Alexis.crisp@arcadis.com | | | Sampler Name: Sommer Guy / Phone Number: 947-465-3421 / 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) | | | | | | | |
| DUP-01_SG-112723 | St. Clair Eastern ROW | 11/27/2023 | Pass | 15700 | 44.3 | Pass | 321.45001 | 100 | 3405 | 23568 | 11:36 | -28 | 11:44 | -5 | N/A |
| SV-01-21_SG-112723 | St. Clair Eastern ROW | 11/27/2023 | Pass | 0 | 45.9 | Pass | 200.91 | 100 | 2319 | 23346 | 11:57 | -28 | 12:03 | -5 | N/A |
| SV-02-21_SG-112723 | St. Clair Eastern ROW | 11/27/2023 | Pass | 15700 | 44.3 | Pass | 321.45001 | 100 | 4575 | 23724 | 11:36 | -28.5 | 11:44 | -5 | N/A |
| SV-03-21_SG-112723 | St. Clair Western ROW | 11/27/2023 | Pass | 0 | 61.7 | Pass | 160.74 | 100 | C349 | 23831 | 13:34 | -28 | 13:41 | -5 | N/A |
| SV-04-21_SG-112723 | St. Clair Western ROW | 11/27/2023 | Pass | 0 | 46.2 | Pass | 308.04001 | 100 | 4501 | 23661 | 13:17 | -28 | 13:28 | -5 | N/A |
| SV-05-21_SG-112723 | St. Clair Western ROW | 11/27/2023 | Pass | 0 | 58.8 | Pass | 174.12 | 100 | 4366 | 23436 | 12:44 | -28.5 | 12:52 | -5 | N/A |
| SV-06-21_SG-112723 | St. Clair Western ROW | 11/27/2023 | Pass | 0 | 42 | Pass | 308.04001 | 100 | 4592 | 23785 | 12:27 | -28 | 12:35 | -5 | N/A |

**Meteorological Data**

| Date | Time | Temp | | Relative Humidity (%) | Barometric Pressure (in.Hg) | Weather source | **General Notes or Observations** |
|---|---|---|---|---|---|---|---|
| | | Indoor | Outdoor | | | | |
| 11/27/2023 | 10:53 | | 28 | 65 | 30 | 28.0 degrees F and Cloudy. | N/A |

**Air Parameters (completed after sample collection)**

| Location ID | CH4 % | CH4 LEL % | O2 % | PID (ppm) | Differential Pressure (in. Water Column) |
|---|---|---|---|---|---|
| -- | 0 | NM | 16.2 | NM | NM |
| SV-01-21 | 0 | NM | 17.5 | NM | NM |
| SV-02-21 | 0 | NM | 16.2 | NM | NM |
| SV-03-21 | 0 | NM | 15.4 | NM | NM |
| SV-04-21 | 0 | NM | 12.7 | NM | NM |
| SV-05-21 | 0 | NM | 9.5 | NM | NM |
| SV-06-21 | 0 | NM | 13.5 | NM | NM |

# Appendix C

## Former Fiero Assembly Site-Specific Criteria Evaluation

**DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY**

**INTEROFFICE COMMUNICATION**

TO: Joe Rogers, Geologist Specialist, MMD

FROM: Shane Morrison, Senior Toxicologist, RRD

DATE: April 21, 2020

SUBJECT: Former Fiero Assembly Site-Specific Criteria Evaluation

The following site-specific volatilization to indoor air criteria (VIAC) are the Michigan Department of Environment, Great Lakes, and Energy's (EGLE's) determination of values that reflect best available information regarding the toxicity and exposure risks posed by the hazardous substances present at the facility. These values are based upon the information provided with the request to develop site-specific VIAC for this facility. These values may be used provided it is documented that the conditions used to develop the site-specific criteria are met at the facility. Other values may be developed by a person consistent with the statutory provisions for development of site-specific criteria and provided for EGLE review and approval.

Correspondence transmitting these values to the submitter/consultant as part of a report, review, or other request must incorporate the appropriate sections of the volatilization to indoor air pathway (VIAP) model document language. As indicated in this document, when groundwater volatilization to indoor air inhalation criteria (GVIIC) and soil volatilization to indoor air inhalation criteria (SVIIC) are not applicable, the correspondence must include language indicating the requirement to satisfy the site-specific VIAC for all three media i.e., groundwater, soil, and soil gas. In addition, all of the following site-specific VIAC tables must be copied into the correspondence or letter as part of your response to the submitter/consultant.

Unrestricted residential site-specific criteria were included in the evaluation based on information provided and EGLE's residential conceptual site model. Exceedance of the site-specific unrestricted residential criteria will require restrictions or institutional controls for closure or aid in the determination of off-site migration.

The nonresidential building size of </> 50,000 $ft^2$ is based on continuously open space and refers to the structure or portion of the structure that may be subdivided (e.g. offices, breakrooms, etc.). If a structure contains areas with both </> 50,000 $ft^2$ continuously open space, a sensitivity analysis must be performed to identify the most restrictive set of criteria to evaluate risk associated with the VIAP for that structure.

If multiple foundation types are present for a structure (i.e. slab-on-grade and basement), a sensitivity analysis must be performed to identify the most restrictive set of criteria to evaluate risk associated with the VIAP for that structure.

The site-specific criteria were generated using the United States Department of Agriculture (USDA) soil type of sand. Other site-specific criteria can be generated using a different soil type by providing soil characterization results from department approved methods on soils collected at the site.

Additional hazardous substances were included in the site-specific evaluation that were not explicitly requested. These hazardous substances may be components of recent petroleum releases and the primary breakdown products of tetrachloroethylene. The preemptive site-specific evaluation of these substances was provided to limit the potential need for future resubmittal for this facility.

Please contact me at MorrisonS5@michigan.gov or 517-284-5063 if you require any clarification of these comments and criterion or have additional questions.

cc: Eric Wildfang, Toxicology Unit Supervisor, RRD

**Table 1**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **< 50,000 ft²** with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 83329 | Acenaphthene | 3,900 (S)<br>sol | 7.2E+06<br>nc | 21,000<br>nc |
| 208968 | Acenaphthylene | 1,400 (CC)<br>nc | DATA | 21,000<br>nc |
| 75070 | Acetaldehyde | 95,000<br>nc | 1,200 (M)<br>nc | 920<br>nc |
| 64197 | Acetic acid | 1.0E+09 (S)<br>sol | 2.3E+07<br>nc | 26,000<br>nc |
| 67641 | Acetone (#) | 2.4E+08 (EE)<br>st | 3.1E+06 (EE)<br>st | 1.0E+06 (EE)<br>st |
| 75058 | Acetonitrile | 1.3E+06<br>nc | 22,000<br>nc | 6,100<br>nc |
| 98862 | Acetophenone | 6.1E+06 (S) (DD)<br>sol | 7.4E+06 (C) (DD) dev<br>(8.4E+05) | 1.1E+05 (DD)<br>dev |
| 107028 | Acrolein | 140<br>nc | 1.6 (M)<br>nc | 2.0<br>nc |
| 79107 | Acrylic acid | 6.1E+05<br>nc | 9,200<br>nc | 20<br>nc |
| 107131 | Acrylonitrile | 4,100<br>ca | 67 (M)<br>ca | 59<br>ca |
| 309002 | Aldrin | 17 (S)<br>sol | 29,000<br>ca | 0.81<br>ca |
| 7664417 | Ammonia (#) | 9.1E+06 (EE)<br>st | DATA | 40,000 (EE)<br>st |
| 994058 | t-Amyl methyl ether (TAME) | 73,000<br>nc | 1,200<br>nc | 6,300<br>nc |
| 120127 | Anthracene | 43 (S)<br>sol | 4.4E+08<br>nc | 1.0E+05<br>nc |
| 103333 | Azobenzene | 46 (CC)<br>ca | DATA | 130<br>ca |
| 71432 | Benzene | 1,100<br>ca | 94<br>ca | 510<br>ca |
| 56553 | Benzo(a)anthracene | 9.4 (S)<br>sol | 2.2E+07<br>ca | 66<br>ca |
| 100447 | Benzyl chloride | 3,600<br>ca | 670<br>ca | 80<br>ca |
| 111444 | bis-2-Chloroethylether | 7,900<br>ca | 190<br>ca | 12<br>ca |
| 108861 | Bromobenzene | 66,000<br>nc | 5,600<br>nc | 6,100<br>nc |
| 75274 | Bromodichloromethane | 1,700<br>nc | 31 (M)<br>nc | 200<br>nc |
| 75252 | Bromoform | 2.0E+05<br>ca | 2,500<br>ca | 3,600<br>ca |
| 74839 | Bromomethane | 1,200<br>nc | 32 (M)<br>nc | 1,000<br>nc |
| 71363 | n-Butanol | 4.9E+07<br>nc | 7.0E+05<br>nc | 36,000<br>nc |
| 78933 | 2-Butanone (MEK) | 5.9E+07 (DD)<br>dev | 7.4E+05 (DD)<br>dev | 3.3E+05 (DD)<br>dev |

**Table 1**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **< 50,000 ft²** with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 123864 | n-Butyl acetate | 2.6E+06 nc | 38,000 nc | 41,000 nc |
| 75650 | t-Butyl alcohol | 8.7E+06 nc | 1.1E+05 nc | 7,400 nc |
| 104518 | n-Butylbenzene | 12,000 (S) sol | 20,000 nc | 20,000 nc |
| 135988 | sec-Butylbenzene | 18,000 (S) sol | 1.3E+05 (C) nc (49,000) | 41 nc |
| 98066 | t-Butylbenzene | 67 nc | 23 (M) nc | 41 nc |
| 79925 | Camphene | 920 nc | 490 nc | 8,200 nc |
| 75150 | Carbon disulfide | 46,000 nc | 1,800 nc | 72,000 nc |
| 56235 | Carbon tetrachloride | 440 ca | 17 (M) ca | 710 ca |
| 57749 | Chlordane | 56 (S) (EE) sol | 4.3E+05 (EE) st | 19 (EE) st |
| 108907 | Chlorobenzene | 27,000 nc | 2,900 nc | 5,100 nc |
| 75683 | 1-Chloro-1,1-difluoroethane | 8.7E+05 nc | 84,000 nc | 5.1E+06 nc |
| 75003 | Chloroethane | 3.2E+05 nc | 12,000 nc | 4.1E+05 nc |
| 110758 | 2-Chloroethyl vinyl ether | TX | TX | TX |
| 67663 | Chloroform | 610 ca | 15 (M) ca | 170 ca |
| 74873 | Chloromethane | 7,400 nc | 240 (M) nc | 9,200 nc |
| 91587 | beta-Chloronaphthalene | TX | TX | TX |
| 95578 | 2-Chlorophenol | 1.5E+06 (DD) dev | 2.8E+05 (DD) dev | 1,200 (DD) dev |
| 95498 | o-Chlorotoluene | 46,000 nc | 7,000 nc | 8,200 nc |
| 74908 | Cyanide, Hydrogen | 3,700 nc | 63 (M) nc | 82 nc |
| 110827 | Cyclohexane | 53,000 nc | 11,000 nc | 6.1E+05 nc |
| 108941 | Cyclohexanone | 2.5E+07 (S) sol | 2.4E+06 (C) nc (1.7E+06) | 72,000 nc |
| 72559 | 4-4`-DDE | 40 (S) sol | 2.2E+06 ca | 41 ca |
| 117840 | Di-n-octyl phthalate | 22 (S) (CC) sol | DATA | 48,000 nc |
| 123422 | Diacetone alcohol | 1.0E+09 (S) sol | 1.8E+08 (C) nc (3.5E+07) | 2.5E+05 nc |
| 132649 | Dibenzofuran | 3,100 (S) sol | 2.5E+08 nc | 410 nc |

**Table 1**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **< 50,000 ft²** with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 124481 | Dibromochloromethane | 4,400 ca | 55 (M) ca | 170 ca |
| 96128 | Dibromochloropropane | 4.2E-02 (M) (CC) ca | DATA | 0.71 ca |
| 74953 | Dibromomethane | 9,000 nc | 120 (M) nc | 410 nc |
| 95501 | 1,2-Dichlorobenzene | 1.6E+05 (S) sol | 52,000 nc | 31,000 nc |
| 541731 | 1,3-Dichlorobenzene | 2,700 nc | 360 nc | 310 nc |
| 106467 | 1,4-Dichlorobenzene | 9,800 ca | 1,300 ca | 1,000 ca |
| 75718 | Dichlorodifluoromethane | 1,400 nc | 440 nc | 34,000 nc |
| 75343 | 1,1-Dichloroethane | 5,300 ca | 150 ca | 2,500 ca |
| 107062 | 1,2-Dichloroethane | 1,600 ca | 46 (M) ca | 150 ca |
| 75354 | 1,1-Dichloroethylene | 8,300 nc | 430 nc | 20,000 nc |
| 156592 | cis-1,2-Dichloroethylene | 2,300 nc | 74 nc | 820 nc |
| 156605 | trans-1,2-Dichloroethylene | 9,800 nc | 420 nc | 8,200 nc |
| 78875 | 1,2-Dichloropropane | 2,100 nc | 74 nc | 410 nc |
| 542756 | 1,3-Dichloropropene | 4,200 (J) ca | 170 (J) ca | 1000 (J) ca |
| 60571 | Dieldrin | 200 (S) sol | 43,000 ca | 0.87 ca |
| 60297 | Diethyl ether | 9.0E+05 nc | 12,000 nc | 1.0E+05 nc |
| 108203 | Diisopropyl ether | 2.7E+05 (DD) dev | 4,700 (DD) dev | 47,000 (DD) dev |
| 108189 | Diisopropylamine | 2.8E+06 nc | 1.0E+05 nc | 20,000 nc |
| 127195 | N,N-Dimethylacetamide | 1.0E+09 (S) sol | 1.4E+08 (C) nc (3.9E+07) | 10,000 nc |
| 121697 | N,N-Dimethylaniline | 1.4E+05 ca | 6,600 ca | 330 ca |
| 68122 | Dimethylformamide | 1.0E+08 nc | 1.6E+06 nc | 720 nc |
| 123911 | 1,4-Dioxane | 1.5E+06 ca | 21,000 ca | 800 ca |
| 115297 | Endosulfan | TX | TX | TX |
| 106898 | Epichlorohydrin | 38,000 nc | 660 nc | 100 nc |
| 64175 | Ethanol (#) | 1.0E+09 (S) (EE) sol | 1.6E+07 (EE) st | 6.3E+05 (EE) st |

**Table 1**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **< 50,000 ft²** with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 141786 | Ethyl acetate | 6.4E+05 nc | 7,300 nc | 7,200 nc |
| 637923 | Ethyl-tert-butyl ether (ETBE) | 1,200 (CC) nc | DATA | 38,000 nc |
| 100414 | Ethylbenzene | 3,600 ca | 680 ca | 1,600 ca |
| 106934 | Ethylene dibromide | 250 ca | 4.2 (M) ca | 6.6 ca |
| 86737 | Fluorene | 1,700 (S) sol | 1.7E+07 nc | 14,000 nc |
| 50000 | Formaldehyde | 3.6E+06 ca | 73,000 ca | 310 ca |
| 64186 | Formic acid | 8.8E+05 nc | 16,000 (M) nc | 31 nc |
| 76448 | Heptachlor | 180 (S) sol | 2.0E+05 ca | 3.1 ca |
| 1024573 | Heptachlor epoxide | 0.40 (CC) ca | DATA | 1.5 ca |
| 142825 | n-Heptane | 3,400 (S) (GW) sol | 4,600 nc | 3.6E+05 nc |
| 87821 | Hexabromobenzene | TX | TX | TX |
| 118741 | Hexachlorobenzene (C-66) | 6.2 (S) sol | 240 (M) nc | 3.6 nc |
| 87683 | Hexachlorobutadiene (C-46) | 890 ca | 140 ca | 180 ca |
| 77474 | Hexachlorocyclopentadiene (C-56) | 43 nc | 11 (M) nc | 20 nc |
| 67721 | Hexachloroethane | 3,900 ca | 180 (M) ca | 400 ca |
| 110543 | n-Hexane | 2,000 (GW) nc | 890 nc | 72,000 nc |
| 591786 | 2-Hexanone | 4.9E+05 nc | 7,600 nc | 3,100 nc |
| 78831 | Isobutyl alcohol | 8.5E+07 (S) sol | 2.8E+06 nc | 1.5E+05 nc |
| 67630 | Isopropyl alcohol | 2.5E+07 nc | 3.5E+05 nc | 20,000 nc |
| 98828 | Isopropyl benzene | 810 ca | 210 (M) ca | 380 ca |
| 58899 | Lindane | TX | TX | TX |
| Varies | Mercury (Total) | 60 (S) sol | 790 nc | 31 nc |
| 74828 | Methane | 10,000 (AA) | DATA | 8.4E+06 (GG) |
| 67561 | Methanol | 1.0E+09 (S) (DD) sol | 3.3E+07 (DD) dev | 1.3E+06 (DD) dev |
| 109864 | 2-Methoxyethanol | 3.8E+06 nc | 53,000 nc | 110 nc |

**Table 1**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **< 50,000 ft²** with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 109024 | N-Methyl-morpholine | TX | TX | TX |
| 108101 | 4-Methyl-2-pentanone (MIBK) | 1.9E+07 (S) (DD)<br>sol | 2.9E+05 (DD)<br>dev | 2.0E+05 (DD)<br>dev |
| 1634044 | Methyl-tert-butyl ether (MTBE) | 3.2E+05<br>ca | 4,200<br>ca | 15,000<br>ca |
| 96377 | Methylcyclopentane | 2,500<br>nc | 1,000 (M)<br>nc | 72,000<br>nc |
| 75092 | Methylene chloride | 1.9E+05<br>nc | 4,600<br>nc | 61,000<br>nc |
| 91576 | 2-Methylnaphthalene | 25,000 (S)<br>sol | 60,000<br>nc | 1,000<br>nc |
| 2385855 | Mirex | TX | TX | TX |
| 91203 | Naphthalene | 6,200<br>ca | 3,800<br>ca | 120<br>ca |
| 98953 | Nitrobenzene | 69,000<br>ca | 9,600<br>ca | 100<br>ca |
| 88755 | 2-Nitrophenol | 1.4 (M) (CC)<br>nc | DATA | 5.1<br>nc |
| 608935 | Pentachlorobenzene | 0.36 (M) (CC)<br>nc | DATA | 10<br>nc |
| 82688 | Pentachloronitrobenzene | 170 (CC)<br>nc | DATA | 1,100<br>nc |
| 109660 | Pentane | 2,700 (GW)<br>nc | 1,300 (M)<br>nc | 1.0E+05<br>nc |
| 109682 | 2-Pentene | TX | TX | TX |
| 335671 | Perfluorooctanoic acid | TX | TX | TX |
| 85018 | Phenanthrene | 1,200 (S)<br>sol | 58,000<br>nc | 10<br>nc |
| 110894 | Piperidine | 1.0E+09 (S)<br>sol | 7.4E+07<br>nc | 7.2E+05<br>nc |
| 1336363 | Polychlorinated biphenyls (PCBs) | 1.9 (CC) (J)<br>ca | DATA | 40 (J)<br>ca |
| 79094 | Propionic acid | 5.5E+08<br>nc | 7.9E+06<br>nc | 31,000<br>nc |
| 71238 | Propyl alcohol | 6.7E+07 (DD)<br>dev | 9.7E+05 (DD)<br>dev | 49,000 (DD)<br>dev |
| 103651 | n-Propylbenzene (#) | 52,000 (S) (DD)<br>sol | 21,000 (DD)<br>dev | 33,000 (DD)<br>dev |
| 129000 | Pyrene | 140 (S)<br>sol | 8.8E+08<br>nc | 10,000<br>nc |
| 110861 | Pyridine | 3.0E+05<br>nc | 19,000<br>nc | 360<br>nc |
| 100425 | Styrene | 45,000<br>ca | 8,600<br>ca | 7,000<br>ca |
| 95943 | 1,2,4,5-Tetrachlorobenzene | 600 (S)<br>sol | 2,500<br>nc | 100<br>nc |

**Table 1**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **< 50,000 ft²** with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 630206 | 1,1,1,2-Tetrachloroethane | 5,700 ca | 180 ca | 540 ca |
| 79345 | 1,1,2,2-Tetrachloroethane | 4,100 ca | 150 ca | 69 ca |
| 127184 | Tetrachloroethylene | 3,400 (EE) st | 150 (EE) st | 2,700 (EE) st |
| 109999 | Tetrahydrofuran | 2.7E+07 nc | 4.5E+05 nc | 2.0E+05 nc |
| 632224 | 1,1,3,3-Tetramethylurea | 31,000 (CC) nc | DATA | 82 nc |
| 509148 | Tetranitromethane | 36 (M) ca | 4.3 (M) ca | 0.27 ca |
| 108883 | Toluene | 5.3E+05 (S) (EE) sol | 64,000 (EE) st | 2.5E+05 (EE) st |
| 2303175 | Triallate | 3,500 (DD) (CC) dev | DATA | 6,700 (DD) dev |
| 102829 | Tributylamine | 1.4E+05 (S) sol | 1.2E+05 nc | 720 nc |
| 87616 | 1,2,3-Trichlorobenzene | 18,000 (S) sol | 29,000 nc | 2,800 nc |
| 120821 | 1,2,4-Trichlorobenzene | 5,100 nc | 1,900 nc | 200 nc |
| 71556 | 1,1,1-Trichloroethane (#) | 2.1E+05 (EE) st | 7,500 (EE) st | 2.3E+05 (EE) st |
| 79005 | 1,1,2-Trichloroethane | 410 nc | 13 (M) nc | 20 nc |
| 79016 | Trichloroethylene | 210 (DD) dev | 8.0 (M) (DD) dev | 130 (DD) dev |
| 75694 | Trichlorofluoromethane | 6,000 nc | 670 nc | 45,000 nc |
| 96184 | 1,2,3-Trichloropropane | 1,800 nc | 91 (M) nc | 31 nc |
| 76131 | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.4E+05 nc | 30,000 nc | 1.9E+06 nc |
| 1582098 | Trifluralin | 180 (S) (CC) sol | DATA | 3.1E+05 nc |
| 540841 | 2,2,4-Trimethyl pentane | 2,400 (S) (GW) sol | 4,500 nc | 3.6E+05 nc |
| 107404 | 2,4,4-Trimethyl-2-pentene | TX | TX | TX |
| 526738 | 1,2,3-Trimethylbenzene | 41,000 (JT) nc | 9,600 (JT) nc | 6,100 (JT) nc |
| 95636 | 1,2,4-Trimethylbenzene | 22,000 (JT) nc | 5,200 (JT) nc | 6,100 (JT) nc |
| 108678 | 1,3,5-Trimethylbenzene | 16,000 (JT) nc | 3,600 (JT) nc | 6,100 (JT) nc |
| 126727 | tris(2,3-Dibromopropyl)phosphate | 2.5 (M) (CC) ca | DATA | 7.5 ca |
| 108054 | Vinyl acetate | 5.1E+05 nc | 5,700 nc | 20,000 nc |

**Table 1**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **< 50,000 ft$^2$** with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m$^3$) |
|---|---|---|---|---|
| 75014 | Vinyl chloride | 260<br>ca | 16 (M)<br>ca | 910<br>ca |
| 1330207 | Xylenes | 60,000 (J)<br>nc | 9,900 (J)<br>nc | 22,000 (J)<br>nc |

**Table 2**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **< 50,000 ft²** with a **basement**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 83329 | Acenaphthene | 3,900 (S)<br>sol | 4.8E+06<br>nc | 21,000<br>nc |
| 208968 | Acenaphthylene | 990 (CC)<br>nc | DATA | 21,000<br>nc |
| 75070 | Acetaldehyde | 45,000<br>nc | 800 (M)<br>nc | 920<br>nc |
| 64197 | Acetic acid | 6.7E+08<br>nc | 1.5E+07<br>nc | 26,000<br>nc |
| 67641 | Acetone (#) | 1.1E+08 (EE)<br>st | 2.1E+06 (EE)<br>st | 1.0E+06 (EE)<br>st |
| 75058 | Acetonitrile | 6.2E+05<br>nc | 15,000<br>nc | 6,100<br>nc |
| 98862 | Acetophenone | 6.1E+06 (S) (DD)<br>sol | 4.9E+06 (C) (DD) dev<br>(8.4E+05) | 1.1E+05 (DD)<br>dev |
| 107028 | Acrolein | 67<br>nc | 1.1 (M)<br>nc | 2.0<br>nc |
| 79107 | Acrylic acid | 2.8E+05<br>nc | 6,100<br>nc | 20<br>nc |
| 107131 | Acrylonitrile | 1,900<br>ca | 45 (M)<br>ca | 59<br>ca |
| 309002 | Aldrin | 17 (S)<br>sol | 20,000<br>ca | 0.81<br>ca |
| 7664417 | Ammonia (#) | 4.9E+06 (EE)<br>st | DATA | 40,000 (EE)<br>st |
| 994058 | t-Amyl methyl ether (TAME) | 33,000<br>nc | 800<br>nc | 6,300<br>nc |
| 120127 | Anthracene | 43 (S)<br>sol | 2.9E+08<br>nc | 1.0E+05<br>nc |
| 103333 | Azobenzene | 33 (CC)<br>ca | DATA | 130<br>ca |
| 71432 | Benzene | 510<br>ca | 63<br>ca | 510<br>ca |
| 56553 | Benzo(a)anthracene | 9.4 (S)<br>sol | 1.5E+07<br>ca | 66<br>ca |
| 100447 | Benzyl chloride | 1,600<br>ca | 450<br>ca | 80<br>ca |
| 111444 | bis-2-Chloroethylether | 3,300<br>ca | 130<br>ca | 12<br>ca |
| 108861 | Bromobenzene | 29,000<br>nc | 3,700<br>nc | 6,100<br>nc |
| 75274 | Bromodichloromethane | 760<br>nc | 21 (M)<br>nc | 200<br>nc |
| 75252 | Bromoform | 83,000<br>ca | 1,700<br>ca | 3,600<br>ca |
| 74839 | Bromomethane | 580<br>nc | 21 (M)<br>nc | 1,000<br>nc |
| 71363 | n-Butanol | 2.2E+07<br>nc | 4.7E+05<br>nc | 36,000<br>nc |
| 78933 | 2-Butanone (MEK) | 2.7E+07 (DD)<br>dev | 4.9E+05 (DD)<br>dev | 3.3E+05 (DD)<br>dev |

**Table 2**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **< 50,000 ft²** with a **basement**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 123864 | n-Butyl acetate | 1.2E+06 nc | 25,000 nc | 41,000 nc |
| 75650 | t-Butyl alcohol | 3.9E+06 nc | 76,000 nc | 7,400 nc |
| 104518 | n-Butylbenzene | 12,000 (S) sol | 13,000 nc | 20,000 nc |
| 135988 | sec-Butylbenzene | 18,000 (S) sol | 88,000 (C) nc (49,000) | 41 nc |
| 98066 | t-Butylbenzene | 29 nc | 15 (M) nc | 41 nc |
| 79925 | Camphene | 410 nc | 330 nc | 8,200 nc |
| 75150 | Carbon disulfide | 22,000 nc | 1,200 nc | 72,000 nc |
| 56235 | Carbon tetrachloride | 190 ca | 12 (M) ca | 710 ca |
| 57749 | Chlordane | 56 (S) (EE) sol | 2.9E+05 (EE) st | 19 (EE) st |
| 108907 | Chlorobenzene | 12,000 nc | 1,900 nc | 5,100 nc |
| 75683 | 1-Chloro-1,1-difluoroethane | 4.0E+05 nc | 56,000 nc | 5.1E+06 nc |
| 75003 | Chloroethane | 1.5E+05 nc | 7,800 nc | 4.1E+05 nc |
| 110758 | 2-Chloroethyl vinyl ether | TX | TX | TX |
| 67663 | Chloroform | 270 ca | 9.9 (M) ca | 170 ca |
| 74873 | Chloromethane | 3,500 nc | 160 (M) nc | 9,200 nc |
| 91587 | beta-Chloronaphthalene | TX | TX | TX |
| 95578 | 2-Chlorophenol | 6.3E+05 (DD) dev | 1.9E+05 (DD) dev | 1,200 (DD) dev |
| 95498 | o-Chlorotoluene | 20,000 nc | 4,700 nc | 8,200 nc |
| 74908 | Cyanide, Hydrogen | 1,900 nc | 42 (M) nc | 82 nc |
| 110827 | Cyclohexane | 24,000 nc | 7,400 nc | 6.1E+05 nc |
| 108941 | Cyclohexanone | 2.5E+07 (S) sol | 1.6E+06 nc | 72,000 nc |
| 72559 | 4-4`-DDE | 40 (S) sol | 1.5E+06 ca | 41 ca |
| 117840 | Di-n-octyl phthalate | 22 (S) (CC) sol | DATA | 48,000 nc |
| 123422 | Diacetone alcohol | 1.0E+09 (S) sol | 1.2E+08 (C) nc (3.5E+07) | 2.5E+05 nc |
| 132649 | Dibenzofuran | 3,100 (S) sol | 1.7E+08 nc | 410 nc |

**Table 2**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **< 50,000 ft²** with a **basement**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 124481 | Dibromochloromethane | 1,800 ca | 36 (M) ca | 170 ca |
| 96128 | Dibromochloropropane | 2.9E-02 (M) (CC) ca | DATA | 0.71 ca |
| 74953 | Dibromomethane | 3,900 nc | 83 (M) nc | 410 nc |
| 95501 | 1,2-Dichlorobenzene | 1.6E+05 (S) sol | 35,000 nc | 31,000 nc |
| 541731 | 1,3-Dichlorobenzene | 1,200 nc | 240 nc | 310 nc |
| 106467 | 1,4-Dichlorobenzene | 4,300 ca | 870 ca | 1,000 ca |
| 75718 | Dichlorodifluoromethane | 640 nc | 290 nc | 34,000 nc |
| 75343 | 1,1-Dichloroethane | 2,400 ca | 99 ca | 2,500 ca |
| 107062 | 1,2-Dichloroethane | 750 ca | 31 (M) ca | 150 ca |
| 75354 | 1,1-Dichloroethylene | 3,800 nc | 290 nc | 20,000 nc |
| 156592 | cis-1,2-Dichloroethylene | 1,100 nc | 49 (M) nc | 820 nc |
| 156605 | trans-1,2-Dichloroethylene | 4,500 nc | 280 nc | 8,200 nc |
| 78875 | 1,2-Dichloropropane | 950 nc | 49 (M) nc | 410 nc |
| 542756 | 1,3-Dichloropropene | 1,900 (J) ca | 120 (J) ca | 1000 (J) ca |
| 60571 | Dieldrin | 200 (S) sol | 29,000 ca | 0.87 ca |
| 60297 | Diethyl ether | 4.1E+05 nc | 8,300 nc | 1.0E+05 nc |
| 108203 | Diisopropyl ether | 1.2E+05 (DD) dev | 3,100 (DD) dev | 47,000 (DD) dev |
| 108189 | Diisopropylamine | 1.2E+06 nc | 69,000 nc | 20,000 nc |
| 127195 | N,N-Dimethylacetamide | 1.0E+09 (S) sol | 9.0E+07 (C) nc (3.9E+07) | 10,000 nc |
| 121697 | N,N-Dimethylaniline | 58,000 ca | 4,400 ca | 330 ca |
| 68122 | Dimethylformamide | 4.8E+07 nc | 1.1E+06 nc | 720 nc |
| 123911 | 1,4-Dioxane | 6.7E+05 ca | 14,000 ca | 800 ca |
| 115297 | Endosulfan | TX | TX | TX |
| 106898 | Epichlorohydrin | 17,000 nc | 440 nc | 100 nc |
| 64175 | Ethanol (#) | 5.0E+08 (EE) st | 1.1E+07 (EE) st | 6.3E+05 (EE) st |

**Table 2**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **< 50,000 ft²** with a **basement**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 141786 | Ethyl acetate | 2.9E+05 nc | 4,900 nc | 7,200 nc |
| 637923 | Ethyl-tert-butyl ether (ETBE) | 780 (CC) nc | DATA | 38,000 nc |
| 100414 | Ethylbenzene | 1,600 ca | 450 ca | 1,600 ca |
| 106934 | Ethylene dibromide | 110 ca | 2.8 (M) ca | 6.6 ca |
| 86737 | Fluorene | 1,700 (S) sol | 1.1E+07 nc | 14,000 nc |
| 50000 | Formaldehyde | 1.9E+06 ca | 49,000 ca | 310 ca |
| 64186 | Formic acid | 4.4E+05 nc | 10,000 (M) nc | 31 nc |
| 76448 | Heptachlor | 180 (S) sol | 1.4E+05 ca | 3.1 ca |
| 1024573 | Heptachlor epoxide | 0.28 (CC) ca | DATA | 1.5 ca |
| 142825 | n-Heptane | 3,400 (S) (GW) sol | 3,000 nc | 3.6E+05 nc |
| 87821 | Hexabromobenzene | TX | TX | TX |
| 118741 | Hexachlorobenzene (C-66) | 6.2 (S) sol | 160 (M) nc | 3.6 nc |
| 87683 | Hexachlorobutadiene (C-46) | 370 ca | 92 ca | 180 ca |
| 77474 | Hexachlorocyclopentadiene (C-56) | 18 (M) nc | 7.5 (M) nc | 20 nc |
| 67721 | Hexachloroethane | 1,600 ca | 120 (M) ca | 400 ca |
| 110543 | n-Hexane | 1,300 (GW) nc | 590 nc | 72,000 nc |
| 591786 | 2-Hexanone | 2.2E+05 nc | 5,000 nc | 3,100 nc |
| 78831 | Isobutyl alcohol | 8.5E+07 (S) sol | 1.8E+06 nc | 1.5E+05 nc |
| 67630 | Isopropyl alcohol | 1.1E+07 nc | 2.3E+05 nc | 20,000 nc |
| 98828 | Isopropyl benzene | 360 ca | 140 (M) ca | 380 ca |
| 58899 | Lindane | TX | TX | TX |
| Varies | Mercury (Total) | 33 nc | 520 nc | 31 nc |
| 74828 | Methane | 10,000 (AA) | DATA | 8.4E+06 (GG) |
| 67561 | Methanol | 9.5E+08 (DD) dev | 2.2E+07 (DD) dev | 1.3E+06 (DD) dev |
| 109864 | 2-Methoxyethanol | 1.7E+06 nc | 35,000 nc | 110 nc |

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| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 109024 | N-Methyl-morpholine | TX | TX | TX |
| 108101 | 4-Methyl-2-pentanone (MIBK) | 9.5E+06 (DD)<br>dev | 1.9E+05 (DD)<br>dev | 2.0E+05 (DD)<br>dev |
| 1634044 | Methyl-tert-butyl ether (MTBE) | 1.5E+05<br>ca | 2,800<br>ca | 15,000<br>ca |
| 96377 | Methylcyclopentane | 1,200<br>nc | 680 (M)<br>nc | 72,000<br>nc |
| 75092 | Methylene chloride | 88,000<br>nc | 3,000<br>nc | 61,000<br>nc |
| 91576 | 2-Methylnaphthalene | 25,000 (S)<br>sol | 40,000<br>nc | 1,000<br>nc |
| 2385855 | Mirex | TX | TX | TX |
| 91203 | Naphthalene | 2,700<br>ca | 2,500<br>ca | 120<br>ca |
| 98953 | Nitrobenzene | 29,000<br>ca | 6,400<br>ca | 100<br>ca |
| 88755 | 2-Nitrophenol | 1.0 (M) (CC)<br>nc | DATA | 5.1<br>nc |
| 608935 | Pentachlorobenzene | 0.25 (M) (CC)<br>nc | DATA | 10<br>nc |
| 82688 | Pentachloronitrobenzene | 120 (CC)<br>nc | DATA | 1,100<br>nc |
| 109660 | Pentane | 1,800 (GW)<br>nc | 830 (M)<br>nc | 1.0E+05<br>nc |
| 109682 | 2-Pentene | TX | TX | TX |
| 335671 | Perfluorooctanoic acid | TX | TX | TX |
| 85018 | Phenanthrene | 1,200 (S)<br>sol | 39,000<br>nc | 10<br>nc |
| 110894 | Piperidine | 6.6E+08<br>nc | 4.9E+07<br>nc | 7.2E+05<br>nc |
| 1336363 | Polychlorinated biphenyls (PCBs) | 1.3 (CC) (J)<br>ca | DATA | 40 (J)<br>ca |
| 79094 | Propionic acid | 2.5E+08<br>nc | 5.2E+06<br>nc | 31,000<br>nc |
| 71238 | Propyl alcohol | 3.1E+07 (DD)<br>dev | 6.5E+05 (DD)<br>dev | 49,000 (DD)<br>dev |
| 103651 | n-Propylbenzene (#) | 31,000 (DD)<br>dev | 14,000 (DD)<br>dev | 33,000 (DD)<br>dev |
| 129000 | Pyrene | 140 (S)<br>sol | 5.9E+08<br>nc | 10,000<br>nc |
| 110861 | Pyridine | 1.4E+05<br>nc | 13,000<br>nc | 360<br>nc |
| 100425 | Styrene | 20,000<br>ca | 5,800<br>ca | 7,000<br>ca |
| 95943 | 1,2,4,5-Tetrachlorobenzene | 600 (S)<br>sol | 1,600<br>nc | 100<br>nc |

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| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 630206 | 1,1,1,2-Tetrachloroethane | 2,400 ca | 120 ca | 540 ca |
| 79345 | 1,1,2,2-Tetrachloroethane | 1,800 ca | 100 ca | 69 ca |
| 127184 | Tetrachloroethylene | 1,500 (EE) st | 99 (EE) st | 2,700 (EE) st |
| 109999 | Tetrahydrofuran | 1.2E+07 nc | 3.0E+05 nc | 2.0E+05 nc |
| 632224 | 1,1,3,3-Tetramethylurea | 23,000 (CC) nc | DATA | 82 nc |
| 509148 | Tetranitromethane | 15 (M) ca | 2.9 (M) ca | 0.27 ca |
| 108883 | Toluene | 2.5E+05 (EE) st | 43,000 (EE) st | 2.5E+05 (EE) st |
| 2303175 | Triallate | 2,500 (DD) (CC) dev | DATA | 6,700 (DD) dev |
| 102829 | Tributylamine | 98,000 nc | 78,000 nc | 720 nc |
| 87616 | 1,2,3-Trichlorobenzene | 18,000 (S) sol | 20,000 nc | 2,800 nc |
| 120821 | 1,2,4-Trichlorobenzene | 2,200 nc | 1,200 nc | 200 nc |
| 71556 | 1,1,1-Trichloroethane (#) | 92,000 (EE) st | 5,000 (EE) st | 2.3E+05 (EE) st |
| 79005 | 1,1,2-Trichloroethane | 180 nc | 8.7 (M) nc | 20 nc |
| 79016 | Trichloroethylene | 93 (DD) dev | 5.3 (M) (DD) dev | 130 (DD) dev |
| 75694 | Trichlorofluoromethane | 2,700 nc | 450 nc | 45,000 nc |
| 96184 | 1,2,3-Trichloropropane | 790 nc | 61 (M) nc | 31 nc |
| 76131 | 1,1,2-Trichloro-1,2,2-trifluoroethane | 58,000 nc | 20,000 nc | 1.9E+06 nc |
| 1582098 | Trifluralin | 180 (S) (CC) sol | DATA | 3.1E+05 nc |
| 540841 | 2,2,4-Trimethyl pentane | 2,400 (S) (GW) sol | 3,000 nc | 3.6E+05 nc |
| 107404 | 2,4,4-Trimethyl-2-pentene | TX | TX | TX |
| 526738 | 1,2,3-Trimethylbenzene | 18,000 (JT) nc | 6,400 (JT) nc | 6,100 (JT) nc |
| 95636 | 1,2,4-Trimethylbenzene | 9,900 (JT) nc | 3,500 (JT) nc | 6,100 (JT) nc |
| 108678 | 1,3,5-Trimethylbenzene | 7,000 (JT) nc | 2,400 (JT) nc | 6,100 (JT) nc |
| 126727 | tris(2,3-Dibromopropyl)phosphate | 1.7 (M) (CC) ca | DATA | 7.5 ca |
| 108054 | Vinyl acetate | 2.3E+05 nc | 3,800 (M) nc | 20,000 nc |

**Table 2**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **< 50,000 ft$^2$** with a **basement**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m$^3$) |
|---|---|---|---|---|
| 75014 | Vinyl chloride | 120<br>ca | 11 (M)<br>ca | 910<br>ca |
| 1330207 | Xylenes | 27,000 (J)<br>nc | 6,600 (J)<br>nc | 22,000 (J)<br>nc |

**Table 3**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **> 50,000 ft²** with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 83329 | Acenaphthene | 3,900 (S)<br>sol | 1.1E+07<br>nc | 21,000<br>nc |
| 208968 | Acenaphthylene | 2,000 (CC)<br>nc | DATA | 21,000<br>nc |
| 75070 | Acetaldehyde | 1.4E+05<br>nc | 1,800 (M)<br>nc | 920<br>nc |
| 64197 | Acetic acid | 1.0E+09 (S)<br>sol | 3.4E+07<br>nc | 26,000<br>nc |
| 67641 | Acetone (#) | 3.6E+08 (EE)<br>st | 4.6E+06 (EE)<br>st | 1.0E+06 (EE)<br>st |
| 75058 | Acetonitrile | 1.9E+06<br>nc | 33,000<br>nc | 6,100<br>nc |
| 98862 | Acetophenone | 6.1E+06 (S) (DD)<br>sol | 1.1E+07 (C) (DD) dev<br>(8.4E+05) | 1.1E+05 (DD)<br>dev |
| 107028 | Acrolein | 210<br>nc | 2.4 (M)<br>nc | 2.0<br>nc |
| 79107 | Acrylic acid | 9.2E+05<br>nc | 14,000<br>nc | 20<br>nc |
| 107131 | Acrylonitrile | 6,200<br>ca | 100<br>ca | 59<br>ca |
| 309002 | Aldrin | 17 (S)<br>sol | 44,000<br>ca | 0.81<br>ca |
| 7664417 | Ammonia (#) | 1.4E+07 (EE)<br>st | DATA | 40,000 (EE)<br>st |
| 994058 | t-Amyl methyl ether (TAME) | 1.1E+05<br>nc | 1,800<br>nc | 6,300<br>nc |
| 120127 | Anthracene | 43 (S)<br>sol | 6.6E+08<br>nc | 1.0E+05<br>nc |
| 103333 | Azobenzene | 66 (CC)<br>ca | DATA | 130<br>ca |
| 71432 | Benzene | 1,700<br>ca | 140<br>ca | 510<br>ca |
| 56553 | Benzo(a)anthracene | 9.4 (S)<br>sol | 3.3E+07<br>ca | 66<br>ca |
| 100447 | Benzyl chloride | 5,400<br>ca | 1,000<br>ca | 80<br>ca |
| 111444 | bis-2-Chloroethylether | 12,000<br>ca | 290<br>ca | 12<br>ca |
| 108861 | Bromobenzene | 99,000<br>nc | 8,300<br>nc | 6,100<br>nc |
| 75274 | Bromodichloromethane | 2,600<br>nc | 47 (M)<br>nc | 200<br>nc |
| 75252 | Bromoform | 3.0E+05<br>ca | 3,800<br>ca | 3,600<br>ca |
| 74839 | Bromomethane | 1,900<br>nc | 47 (M)<br>nc | 1,000<br>nc |
| 71363 | n-Butanol | 6.3E+07 (S)<br>sol | 1.1E+06<br>nc | 36,000<br>nc |
| 78933 | 2-Butanone (MEK) | 8.8E+07 (DD)<br>dev | 1.1E+06 (DD)<br>dev | 3.3E+05 (DD)<br>dev |

**Table 3**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **> 50,000 ft²** with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 123864 | n-Butyl acetate | 3.9E+06 nc | 57,000 nc | 41,000 nc |
| 75650 | t-Butyl alcohol | 1.3E+07 nc | 1.7E+05 nc | 7,400 nc |
| 104518 | n-Butylbenzene | 12,000 (S) sol | 29,000 nc | 20,000 nc |
| 135988 | sec-Butylbenzene | 18,000 (S) sol | 2.0E+05 (C) nc (49,000) | 41 nc |
| 98066 | t-Butylbenzene | 100 nc | 34 (M) nc | 41 nc |
| 79925 | Camphene | 1,400 nc | 740 nc | 8,200 nc |
| 75150 | Carbon disulfide | 70,000 nc | 2,700 nc | 72,000 nc |
| 56235 | Carbon tetrachloride | 650 ca | 26 (M) ca | 710 ca |
| 57749 | Chlordane | 56 (S) (EE) sol | 6.5E+05 (EE) st | 19 (EE) st |
| 108907 | Chlorobenzene | 41,000 nc | 4,300 nc | 5,100 nc |
| 75683 | 1-Chloro-1,1-difluoroethane | 1.3E+06 nc | 1.3E+05 nc | 5.1E+06 nc |
| 75003 | Chloroethane | 4.9E+05 nc | 17,000 nc | 4.1E+05 nc |
| 110758 | 2-Chloroethyl vinyl ether | TX | TX | TX |
| 67663 | Chloroform | 910 ca | 22 (M) ca | 170 ca |
| 74873 | Chloromethane | 11,000 nc | 370 nc | 9,200 nc |
| 91587 | beta-Chloronaphthalene | TX | TX | TX |
| 95578 | 2-Chlorophenol | 2.3E+06 (DD) dev | 4.2E+05 (DD) dev | 1,200 (DD) dev |
| 95498 | o-Chlorotoluene | 69,000 nc | 11,000 nc | 8,200 nc |
| 74908 | Cyanide, Hydrogen | 5,500 nc | 95 (M) nc | 82 nc |
| 110827 | Cyclohexane | 55,000 (S) sol | 17,000 nc | 6.1E+05 nc |
| 108941 | Cyclohexanone | 2.5E+07 (S) sol | 3.6E+06 (C) nc (1.7E+06) | 72,000 nc |
| 72559 | 4-4`-DDE | 40 (S) sol | 3.3E+06 ca | 41 ca |
| 117840 | Di-n-octyl phthalate | 22 (S) (CC) sol | DATA | 48,000 nc |
| 123422 | Diacetone alcohol | 1.0E+09 (S) sol | 2.8E+08 (C) nc (3.5E+07) | 2.5E+05 nc |
| 132649 | Dibenzofuran | 3,100 (S) sol | 3.8E+08 nc | 410 nc |

**Table 3**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **> 50,000 ft²** with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 124481 | Dibromochloromethane | 6,600 ca | 82 (M) ca | 170 ca |
| 96128 | Dibromochloropropane | 6.1E-02 (M) (CC) ca | DATA | 0.71 ca |
| 74953 | Dibromomethane | 13,000 nc | 190 (M) nc | 410 nc |
| 95501 | 1,2-Dichlorobenzene | 1.6E+05 (S) sol | 78,000 nc | 31,000 nc |
| 541731 | 1,3-Dichlorobenzene | 4,000 nc | 540 nc | 310 nc |
| 106467 | 1,4-Dichlorobenzene | 15,000 ca | 2,000 ca | 1,000 ca |
| 75718 | Dichlorodifluoromethane | 2,100 nc | 660 nc | 34,000 nc |
| 75343 | 1,1-Dichloroethane | 8,000 ca | 220 ca | 2,500 ca |
| 107062 | 1,2-Dichloroethane | 2,500 ca | 69 ca | 150 ca |
| 75354 | 1,1-Dichloroethylene | 13,000 nc | 650 nc | 20,000 nc |
| 156592 | cis-1,2-Dichloroethylene | 3,500 nc | 110 nc | 820 nc |
| 156605 | trans-1,2-Dichloroethylene | 15,000 nc | 630 nc | 8,200 nc |
| 78875 | 1,2-Dichloropropane | 3,200 nc | 110 nc | 410 nc |
| 542756 | 1,3-Dichloropropene | 6,300 (J) ca | 260 (J) ca | 1000 (J) ca |
| 60571 | Dieldrin | 200 (S) sol | 65,000 ca | 0.87 ca |
| 60297 | Diethyl ether | 1.4E+06 nc | 19,000 nc | 1.0E+05 nc |
| 108203 | Diisopropyl ether | 4.1E+05 (DD) dev | 7,000 (DD) dev | 47,000 (DD) dev |
| 108189 | Diisopropylamine | 4.3E+06 nc | 1.5E+05 nc | 20,000 nc |
| 127195 | N,N-Dimethylacetamide | 1.0E+09 (S) sol | 2.0E+08 (C) nc (3.9E+07) | 10,000 nc |
| 121697 | N,N-Dimethylaniline | 2.1E+05 ca | 9,900 ca | 330 ca |
| 68122 | Dimethylformamide | 1.5E+08 nc | 2.4E+06 nc | 720 nc |
| 123911 | 1,4-Dioxane | 2.3E+06 ca | 31,000 ca | 800 ca |
| 115297 | Endosulfan | TX | TX | TX |
| 106898 | Epichlorohydrin | 57,000 nc | 990 nc | 100 nc |
| 64175 | Ethanol (#) | 1.0E+09 (S) (EE) sol | 2.4E+07 (EE) st | 6.3E+05 (EE) st |

**Table 3**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **> 50,000 ft²** with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 141786 | Ethyl acetate | 9.5E+05 nc | 11,000 nc | 7,200 nc |
| 637923 | Ethyl-tert-butyl ether (ETBE) | 1,700 (CC) nc | DATA | 38,000 nc |
| 100414 | Ethylbenzene | 5,400 ca | 1,000 ca | 1,600 ca |
| 106934 | Ethylene dibromide | 370 ca | 6.2 (M) ca | 6.6 ca |
| 86737 | Fluorene | 1,700 (S) sol | 2.5E+07 nc | 14,000 nc |
| 50000 | Formaldehyde | 5.4E+06 ca | 1.1E+05 ca | 310 ca |
| 64186 | Formic acid | 1.3E+06 nc | 24,000 nc | 31 nc |
| 76448 | Heptachlor | 180 (S) sol | 3.1E+05 ca | 3.1 ca |
| 1024573 | Heptachlor epoxide | 0.57 (CC) ca | DATA | 1.5 ca |
| 142825 | n-Heptane | 3,400 (S) sol | 6,800 nc | 3.6E+05 nc |
| 87821 | Hexabromobenzene | TX | TX | TX |
| 118741 | Hexachlorobenzene (C-66) | 6.2 (S) sol | 360 nc | 3.6 nc |
| 87683 | Hexachlorobutadiene (C-46) | 1,300 ca | 210 ca | 180 ca |
| 77474 | Hexachlorocyclopentadiene (C-56) | 65 nc | 17 (M) nc | 20 nc |
| 67721 | Hexachloroethane | 5,900 ca | 270 (M) ca | 400 ca |
| 110543 | n-Hexane | 3,000 (GW) nc | 1,300 nc | 72,000 nc |
| 591786 | 2-Hexanone | 7.4E+05 nc | 11,000 nc | 3,100 nc |
| 78831 | Isobutyl alcohol | 8.5E+07 (S) sol | 4.2E+06 (C) nc (3.3E+06) | 1.5E+05 nc |
| 67630 | Isopropyl alcohol | 3.7E+07 nc | 5.2E+05 nc | 20,000 nc |
| 98828 | Isopropyl benzene | 1,200 ca | 320 ca | 380 ca |
| 58899 | Lindane | TX | TX | TX |
| Varies | Mercury (Total) | 60 (S) sol | 1,200 nc | 31 nc |
| 74828 | Methane | 10,000 (AA) | DATA | 8.4E+06 (GG) |
| 67561 | Methanol | 1.0E+09 (S) (DD) sol | 5.0E+07 (C) (DD) dev (3.5E+07) | 1.3E+06 (DD) dev |
| 109864 | 2-Methoxyethanol | 5.7E+06 nc | 79,000 nc | 110 nc |

**Table 3**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **> 50,000 ft²** with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 109024 | N-Methyl-morpholine | TX | TX | TX |
| 108101 | 4-Methyl-2-pentanone (MIBK) | 1.9E+07 (S) (DD)<br>sol | 4.4E+05 (DD)<br>dev | 2.0E+05 (DD)<br>dev |
| 1634044 | Methyl-tert-butyl ether (MTBE) | 4.9E+05<br>ca | 6,300<br>ca | 15,000<br>ca |
| 96377 | Methylcyclopentane | 3,800<br>nc | 1,500 (M)<br>nc | 72,000<br>nc |
| 75092 | Methylene chloride | 2.8E+05<br>nc | 6,900<br>nc | 61,000<br>nc |
| 91576 | 2-Methylnaphthalene | 25,000 (S)<br>sol | 90,000<br>nc | 1,000<br>nc |
| 2385855 | Mirex | TX | TX | TX |
| 91203 | Naphthalene | 9,300<br>ca | 5,700<br>ca | 120<br>ca |
| 98953 | Nitrobenzene | 1.0E+05<br>ca | 14,000<br>ca | 100<br>ca |
| 88755 | 2-Nitrophenol | 2.0 (M) (CC)<br>nc | DATA | 5.1<br>nc |
| 608935 | Pentachlorobenzene | 0.54 (M) (CC)<br>nc | DATA | 10<br>nc |
| 82688 | Pentachloronitrobenzene | 250 (CC)<br>nc | DATA | 1,100<br>nc |
| 109660 | Pentane | 4,100 (GW)<br>nc | 1,900 (M)<br>nc | 1.0E+05<br>nc |
| 109682 | 2-Pentene | TX | TX | TX |
| 335671 | Perfluorooctanoic acid | TX | TX | TX |
| 85018 | Phenanthrene | 1,200 (S)<br>sol | 88,000<br>nc | 10<br>nc |
| 110894 | Piperidine | 1.0E+09 (S)<br>sol | 1.1E+08<br>nc | 7.2E+05<br>nc |
| 1336363 | Polychlorinated biphenyls (PCBs) | 2.9 (CC) (J)<br>ca | DATA | 40 (J)<br>ca |
| 79094 | Propionic acid | 8.3E+08<br>nc | 1.2E+07<br>nc | 31,000<br>nc |
| 71238 | Propyl alcohol | 1.0E+08 (DD)<br>dev | 1.5E+06 (DD)<br>dev | 49,000 (DD)<br>dev |
| 103651 | n-Propylbenzene (#) | 52,000 (S) (DD)<br>sol | 32,000 (DD)<br>dev | 33,000 (DD)<br>dev |
| 129000 | Pyrene | 140 (S)<br>sol | 1.3E+09<br>nc | 10,000<br>nc |
| 110861 | Pyridine | 4.6E+05<br>nc | 29,000<br>nc | 360<br>nc |
| 100425 | Styrene | 67,000<br>ca | 13,000<br>ca | 7,000<br>ca |
| 95943 | 1,2,4,5-Tetrachlorobenzene | 600 (S)<br>sol | 3,700<br>nc | 100<br>nc |

**Table 3**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **> 50,000 ft²** with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 630206 | 1,1,1,2-Tetrachloroethane | 8,500 ca | 270 ca | 540 ca |
| 79345 | 1,1,2,2-Tetrachloroethane | 6,200 ca | 230 ca | 69 ca |
| 127184 | Tetrachloroethylene | 5,000 (EE) st | 220 (EE) st | 2,700 (EE) st |
| 109999 | Tetrahydrofuran | 4.1E+07 nc | 6.7E+05 nc | 2.0E+05 nc |
| 632224 | 1,1,3,3-Tetramethylurea | 43,000 (CC) nc | DATA | 82 nc |
| 509148 | Tetranitromethane | 54 (M) ca | 6.5 (M) ca | 0.27 ca |
| 108883 | Toluene | 5.3E+05 (S) (EE) sol | 96,000 (EE) st | 2.5E+05 (EE) st |
| 2303175 | Triallate | 4,000 (S) (DD) (CC) sol | DATA | 6,700 (DD) dev |
| 102829 | Tributylamine | 1.4E+05 (S) sol | 1.8E+05 nc | 720 nc |
| 87616 | 1,2,3-Trichlorobenzene | 18,000 (S) sol | 44,000 nc | 2,800 nc |
| 120821 | 1,2,4-Trichlorobenzene | 7,700 nc | 2,800 nc | 200 nc |
| 71556 | 1,1,1-Trichloroethane (#) | 3.1E+05 (EE) st | 11,000 (EE) st | 2.3E+05 (EE) st |
| 79005 | 1,1,2-Trichloroethane | 620 nc | 20 (M) nc | 20 nc |
| 79016 | Trichloroethylene | 310 (DD) dev | 12 (M) (DD) dev | 130 (DD) dev |
| 75694 | Trichlorofluoromethane | 9,000 nc | 1,000 nc | 45,000 nc |
| 96184 | 1,2,3-Trichloropropane | 2,700 nc | 140 nc | 31 nc |
| 76131 | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.7E+05 (S) sol | 45,000 nc | 1.9E+06 nc |
| 1582098 | Trifluralin | 180 (S) (CC) sol | DATA | 3.1E+05 nc |
| 540841 | 2,2,4-Trimethyl pentane | 2,400 (S) sol | 6,700 nc | 3.6E+05 nc |
| 107404 | 2,4,4-Trimethyl-2-pentene | TX | TX | TX |
| 526738 | 1,2,3-Trimethylbenzene | 61,000 (JT) nc | 14,000 (JT) nc | 6,100 (JT) nc |
| 95636 | 1,2,4-Trimethylbenzene | 34,000 (JT) nc | 7,800 (JT) nc | 6,100 (JT) nc |
| 108678 | 1,3,5-Trimethylbenzene | 24,000 (JT) nc | 5,400 (JT) nc | 6,100 (JT) nc |
| 126727 | tris(2,3-Dibromopropyl)phosphate | 3.6 (M) (CC) ca | DATA | 7.5 ca |
| 108054 | Vinyl acetate | 7.7E+05 nc | 8,600 nc | 20,000 nc |

**Table 3**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **> 50,000 ft$^2$** with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m$^3$) |
|---|---|---|---|---|
| 75014 | Vinyl chloride | 390<br>ca | 24 (M)<br>ca | 910<br>ca |
| 1330207 | Xylenes | 91,000 (J)<br>nc | 15,000 (J)<br>nc | 22,000 (J)<br>nc |

**Table 4**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **> 50,000 ft²** with a **basement**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 83329 | Acenaphthene | 3,900 (S)<br>sol | 7.2E+06<br>nc | 21,000<br>nc |
| 208968 | Acenaphthylene | 1,400 (CC)<br>nc | DATA | 21,000<br>nc |
| 75070 | Acetaldehyde | 68,000<br>nc | 1,200 (M)<br>nc | 920<br>nc |
| 64197 | Acetic acid | 1.0E+09 (S)<br>sol | 2.3E+07<br>nc | 26,000<br>nc |
| 67641 | Acetone (#) | 1.6E+08 (EE)<br>st | 3.1E+06 (EE)<br>st | 1.0E+06 (EE)<br>st |
| 75058 | Acetonitrile | 9.2E+05<br>nc | 22,000<br>nc | 6,100<br>nc |
| 98862 | Acetophenone | 6.1E+06 (S) (DD)<br>sol | 7.4E+06 (C) (DD) dev<br>(8.4E+05) | 1.1E+05 (DD)<br>dev |
| 107028 | Acrolein | 100<br>nc | 1.6 (M)<br>nc | 2.0<br>nc |
| 79107 | Acrylic acid | 4.2E+05<br>nc | 9,100<br>nc | 20<br>nc |
| 107131 | Acrylonitrile | 2,900<br>ca | 67 (M)<br>ca | 59<br>ca |
| 309002 | Aldrin | 17 (S)<br>sol | 29,000<br>ca | 0.81<br>ca |
| 7664417 | Ammonia (#) | 7.4E+06 (EE)<br>st | DATA | 40,000 (EE)<br>st |
| 994058 | t-Amyl methyl ether (TAME) | 49,000<br>nc | 1,200<br>nc | 6,300<br>nc |
| 120127 | Anthracene | 43 (S)<br>sol | 4.4E+08<br>nc | 1.0E+05<br>nc |
| 103333 | Azobenzene | 46 (CC)<br>ca | DATA | 130<br>ca |
| 71432 | Benzene | 760<br>ca | 94<br>ca | 510<br>ca |
| 56553 | Benzo(a)anthracene | 9.4 (S)<br>sol | 2.2E+07<br>ca | 66<br>ca |
| 100447 | Benzyl chloride | 2,400<br>ca | 670<br>ca | 80<br>ca |
| 111444 | bis-2-Chloroethylether | 4,900<br>ca | 190<br>ca | 12<br>ca |
| 108861 | Bromobenzene | 43,000<br>nc | 5,600<br>nc | 6,100<br>nc |
| 75274 | Bromodichloromethane | 1,100<br>nc | 31 (M)<br>nc | 200<br>nc |
| 75252 | Bromoform | 1.2E+05<br>ca | 2,500<br>ca | 3,600<br>ca |
| 74839 | Bromomethane | 860<br>nc | 32 (M)<br>nc | 1,000<br>nc |
| 71363 | n-Butanol | 3.3E+07<br>nc | 7.0E+05<br>nc | 36,000<br>nc |
| 78933 | 2-Butanone (MEK) | 4.0E+07 (DD)<br>dev | 7.4E+05 (DD)<br>dev | 3.3E+05 (DD)<br>dev |

**Table 4**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **> 50,000 ft²** with a **basement**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 123864 | n-Butyl acetate | 1.7E+06 nc | 38,000 nc | 41,000 nc |
| 75650 | t-Butyl alcohol | 5.8E+06 nc | 1.1E+05 nc | 7,400 nc |
| 104518 | n-Butylbenzene | 12,000 (S) sol | 20,000 nc | 20,000 nc |
| 135988 | sec-Butylbenzene | 18,000 (S) sol | 1.3E+05 (C) nc (49,000) | 41 nc |
| 98066 | t-Butylbenzene | 44 nc | 23 (M) nc | 41 nc |
| 79925 | Camphene | 620 nc | 490 nc | 8,200 nc |
| 75150 | Carbon disulfide | 33,000 nc | 1,800 nc | 72,000 nc |
| 56235 | Carbon tetrachloride | 290 ca | 17 (M) ca | 710 ca |
| 57749 | Chlordane | 56 (S) (EE) sol | 4.3E+05 (EE) st | 19 (EE) st |
| 108907 | Chlorobenzene | 18,000 nc | 2,900 nc | 5,100 nc |
| 75683 | 1-Chloro-1,1-difluoroethane | 5.9E+05 nc | 84,000 nc | 5.1E+06 nc |
| 75003 | Chloroethane | 2.3E+05 nc | 12,000 nc | 4.1E+05 nc |
| 110758 | 2-Chloroethyl vinyl ether | TX | TX | TX |
| 67663 | Chloroform | 410 ca | 15 (M) ca | 170 ca |
| 74873 | Chloromethane | 5,300 nc | 240 (M) nc | 9,200 nc |
| 91587 | beta-Chloronaphthalene | TX | TX | TX |
| 95578 | 2-Chlorophenol | 9.5E+05 (DD) dev | 2.8E+05 (DD) dev | 1,200 (DD) dev |
| 95498 | o-Chlorotoluene | 31,000 nc | 7,000 nc | 8,200 nc |
| 74908 | Cyanide, Hydrogen | 2,800 nc | 63 (M) nc | 82 nc |
| 110827 | Cyclohexane | 36,000 nc | 11,000 nc | 6.1E+05 nc |
| 108941 | Cyclohexanone | 2.5E+07 (S) sol | 2.4E+06 (C) nc (1.7E+06) | 72,000 nc |
| 72559 | 4-4`-DDE | 40 (S) sol | 2.2E+06 ca | 41 ca |
| 117840 | Di-n-octyl phthalate | 22 (S) (CC) sol | DATA | 48,000 nc |
| 123422 | Diacetone alcohol | 1.0E+09 (S) sol | 1.8E+08 (C) nc (3.5E+07) | 2.5E+05 nc |
| 132649 | Dibenzofuran | 3,100 (S) sol | 2.5E+08 nc | 410 nc |

**Table 4**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **> 50,000 ft²** with a **basement**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 124481 | Dibromochloromethane | 2,800 ca | 54 (M) ca | 170 ca |
| 96128 | Dibromochloropropane | 4.2E-02 (M) (CC) ca | DATA | 0.71 ca |
| 74953 | Dibromomethane | 5,900 nc | 120 (M) nc | 410 nc |
| 95501 | 1,2-Dichlorobenzene | 1.6E+05 (S) sol | 52,000 nc | 31,000 nc |
| 541731 | 1,3-Dichlorobenzene | 1,700 nc | 360 nc | 310 nc |
| 106467 | 1,4-Dichlorobenzene | 6,400 ca | 1,300 ca | 1,000 ca |
| 75718 | Dichlorodifluoromethane | 960 nc | 440 nc | 34,000 nc |
| 75343 | 1,1-Dichloroethane | 3,600 ca | 150 ca | 2,500 ca |
| 107062 | 1,2-Dichloroethane | 1,100 ca | 46 (M) ca | 150 ca |
| 75354 | 1,1-Dichloroethylene | 5,700 nc | 430 nc | 20,000 nc |
| 156592 | cis-1,2-Dichloroethylene | 1,600 nc | 74 nc | 820 nc |
| 156605 | trans-1,2-Dichloroethylene | 6,700 nc | 420 nc | 8,200 nc |
| 78875 | 1,2-Dichloropropane | 1,400 nc | 74 nc | 410 nc |
| 542756 | 1,3-Dichloropropene | 2,800 (J) ca | 170 (J) ca | 1000 (J) ca |
| 60571 | Dieldrin | 200 (S) sol | 43,000 ca | 0.87 ca |
| 60297 | Diethyl ether | 6.2E+05 nc | 12,000 nc | 1.0E+05 nc |
| 108203 | Diisopropyl ether | 1.8E+05 (DD) dev | 4,700 (DD) dev | 47,000 (DD) dev |
| 108189 | Diisopropylamine | 1.9E+06 nc | 1.0E+05 nc | 20,000 nc |
| 127195 | N,N-Dimethylacetamide | 1.0E+09 (S) sol | 1.4E+08 (C) nc (3.9E+07) | 10,000 nc |
| 121697 | N,N-Dimethylaniline | 88,000 ca | 6,600 ca | 330 ca |
| 68122 | Dimethylformamide | 7.2E+07 nc | 1.6E+06 nc | 720 nc |
| 123911 | 1,4-Dioxane | 1.0E+06 ca | 21,000 ca | 800 ca |
| 115297 | Endosulfan | TX | TX | TX |
| 106898 | Epichlorohydrin | 26,000 nc | 660 nc | 100 nc |
| 64175 | Ethanol (#) | 7.4E+08 (EE) st | 1.6E+07 (EE) st | 6.3E+05 (EE) st |

**Table 4**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **> 50,000 ft²** with a **basement**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 141786 | Ethyl acetate | 4.3E+05 nc | 7,300 nc | 7,200 nc |
| 637923 | Ethyl-tert-butyl ether (ETBE) | 1,200 (CC) nc | DATA | 38,000 nc |
| 100414 | Ethylbenzene | 2,400 ca | 680 ca | 1,600 ca |
| 106934 | Ethylene dibromide | 160 ca | 4.2 (M) ca | 6.6 ca |
| 86737 | Fluorene | 1,700 (S) sol | 1.7E+07 nc | 14,000 nc |
| 50000 | Formaldehyde | 2.8E+06 ca | 73,000 ca | 310 ca |
| 64186 | Formic acid | 6.5E+05 nc | 16,000 (M) nc | 31 nc |
| 76448 | Heptachlor | 180 (S) sol | 2.0E+05 ca | 3.1 ca |
| 1024573 | Heptachlor epoxide | 0.40 (CC) ca | DATA | 1.5 ca |
| 142825 | n-Heptane | 3,400 (S) (GW) sol | 4,500 nc | 3.6E+05 nc |
| 87821 | Hexabromobenzene | TX | TX | TX |
| 118741 | Hexachlorobenzene (C-66) | 6.2 (S) sol | 240 (M) nc | 3.6 nc |
| 87683 | Hexachlorobutadiene (C-46) | 550 ca | 140 ca | 180 ca |
| 77474 | Hexachlorocyclopentadiene (C-56) | 27 nc | 11 (M) nc | 20 nc |
| 67721 | Hexachloroethane | 2,500 ca | 180 (M) ca | 400 ca |
| 110543 | n-Hexane | 2,000 (GW) nc | 880 nc | 72,000 nc |
| 591786 | 2-Hexanone | 3.2E+05 nc | 7,600 nc | 3,100 nc |
| 78831 | Isobutyl alcohol | 8.5E+07 (S) sol | 2.8E+06 nc | 1.5E+05 nc |
| 67630 | Isopropyl alcohol | 1.7E+07 nc | 3.5E+05 nc | 20,000 nc |
| 98828 | Isopropyl benzene | 540 ca | 210 (M) ca | 380 ca |
| 58899 | Lindane | TX | TX | TX |
| Varies | Mercury (Total) | 49 nc | 780 nc | 31 nc |
| 74828 | Methane | 10,000 (AA) | DATA | 8.4E+06 (GG) |
| 67561 | Methanol | 1.0E+09 (S) (DD) sol | 3.3E+07 (DD) dev | 1.3E+06 (DD) dev |
| 109864 | 2-Methoxyethanol | 2.6E+06 nc | 53,000 nc | 110 nc |

**Table 4**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **> 50,000 ft²** with a **basement**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 109024 | N-Methyl-morpholine | TX | TX | TX |
| 108101 | 4-Methyl-2-pentanone (MIBK) | 1.4E+07 (DD)<br>dev | 2.9E+05 (DD)<br>dev | 2.0E+05 (DD)<br>dev |
| 1634044 | Methyl-tert-butyl ether (MTBE) | 2.2E+05<br>ca | 4,200<br>ca | 15,000<br>ca |
| 96377 | Methylcyclopentane | 1,700<br>nc | 1,000 (M)<br>nc | 72,000<br>nc |
| 75092 | Methylene chloride | 1.3E+05<br>nc | 4,600<br>nc | 61,000<br>nc |
| 91576 | 2-Methylnaphthalene | 25,000 (S)<br>sol | 60,000<br>nc | 1,000<br>nc |
| 2385855 | Mirex | TX | TX | TX |
| 91203 | Naphthalene | 4,100<br>ca | 3,800<br>ca | 120<br>ca |
| 98953 | Nitrobenzene | 44,000<br>ca | 9,600<br>ca | 100<br>ca |
| 88755 | 2-Nitrophenol | 1.4 (M) (CC)<br>nc | DATA | 5.1<br>nc |
| 608935 | Pentachlorobenzene | 0.36 (M) (CC)<br>nc | DATA | 10<br>nc |
| 82688 | Pentachloronitrobenzene | 170 (CC)<br>nc | DATA | 1,100<br>nc |
| 109660 | Pentane | 2,700 (GW)<br>nc | 1,300 (M)<br>nc | 1.0E+05<br>nc |
| 109682 | 2-Pentene | TX | TX | TX |
| 335671 | Perfluorooctanoic acid | TX | TX | TX |
| 85018 | Phenanthrene | 1,200 (S)<br>sol | 58,000<br>nc | 10<br>nc |
| 110894 | Piperidine | 9.9E+08<br>nc | 7.4E+07<br>nc | 7.2E+05<br>nc |
| 1336363 | Polychlorinated biphenyls (PCBs) | 1.9 (CC) (J)<br>ca | DATA | 40 (J)<br>ca |
| 79094 | Propionic acid | 3.7E+08<br>nc | 7.9E+06<br>nc | 31,000<br>nc |
| 71238 | Propyl alcohol | 4.6E+07 (DD)<br>dev | 9.7E+05 (DD)<br>dev | 49,000 (DD)<br>dev |
| 103651 | n-Propylbenzene (#) | 46,000 (DD)<br>dev | 21,000 (DD)<br>dev | 33,000 (DD)<br>dev |
| 129000 | Pyrene | 140 (S)<br>sol | 8.8E+08<br>nc | 10,000<br>nc |
| 110861 | Pyridine | 2.0E+05<br>nc | 19,000<br>nc | 360<br>nc |
| 100425 | Styrene | 30,000<br>ca | 8,600<br>ca | 7,000<br>ca |
| 95943 | 1,2,4,5-Tetrachlorobenzene | 600 (S)<br>sol | 2,500<br>nc | 100<br>nc |

**Table 4**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **> 50,000 ft²** with a **basement**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 630206 | 1,1,1,2-Tetrachloroethane | 3,700 ca | 180 ca | 540 ca |
| 79345 | 1,1,2,2-Tetrachloroethane | 2,600 ca | 150 ca | 69 ca |
| 127184 | Tetrachloroethylene | 2,200 (EE) st | 150 (EE) st | 2,700 (EE) st |
| 109999 | Tetrahydrofuran | 1.9E+07 nc | 4.5E+05 nc | 2.0E+05 nc |
| 632224 | 1,1,3,3-Tetramethylurea | 31,000 (CC) nc | DATA | 82 nc |
| 509148 | Tetranitromethane | 22 (M) ca | 4.3 (M) ca | 0.27 ca |
| 108883 | Toluene | 3.8E+05 (EE) st | 64,000 (EE) st | 2.5E+05 (EE) st |
| 2303175 | Triallate | 3,500 (DD) (CC) dev | DATA | 6,700 (DD) dev |
| 102829 | Tributylamine | 1.4E+05 (S) sol | 1.2E+05 nc | 720 nc |
| 87616 | 1,2,3-Trichlorobenzene | 18,000 (S) sol | 29,000 nc | 2,800 nc |
| 120821 | 1,2,4-Trichlorobenzene | 3,300 nc | 1,900 nc | 200 nc |
| 71556 | 1,1,1-Trichloroethane (#) | 1.4E+05 (EE) st | 7,500 (EE) st | 2.3E+05 (EE) st |
| 79005 | 1,1,2-Trichloroethane | 280 nc | 13 (M) nc | 20 nc |
| 79016 | Trichloroethylene | 140 (DD) dev | 8.0 (M) (DD) dev | 130 (DD) dev |
| 75694 | Trichlorofluoromethane | 4,000 nc | 670 nc | 45,000 nc |
| 96184 | 1,2,3-Trichloropropane | 1,200 nc | 91 (M) nc | 31 nc |
| 76131 | 1,1,2-Trichloro-1,2,2-trifluoroethane | 88,000 nc | 30,000 nc | 1.9E+06 nc |
| 1582098 | Trifluralin | 180 (S) (CC) sol | DATA | 3.1E+05 nc |
| 540841 | 2,2,4-Trimethyl pentane | 2,400 (S) (GW) sol | 4,400 nc | 3.6E+05 nc |
| 107404 | 2,4,4-Trimethyl-2-pentene | TX | TX | TX |
| 526738 | 1,2,3-Trimethylbenzene | 27,000 (JT) nc | 9,600 (JT) nc | 6,100 (JT) nc |
| 95636 | 1,2,4-Trimethylbenzene | 15,000 (JT) nc | 5,200 (JT) nc | 6,100 (JT) nc |
| 108678 | 1,3,5-Trimethylbenzene | 10,000 (JT) nc | 3,600 (JT) nc | 6,100 (JT) nc |
| 126727 | tris(2,3-Dibromopropyl)phosphate | 2.5 (M) (CC) ca | DATA | 7.5 ca |
| 108054 | Vinyl acetate | 3.5E+05 nc | 5,700 nc | 20,000 nc |

**Table 4**. Nonresidential Volatilization to Indoor Air Criteria (VIAC) **adjusted to a 12-hour workday exposure**. The following are **restricted** site-specific criteria that apply to a nonresidential structure **> 50,000 ft$^2$** with a **basement**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | 12-hour Groundwater Not In Contact (GWNIC) (µg/L) | 12-hour Soil (µg/kg) | 12-hour Soil Gas** (µg/m$^3$) |
|---|---|---|---|---|
| 75014 | Vinyl chloride | 180<br>ca | 16 (M)<br>ca | 910<br>ca |
| 1330207 | Xylenes | 41,000 (J)<br>nc | 9,900 (J)<br>nc | 22,000 (J)<br>nc |

**Table 5**. Residential Volatilization to Indoor Air Criteria (VIAC). The following are **restricted** site-specific criteria that apply to a residential house with a **slab-on-grade** the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | Groundwater Not In Contact (GWNIC) (µg/L) | Soil (µg/kg) | Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 83329 | Acenaphthene | 3,900 (S)<br>sol | 2.1E+05<br>nc | 7,300<br>nc |
| 208968 | Acenaphthylene | 65 (CC)<br>nc | DATA | 7,300<br>nc |
| 75070 | Acetaldehyde | 4,300<br>nc | 34 (M)<br>nc | 310<br>nc |
| 64197 | Acetic acid | 6.0E+07<br>nc | 6.5E+05<br>nc | 8,700<br>nc |
| 67641 | Acetone | 3.2E+07 (EE)<br>st | 2.6E+05 (EE)<br>st | 1.0E+06 (EE)<br>st |
| 75058 | Acetonitrile | 57,000<br>nc | 620 (M)<br>nc | 2,100<br>nc |
| 98862 | Acetophenone | 6.1E+06 (S) (DD)<br>sol | 6.2E+05 (DD)<br>dev | 1.1E+05 (DD)<br>dev |
| 107028 | Acrolein | 6.7 (M)<br>nc | 4.6E-02 (M)<br>nc | 0.70<br>nc |
| 79107 | Acrylic acid | 27,000<br>nc | 260<br>nc | 7.0<br>nc |
| 107131 | Acrylonitrile | 120<br>ca | 1.2 (M)<br>ca | 12<br>ca |
| 309002 | Aldrin | 17 (S)<br>sol | 530<br>ca | 0.17<br>ca |
| 7664417 | Ammonia | 4.5E+05<br>nc | DATA | 17,000<br>nc |
| 994058 | t-Amyl methyl ether (TAME) | 3,600<br>nc | 34 (M)<br>nc | 2,200<br>nc |
| 120127 | Anthracene | 43 (S)<br>sol | 1.3E+07<br>nc | 35,000<br>nc |
| 103333 | Azobenzene | 1.8 (M) (CC)<br>ca | DATA | 27<br>ca |
| 71432 | Benzene | 34<br>ca | 1.7 (M)<br>ca | 110<br>ca |
| 56553 | Benzo(a)anthracene | 9.4 (S) (MM)<br>sol | 1.6E+05 (MM)<br>mut | 5.8 (MM)<br>mut |
| 100447 | Benzyl chloride | 110<br>ca | 12 (M)<br>ca | 17<br>ca |
| 111444 | bis-2-Chloroethylether | 240<br>ca | 3.4 (M)<br>ca | 2.6<br>ca |
| 108861 | Bromobenzene | 3,300<br>nc | 160<br>nc | 2,100<br>nc |
| 75274 | Bromodichloromethane | 60<br>ca | 0.61 (M)<br>ca | 48<br>ca |
| 75252 | Bromoform | 6,400<br>ca | 45 (M)<br>ca | 770<br>ca |
| 74839 | Bromomethane | 59<br>nc | 0.90 (M)<br>nc | 350<br>nc |
| 71363 | n-Butanol | 2.2E+06<br>nc | 20,000<br>nc | 12,000<br>nc |
| 78933 | 2-Butanone (MEK) | 4.0E+06 (DD)<br>dev | 31,000 (DD)<br>dev | 1.7E+05 (DD)<br>dev |
| 123864 | n-Butyl acetate | 1.3E+05<br>nc | 1,100<br>nc | 14,000<br>nc |

**Table 5**. Residential Volatilization to Indoor Air Criteria (VIAC). The following are **restricted** site-specific criteria that apply to a residential house with a **slab-on-grade** the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | Groundwater Not In Contact (GWNIC) (µg/L) | Soil (µg/kg) | Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 75650 | t-Butyl alcohol | 4.0E+05<br>nc | 3,200<br>nc | 2,500<br>nc |
| 104518 | n-Butylbenzene | 2,000<br>nc | 560<br>nc | 7,000<br>nc |
| 135988 | sec-Butylbenzene | 9,200<br>nc | 3,800<br>nc | 14<br>nc |
| 98066 | t-Butylbenzene | 3.4<br>nc | 0.64 (M)<br>nc | 14<br>nc |
| 79925 | Camphene | 46<br>nc | 14<br>nc | 2,800<br>nc |
| 75150 | Carbon disulfide | 2,200<br>nc | 52 (M)<br>nc | 24,000<br>nc |
| 56235 | Carbon tetrachloride | 14<br>ca | 0.31 (M)<br>ca | 150<br>ca |
| 57749 | Chlordane | 56 (S) (EE)<br>sol | 13,000 (EE)<br>st | 6.7 (EE)<br>st |
| 108907 | Chlorobenzene | 1,300<br>nc | 82<br>nc | 1,700<br>nc |
| 75683 | 1-Chloro-1,1-difluoroethane | 43,000<br>nc | 2,400<br>nc | 1.7E+06<br>nc |
| 75003 | Chloroethane | 15,000<br>nc | 330<br>nc | 1.4E+05<br>nc |
| 110758 | 2-Chloroethyl vinyl ether | TX | TX | TX |
| 67663 | Chloroform | 19<br>ca | 0.26 (M)<br>ca | 37<br>ca |
| 74873 | Chloromethane | 340<br>nc | 6.9 (M)<br>nc | 3,100<br>nc |
| 91587 | beta-Chloronaphthalene | TX | TX | TX |
| 95578 | 2-Chlorophenol | 1.0E+05 (DD)<br>dev | 12,000 (DD)<br>dev | 600 (DD)<br>dev |
| 95498 | o-Chlorotoluene | 2,300<br>nc | 200<br>nc | 2,800<br>nc |
| 74908 | Cyanide, Hydrogen | 160<br>nc | 1.8 (M)<br>nc | 28<br>nc |
| 110827 | Cyclohexane | 2,600<br>nc | 320 (M)<br>nc | 2.1E+05<br>nc |
| 108941 | Cyclohexanone | 5.1E+06<br>nc | 69,000<br>nc | 24,000<br>nc |
| 72559 | 4-4`-DDE | 40 (S)<br>sol | 39,000<br>ca | 8.7<br>ca |
| 117840 | Di-n-octyl phthalate | 22 (S) (CC)<br>sol | DATA | 16,000<br>nc |
| 123422 | Diacetone alcohol | 7.5E+08<br>nc | 5.2E+06<br>nc | 83,000<br>nc |
| 132649 | Dibenzofuran | 3,100 (S)<br>sol | 7.1E+06<br>nc | 140<br>nc |
| 124481 | Dibromochloromethane | 58 (MM)<br>mut | 0.40 (MM) (M)<br>mut | 14 (MM)<br>mut |
| 96128 | Dibromochloropropane | 4.5E-04 (MM) (M) (CC)<br>mut | DATA | 6.2E-02 (MM)<br>mut |

**Table 5**. Residential Volatilization to Indoor Air Criteria (VIAC). The following are **restricted** site-specific criteria that apply to a residential house with a **slab-on-grade** the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | Groundwater Not In Contact (GWNIC) (µg/L) | Soil (µg/kg) | Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 74953 | Dibromomethane | 450<br>nc | 3.5 (M)<br>nc | 140<br>nc |
| 95501 | 1,2-Dichlorobenzene | 19,000<br>nc | 1,500<br>nc | 10,000<br>nc |
| 541731 | 1,3-Dichlorobenzene | 130<br>nc | 10 (M)<br>nc | 100<br>nc |
| 106467 | 1,4-Dichlorobenzene | 310<br>ca | 23 (M)<br>ca | 220<br>ca |
| 75718 | Dichlorodifluoromethane | 71<br>nc | 12 (M)<br>nc | 11,000<br>nc |
| 75343 | 1,1-Dichloroethane | 160<br>ca | 2.6 (M)<br>ca | 530<br>ca |
| 107062 | 1,2-Dichloroethane | 50<br>ca | 0.82 (M)<br>ca | 33<br>ca |
| 75354 | 1,1-Dichloroethylene | 410<br>nc | 12 (M)<br>nc | 7,000<br>nc |
| 156592 | cis-1,2-Dichloroethylene | 110<br>nc | 2.1 (M)<br>nc | 280<br>nc |
| 156605 | trans-1,2-Dichloroethylene | 480<br>nc | 12 (M)<br>nc | 2,800<br>nc |
| 78875 | 1,2-Dichloropropane | 100<br>nc | 2.1 (M)<br>nc | 140<br>nc |
| 542756 | 1,3-Dichloropropene | 130 (J)<br>ca | 3.1 (M) (J)<br>ca | 210 (J)<br>ca |
| 60571 | Dieldrin | 200 (S)<br>sol | 780<br>ca | 0.18<br>ca |
| 60297 | Diethyl ether | 44,000<br>nc | 350<br>nc | 35,000<br>nc |
| 108203 | Diisopropyl ether | 20,000 (DD)<br>dev | 200 (M) (DD)<br>dev | 23,000 (DD)<br>dev |
| 108189 | Diisopropylamine | 1.4E+05<br>nc | 2,900<br>nc | 7,000<br>nc |
| 127195 | N,N-Dimethylacetamide | 2.2E+08<br>nc | 3.8E+06<br>nc | 3,500<br>nc |
| 121697 | N,N-Dimethylaniline | 4,100<br>ca | 120<br>ca | 71<br>ca |
| 68122 | Dimethylformamide | 4.3E+06<br>nc | 46,000<br>nc | 240<br>nc |
| 123911 | 1,4-Dioxane | 43,000<br>ca | 370 (M)<br>ca | 170<br>ca |
| 115297 | Endosulfan | TX | TX | TX |
| 106898 | Epichlorohydrin | 1,800<br>nc | 19 (M)<br>nc | 35<br>nc |
| 64175 | Ethanol | 1.3E+08 (EE)<br>st | 1.3E+06 (EE)<br>st | 6.3E+05 (EE)<br>st |
| 141786 | Ethyl acetate | 31,000<br>nc | 210<br>nc | 2,400<br>nc |
| 637923 | Ethyl-tert-butyl ether (ETBE) | 22 (CC)<br>nc | DATA | 13,000<br>nc |
| 100414 | Ethylbenzene | 110<br>ca | 12 (M)<br>ca | 340<br>ca |

**Table 5**. Residential Volatilization to Indoor Air Criteria (VIAC). The following are **restricted** site-specific criteria that apply to a residential house with a **slab-on-grade** the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | Groundwater Not In Contact (GWNIC) (µg/L) | Soil (µg/kg) | Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 106934 | Ethylene dibromide | 8.0<br>ca | 7.4E-02 (M)<br>ca | 1.4<br>ca |
| 86737 | Fluorene | 1,700 (S)<br>sol | 4.7E+05<br>nc | 4,900<br>nc |
| 50000 | Formaldehyde | 36,000 (MM)<br>mut | 530 (MM) (M)<br>mut | 27 (MM)<br>mut |
| 64186 | Formic acid | 36,000<br>nc | 450 (M)<br>nc | 10<br>nc |
| 76448 | Heptachlor | 24<br>ca | 3,700<br>ca | 0.65<br>ca |
| 1024573 | Heptachlor epoxide | 1.4E-02 (CC)<br>ca | DATA | 0.33<br>ca |
| 142825 | n-Heptane | 150 (GW)<br>nc | 130<br>nc | 1.2E+05<br>nc |
| 87821 | Hexabromobenzene | TX | TX | TX |
| 118741 | Hexachlorobenzene (C-66) | 6.2 (S)<br>sol | 6.8 (M)<br>nc | 1.2<br>nc |
| 87683 | Hexachlorobutadiene (C-46) | 29<br>ca | 2.5 (M)<br>ca | 39<br>ca |
| 77474 | Hexachlorocyclopentadiene (C-56) | 2.3 (M)<br>nc | 0.32 (M)<br>nc | 7.0<br>nc |
| 67721 | Hexachloroethane | 130<br>ca | 3.3 (M)<br>ca | 85<br>ca |
| 110543 | n-Hexane | 29 (GW)<br>nc | 25<br>nc | 24,000<br>nc |
| 591786 | 2-Hexanone | 24,000<br>nc | 220 (M)<br>nc | 1,000<br>nc |
| 78831 | Isobutyl alcohol | 9.2E+06<br>nc | 79,000<br>nc | 52,000<br>nc |
| 67630 | Isopropyl alcohol | 1.1E+06<br>nc | 9,900<br>nc | 7,000<br>nc |
| 98828 | Isopropyl benzene | 26<br>ca | 3.8 (M)<br>ca | 81<br>ca |
| 58899 | Lindane | TX | TX | TX |
| Varies | Mercury (Total) | 3.6<br>nc | 22<br>nc | 10<br>nc |
| 74828 | Methane | 10,000 (AA) | DATA | 8.4E+06 (GG) |
| 67561 | Methanol | 1.2E+08 (DD)<br>dev | 1.4E+06 (DD)<br>dev | 6.7E+05 (DD)<br>dev |
| 109864 | 2-Methoxyethanol | 1.7E+05<br>nc | 1,500<br>nc | 38<br>nc |
| 109024 | N-Methyl-morpholine | TX | TX | TX |
| 108101 | 4-Methyl-2-pentanone (MIBK) | 1.6E+06 (DD)<br>dev | 12,000 (DD)<br>dev | 1.0E+05 (DD)<br>dev |
| 1634044 | Methyl-tert-butyl ether (MTBE) | 10,000<br>ca | 74 (M)<br>ca | 3,300<br>ca |
| 96377 | Methylcyclopentane | 120<br>nc | 29 (M)<br>nc | 24,000<br>nc |

**Table 5**. Residential Volatilization to Indoor Air Criteria (VIAC). The following are **restricted** site-specific criteria that apply to a residential house with a **slab-on-grade** the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | Groundwater Not In Contact (GWNIC) (µg/L) | Soil (µg/kg) | Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 75092 | Methylene chloride | 9,100<br>nc | 130<br>nc | 21,000<br>nc |
| 91576 | 2-Methylnaphthalene | 3,500<br>nc | 1,700<br>nc | 350<br>nc |
| 2385855 | Mirex | TX | TX | TX |
| 91203 | Naphthalene | 190<br>ca | 67 (M)<br>ca | 25<br>ca |
| 98953 | Nitrobenzene | 2,000<br>ca | 170 (M)<br>ca | 21<br>ca |
| 88755 | 2-Nitrophenol | 0.12 (M) (CC)<br>nc | DATA | 1.7<br>nc |
| 608935 | Pentachlorobenzene | 8.6E-03 (M) (CC)<br>nc | DATA | 3.5<br>nc |
| 82688 | Pentachloronitrobenzene | 8.5 (M) (CC)<br>nc | DATA | 380<br>nc |
| 109660 | Pentane | 45 (M)<br>nc | 36 (M)<br>nc | 35,000<br>nc |
| 109682 | 2-Pentene | TX | TX | TX |
| 335671 | Perfluorooctanoic acid | TX | TX | TX |
| 85018 | Phenanthrene | 470<br>nc | 1,700<br>nc | 3.5<br>nc |
| 110894 | Piperidine | 6.9E+07<br>nc | 2.1E+06<br>nc | 2.4E+05<br>nc |
| 1336363 | Polychlorinated biphenyls (PCBs) | 3.1E-02 (M) (CC) (J)<br>ca | DATA | 8.5 (J)<br>ca |
| 79094 | Propionic acid | 2.4E+07<br>nc | 2.2E+05<br>nc | 10,000<br>nc |
| 71238 | Propyl alcohol | 4.4E+06 (DD)<br>dev | 41,000 (DD)<br>dev | 24,000 (DD)<br>dev |
| 103651 | n-Propylbenzene | 10,000 (DD)<br>dev | 1,800 (DD)<br>dev | 33,000 (DD)<br>dev |
| 129000 | Pyrene | 140 (S)<br>sol | 2.5E+07<br>nc | 3,500<br>nc |
| 110861 | Pyridine | 14,000<br>nc | 550<br>nc | 120<br>nc |
| 100425 | Styrene | 1,400<br>ca | 150<br>ca | 1,500<br>ca |
| 95943 | 1,2,4,5-Tetrachlorobenzene | 250<br>nc | 71 (M)<br>nc | 35<br>nc |
| 630206 | 1,1,1,2-Tetrachloroethane | 180<br>ca | 3.2 (M)<br>ca | 110<br>ca |
| 79345 | 1,1,2,2-Tetrachloroethane | 130<br>ca | 2.7 (M)<br>ca | 15<br>ca |
| 127184 | Tetrachloroethylene | 250 (EE)<br>st | 6.2 (M) (EE)<br>st | 1,400 (EE)<br>st |
| 109999 | Tetrahydrofuran | 1.3E+06<br>nc | 13,000<br>nc | 70,000<br>nc |
| 632224 | 1,1,3,3-Tetramethylurea | 2,700 (CC)<br>nc | DATA | 28<br>nc |

**Table 5**. Residential Volatilization to Indoor Air Criteria (VIAC). The following are **restricted** site-specific criteria that apply to a residential house with a **slab-on-grade** the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | Groundwater Not In Contact (GWNIC) (µg/L) | Soil (µg/kg) | Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 509148 | Tetranitromethane | 1.2 (M)<br>ca | 7.7E-02 (M)<br>ca | 5.6E-02<br>ca |
| 108883 | Toluene | 56,000<br>nc | 3,700<br>nc | 1.7E+05<br>nc |
| 2303175 | Triallate | 530 (DD) (CC)<br>dev | DATA | 6,700 (DD)<br>dev |
| 102829 | Tributylamine | 13,000<br>nc | 3,400<br>nc | 240<br>nc |
| 87616 | 1,2,3-Trichlorobenzene | 4,100<br>nc | 840<br>nc | 940<br>nc |
| 120821 | 1,2,4-Trichlorobenzene | 270<br>nc | 53 (M)<br>nc | 70<br>nc |
| 71556 | 1,1,1-Trichloroethane | 22,000 (EE)<br>st | 450 (EE)<br>st | 1.7E+05 (EE)<br>st |
| 79005 | 1,1,2-Trichloroethane | 21<br>nc | 0.37 (M)<br>nc | 7.0<br>nc |
| 79016 | Trichloroethylene | 15 (DD)<br>dev | 0.33 (M) (DD)<br>dev | 67 (DD)<br>dev |
| 75694 | Trichlorofluoromethane | 300<br>nc | 19 (M)<br>nc | 15,000<br>nc |
| 96184 | 1,2,3-Trichloropropane | 91<br>nc | 2.6 (M)<br>nc | 10<br>nc |
| 76131 | 1,1,2-Trichloro-1,2,2-trifluoroethane | 7,100<br>nc | 860<br>nc | 6.6E+05<br>nc |
| 1582098 | Trifluralin | 180 (S) (CC)<br>sol | DATA | 1.0E+05<br>nc |
| 540841 | 2,2,4-Trimethyl pentane | 160 (GW)<br>nc | 130 (M)<br>nc | 1.2E+05<br>nc |
| 107404 | 2,4,4-Trimethyl-2-pentene | TX | TX | TX |
| 526738 | 1,2,3-Trimethylbenzene | 2,000 (JT)<br>nc | 270 (JT)<br>nc | 2,100 (JT)<br>nc |
| 95636 | 1,2,4-Trimethylbenzene | 1,100 (JT)<br>nc | 150 (JT)<br>nc | 2,100 (JT)<br>nc |
| 108678 | 1,3,5-Trimethylbenzene | 800 (JT)<br>nc | 100 (JT)<br>nc | 2,100 (JT)<br>nc |
| 126727 | tris(2,3-Dibromopropyl)phosphate | 7.4E-02 (M) (CC)<br>ca | DATA | 1.6<br>ca |
| 108054 | Vinyl acetate | 25,000<br>nc | 160 (M)<br>nc | 7,000<br>nc |
| 75014 | Vinyl chloride | 2.2 (MM)<br>mut | 8.2E-02 (MM) (M)<br>mut | 54 (MM)<br>mut |
| 1330207 | Xylenes | 3,000 (J)<br>nc | 280 (J)<br>nc | 7,600 (J)<br>nc |

**Table 6**. Residential Volatilization to Indoor Air Criteria (VIAC). The following are **unrestricted** site-specific criteria that apply to a residential house with a **basement**, the depth to groundwater submitted for this site (i.e. 17.5 ft), and USDA soil type of **sand**.

| CAS# | Hazardous Substance | Groundwater Not In Contact (GWNIC) (µg/L) | Soil (µg/kg) | Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 83329 | Acenaphthene | 3,900 (S)<br>sol | 2.0E+05<br>nc | 7,300<br>nc |
| 208968 | Acenaphthylene | 65 (CC)<br>nc | DATA | 7,300<br>nc |
| 75070 | Acetaldehyde | 2,400<br>nc | 34 (M)<br>nc | 310<br>nc |
| 64197 | Acetic acid | 3.4E+07<br>nc | 6.5E+05<br>nc | 8,700<br>nc |
| 67641 | Acetone | 1.8E+07 (EE)<br>st | 2.6E+05 (EE)<br>st | 1.0E+06 (EE)<br>st |
| 75058 | Acetonitrile | 33,000<br>nc | 620 (M)<br>nc | 2,100<br>nc |
| 98862 | Acetophenone | 6.1E+06 (S) (DD)<br>sol | 6.2E+05 (DD)<br>dev | 1.1E+05 (DD)<br>dev |
| 107028 | Acrolein | 3.7 (M)<br>nc | 4.6E-02 (M)<br>nc | 0.70<br>nc |
| 79107 | Acrylic acid | 15,000<br>nc | 260<br>nc | 7.0<br>nc |
| 107131 | Acrylonitrile | 67<br>ca | 1.2 (M)<br>ca | 12<br>ca |
| 309002 | Aldrin | 17 (S)<br>sol | 520<br>ca | 0.17<br>ca |
| 7664417 | Ammonia | 3.0E+05<br>nc | DATA | 17,000<br>nc |
| 994058 | t-Amyl methyl ether (TAME) | 1,900<br>nc | 34 (M)<br>nc | 2,200<br>nc |
| 120127 | Anthracene | 43 (S)<br>sol | 1.3E+07<br>nc | 35,000<br>nc |
| 103333 | Azobenzene | 1.8 (M) (CC)<br>ca | DATA | 27<br>ca |
| 71432 | Benzene | 18<br>ca | 1.7 (M)<br>ca | 110<br>ca |
| 56553 | Benzo(a)anthracene | 9.4 (S) (MM)<br>sol | 1.6E+05 (MM)<br>mut | 5.8 (MM)<br>mut |
| 100447 | Benzyl chloride | 59<br>ca | 12 (M)<br>ca | 17<br>ca |
| 111444 | bis-2-Chloroethylether | 120<br>ca | 3.4 (M)<br>ca | 2.6<br>ca |
| 108861 | Bromobenzene | 1,700<br>nc | 160<br>nc | 2,100<br>nc |
| 75274 | Bromodichloromethane | 31<br>ca | 0.61 (M)<br>ca | 48<br>ca |
| 75252 | Bromoform | 3,200<br>ca | 45 (M)<br>ca | 770<br>ca |
| 74839 | Bromomethane | 33<br>nc | 0.90 (M)<br>nc | 350<br>nc |
| 71363 | n-Butanol | 1.2E+06<br>nc | 20,000<br>nc | 12,000<br>nc |
| 78933 | 2-Butanone (MEK) | 2.2E+06 (DD)<br>dev | 31,000 (DD)<br>dev | 1.7E+05 (DD)<br>dev |
| 123864 | n-Butyl acetate | 68,000<br>nc | 1,100<br>nc | 14,000<br>nc |

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| CAS# | Hazardous Substance | Groundwater Not In Contact (GWNIC) (µg/L) | Soil (µg/kg) | Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 75650 | t-Butyl alcohol | 2.1E+05<br>nc | 3,200<br>nc | 2,500<br>nc |
| 104518 | n-Butylbenzene | 1,100<br>nc | 550<br>nc | 7,000<br>nc |
| 135988 | sec-Butylbenzene | 4,300<br>nc | 3,800<br>nc | 14<br>nc |
| 98066 | t-Butylbenzene | 1.8<br>nc | 0.64 (M)<br>nc | 14<br>nc |
| 79925 | Camphene | 24<br>nc | 14<br>nc | 2,800<br>nc |
| 75150 | Carbon disulfide | 1,200<br>nc | 52 (M)<br>nc | 24,000<br>nc |
| 56235 | Carbon tetrachloride | 7.2<br>ca | 0.31 (M)<br>ca | 150<br>ca |
| 57749 | Chlordane | 56 (S) (EE)<br>sol | 13,000 (EE)<br>st | 6.7 (EE)<br>st |
| 108907 | Chlorobenzene | 720<br>nc | 82<br>nc | 1,700<br>nc |
| 75683 | 1-Chloro-1,1-difluoroethane | 23,000<br>nc | 2,400<br>nc | 1.7E+06<br>nc |
| 75003 | Chloroethane | 8,600<br>nc | 330<br>nc | 1.4E+05<br>nc |
| 110758 | 2-Chloroethyl vinyl ether | TX | TX | TX |
| 67663 | Chloroform | 10<br>ca | 0.26 (M)<br>ca | 37<br>ca |
| 74873 | Chloromethane | 200<br>nc | 6.9 (M)<br>nc | 3,100<br>nc |
| 91587 | beta-Chloronaphthalene | TX | TX | TX |
| 95578 | 2-Chlorophenol | 52,000 (DD)<br>dev | 12,000 (DD)<br>dev | 600 (DD)<br>dev |
| 95498 | o-Chlorotoluene | 1,200<br>nc | 200<br>nc | 2,800<br>nc |
| 74908 | Cyanide, Hydrogen | 97<br>nc | 1.8 (M)<br>nc | 28<br>nc |
| 110827 | Cyclohexane | 1,400<br>nc | 320 (M)<br>nc | 2.1E+05<br>nc |
| 108941 | Cyclohexanone | 2.6E+06<br>nc | 68,000<br>nc | 24,000<br>nc |
| 72559 | 4-4`-DDE | 40 (S)<br>sol | 39,000<br>ca | 8.7<br>ca |
| 117840 | Di-n-octyl phthalate | 22 (S) (CC)<br>sol | DATA | 16,000<br>nc |
| 123422 | Diacetone alcohol | 3.7E+08<br>nc | 5.2E+06<br>nc | 83,000<br>nc |
| 132649 | Dibenzofuran | 3,100 (S)<br>sol | 7.1E+06<br>nc | 140<br>nc |
| 124481 | Dibromochloromethane | 29 (MM)<br>mut | 0.40 (MM) (M)<br>mut | 14 (MM)<br>mut |
| 96128 | Dibromochloropropane | 4.5E-04 (MM) (M) (CC)<br>mut | DATA | 6.2E-02 (MM)<br>mut |

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| CAS# | Hazardous Substance | Groundwater Not In Contact (GWNIC) (µg/L) | Soil (µg/kg) | Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 74953 | Dibromomethane | 230<br>nc | 3.5 (M)<br>nc | 140<br>nc |
| 95501 | 1,2-Dichlorobenzene | 9,900<br>nc | 1,500<br>nc | 10,000<br>nc |
| 541731 | 1,3-Dichlorobenzene | 70<br>nc | 10 (M)<br>nc | 100<br>nc |
| 106467 | 1,4-Dichlorobenzene | 160<br>ca | 23 (M)<br>ca | 220<br>ca |
| 75718 | Dichlorodifluoromethane | 38<br>nc | 12 (M)<br>nc | 11,000<br>nc |
| 75343 | 1,1-Dichloroethane | 88<br>ca | 2.6 (M)<br>ca | 530<br>ca |
| 107062 | 1,2-Dichloroethane | 27<br>ca | 0.82 (M)<br>ca | 33<br>ca |
| 75354 | 1,1-Dichloroethylene | 220<br>nc | 12 (M)<br>nc | 7,000<br>nc |
| 156592 | cis-1,2-Dichloroethylene | 62<br>nc | 2.1 (M)<br>nc | 280<br>nc |
| 156605 | trans-1,2-Dichloroethylene | 260<br>nc | 12 (M)<br>nc | 2,800<br>nc |
| 78875 | 1,2-Dichloropropane | 56<br>nc | 2.1 (M)<br>nc | 140<br>nc |
| 542756 | 1,3-Dichloropropene | 69 (J)<br>ca | 3.1 (M) (J)<br>ca | 210 (J)<br>ca |
| 60571 | Dieldrin | 110<br>ca | 770<br>ca | 0.18<br>ca |
| 60297 | Diethyl ether | 24,000<br>nc | 350<br>nc | 35,000<br>nc |
| 108203 | Diisopropyl ether | 11,000 (DD)<br>dev | 190 (M) (DD)<br>dev | 23,000 (DD)<br>dev |
| 108189 | Diisopropylamine | 72,000<br>nc | 2,900<br>nc | 7,000<br>nc |
| 127195 | N,N-Dimethylacetamide | 1.4E+08<br>nc | 3.8E+06<br>nc | 3,500<br>nc |
| 121697 | N,N-Dimethylaniline | 2,100<br>ca | 120<br>ca | 71<br>ca |
| 68122 | Dimethylformamide | 2.4E+06<br>nc | 46,000<br>nc | 240<br>nc |
| 123911 | 1,4-Dioxane | 22,000<br>ca | 360 (M)<br>ca | 170<br>ca |
| 115297 | Endosulfan | TX | TX | TX |
| 106898 | Epichlorohydrin | 940<br>nc | 19 (M)<br>nc | 35<br>nc |
| 64175 | Ethanol | 7.5E+07 (EE)<br>st | 1.3E+06 (EE)<br>st | 6.3E+05 (EE)<br>st |
| 141786 | Ethyl acetate | 16,000<br>nc | 210<br>nc | 2,400<br>nc |
| 637923 | Ethyl-tert-butyl ether (ETBE) | 22 (CC)<br>nc | DATA | 13,000<br>nc |
| 100414 | Ethylbenzene | 60<br>ca | 12 (M)<br>ca | 340<br>ca |

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| CAS# | Hazardous Substance | Groundwater Not In Contact (GWNIC) (µg/L) | Soil (µg/kg) | Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 106934 | Ethylene dibromide | 4.0<br>ca | 7.4E-02 (M)<br>ca | 1.4<br>ca |
| 86737 | Fluorene | 1,700 (S)<br>sol | 4.7E+05<br>nc | 4,900<br>nc |
| 50000 | Formaldehyde | 23,000 (MM)<br>mut | 530 (MM) (M)<br>mut | 27 (MM)<br>mut |
| 64186 | Formic acid | 22,000<br>nc | 440 (M)<br>nc | 10<br>nc |
| 76448 | Heptachlor | 11<br>ca | 3,600<br>ca | 0.65<br>ca |
| 1024573 | Heptachlor epoxide | 1.4E-02 (CC)<br>ca | DATA | 0.33<br>ca |
| 142825 | n-Heptane | 150 (GW)<br>nc | 130<br>nc | 1.2E+05<br>nc |
| 87821 | Hexabromobenzene | TX | TX | TX |
| 118741 | Hexachlorobenzene (C-66) | 4.7<br>nc | 6.7 (M)<br>nc | 1.2<br>nc |
| 87683 | Hexachlorobutadiene (C-46) | 14<br>ca | 2.5 (M)<br>ca | 39<br>ca |
| 77474 | Hexachlorocyclopentadiene (C-56) | 1.1 (M)<br>nc | 0.32 (M)<br>nc | 7.0<br>nc |
| 67721 | Hexachloroethane | 64<br>ca | 3.2 (M)<br>ca | 85<br>ca |
| 110543 | n-Hexane | 29 (GW)<br>nc | 25<br>nc | 24,000<br>nc |
| 591786 | 2-Hexanone | 12,000<br>nc | 210 (M)<br>nc | 1,000<br>nc |
| 78831 | Isobutyl alcohol | 4.8E+06<br>nc | 79,000<br>nc | 52,000<br>nc |
| 67630 | Isopropyl alcohol | 6.0E+05<br>nc | 9,800<br>nc | 7,000<br>nc |
| 98828 | Isopropyl benzene | 13<br>ca | 3.8 (M)<br>ca | 81<br>ca |
| 58899 | Lindane | TX | TX | TX |
| Varies | Mercury (Total) | 1.9<br>nc | 22<br>nc | 10<br>nc |
| 74828 | Methane | 10,000 (AA) | DATA | 8.4E+06 (GG) |
| 67561 | Methanol | 7.0E+07 (DD)<br>dev | 1.4E+06 (DD)<br>dev | 6.7E+05 (DD)<br>dev |
| 109864 | 2-Methoxyethanol | 89,000<br>nc | 1,500<br>nc | 38<br>nc |
| 109024 | N-Methyl-morpholine | TX | TX | TX |
| 108101 | 4-Methyl-2-pentanone (MIBK) | 8.1E+05 (DD)<br>dev | 12,000 (DD)<br>dev | 1.0E+05 (DD)<br>dev |
| 1634044 | Methyl-tert-butyl ether (MTBE) | 5,300<br>ca | 74 (M)<br>ca | 3,300<br>ca |
| 96377 | Methylcyclopentane | 67<br>nc | 29 (M)<br>nc | 24,000<br>nc |

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| CAS# | Hazardous Substance | Groundwater Not In Contact (GWNIC) (µg/L) | Soil (µg/kg) | Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 75092 | Methylene chloride | 5,000<br>nc | 130<br>nc | 21,000<br>nc |
| 91576 | 2-Methylnaphthalene | 1,800<br>nc | 1,700<br>nc | 350<br>nc |
| 2385855 | Mirex | TX | TX | TX |
| 91203 | Naphthalene | 100<br>ca | 67 (M)<br>ca | 25<br>ca |
| 98953 | Nitrobenzene | 1,000<br>ca | 170 (M)<br>ca | 21<br>ca |
| 88755 | 2-Nitrophenol | 0.12 (M) (CC)<br>nc | DATA | 1.7<br>nc |
| 608935 | Pentachlorobenzene | 8.6E-03 (M) (CC)<br>nc | DATA | 3.5<br>nc |
| 82688 | Pentachloronitrobenzene | 8.5 (M) (CC)<br>nc | DATA | 380<br>nc |
| 109660 | Pentane | 40 (M) (GW)<br>nc | 36 (M)<br>nc | 35,000<br>nc |
| 109682 | 2-Pentene | TX | TX | TX |
| 335671 | Perfluorooctanoic acid | TX | TX | TX |
| 85018 | Phenanthrene | 220<br>nc | 1,700<br>nc | 3.5<br>nc |
| 110894 | Piperidine | 3.5E+07<br>nc | 2.1E+06<br>nc | 2.4E+05<br>nc |
| 1336363 | Polychlorinated biphenyls (PCBs) | 3.1E-02 (M) (CC) (J)<br>ca | DATA | 8.5 (J)<br>ca |
| 79094 | Propionic acid | 1.3E+07<br>nc | 2.2E+05<br>nc | 10,000<br>nc |
| 71238 | Propyl alcohol | 2.4E+06 (DD)<br>dev | 40,000 (DD)<br>dev | 24,000 (DD)<br>dev |
| 103651 | n-Propylbenzene | 5,400 (DD)<br>dev | 1,800 (DD)<br>dev | 33,000 (DD)<br>dev |
| 129000 | Pyrene | 140 (S)<br>sol | 2.5E+07<br>nc | 3,500<br>nc |
| 110861 | Pyridine | 7,300<br>nc | 540<br>nc | 120<br>nc |
| 100425 | Styrene | 740<br>ca | 150<br>ca | 1,500<br>ca |
| 95943 | 1,2,4,5-Tetrachlorobenzene | 120<br>nc | 70 (M)<br>nc | 35<br>nc |
| 630206 | 1,1,1,2-Tetrachloroethane | 93<br>ca | 3.2 (M)<br>ca | 110<br>ca |
| 79345 | 1,1,2,2-Tetrachloroethane | 66<br>ca | 2.7 (M)<br>ca | 15<br>ca |
| 127184 | Tetrachloroethylene | 130 (EE)<br>st | 6.2 (M) (EE)<br>st | 1,400 (EE)<br>st |
| 109999 | Tetrahydrofuran | 6.9E+05<br>nc | 13,000<br>nc | 70,000<br>nc |
| 632224 | 1,1,3,3-Tetramethylurea | 2,700 (CC)<br>nc | DATA | 28<br>nc |

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| CAS# | Hazardous Substance | Groundwater Not In Contact (GWNIC) (µg/L) | Soil (µg/kg) | Soil Gas** (µg/m³) |
|---|---|---|---|---|
| 509148 | Tetranitromethane | 0.56 (M)<br>ca | 7.6E-02 (M)<br>ca | 5.6E-02<br>ca |
| 108883 | Toluene | 30,000<br>nc | 3,700<br>nc | 1.7E+05<br>nc |
| 2303175 | Triallate | 530 (DD) (CC)<br>dev | DATA | 6,700 (DD)<br>dev |
| 102829 | Tributylamine | 6,000<br>nc | 3,300<br>nc | 240<br>nc |
| 87616 | 1,2,3-Trichlorobenzene | 2,100<br>nc | 830<br>nc | 940<br>nc |
| 120821 | 1,2,4-Trichlorobenzene | 130<br>nc | 53 (M)<br>nc | 70<br>nc |
| 71556 | 1,1,1-Trichloroethane | 11,000 (EE)<br>st | 450 (EE)<br>st | 1.7E+05 (EE)<br>st |
| 79005 | 1,1,2-Trichloroethane | 11<br>nc | 0.37 (M)<br>nc | 7.0<br>nc |
| 79016 | Trichloroethylene | 8.1 (DD)<br>dev | 0.33 (M) (DD)<br>dev | 67 (DD)<br>dev |
| 75694 | Trichlorofluoromethane | 160<br>nc | 19 (M)<br>nc | 15,000<br>nc |
| 96184 | 1,2,3-Trichloropropane | 47<br>nc | 2.6 (M)<br>nc | 10<br>nc |
| 76131 | 1,1,2-Trichloro-1,2,2-trifluoroethane | 3,600<br>nc | 860<br>nc | 6.6E+05<br>nc |
| 1582098 | Trifluralin | 180 (S) (CC)<br>sol | DATA | 1.0E+05<br>nc |
| 540841 | 2,2,4-Trimethyl pentane | 160 (GW)<br>nc | 130 (M)<br>nc | 1.2E+05<br>nc |
| 107404 | 2,4,4-Trimethyl-2-pentene | TX | TX | TX |
| 526738 | 1,2,3-Trimethylbenzene | 1,100 (JT)<br>nc | 270 (JT)<br>nc | 2,100 (JT)<br>nc |
| 95636 | 1,2,4-Trimethylbenzene | 590 (JT)<br>nc | 150 (JT)<br>nc | 2,100 (JT)<br>nc |
| 108678 | 1,3,5-Trimethylbenzene | 420 (JT)<br>nc | 100 (JT)<br>nc | 2,100 (JT)<br>nc |
| 126727 | tris(2,3-Dibromopropyl)phosphate | 7.4E-02 (M) (CC)<br>ca | DATA | 1.6<br>ca |
| 108054 | Vinyl acetate | 13,000<br>nc | 160 (M)<br>nc | 7,000<br>nc |
| 75014 | Vinyl chloride | 1.2 (MM)<br>mut | 8.2E-02 (MM) (M)<br>mut | 54 (MM)<br>mut |
| 1330207 | Xylenes | 1,600 (J)<br>nc | 280 (J)<br>nc | 7,600 (J)<br>nc |

## FOOTNOTES

**Soil gas site-specific volatilization to indoor air (SSVIAC) are applicable for all depths.

- Acceptable Air Values (AAV) endpoint basis used for SSVIAC: (**ca**) = Carcinogenetic; (**nc**) = Non-Carcinogenetic; (**dev**) = Developmental; (**mut**) = Mutagenic cancer; (**st**) = Short-term (i.e., less than chronic exposure).
- Footnote (#): Acceptable air concentrations (AAC) cannot be adjusted to a 12-hour exposure time for hazardous substance.
- Footnote **AA**: Health-based groundwater SSVIAC are not available due to insufficient toxicological data. Dissolved-phase methane in groundwater is not explosive; however, if liberated and allowed to accumulate in an enclosed structure the principle health and safety concerns are explosive, flammable, and asphyxiant properties of gas phase methane. The acceptable groundwater concentration is the flammability and explosivity screening level (**FESL**) of 10,000 µg/L.
- Footnote **C**: The health-based SSVIAC exceeds the chemical-specific soil saturation screening level (**Csat**). The person proposing or implementing response activity must document whether additional response activity is required to control non aqueous phase liquid (**NAPL**) to protect against risks associated with NAPL by using methods appropriate for the NAPL present.
- Footnote **CC**: Insufficient chemical-physical input parameters have been identified to allow the development of a health-based SSVIAC using standard methods. The health based SSVIAC for groundwater is developed based solely on the approach that the department uses for shallow groundwater. If groundwater detections are present, soil vapor may be the most appropriate media to evaluate risk posed from the VIAP.
- Footnote **DATA**: Insufficient physical chemical parameters to calculate a health based SSVIAC for specified media. If detections are present in specified media, health-based soil vapor SSVIAC should be used to evaluate risk.
- Footnote **DD**: Hazardous substance causes developmental effects. Residential SSVIAC are protective of both prenatal exposure using a pregnant female receptor and postnatal exposure using a child receptor. Nonresidential SSVIAC are protective of prenatal exposure using a pregnant female receptor. Prenatal developmental effects may occur after an acute (i.e. short-term) or full-term exposure.
- Footnote **EE**: The acceptable air concentration (**AAC**) for the volatile hazardous substances is not derived using standard methods. The hazardous substance may cause adverse human health effects for less than chronic exposures (i.e. short-term or acute). The AAC for these hazardous substances is the acute or intermediate minimum risk level (MRL) developed by the Agency for Toxic Substances and Disease Registry (ATSDR), a United States Environmental Protection Agency Integrated Risk Information System (IRIS) acute reference concentration, or EGLE's Air Quality Division acute initial threshold screening level (ITSL).
- Footnote **FF**: The AAC for the volatile hazardous substances are based on toxicity values that have been identified to have the potential to cause adverse human health effects for less than chronic exposures (i.e. short-term or acute). The short-term exposure for shallow groundwater health based SSVIAC are based on modification of the standard methods by the department to develop applicable shallow groundwater values.
- Footnote **GG**: Health-based SSVIAC for soil vapor are not available due to insufficient toxicological data. The soil vapor value addresses the health and safety concerns of explosive, flammable, and asphyxiant properties of gas phase methane. The acceptable soil vapor concentration is derived based on 25% of the lower explosive level (**LEL**) for methane.
- Footnote **GW**: The calculated health based SSVIAC for a hazardous substance based upon shallow groundwater is considered protective when it is greater than the calculated value for groundwater.
- Footnote **ID**: Requires further evaluation to determine the appropriate media to sample.
- Footnote **J**: Hazardous substance may be present in several isomer forms. Isomer-specific concentrations must be added together for comparison to criteria.
- Footnote **JT**: Hazardous substance may be present in several isomer forms. The health-based SSVIAC may be used for the individual isomer provided that it is the sole isomer detected; however, when multiple isomers are detected in a medium, the isomer-specific concentrations must be added together and compared to the most restrictive health-based SSVIAC of the detected isomers.
- Footnote **M**: The health based SSVIAC may be below target detection limits (**TDL**). In accordance with Sec. 20120a(10) when the TDL for a hazardous substance is greater than the developed health-based SSVIAC, the TDL is used to evaluate the risk posed from the pathway.
- Footnote **MM**: Hazardous substance is a carcinogen with a mutagenic mode of action. The cancer potency values used in calculating health-based SSVIAC are modified using age-dependent adjustment factors for those carcinogenic chemicals identified as mutagenic.
- Footnote **NA**: The hazardous substance does not meet the department's definition of a volatile; therefore, no health based SSVIAC were developed.
- Footnote **NR**: The hazardous substance has not been previously evaluated by the Remediation and Redevelopment Division Toxicology Unit. The identification, collection, and evaluation of toxicological literature and chemical-physical data cannot be completed within the timeframe requested.
- Footnote **S**: Calculated health-based SSVIAC exceeds the hazardous substance-specific water solubility limit; therefore, the water solubility limit is used to evaluate the risk posed from the pathway.
- Footnote **TX**: The Remediation and Redevelopment Division Toxicology Unit has not identified an inhalation toxicity value for the hazardous substance.

# Appendix D

## Mann-Kendall Calculations and Trend Graphs

**TABLE D-1**
**Groundwater Summary Statistics and Trend Results**
**RACER Pontiac North Campus**
**March, 2024**

| 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 - 12/23 | D-1 | 14 / 15 | 3 - 12 | 6.9 | 6.5 | 3 | NST | -- | 0.061 | -32 | NST | -- | -0.00202 | -0.00377 to 0.0000499 |
| MW-02-17 | Trichloroethene | 04/17 - 12/23 | D-2 | 14 / 15 | 1 - 7 | 3.4 | 2 | 2 | UP | -- | 0.025 | 38 | NT | -- | 0.00140 | 0 to 0.00233 |
| MW-05-18 | cis-1,2-Dichloroethene | 10/18 - 12/23 | D-3 | 13 / 13 | 3 - 15 | 9.6 | 11 | 3.2 | NST | -- | 0.402 | -5 | NST | -- | 0 | -0.00453 to 0.00385 |
| MW-06-20 | cis-1,2-Dichloroethene | 09/20 - 11/23 | D-4 | 14 / 14 | 3 - 10 | 6.5 | 7 | 1.7 | NST | -- | 0.214 | -15 | NST | -- | -0.000992 | -0.00354 to 0.00270 |
| MW-06-20 | Trichloroethene | 09/20 - 11/23 | D-5 | 14 / 14 | 7 - 14 | 9.7 | 9 | 2.1 | UP | -- | 0.031 | 34 | NT | -- | 0.00162 | 0 to 0.00549 |
| MW-07-20 | cis-1,2-Dichloroethene | 08/20 - 12/23 | D-6 | 10 / 10 | 6 - 15 | 10.9 | 11 | 3.2 | NST | -- | 0.127 | -14 | NST | -- | -0.00549 | -0.00930 to 0.00277 |
| MW-07-20 | Trichloroethene | 08/20 - 12/23 | D-7 | 10 / 10 | 1 - 3 | 2.2 | 2 | 0.63 | NST | -- | 0.146 | -13 | NT | -- | 0 | -0.00185 to 0 |
| MW-08-21 | cis-1,2-Dichloroethene | 06/21 - 11/23 | D-8 | 10 / 11 | 2 - 12 | 7.8 | 9.5 | 3.9 | NST | -- | 0.239 | -10 | NST | -- | -0.00322 | -0.0126 to 0.00524 |
| MW-08-21 | Trichloroethene | 06/21 - 11/23 | D-9 | 11 / 11 | 9 - 12 | 10.5 | 10 | 1.1 | UP | -- | 0.030 | 24 | NT | -- | 0.00271 | 0 to 0.00549 |
| MW-09-22 | Tetrachloroethene | 01/22 - 11/23 | D-10 | 9 / 9 | 48 - 195 | 118 | 122 | 51.8 | NST | -- | 0.306 | 6 | NST | -- | 0.0696 | -0.223 to 0.356 |
| MW-09-22 | Trichloroethene | 01/22 - 11/23 | D-11 | 8 / 9 | 1 - 5 | 3.3 | 3.5 | 1.3 | NST | -- | 0.060 | 16 | NST | -- | 0.00348 | -0.000451 to 0.00820 |
| MW-14-22 | cis-1,2-Dichloroethene | 03/22 - 11/23 | D-12 | 8 / 8 | 5 - 30 | 14 | 12.5 | 7.8 | NST | -- | 0.199 | 8 | NST | -- | 0.0175 | -0.0213 to 0.0427 |
| MW-14-22 | Tetrachloroethene | 03/22 - 11/23 | D-13 | 8 / 8 | 52 - 212 | 125 | 99 | 62.7 | UP | -- | 0.003 | 22 | UP | -- | 0.209 | 0.119 to 0.360 |
| MW-14-22 | Trichloroethene | 03/22 - 11/23 | D-14 | 8 / 8 | 12 - 22 | 17.8 | 18.5 | 3.2 | UP | -- | 0.043 | 15 | NST | -- | 0.00995 | -0.00308 to 0.0225 |
| MW-16-22 | cis-1,2-Dichloroethene | 11/22 - 11/23 | D-15 | 5 / 5 | 8 - 120 | 42.6 | 20 | 47.2 | NST | 5a | 0.242 | -4 | NA | 5a | NA | NA |
| MW-16-22 | Tetrachloroethene | 11/22 - 11/23 | D-16 | 5 / 5 | 94 - 306 | 210 | 180 | 91.2 | DWN | 5a | 0.008 | -10 | NA | 5a | NA | NA |
| MW-16-22 | Trichloroethene | 11/22 - 11/23 | D-17 | 5 / 5 | 94 - 306 | 210 | 180 | 91.2 | DWN | 5a | 0.008 | -10 | NA | 5a | NA | NA |
| MWF16-05 | Tetrachloroethene | 10/17 - 11/23 | D-18 | 12 / 12 | 12 - 730 | 484 | 495 | 198 | NST | -- | 0.419 | 4 | NST | -- | 0.0206 | -0.316 to 0.269 |
| MWF16-05 | Trichloroethene | 10/17 - 11/23 | D-19 | 8 / 12 | 3 - 40 | 25.8 | 30 | 10.9 | DWN | -- | 0.050 | -24 | NT | -- | -0.0140 | -0.0419 to 0 |
| MWF16-06 | cis-1,2-Dichloroethene | 04/17 - 11/23 | D-20 | 12 / 12 | 7 - 150 | 43.8 | 24.5 | 43 | NST | -- | 0.186 | -14 | NST | -- | -0.00737 | -0.0866 to 0.00827 |
| MWF16-06 | Tetrachloroethene | 04/17 - 11/23 | D-21 | 12 / 12 | 36 - 127 | 66.8 | 64.5 | 26.6 | DWN | -- | 0.050 | -25 | NST | -- | -0.0262 | -0.0680 to 0.000435 |
| MWF16-06 | Trichloroethene | 04/17 - 11/23 | D-22 | 12 / 12 | 5 - 30 | 12.8 | 10.5 | 7.9 | DWN | -- | 0.011 | -34 | DWN | -- | -0.00431 | -0.0168 to -0.00137 |
| MWF16-12 | Tetrachloroethene | 03/21 - 11/23 | D-23 | 6 / 6 | 9 - 50 | 33.8 | 38 | 14.7 | NST | 5a | 0.136 | -7 | NST | 5a | -0.0245 | -0.0938 to 0.0170 |
| MWF16-15 | cis-1,2-Dichloroethene | 04/17 - 12/23 | D-24 | 8 / 8 | 1 - 15 | 7.4 | 6 | 5 | NST | -- | 0.500 | 1 | NST | -- | 0.00106 | -0.00651 to 0.00547 |
| MWF16-15 | Trichloroethene | 04/17 - 12/23 | D-25 | 7 / 8 | 2 - 4 | 2.9 | 3 | 0.9 | UP | -- | 0.012 | 19 | NT | -- | 0.000936 | 0 to 0.00286 |
| MWF16-16 | cis-1,2-Dichloroethene | 10/17 - 11/23 | D-26 | 11 / 14 | 2 - 20 | 14 | 15 | 6.3 | NST | -- | 0.250 | 13 | NST | -- | 0.000449 | -0.00562 to 0.0137 |
| MWF16-16 | Tetrachloroethene | 10/17 - 11/23 | D-27 | 14 / 14 | 14 - 490 | 312 | 315 | 135 | UP | -- | 0.016 | 40 | UP | -- | 0.152 | 0.00763 to 0.192 |
| MWF16-16 | Trichloroethene | 10/17 - 11/23 | D-28 | 7 / 14 | 4 - 20 | 11.1 | 10 | 6.1 | NST | -- | 0.278 | -11 | NST | 5c | 0 | -0.00887 to 0.0000717 |
| MWF16-18 | cis-1,2-Dichloroethene | 03/21 - 11/23 | D-29 | 11 / 11 | 20 - 130 | 79.1 | 70 | 34.5 | UP | -- | <0.001 | 44 | UP | -- | 0.106 | 0.0795 to 0.121 |
| MWF16-18 | Tetrachloroethene | 03/21 - 11/23 | D-30 | 11 / 11 | 740 - 1350 | 1110 | 1090 | 176 | NST | -- | 0.292 | -8 | NST | -- | -0.179 | -0.496 to 0.347 |
| MWF16-18 | Trichloroethene | 03/21 - 11/23 | D-31 | 11 / 11 | 10 - 30 | 20.9 | 20 | 5.4 | UP | -- | 0.006 | 26 | NT | -- | 0 | 0 to 0.0166 |
| MWF16-22 | cis-1,2-Dichloroethene | 09/20 - 11/23 | D-32 | 8 / 8 | 5 - 54 | 14.4 | 9.5 | 16.3 | UP | -- | 0.012 | 19 | UP | -- | 0.00897 | 0.00161 to 0.0427 |
| MWF16-22 | Tetrachloroethene | 09/20 - 11/23 | D-33 | 8 / 8 | 69 - 285 | 102 | 76.5 | 74 | NST | -- | 0.114 | 11 | NST | -- | 0.00569 | -0.00673 to 0.163 |
| MWF16-22 | Trichloroethene | 09/20 - 11/23 | D-34 | 8 / 8 | 2 - 13 | 3.5 | 2 | 3.9 | NST | -- | 0.072 | 13 | NT | -- | 0 | 0 to 0.00380 |
| MWF16-23 | cis-1,2-Dichloroethene | 10/17 - 11/23 | D-35 | 17 / 17 | 2 - 21 | 9.1 | 10 | 5.4 | DWN | -- | 0.024 | -48 | NT | -- | -0.00549 | -0.00993 to 0 |
| MWF16-23 | Trichloroethene | 10/17 - 11/23 | D-36 | 17 / 17 | 9 - 23 | 17.4 | 17 | 3.5 | NST | -- | 0.238 | -18 | NST | -- | -0.00170 | -0.00548 to 0.00134 |
| MWF16-25 | cis-1,2-Dichloroethene | 10/18 - 11/23 | D-37 | 13 / 13 | 5 - 43 | 22.4 | 16 | 15.1 | UP | -- | <0.001 | 68 | UP | -- | 0.0280 | 0.0173 to 0.0398 |
| MWF7-02 | cis-1,2-Dichloroethene | 04/17 - 06/23 | D-38 | 11 / 11 | 1 - 3 | 2.4 | 2 | 0.67 | DWN | -- | 0.028 | -23 | NT | -- | -0.000488 | -0.00106 to 0 |
| MWF7-02 | Tetrachloroethene | 04/17 - 06/23 | D-39 | 11 / 11 | 26 - 115 | 69 | 77 | 30 | UP | -- | 0.001 | 40 | UP | -- | 0.0357 | 0.0231 to 0.0457 |
| MWF7-02 | Trichloroethene | 04/17 - 06/23 | D-40 | 11 / 11 | 3 - 5 | 3.6 | 4 | 0.67 | NST | -- | 0.058 | 19 | NT | -- | 0 | 0 to 0.000975 |

| 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) |
| MWOS-08 | cis-1,2-Dichloroethene | 09/20 - 11/23 | D-41 | 13 / 13 | 1 - 6 | 3 | 3 | 1.6 | DWN | -- | 0.045 | -28 | NT | -- | -0.00215 | -0.00498 to 0 |
| MWOS-09R | cis-1,2-Dichloroethene | 11/21 - 11/23 | D-42 | 10 / 10 | 19 - 28 | 23.7 | 22.5 | 3.4 | NST | -- | 0.242 | -9 | NST | -- | -0.00161 | -0.0162 to 0.00562 |
| MWOS-09R | Tetrachloroethene | 11/21 - 11/23 | D-43 | 10 / 10 | 10 - 17 | 13.4 | 13.5 | 2.3 | NST | -- | 0.168 | 12 | NST | -- | 0.00311 | -0.00536 to 0.0119 |
| MWOS-09R | Trichloroethene | 11/21 - 11/23 | D-44 | 10 / 10 | 3 - 5 | 3.7 | 3.5 | 0.82 | NST | -- | 0.431 | -3 | NST | -- | 0 | -0.00319 to 0.00160 |
| MWOS-10 | cis-1,2-Dichloroethene | 11/21 - 11/23 | D-45 | 10 / 10 | 4 - 9 | 6.8 | 7 | 1.8 | NST | -- | 0.332 | 6 | NST | -- | 0.00183 | -0.00608 to 0.00684 |
| MWOS-10 | Trichloroethene | 11/21 - 11/23 | D-46 | 10 / 10 | 7 - 12 | 9.2 | 9 | 1.8 | NST | -- | 0.300 | 7 | NST | -- | 0.00177 | -0.00921 to 0.00686 |
| TW-12-22 | cis-1,2-Dichloroethene | 01/22 - 11/23 | D-47 | 7 / 7 | 32 - 85 | 53.3 | 51 | 18.7 | NST | 5a | 0.191 | -7 | NST | 5a | -0.0500 | -0.0954 to 0.0606 |
| TW-12-22 | Trichloroethene | 01/22 - 11/23 | D-48 | 7 / 7 | 3 - 13 | 6.6 | 6 | 3.1 | NST | 5a | 0.334 | -4 | NST | 5a | -0.00313 | -0.00853 to 0.0142 |
| Unknown-01 | Tetrachloroethene | 04/17 - 12/23 | D-49 | 6 / 6 | 23 - 45 | 34.5 | 35 | 9.6 | NST | 5a | 0.360 | 3 | NST | 5a | 0.00598 | -0.0362 to 0.0545 |

**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

$H_0$ = null hypothesis: no significant trend (slope = 0)
$H_a$ = alternative hypothesis: significant trend (slope ≠ 0)
95% CI = 95% confidence interval

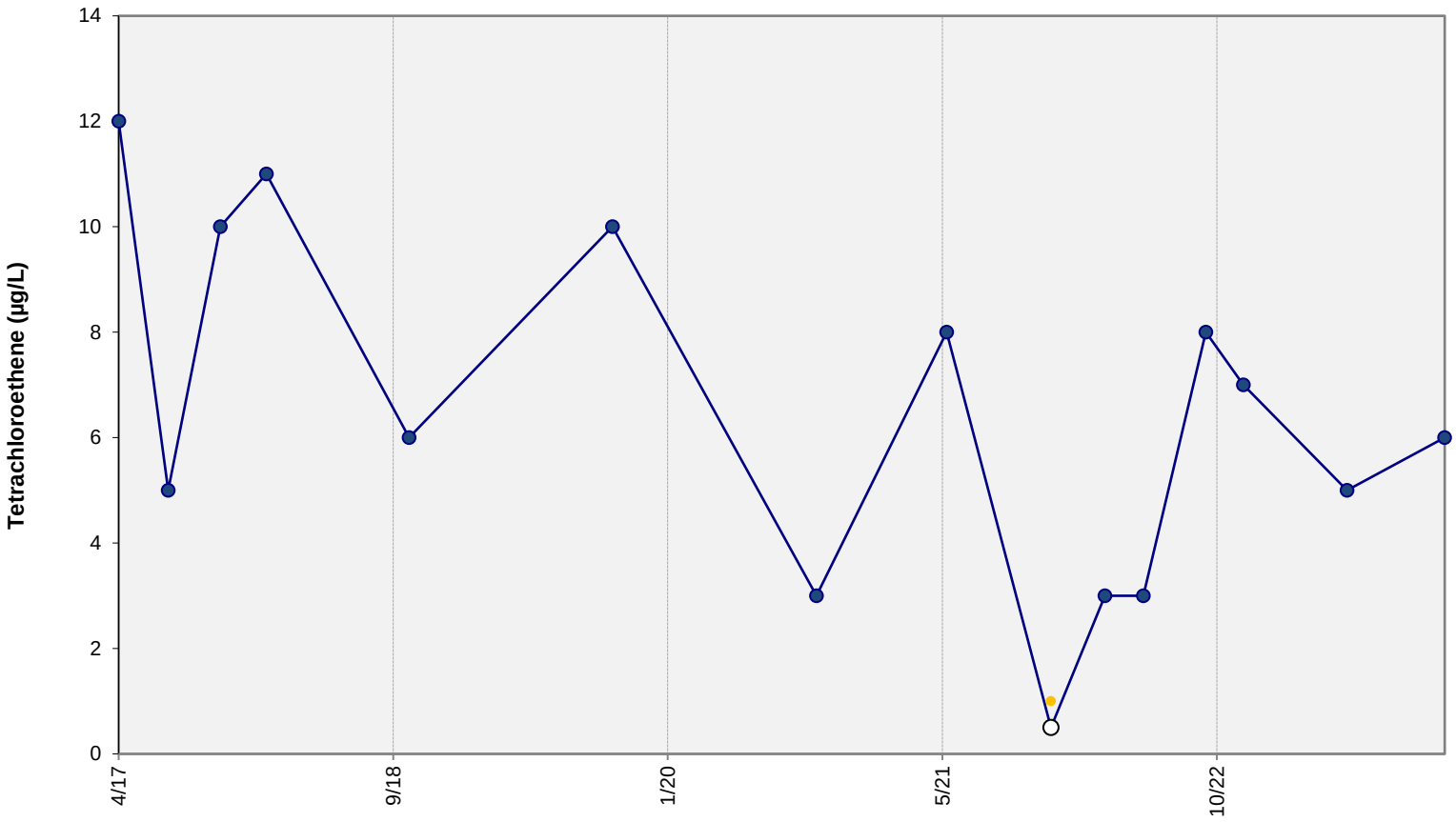
**Notes:**

1. All analytical results are in µg/L. Result values less than 10 are reported to 2 significant figures; values greater than 10 are reported to 3 significant figures.
2. Trend results are presented when at least four samples and one detected value are available. Significance of trends evaluated at 95% confidence (alpha = 0.05).
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 ≤ 0.05, or 95% 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.




Res Fiero SSVIAC BASE criteria value of 130 is off-scale.

**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.061 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = -2.0E-03 µg/L Per Day

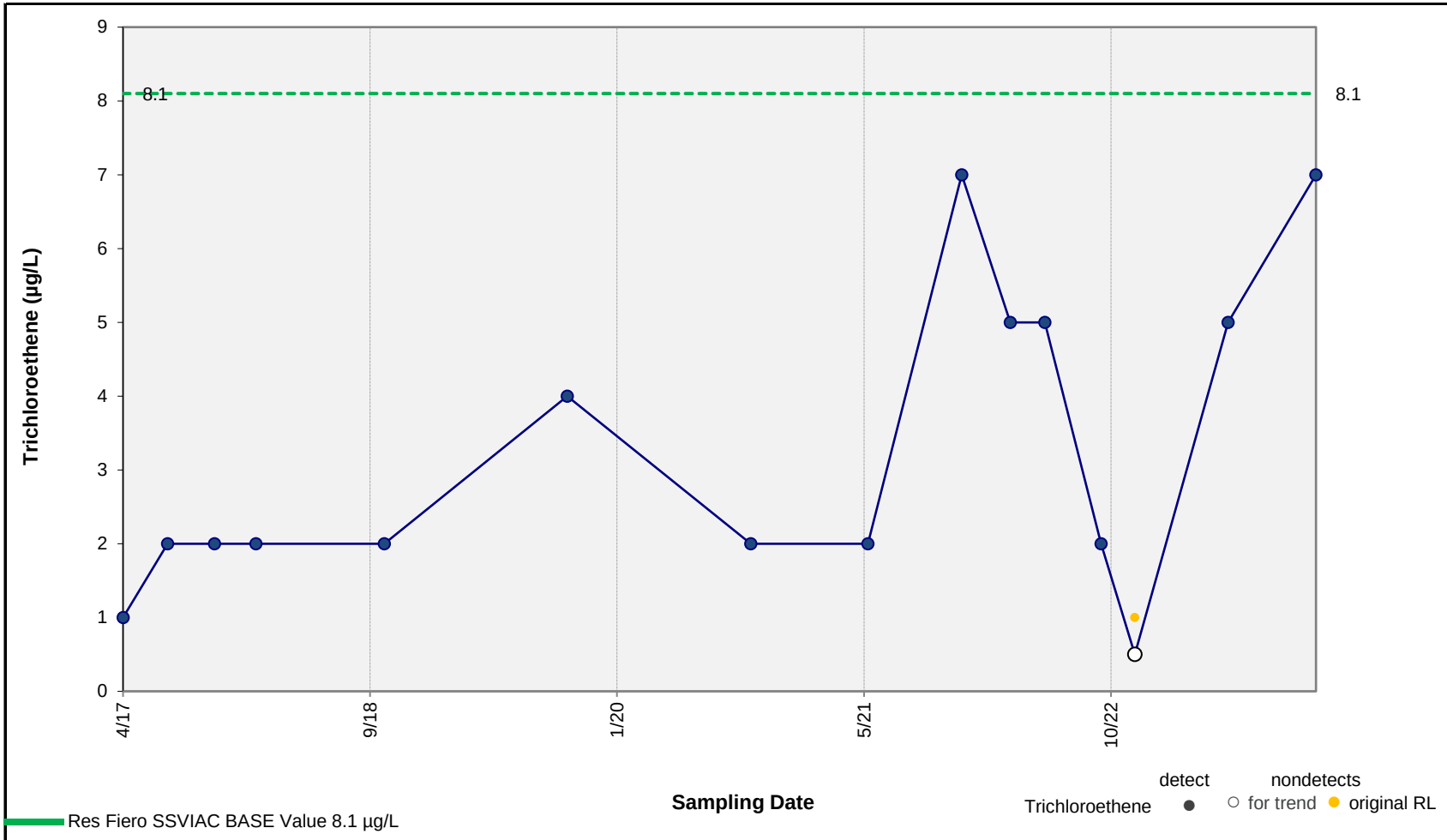
95% Confidence Interval = -3.8E-03 to 5.0E-05 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Tetrachloroethene in Well MW-02-17**

Racer PNC GW

**Figure D-1**




**Results of Mann-Kendall Test for Trend:** **INCREASING TREND**

p value = 0.025 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No trend**

Median Slope Estimate = 1.4E-03 µg/L Per Day

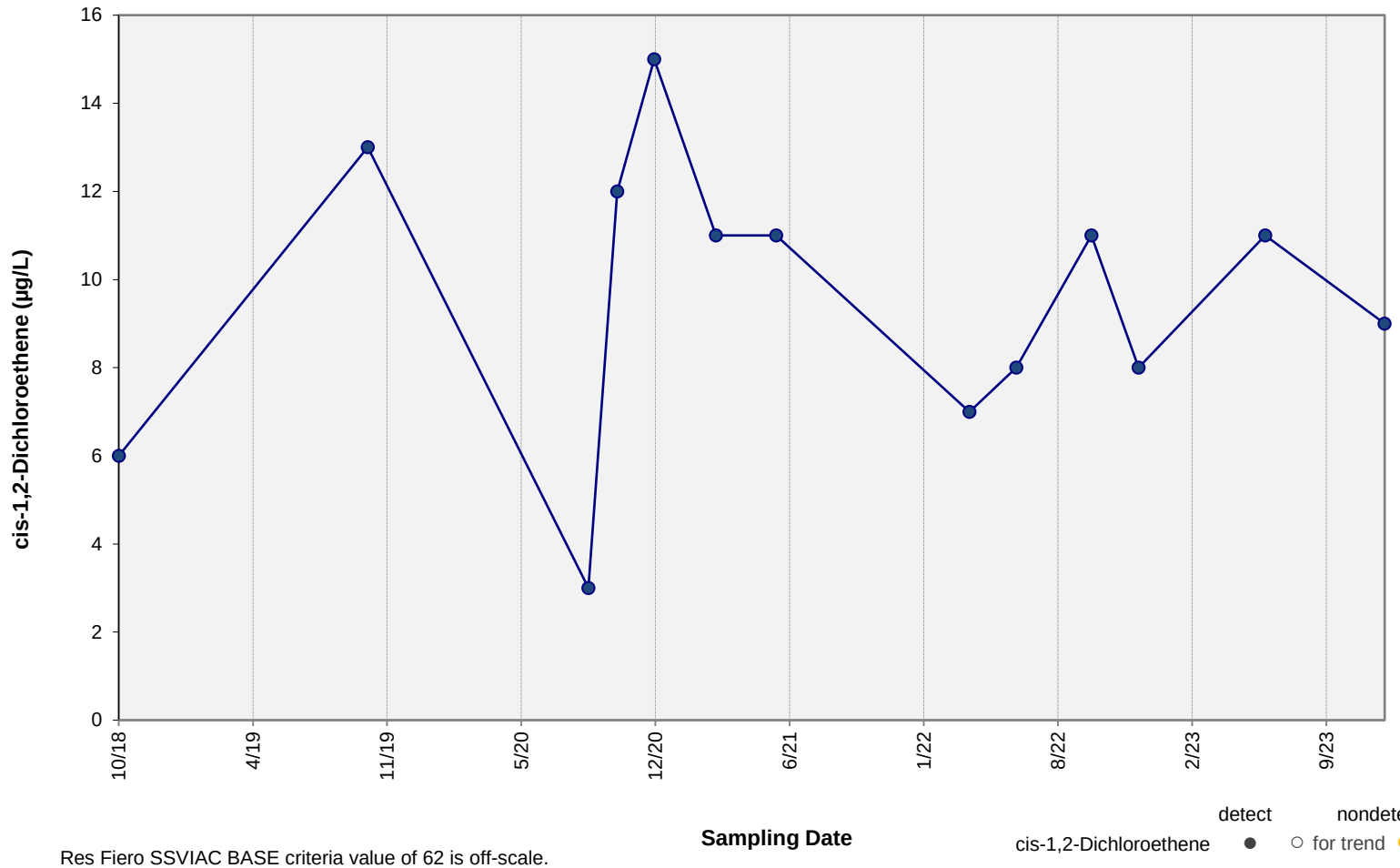
95% Confidence Interval = 0.0E+00 to 2.3E-03 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Trichloroethene in Well MW-02-17**

Racer PNC GW

**Figure D-2**




Res Fiero SSVIAC BASE criteria value of 62 is off-scale.

**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.402 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 0.0E+00 µg/L Per Day

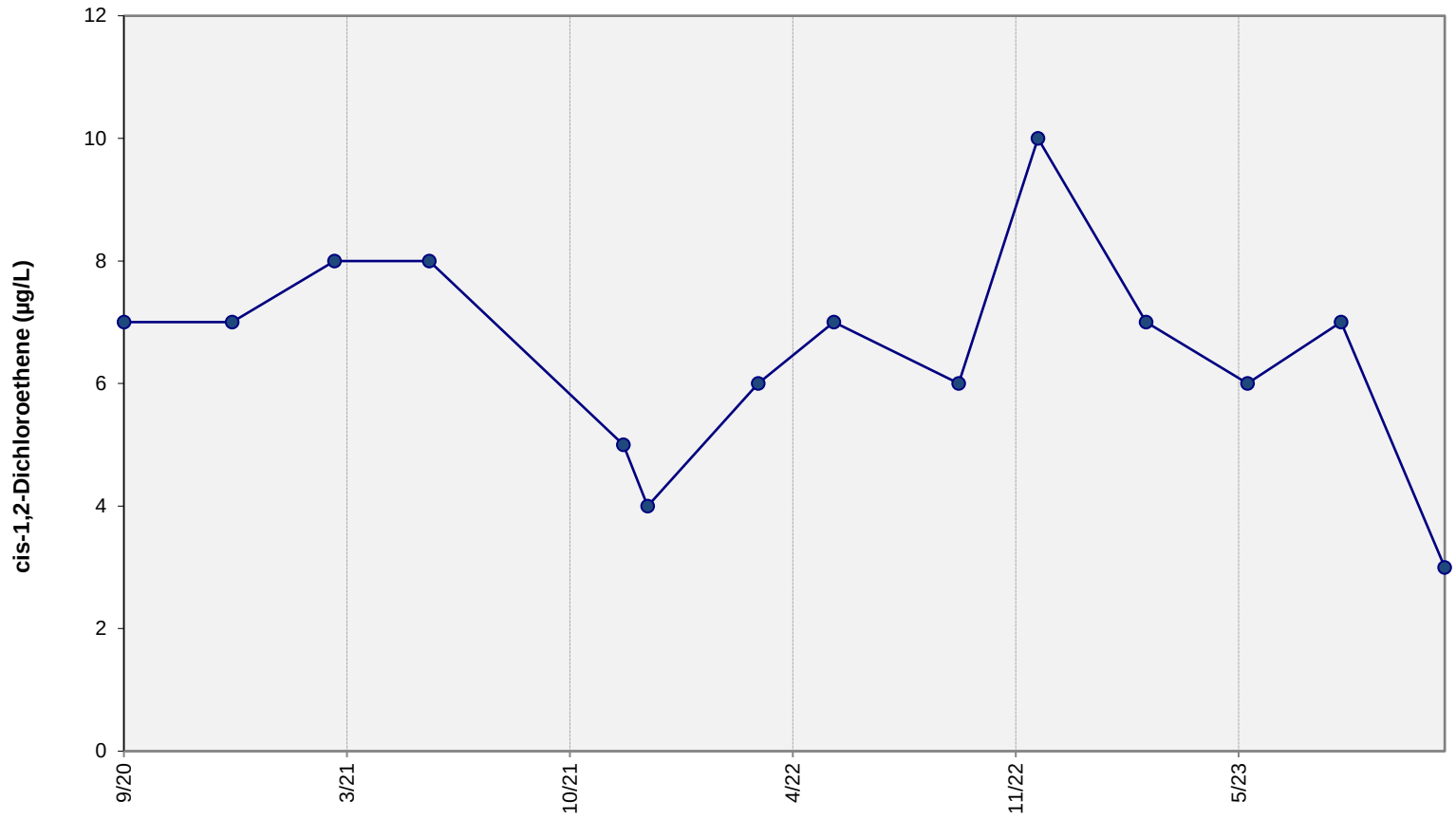
95% Confidence Interval = -4.5E-03 to 3.8E-03 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – cis-1,2-Dichloroethene in Well MW-05-18**

Racer PNC GW

**Figure D-3**




Res Fiero SSVIAC BASE criteria value of 62 is off-scale.

**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.214 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = -9.9E-04 µg/L Per Day

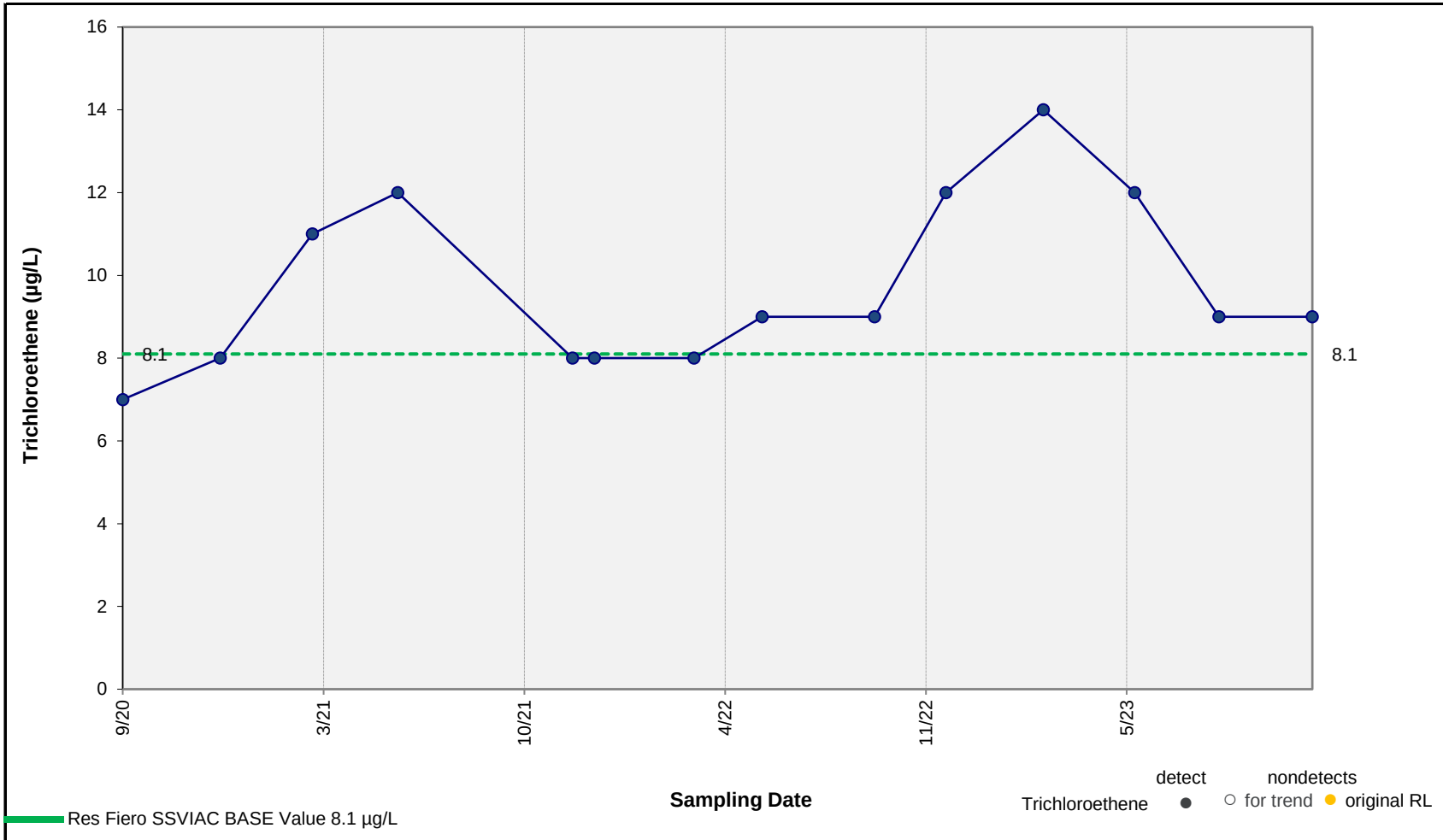
95% Confidence Interval = -3.5E-03 to 2.7E-03 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – cis-1,2-Dichloroethene in Well MW-06-20**

Racer PNC GW

**Figure D-4**




**Results of Mann-Kendall Test for Trend:** **INCREASING TREND**

p value = 0.031 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No trend**

Median Slope Estimate = 1.6E-03 µg/L Per Day

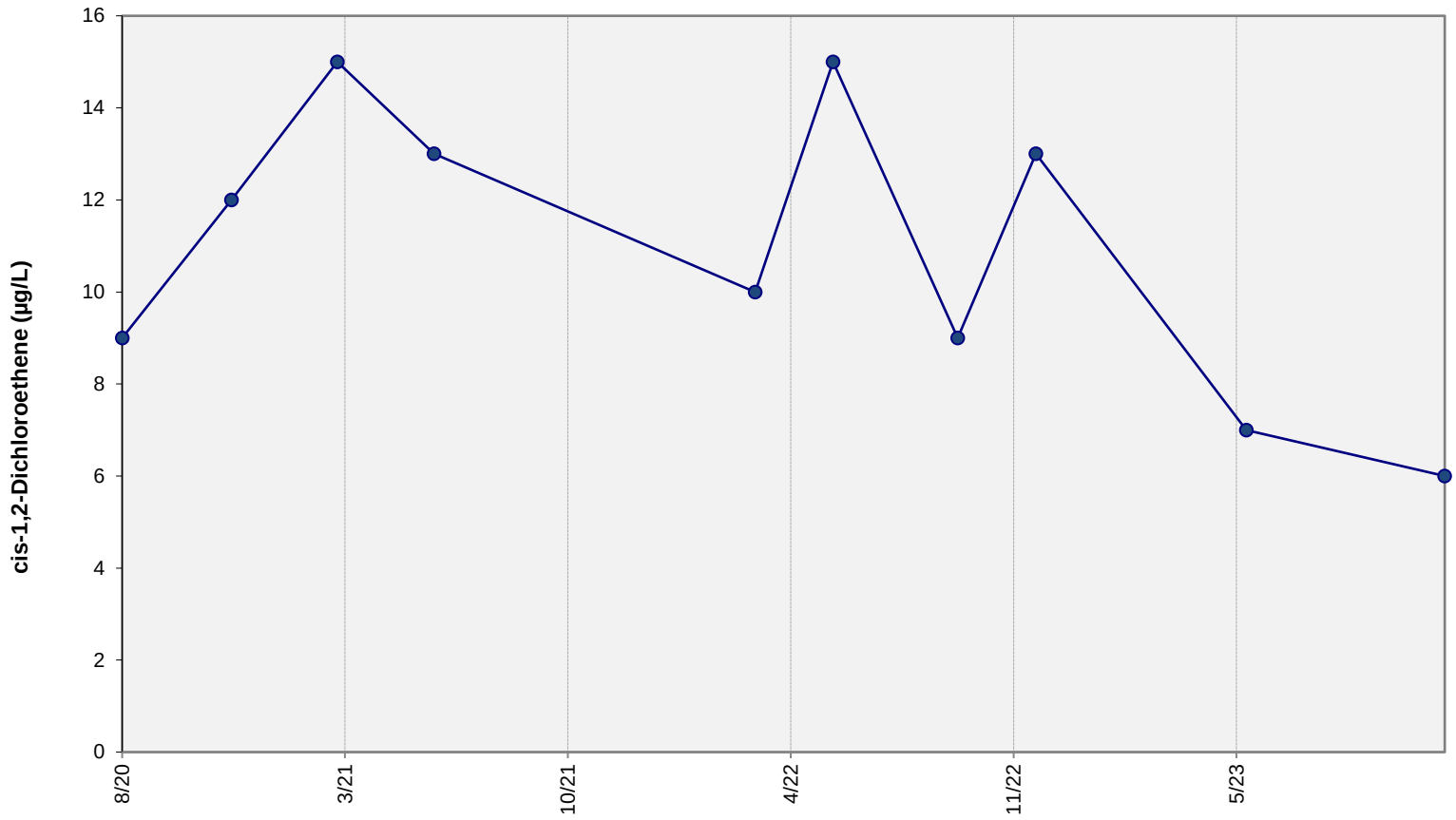
95% Confidence Interval = 0.0E+00 to 5.5E-03 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Trichloroethene in Well MW-06-20**

Racer PNC GW

**Figure D-5**




Res Fiero SSVIAC BASE criteria value of 62 is off-scale.

**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.127 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = -5.5E-03 µg/L Per Day

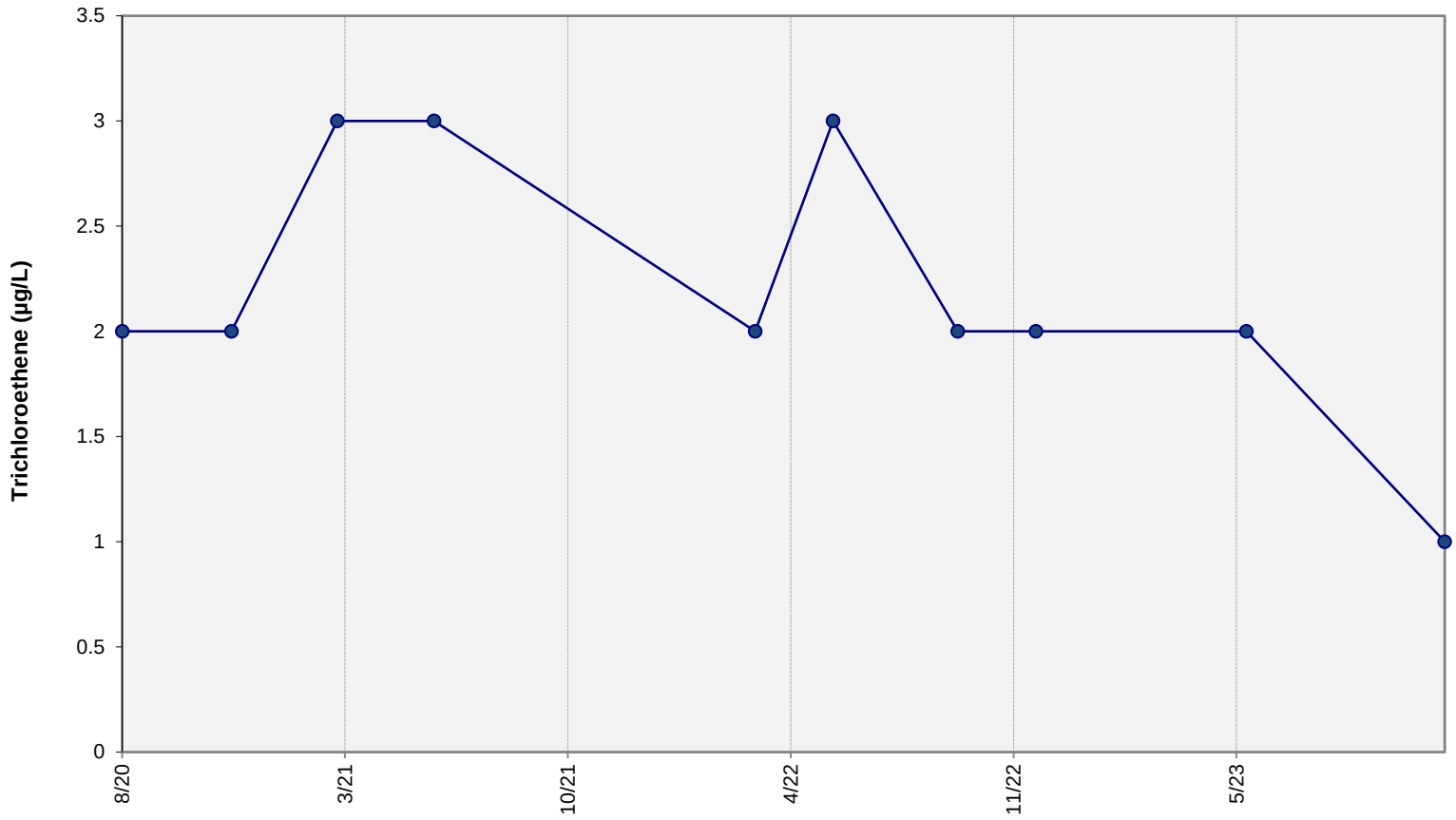
95% Confidence Interval = -9.3E-03 to 2.8E-03 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – cis-1,2-Dichloroethene in Well MW-07-20**

Racer PNC GW

**Figure D-6**




Res Fiero SSVIAC BASE criteria value of 8.1 is off-scale.

**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.146 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No trend**

Median Slope Estimate = 0.0E+00 µg/L Per Day

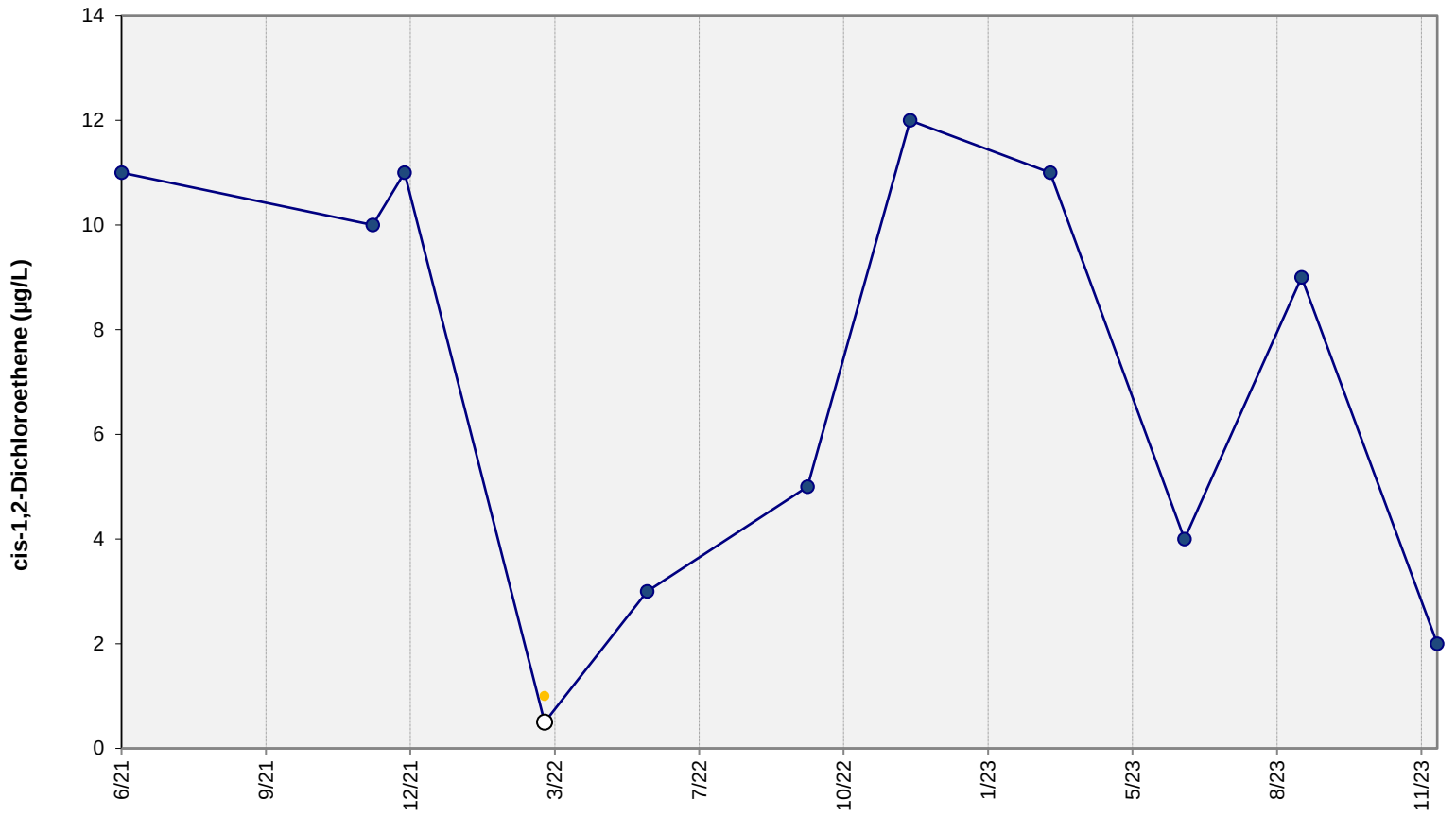
95% Confidence Interval = -1.8E-03 to 0.0E+00 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Trichloroethene in Well MW-07-20**

Racer PNC GW

**Figure D-7**




Res Fiero SSVIAC BASE criteria value of 62 is off-scale.

**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.239 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = -3.2E-03 µg/L Per Day

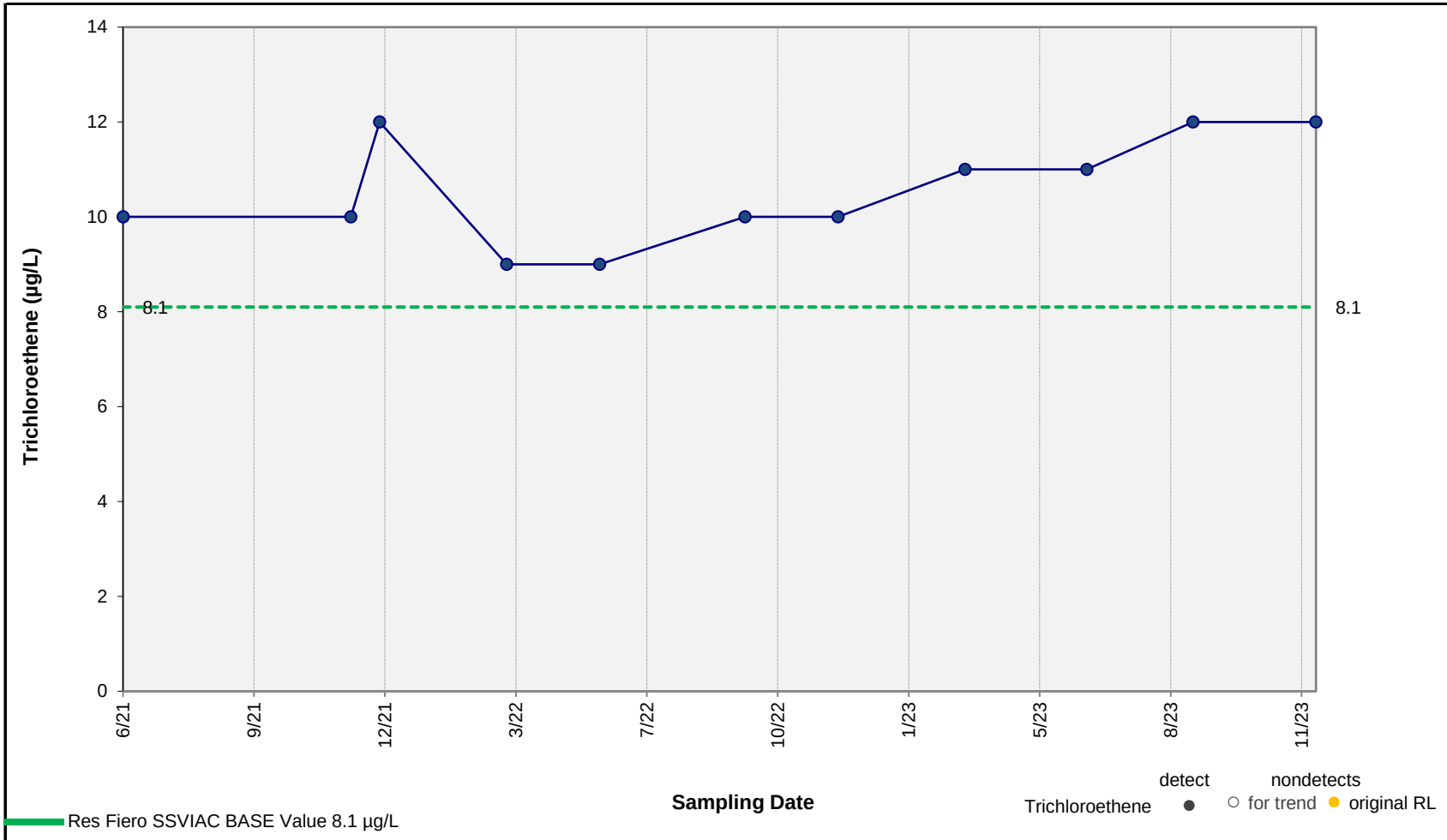
95% Confidence Interval = -1.3E-02 to 5.2E-03 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – cis-1,2-Dichloroethene in Well MW-08-21**

Racer PNC GW

**Figure D-8**




**Results of Mann-Kendall Test for Trend:** **INCREASING TREND**

p value = 0.030 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No trend**

Median Slope Estimate = 2.7E-03 µg/L Per Day

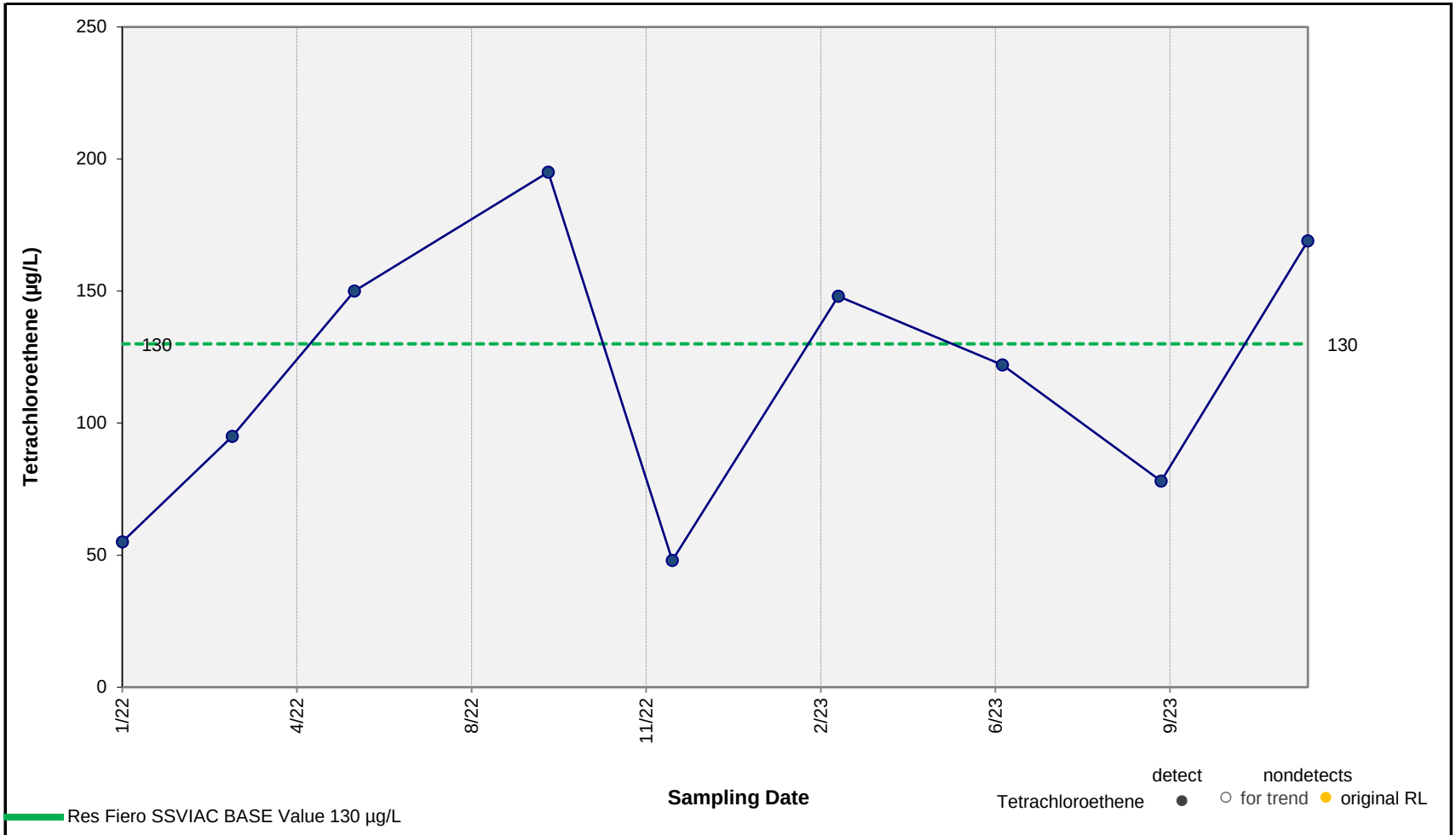
95% Confidence Interval = 0.0E+00 to 5.5E-03 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Trichloroethene in Well MW-08-21**

Racer PNC GW

**Figure D-9**




**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.306 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 7.0E-02 µg/L Per Day

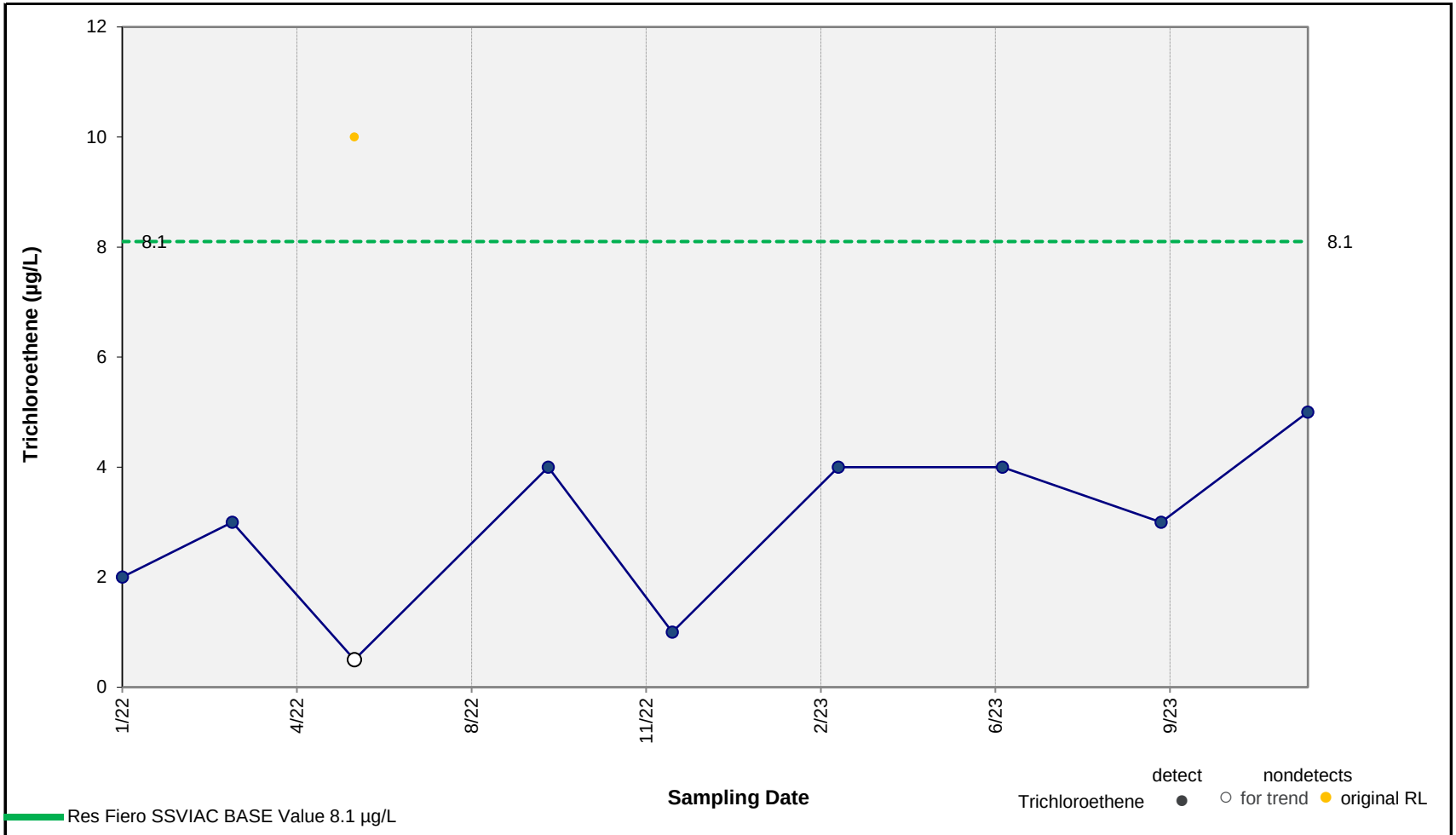
95% Confidence Interval = -2.2E-01 to 3.6E-01 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Tetrachloroethene in Well MW-09-22**

Racer PNC GW

**Figure D-10**




**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.060 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 3.5E-03 µg/L Per Day

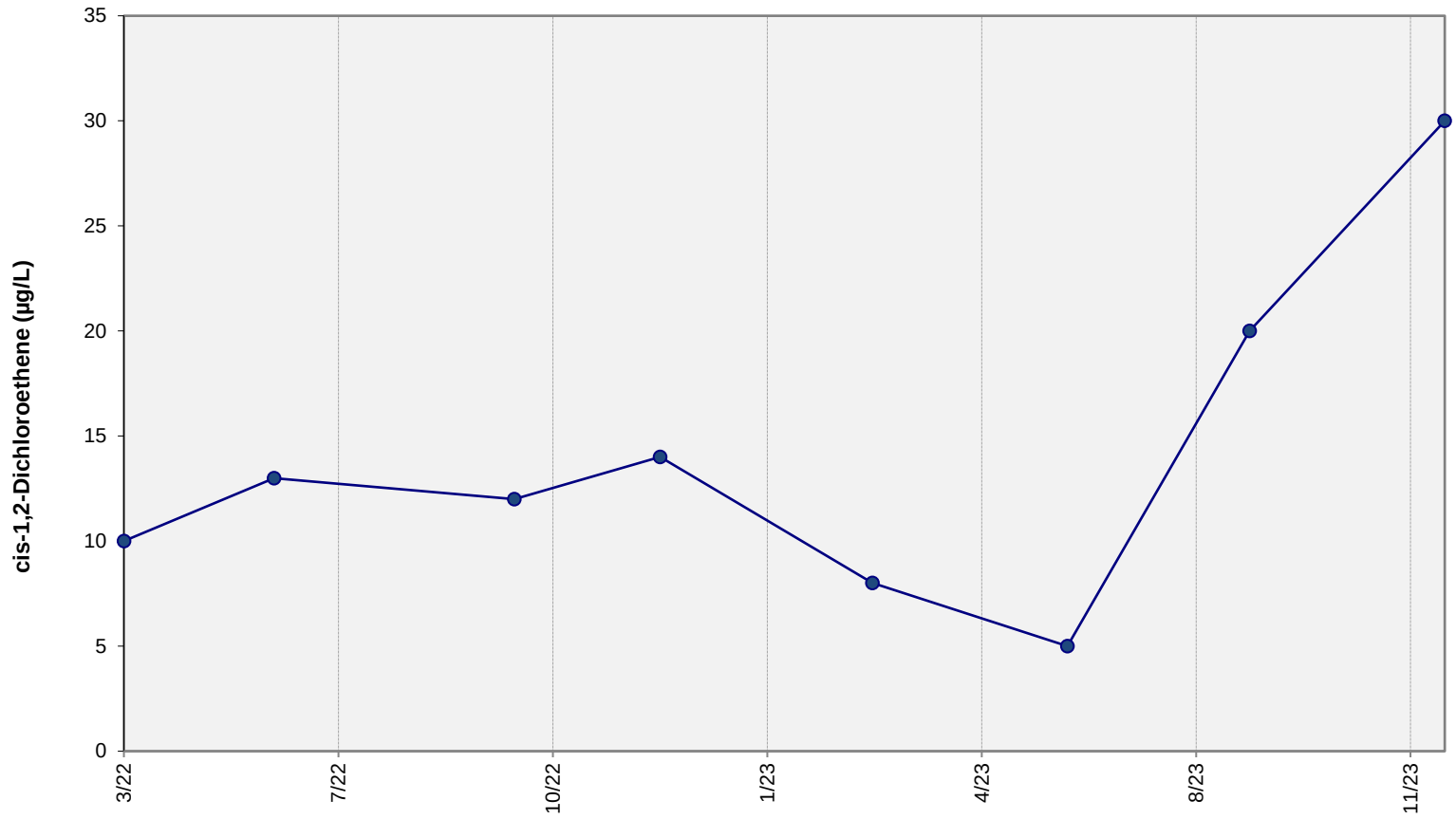
95% Confidence Interval = -4.5E-04 to 8.2E-03 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Trichloroethene in Well MW-09-22**

Racer PNC GW

**Figure D-11**




Res Fiero SSVIAC BASE criteria value of 62 is off-scale.

**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.199 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 1.8E-02 µg/L Per Day

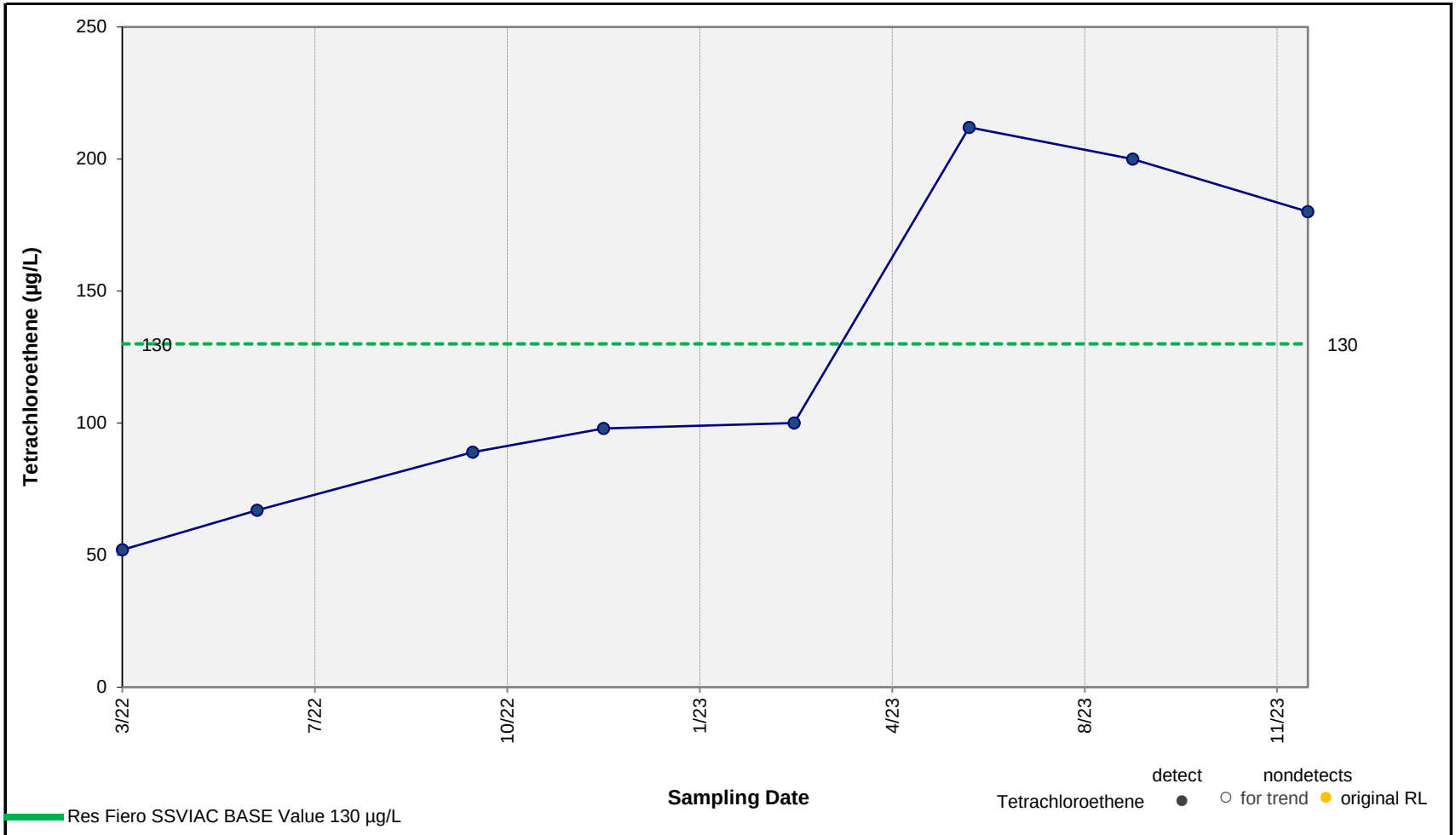
95% Confidence Interval = -2.1E-02 to 4.3E-02 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – cis-1,2-Dichloroethene in Well MW-14-22**

Racer PNC GW

**Figure D-12**




**Results of Mann-Kendall Test for Trend:** **INCREASING TREND**

p value = 0.003 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **INCREASING TREND**

Median Slope Estimate = 2.1E-01 µg/L Per Day

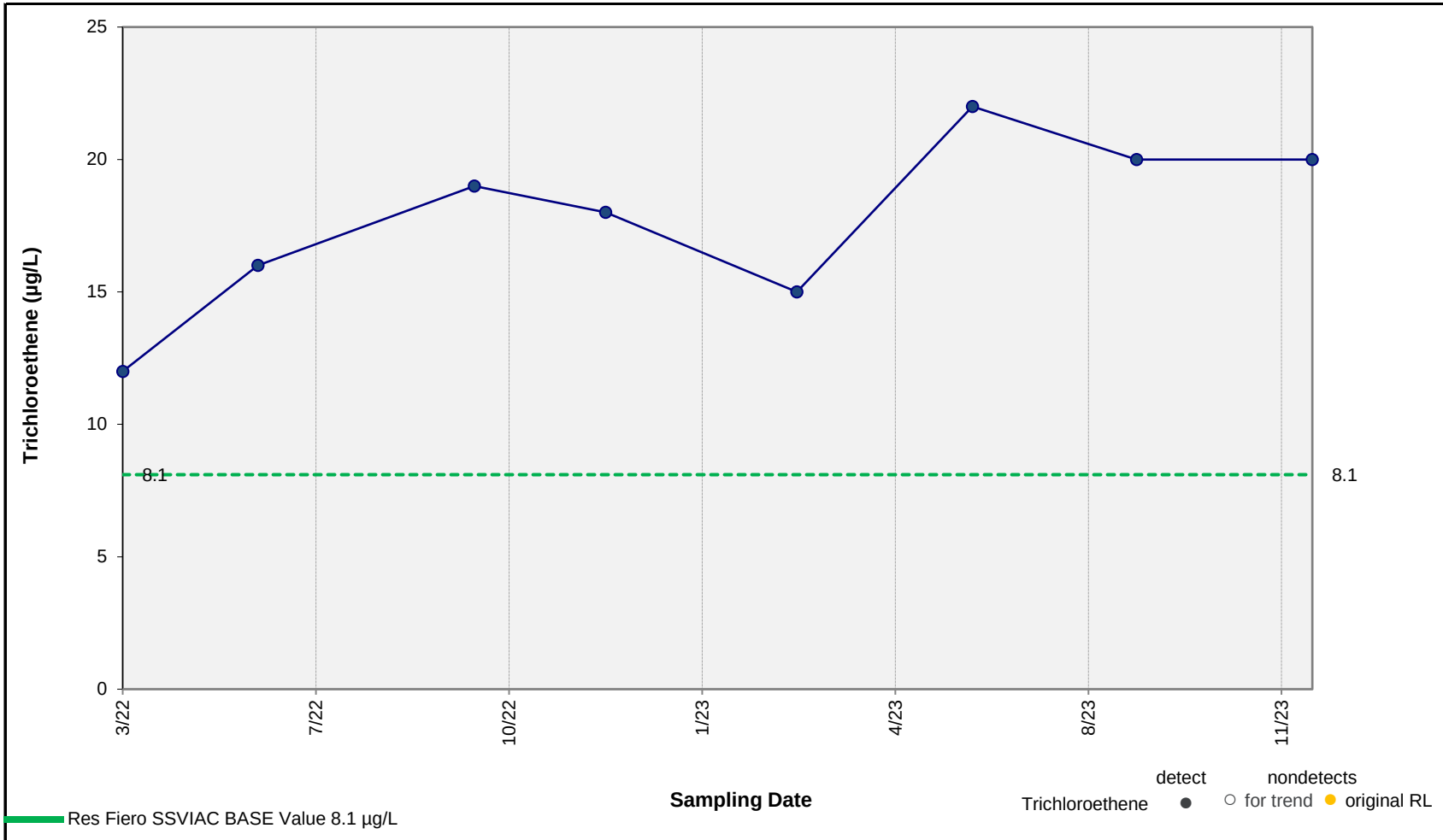
95% Confidence Interval = 1.2E-01 to 3.6E-01 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Tetrachloroethene in Well MW-14-22**

Racer PNC GW

**Figure D-13**




**Results of Mann-Kendall Test for Trend:** **INCREASING TREND**

p value = 0.043 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 1.0E-02 µg/L Per Day

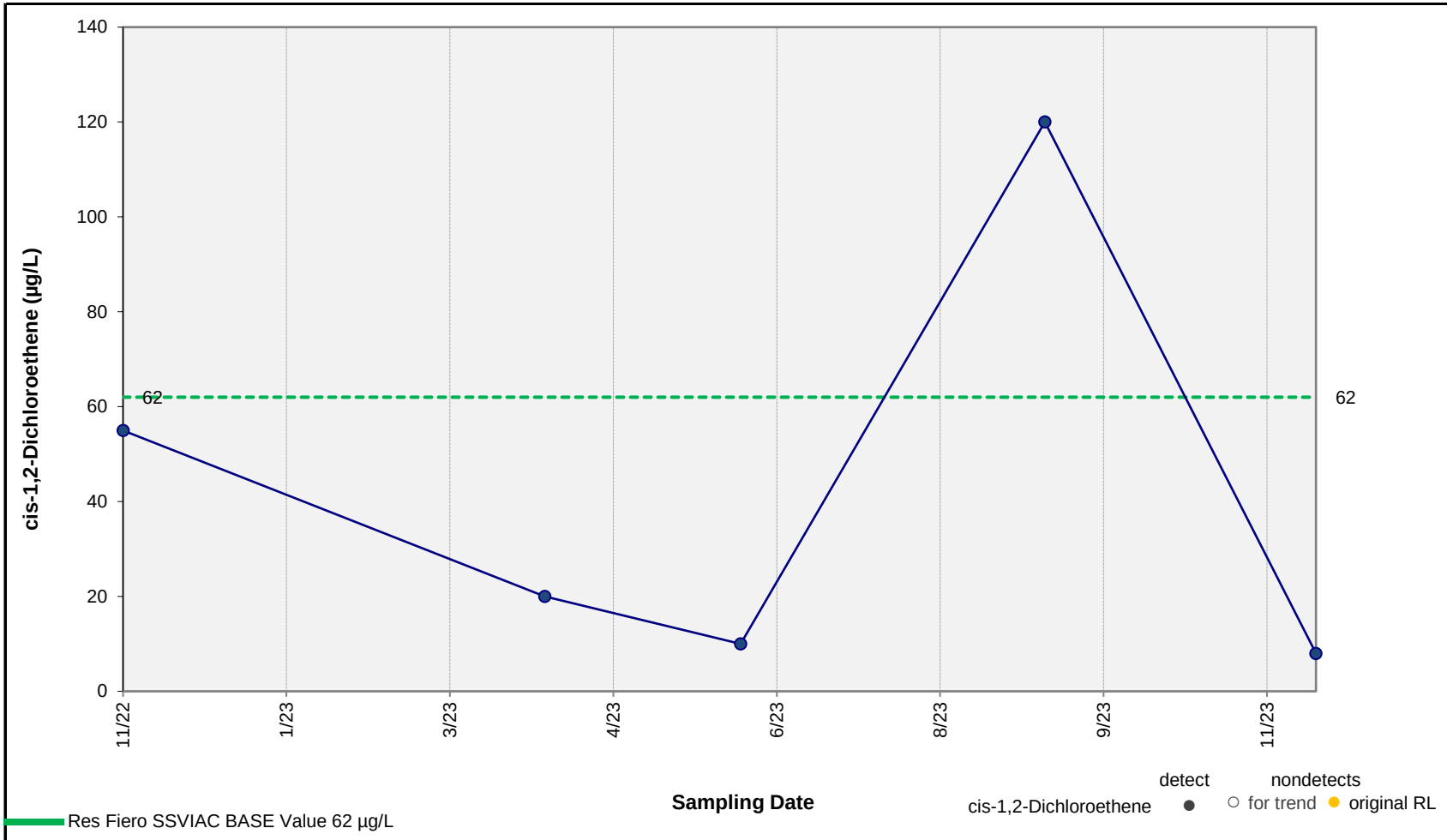
95% Confidence Interval = -3.1E-03 to 2.2E-02 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Trichloroethene in Well MW-14-22**

Racer PNC GW

**Figure D-14**




**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.242 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **NA**

Median Slope Estimate = NA µg/L Per Day

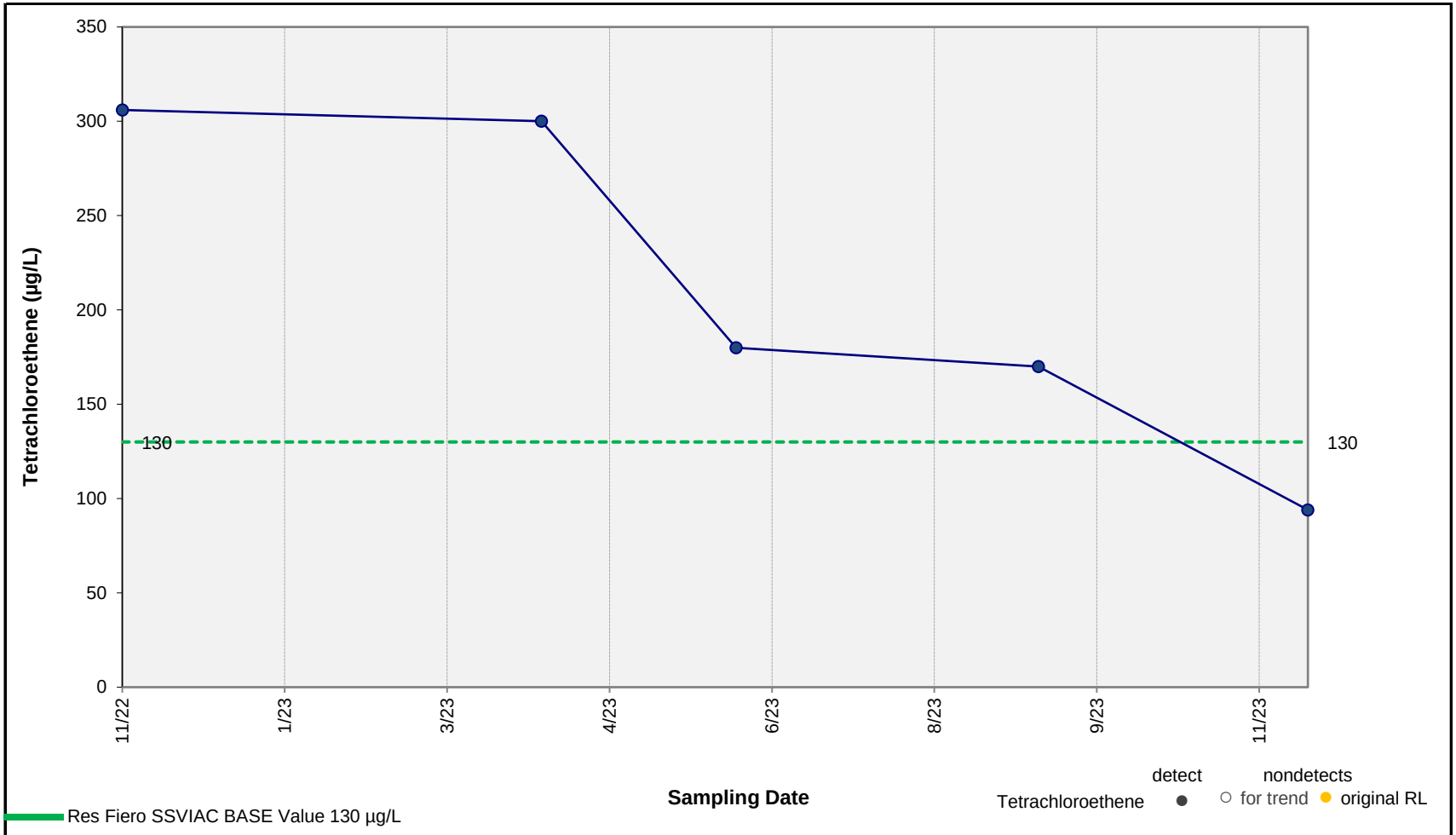
95% Confidence Interval = NA to NA µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – cis-1,2-Dichloroethene in Well MW-16-22**

Racer PNC GW

**Figure D-15**




**Results of Mann-Kendall Test for Trend:** **DECREASING TREND**

p value = 0.008 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **NA**

Median Slope Estimate = NA µg/L Per Day

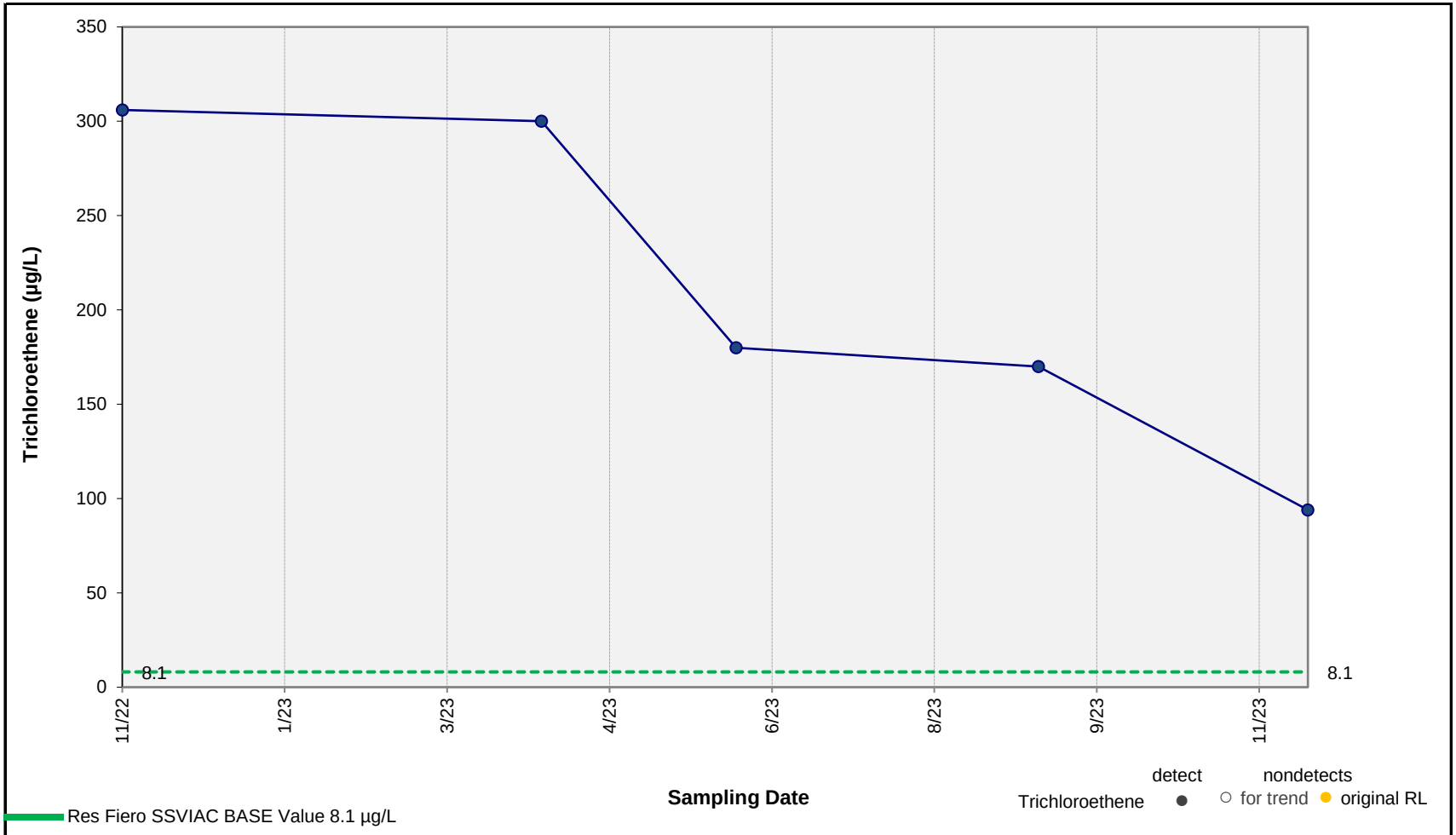
95% Confidence Interval = NA to NA µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Tetrachloroethene in Well MW-16-22**

Racer PNC GW

**Figure D-16**




**Results of Mann-Kendall Test for Trend:** **DECREASING TREND**

p value = 0.008 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **NA**

Median Slope Estimate = NA µg/L Per Day

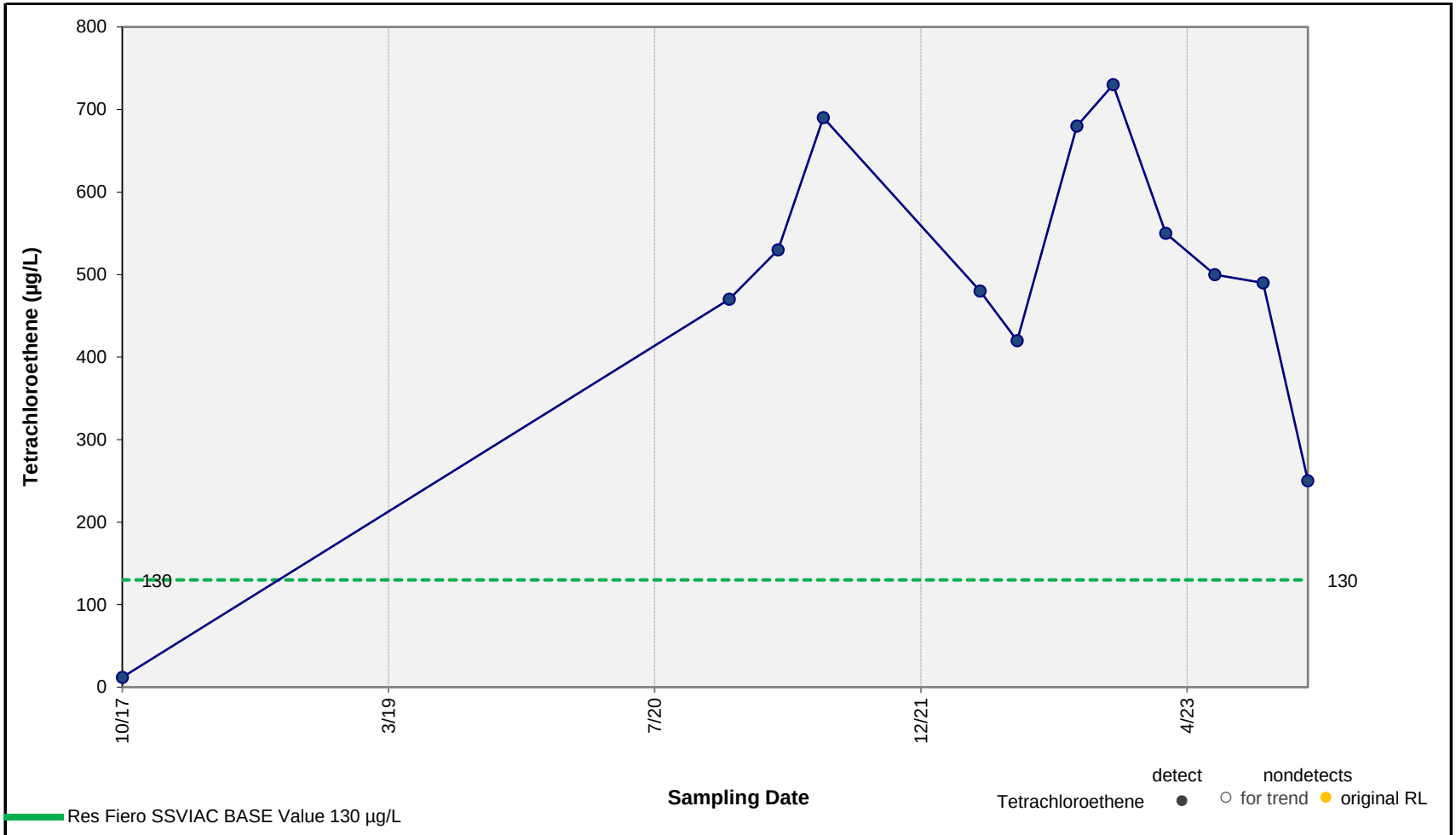
95% Confidence Interval = NA to NA µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Trichloroethene in Well MW-16-22**

Racer PNC GW

**Figure D-17**




**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.419 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 2.1E-02 µg/L Per Day

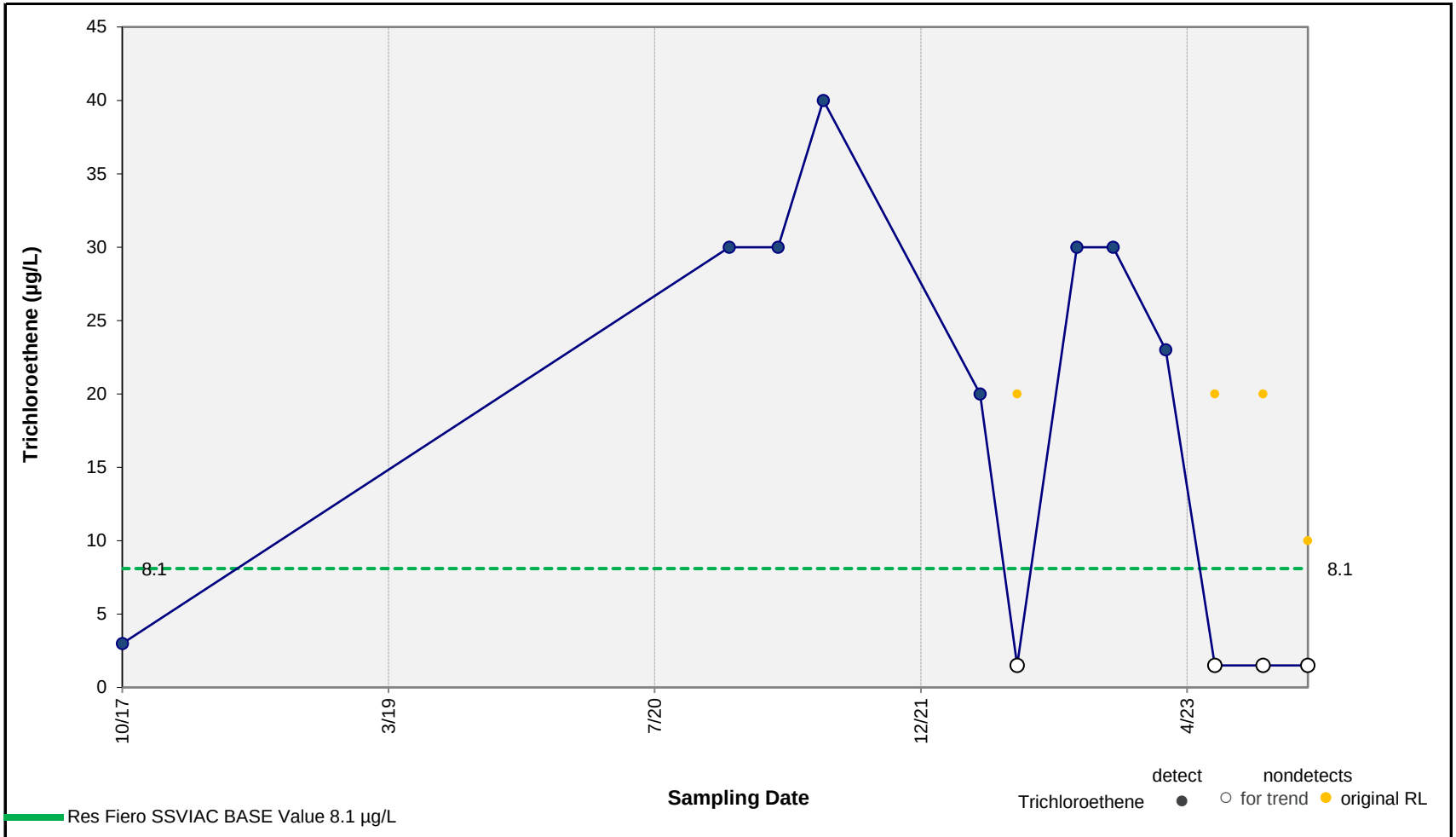
95% Confidence Interval = -3.2E-01 to 2.7E-01 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Tetrachloroethene in Well MWF16-05**

Racer PNC GW

**Figure D-18**




**Results of Mann-Kendall Test for Trend:** **DECREASING TREND**

p value = 0.050 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No trend**

Median Slope Estimate = -1.4E-02 µg/L Per Day

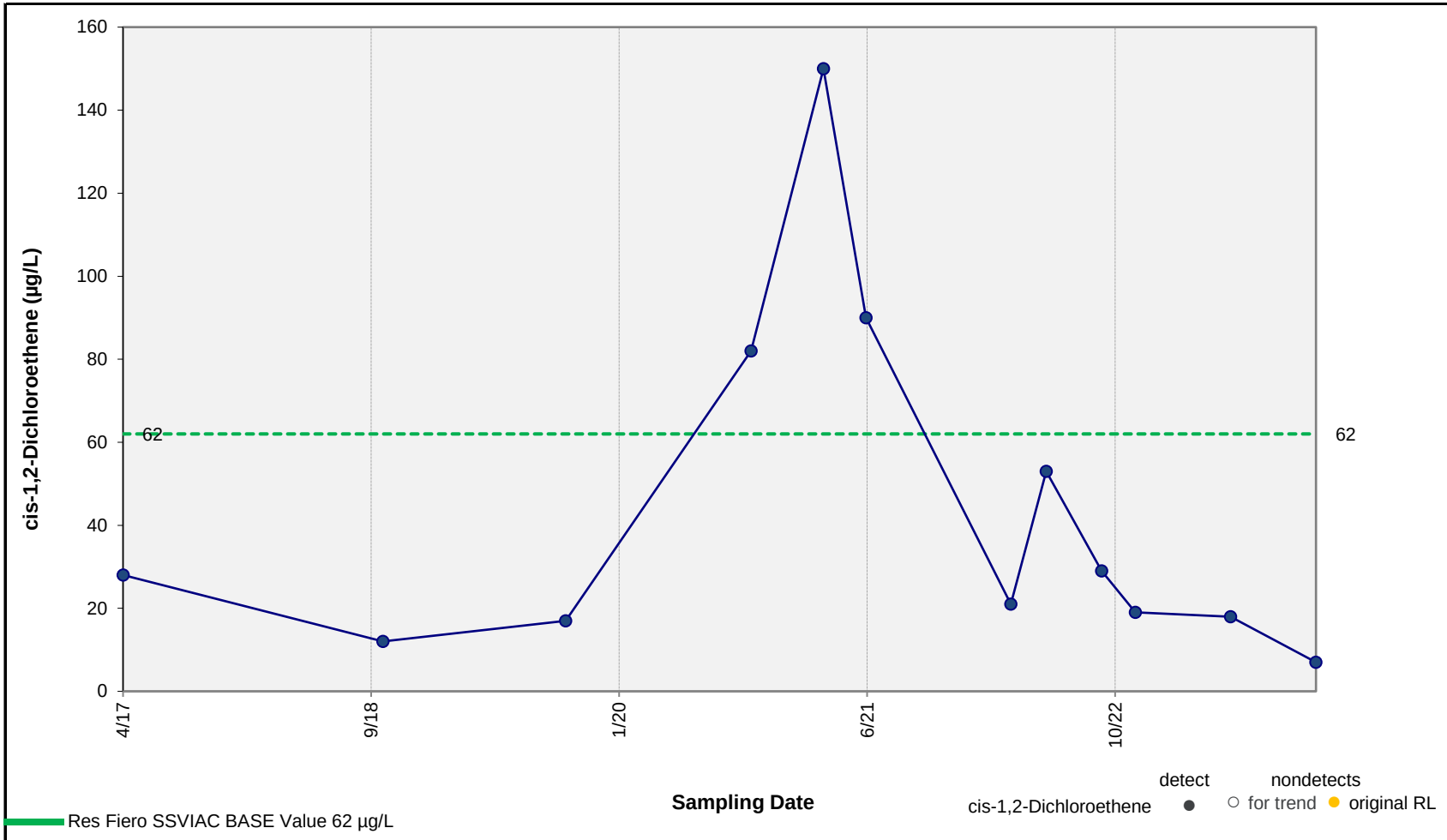
95% Confidence Interval = -4.2E-02 to 0.0E+00 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Trichloroethene in Well MWF16-05**

Racer PNC GW

**Figure D-19**




**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.186 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = -7.4E-03 µg/L Per Day

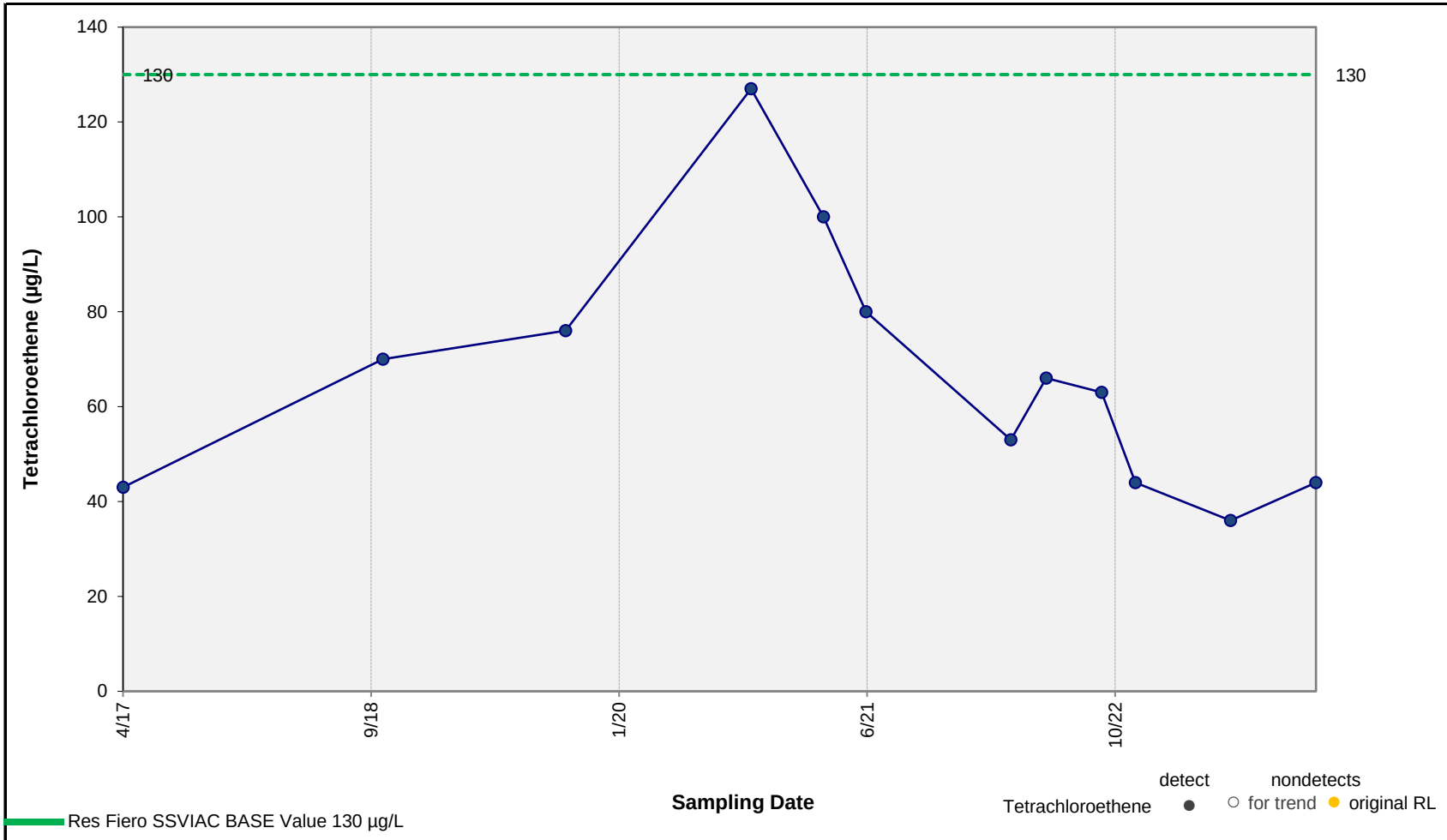
95% Confidence Interval = -8.7E-02 to 8.3E-03 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – cis-1,2-Dichloroethene in Well MWF16-06**

Racer PNC GW

**Figure D-20**




**Results of Mann-Kendall Test for Trend:** **DECREASING TREND**

p value = 0.050 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = -2.6E-02 µg/L Per Day

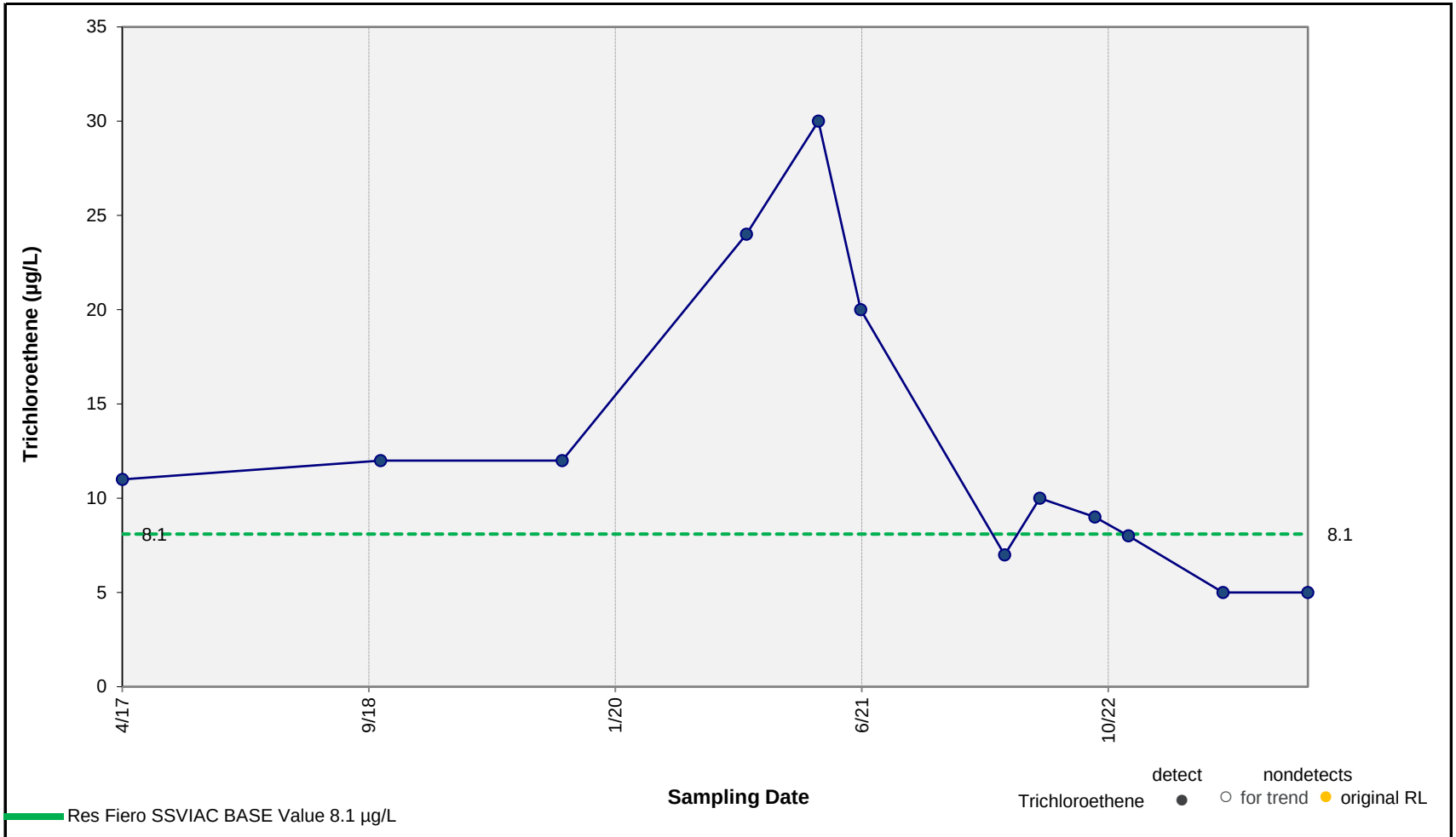
95% Confidence Interval = -6.8E-02 to 4.3E-04 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Tetrachloroethene in Well MWF16-06**

Racer PNC GW

**Figure D-21**




**Results of Mann-Kendall Test for Trend:** **DECREASING TREND**

p value = 0.011 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **DECREASING TREND**

Median Slope Estimate = -4.3E-03 µg/L Per Day

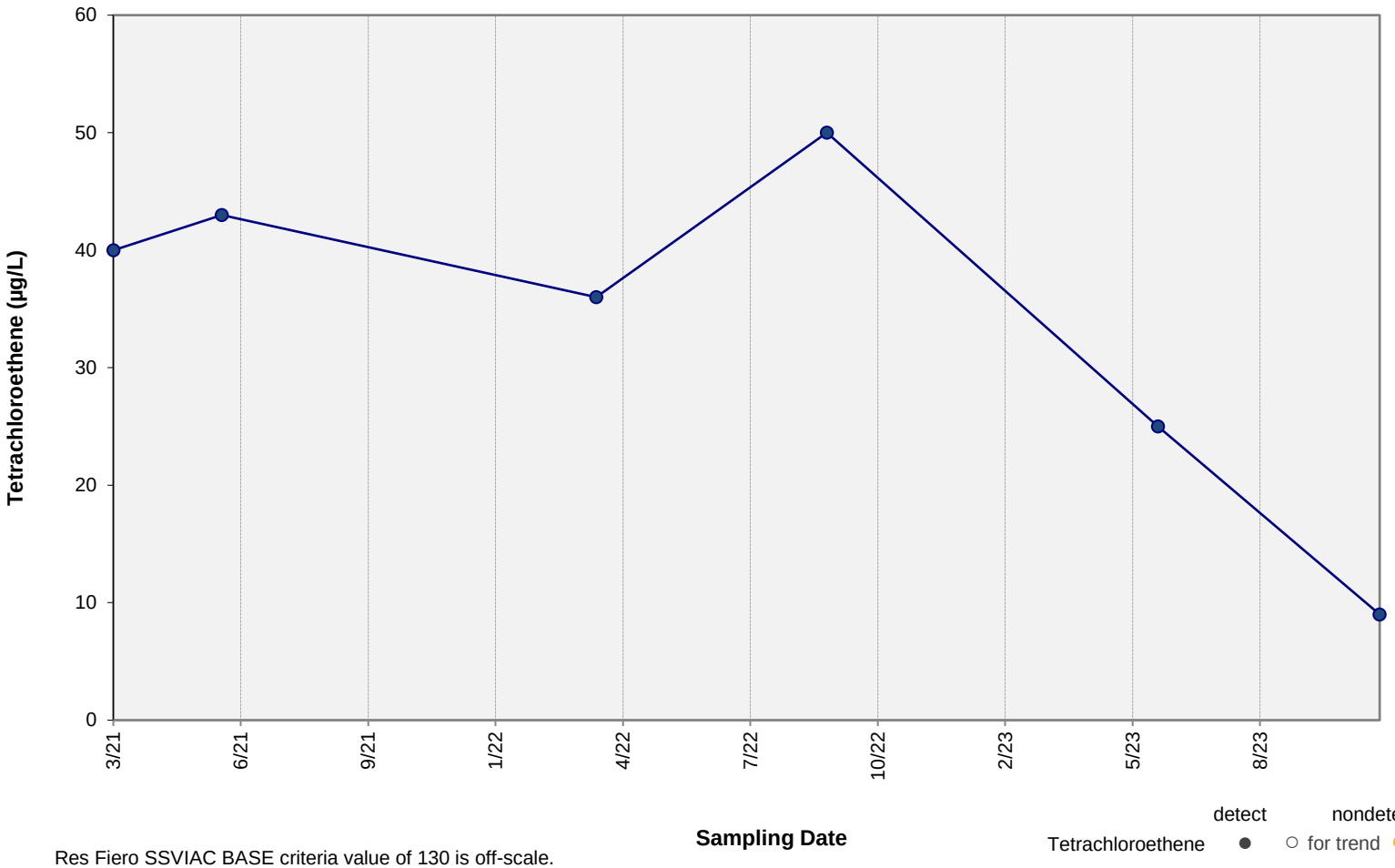
95% Confidence Interval = -1.7E-02 to -1.4E-03 µg/L Per Day

ARCADIS

## Concentration vs. Time Plot – Trichloroethene in Well MWF16-06

Racer PNC GW

**Figure D-22**




Res Fiero SSVIAC BASE criteria value of 130 is off-scale.

**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.136 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = -2.4E-02 µg/L Per Day

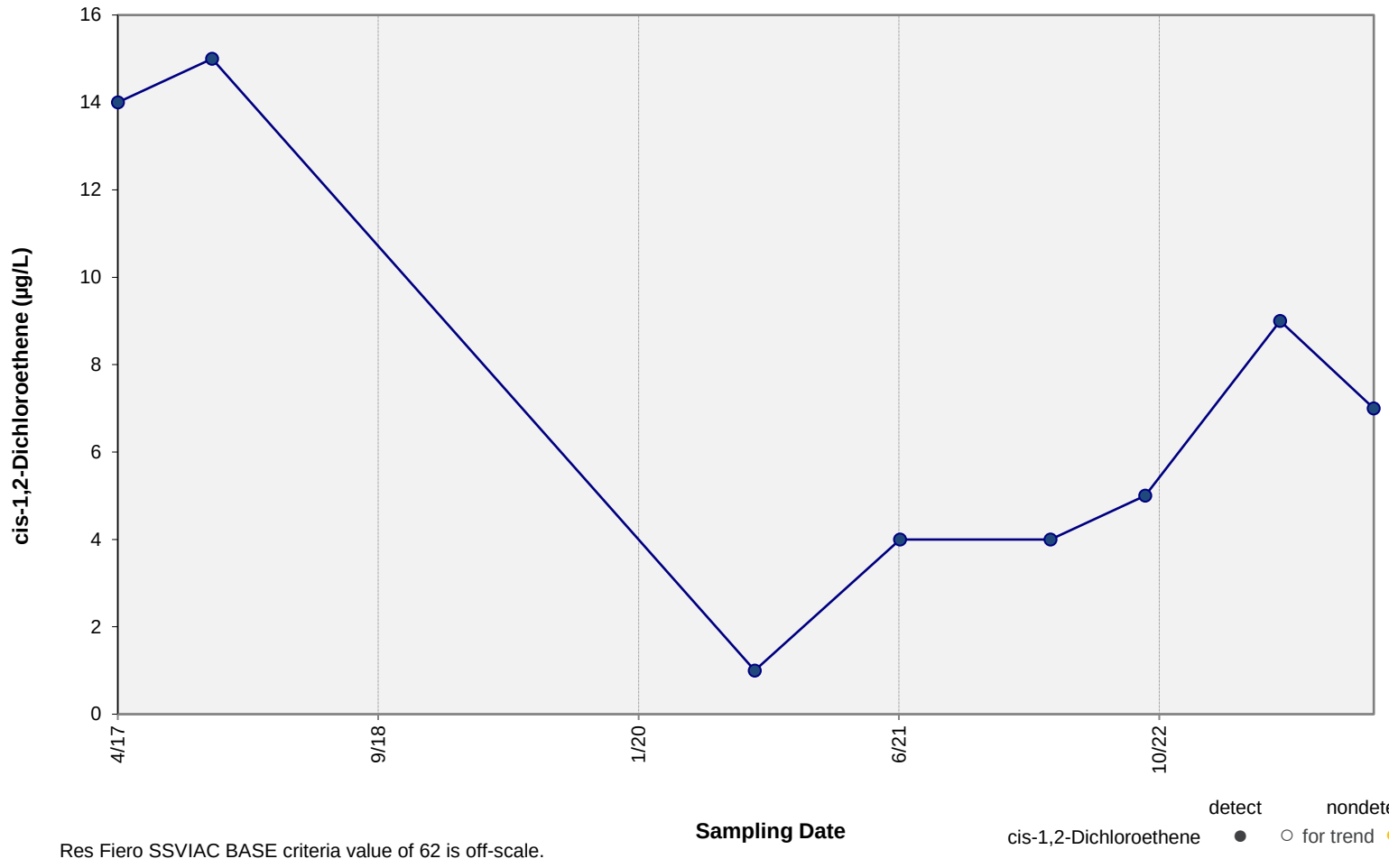
95% Confidence Interval = -9.4E-02 to 1.7E-02 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Tetrachloroethene in Well MWF16-12**

Racer PNC GW

**Figure D-23**




Res Fiero SSVIAC BASE criteria value of 62 is off-scale.

**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.500 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 1.1E-03 µg/L Per Day

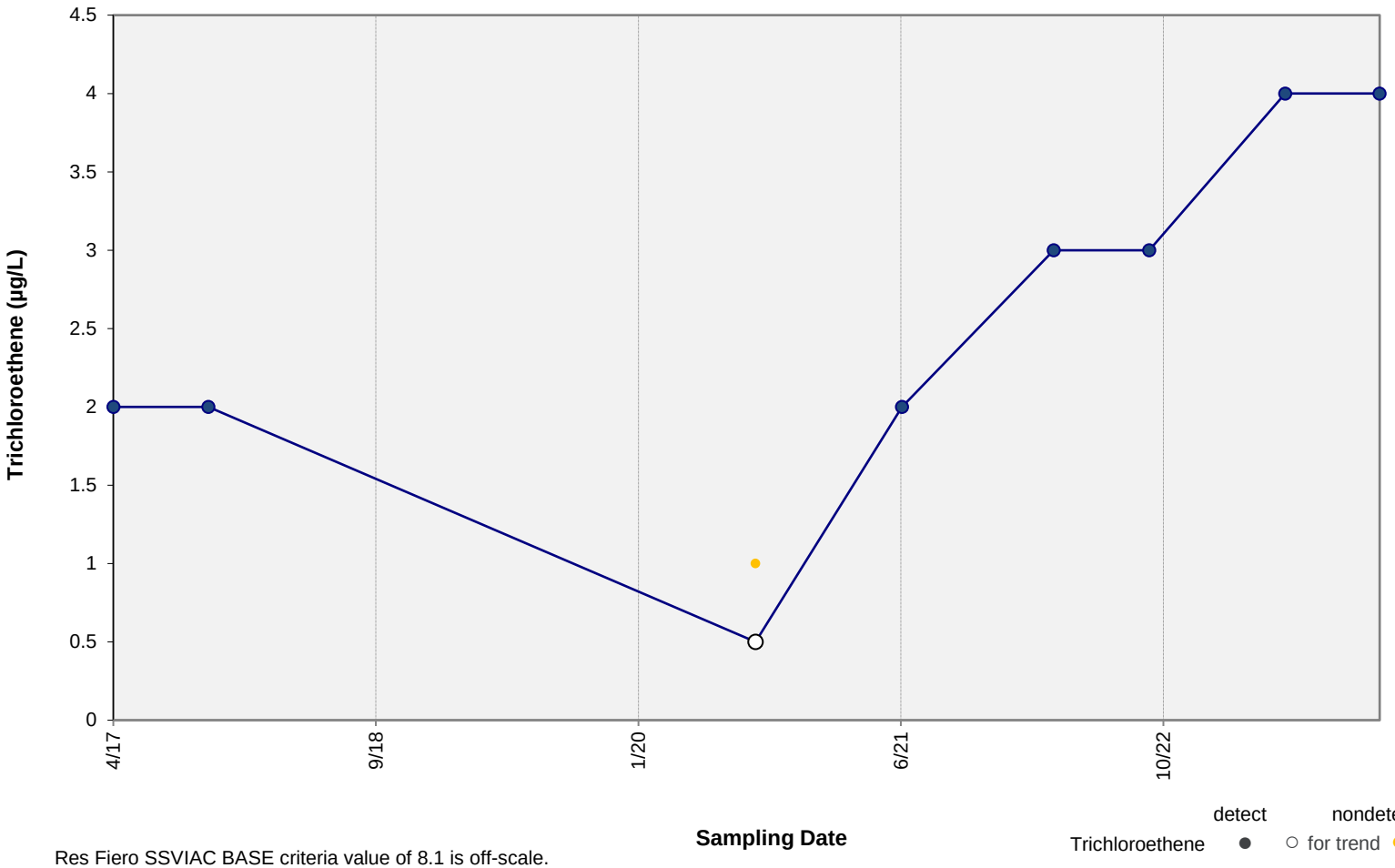
95% Confidence Interval = -6.5E-03 to 5.5E-03 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – cis-1,2-Dichloroethene in Well MWF16-15**

Racer PNC GW

**Figure D-24**




Res Fiero SSVIAC BASE criteria value of 8.1 is off-scale.

**Results of Mann-Kendall Test for Trend:** **INCREASING TREND**

p value = 0.012 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No trend**

Median Slope Estimate = 9.4E-04 µg/L Per Day

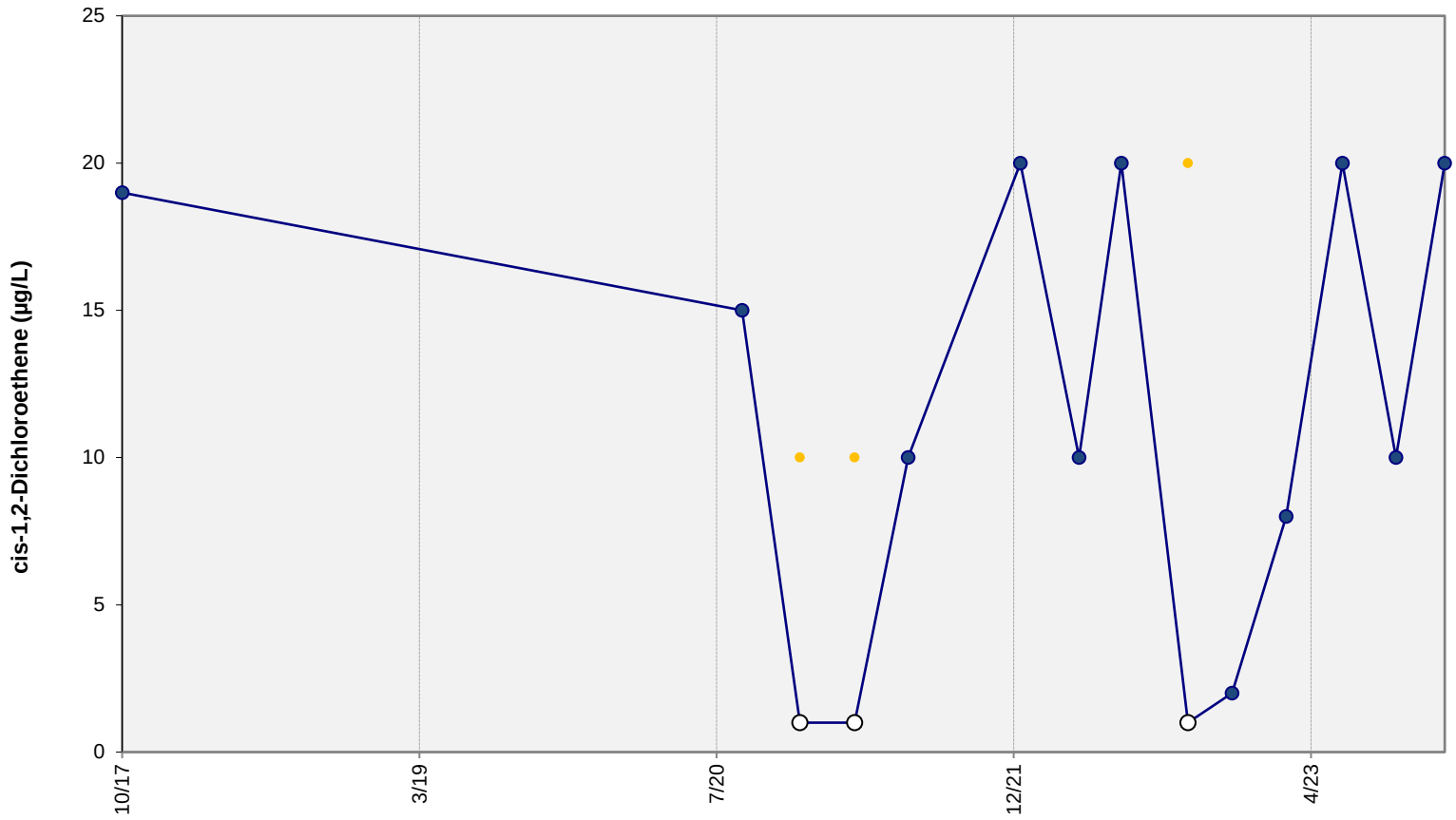
95% Confidence Interval = 0.0E+00 to 2.9E-03 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Trichloroethene in Well MWF16-15**

Racer PNC GW

**Figure D-25**




Res Fiero SSVIAC BASE criteria value of 62 is off-scale.

**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.250 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 4.5E-04 µg/L Per Day

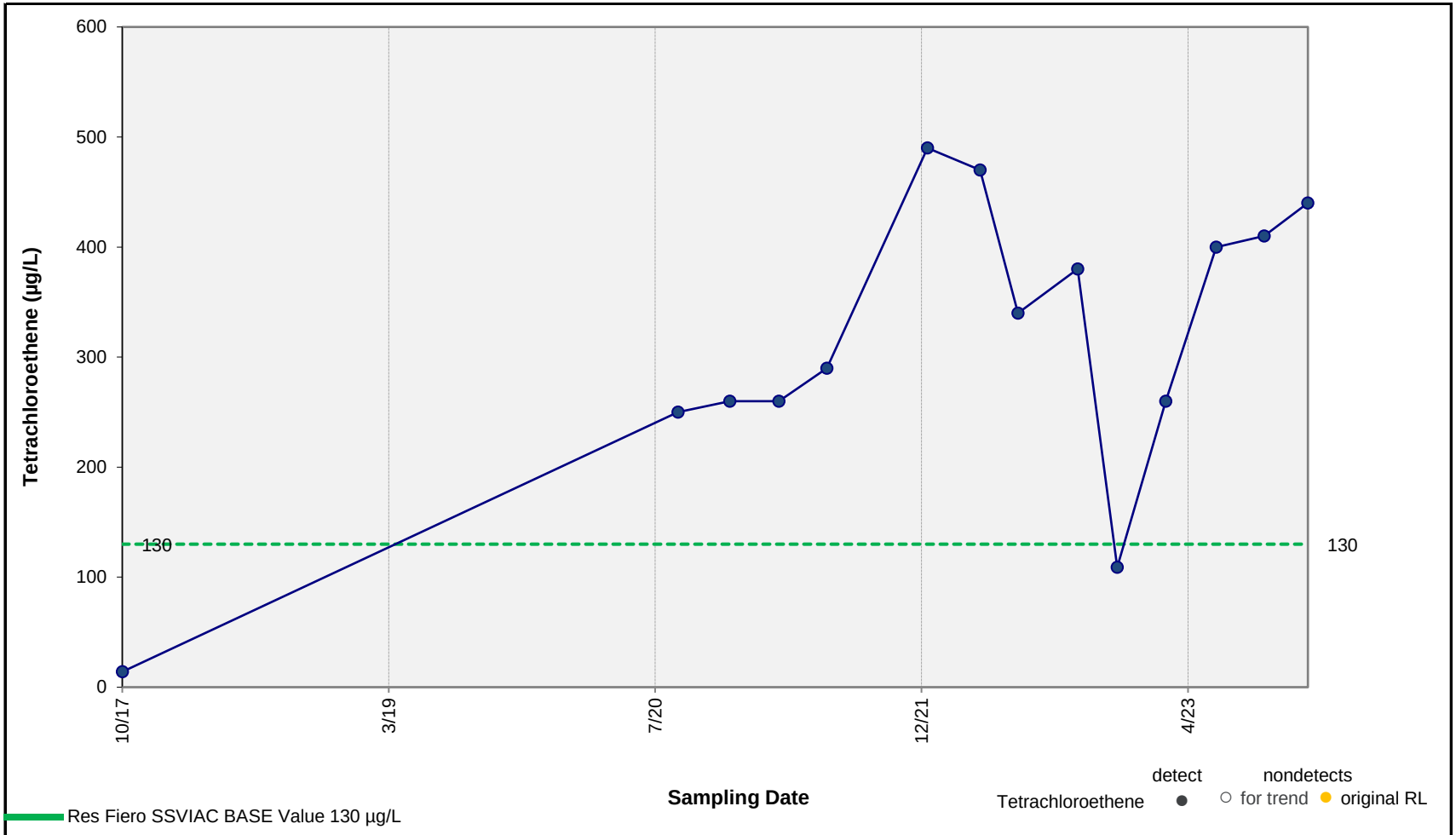
95% Confidence Interval = -5.6E-03 to 1.4E-02 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – cis-1,2-Dichloroethene in Well MWF16-16**

Racer PNC GW

**Figure D-26**




**Results of Mann-Kendall Test for Trend:** **INCREASING TREND**

p value = 0.016 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **INCREASING TREND**

Median Slope Estimate = 1.5E-01 µg/L Per Day

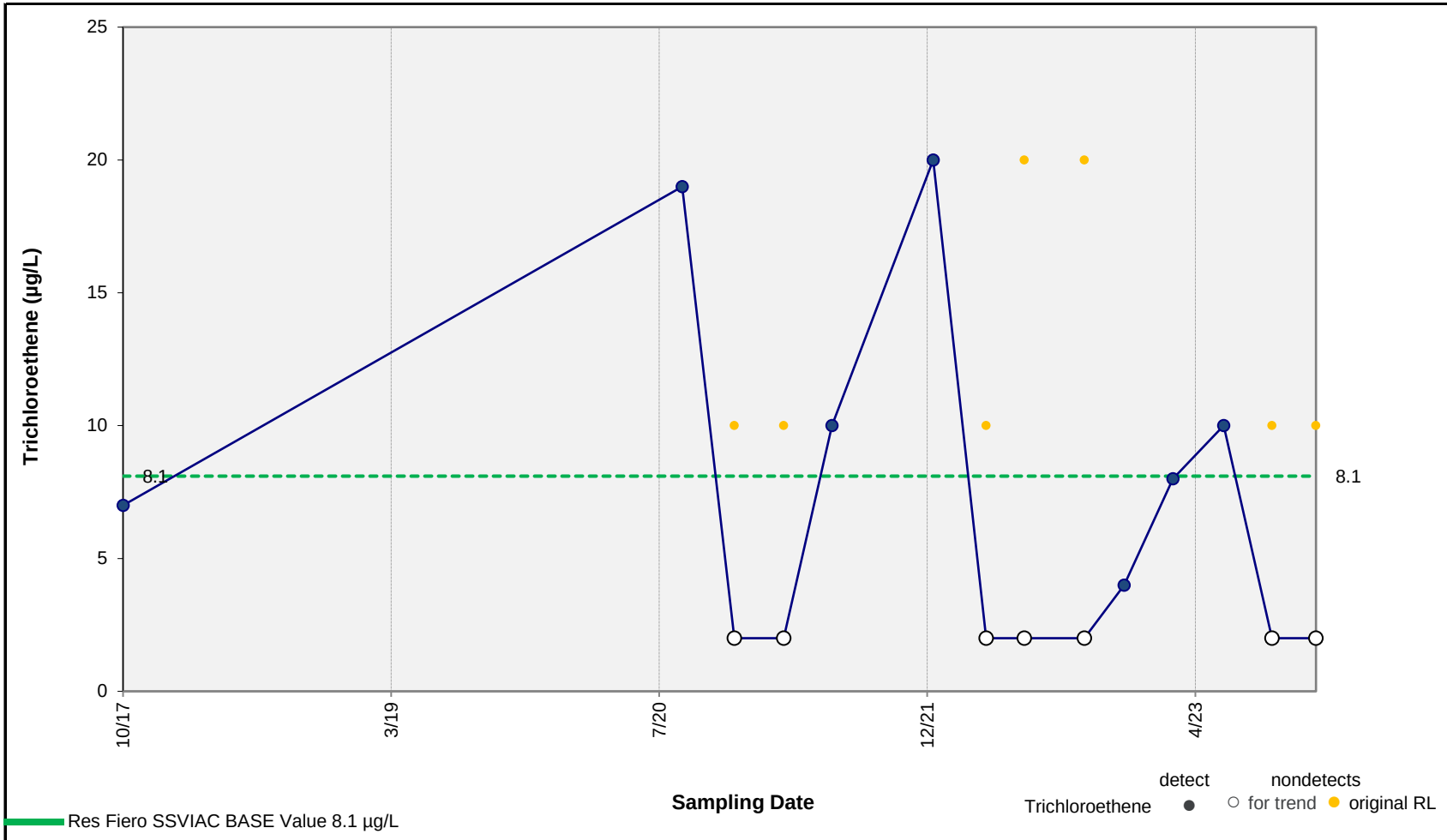
95% Confidence Interval = 7.6E-03 to 1.9E-01 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Tetrachloroethene in Well MWF16-16**

Racer PNC GW

**Figure D-27**




**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.278 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 0.0E+00 µg/L Per Day

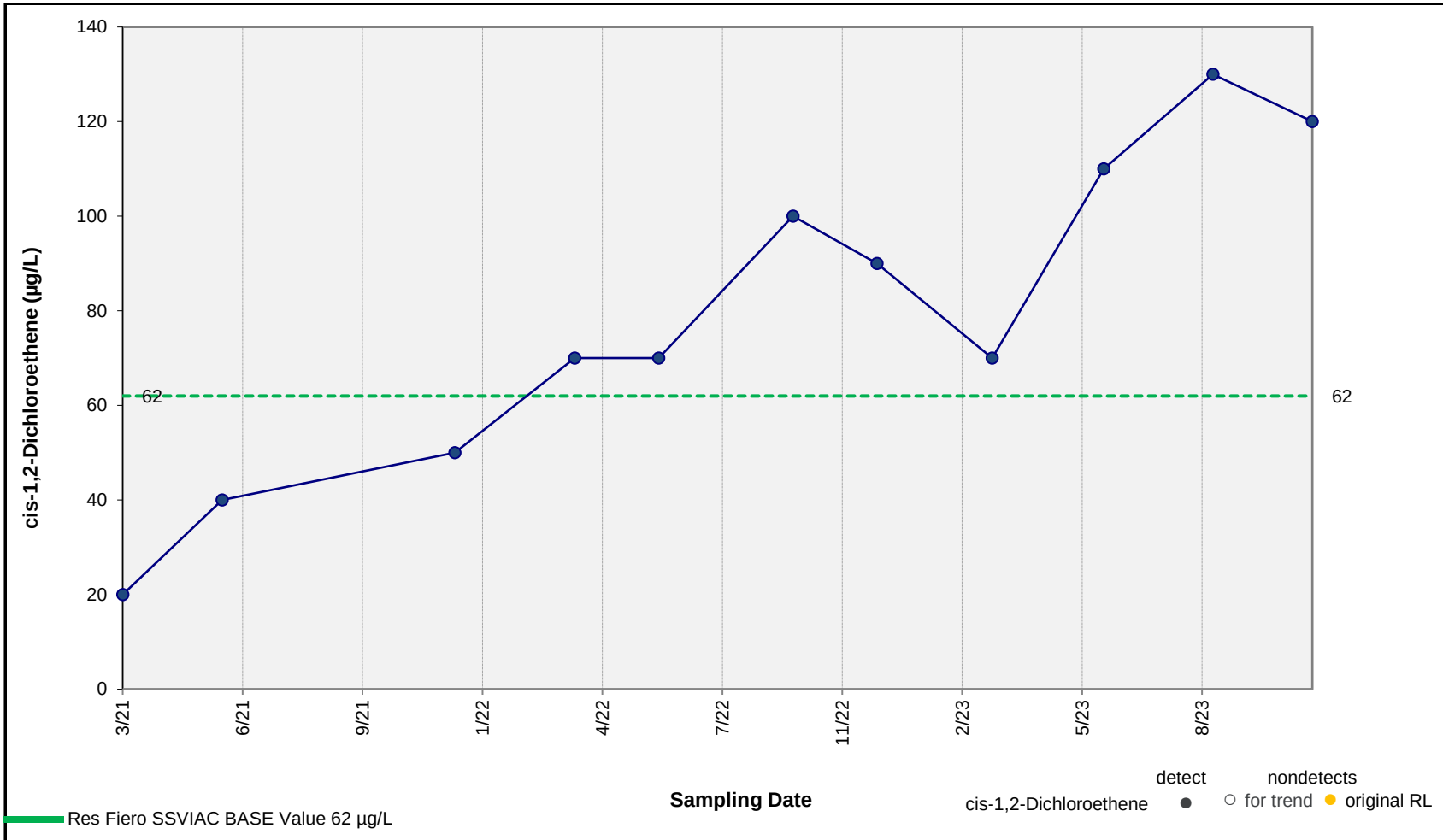
95% Confidence Interval = -8.9E-03 to 7.2E-05 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Trichloroethene in Well MWF16-16**

Racer PNC GW

**Figure D-28**




**Results of Mann-Kendall Test for Trend:** **INCREASING TREND**

p value = <0.001 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **INCREASING TREND**

Median Slope Estimate = 1.1E-01 µg/L Per Day

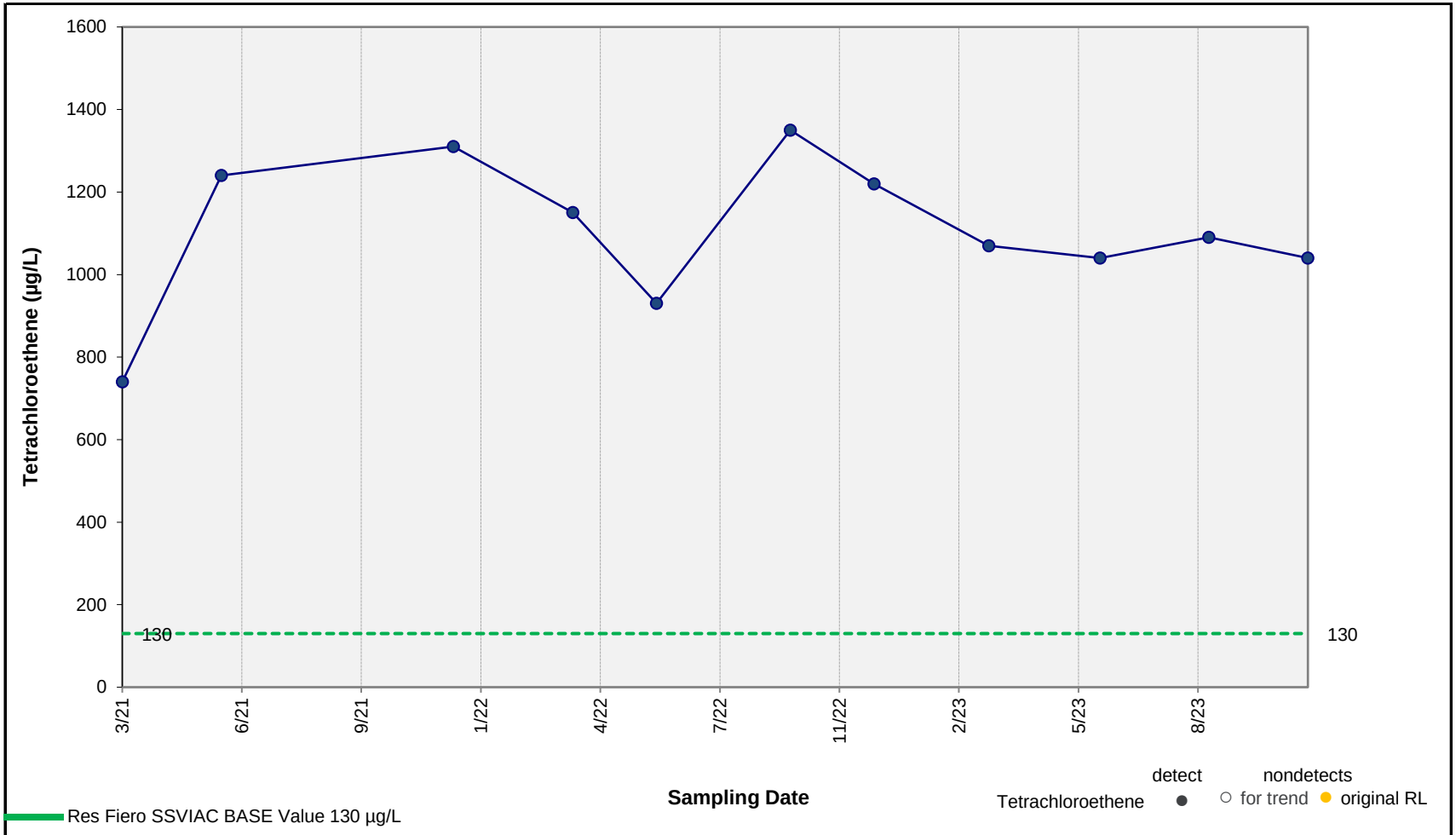
95% Confidence Interval = 7.9E-02 to 1.2E-01 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – cis-1,2-Dichloroethene in Well MWF16-18**

Racer PNC GW

**Figure D-29**




**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.292 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = -1.8E-01 µg/L Per Day

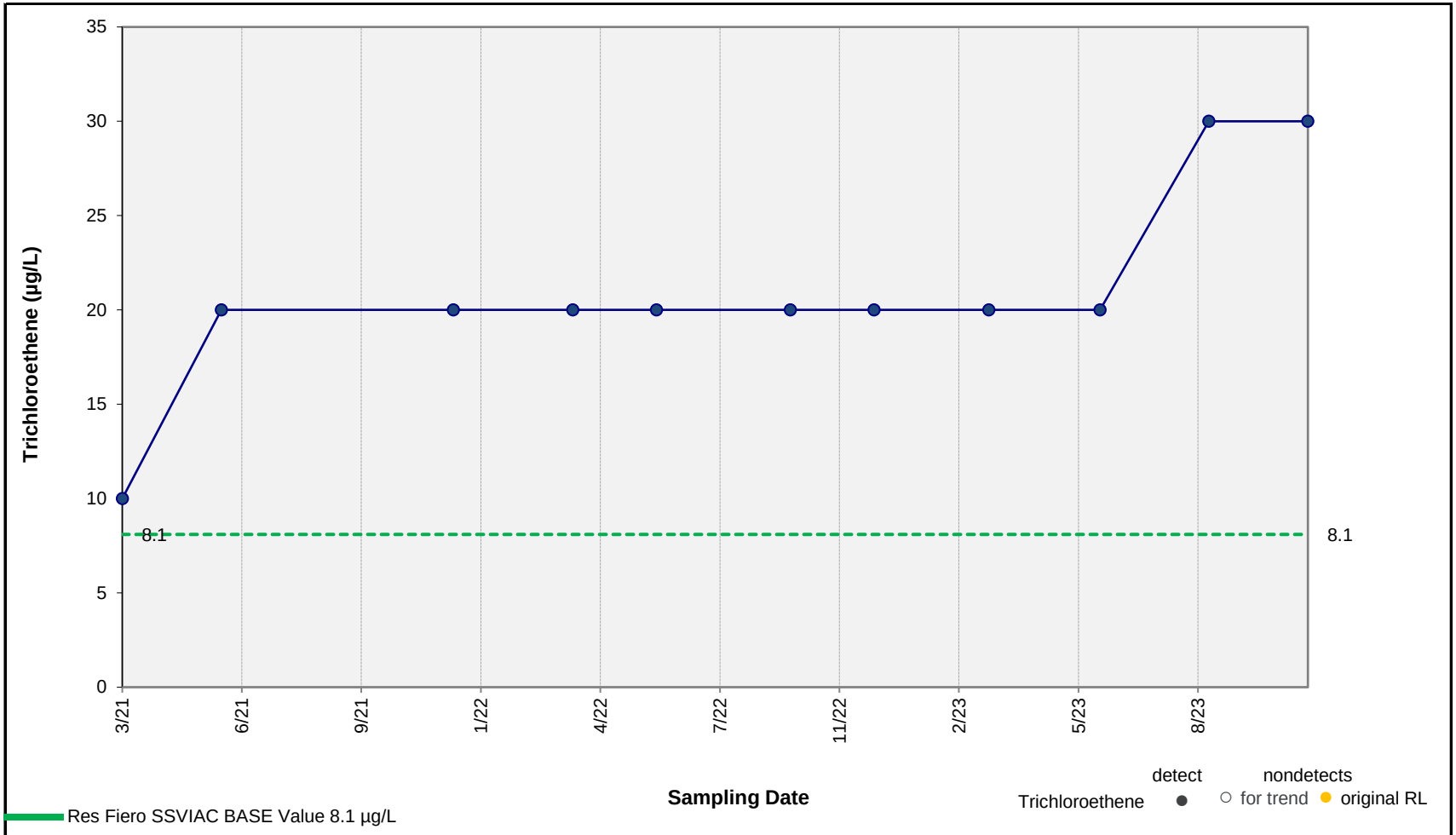
95% Confidence Interval = -5.0E-01 to 3.5E-01 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Tetrachloroethene in Well MWF16-18**

Racer PNC GW

**Figure D-30**




**Results of Mann-Kendall Test for Trend:** **INCREASING TREND**

p value = 0.006 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No trend**

Median Slope Estimate = 0.0E+00 µg/L Per Day

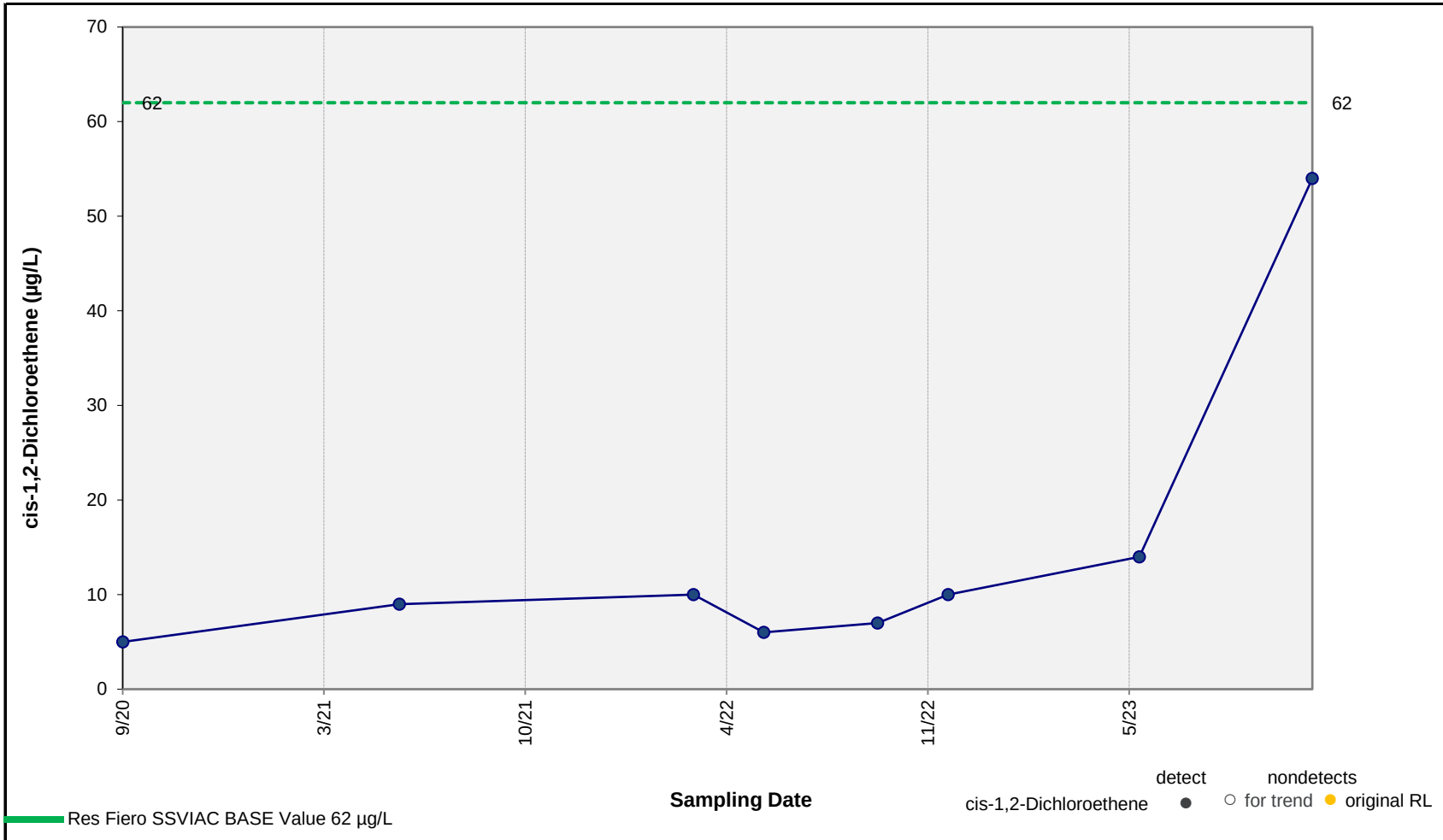
95% Confidence Interval = 0.0E+00 to 1.7E-02 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Trichloroethene in Well MWF16-18**

Racer PNC GW

**Figure D-31**




**Results of Mann-Kendall Test for Trend:** **INCREASING TREND**

p value = 0.012 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **INCREASING TREND**

Median Slope Estimate = 9.0E-03 µg/L Per Day

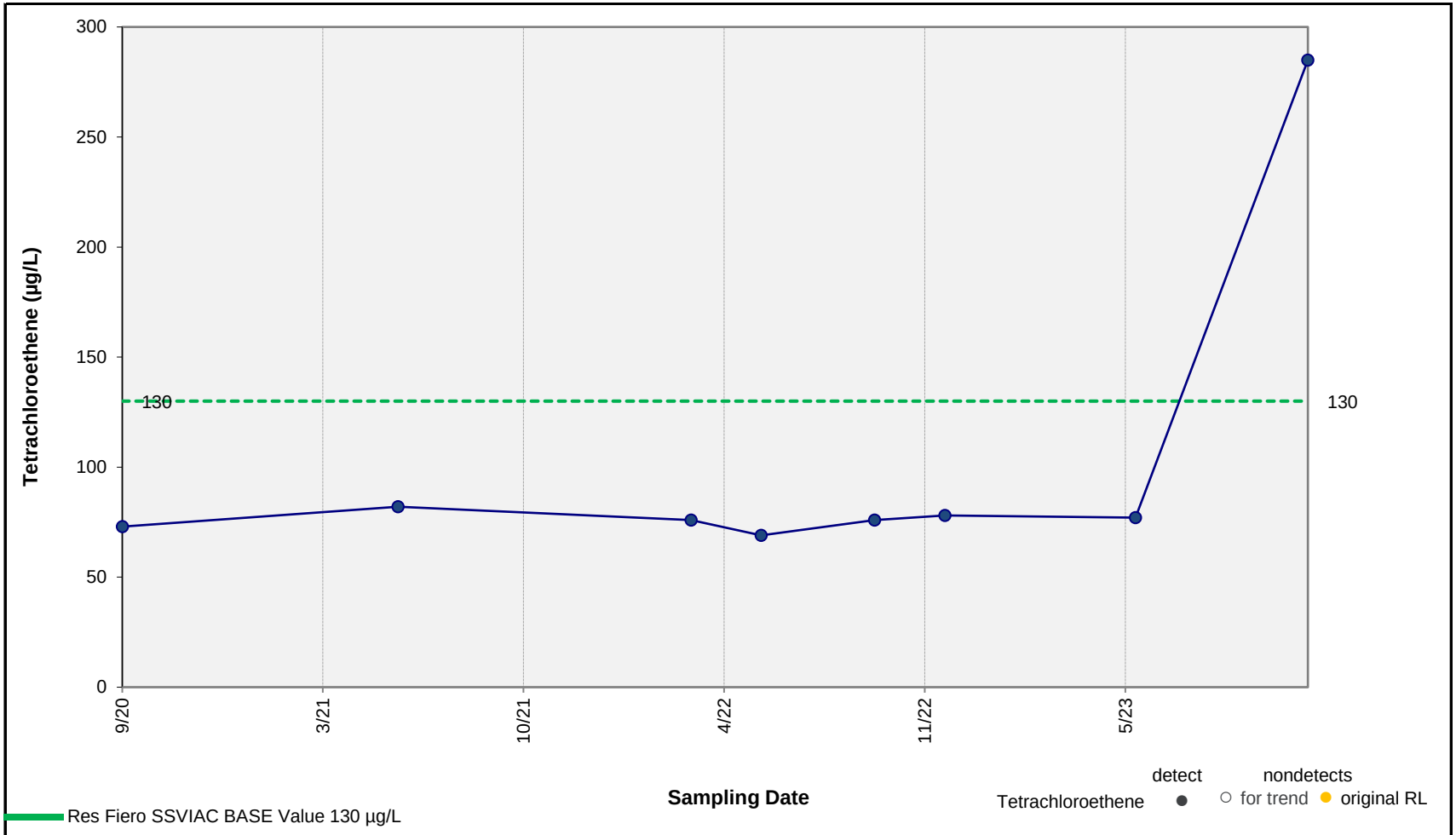
95% Confidence Interval = 1.6E-03 to 4.3E-02 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – cis-1,2-Dichloroethene in Well MWF16-22**

Racer PNC GW

**Figure D-32**




**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.114 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 5.7E-03 µg/L Per Day

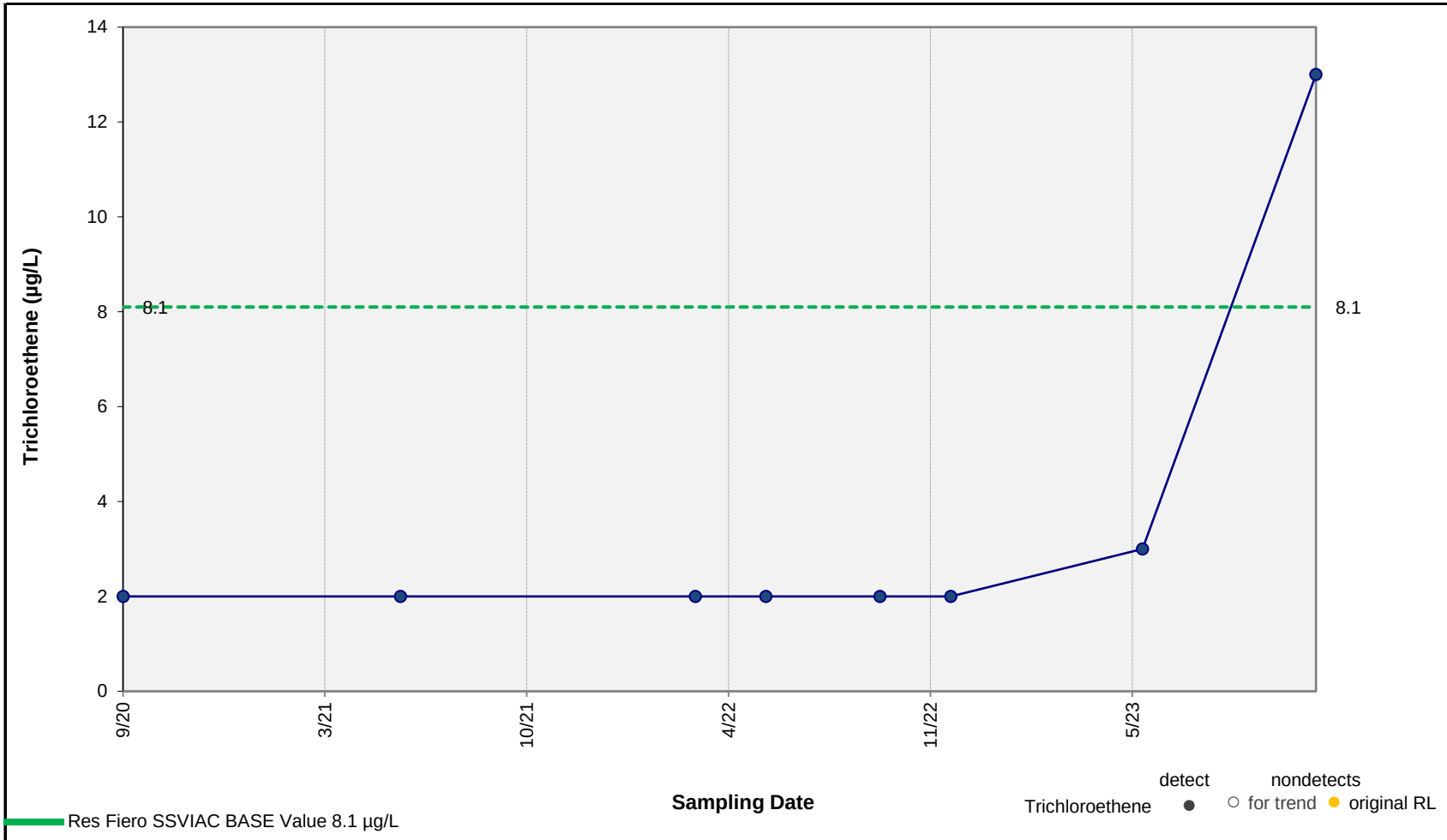
95% Confidence Interval = -6.7E-03 to 1.6E-01 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Tetrachloroethene in Well MWF16-22**

Racer PNC GW

**Figure D-33**




**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.072 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No trend**

Median Slope Estimate = 0.0E+00 µg/L Per Day

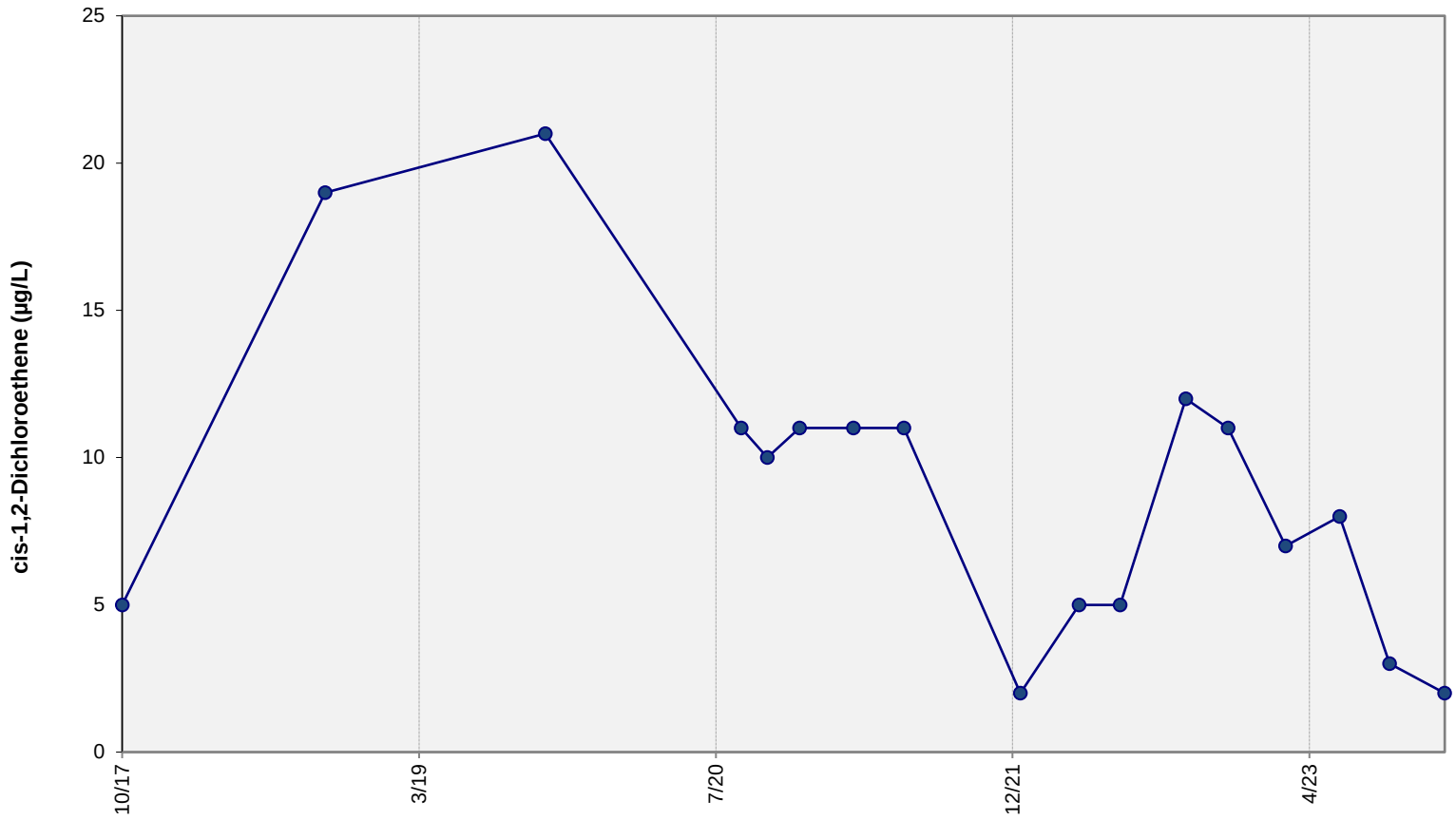
95% Confidence Interval = 0.0E+00 to 3.8E-03 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Trichloroethene in Well MWF16-22**

Racer PNC GW

**Figure D-34**




Res Fiero SSVIAC BASE criteria value of 62 is off-scale.

**Results of Mann-Kendall Test for Trend:** **DECREASING TREND**

p value = 0.024 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No trend**

Median Slope Estimate = -5.5E-03 µg/L Per Day

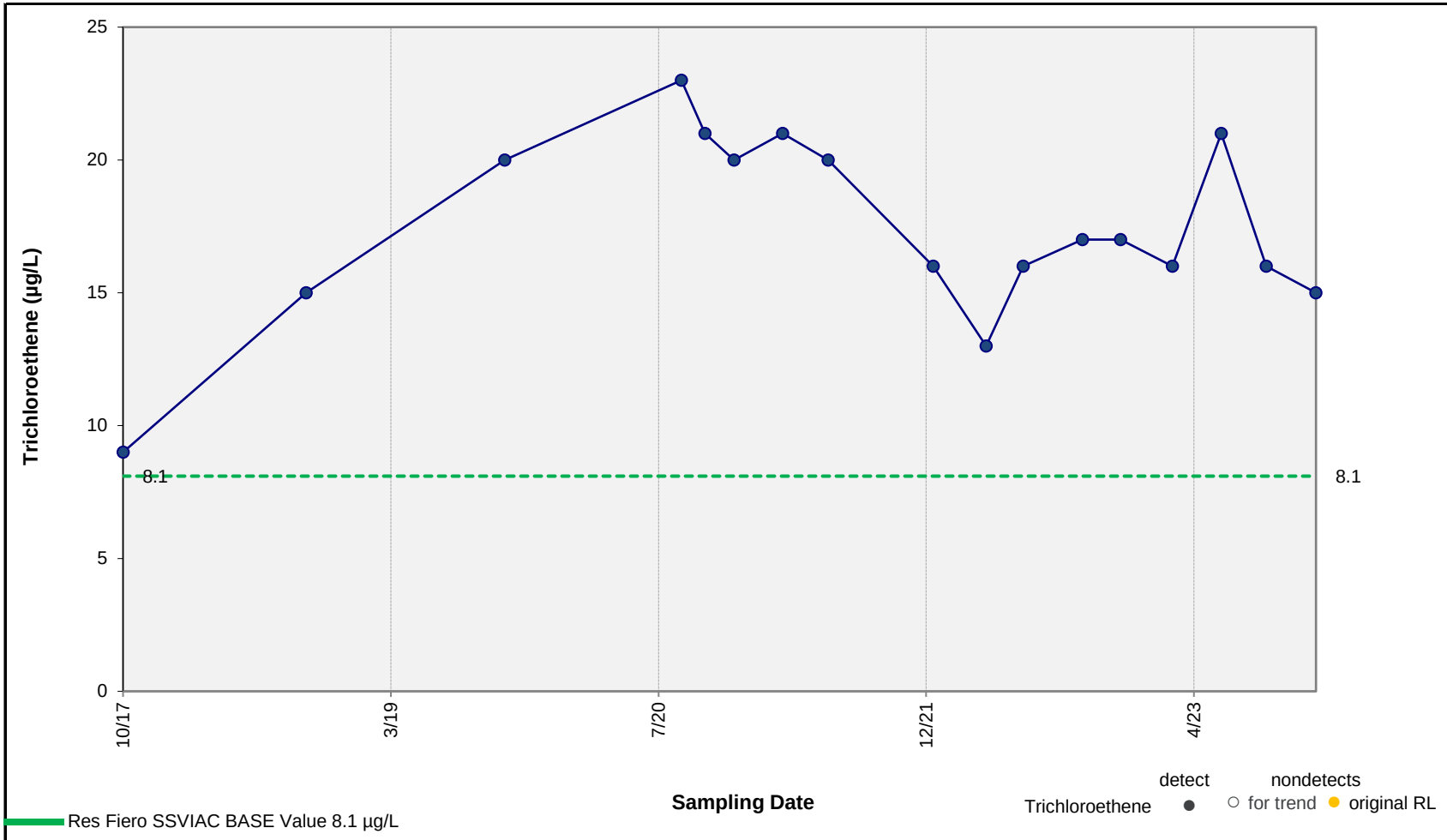
95% Confidence Interval = -9.9E-03 to 0.0E+00 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – cis-1,2-Dichloroethene in Well MWF16-23**

Racer PNC GW

**Figure D-35**




**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.238 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = -1.7E-03 µg/L Per Day

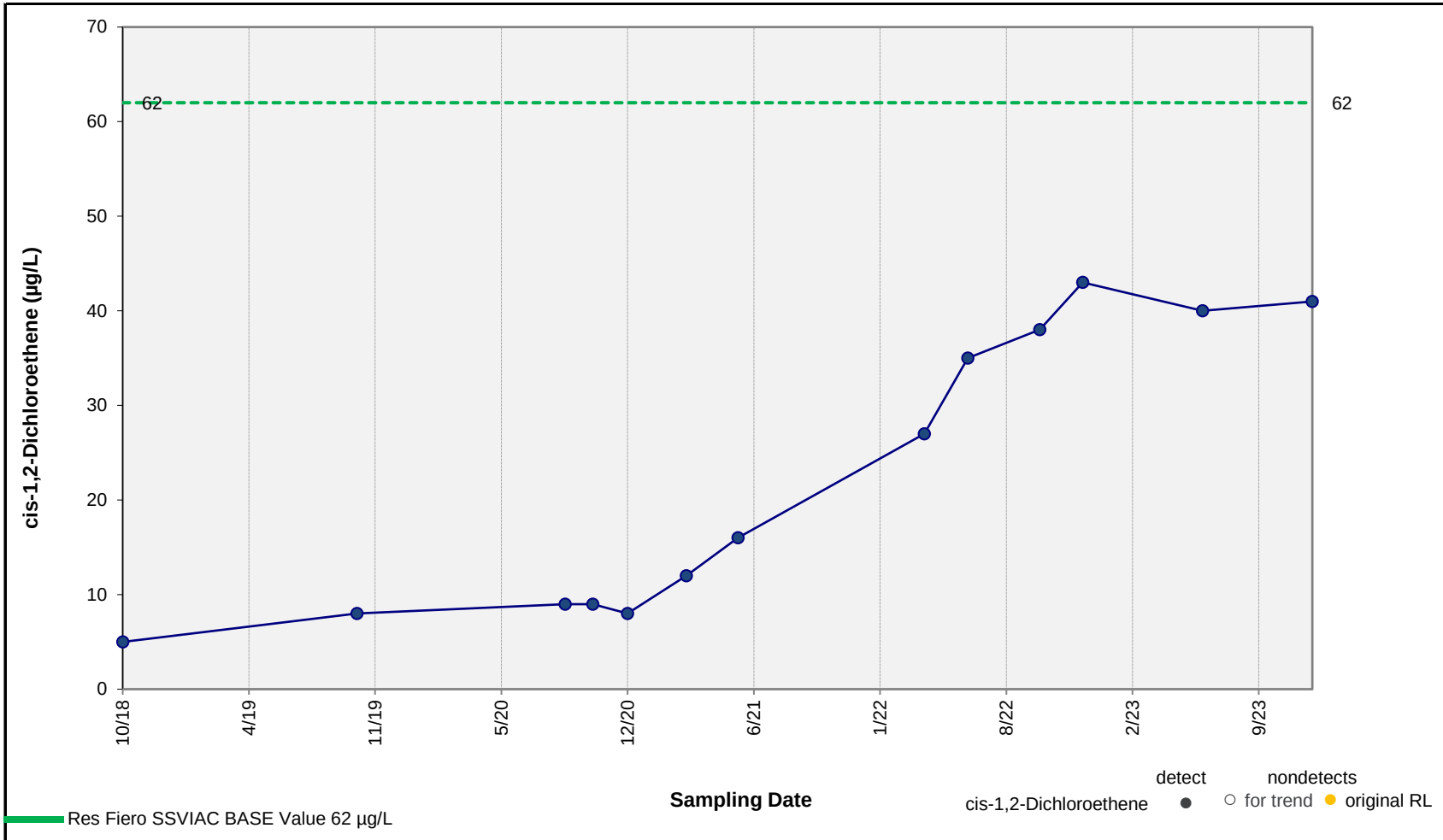
95% Confidence Interval = -5.5E-03 to 1.3E-03 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Trichloroethene in Well MWF16-23**

Racer PNC GW

**Figure D-36**




**Results of Mann-Kendall Test for Trend:** **INCREASING TREND**

p value = <0.001 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **INCREASING TREND**

Median Slope Estimate = 2.8E-02 µg/L Per Day

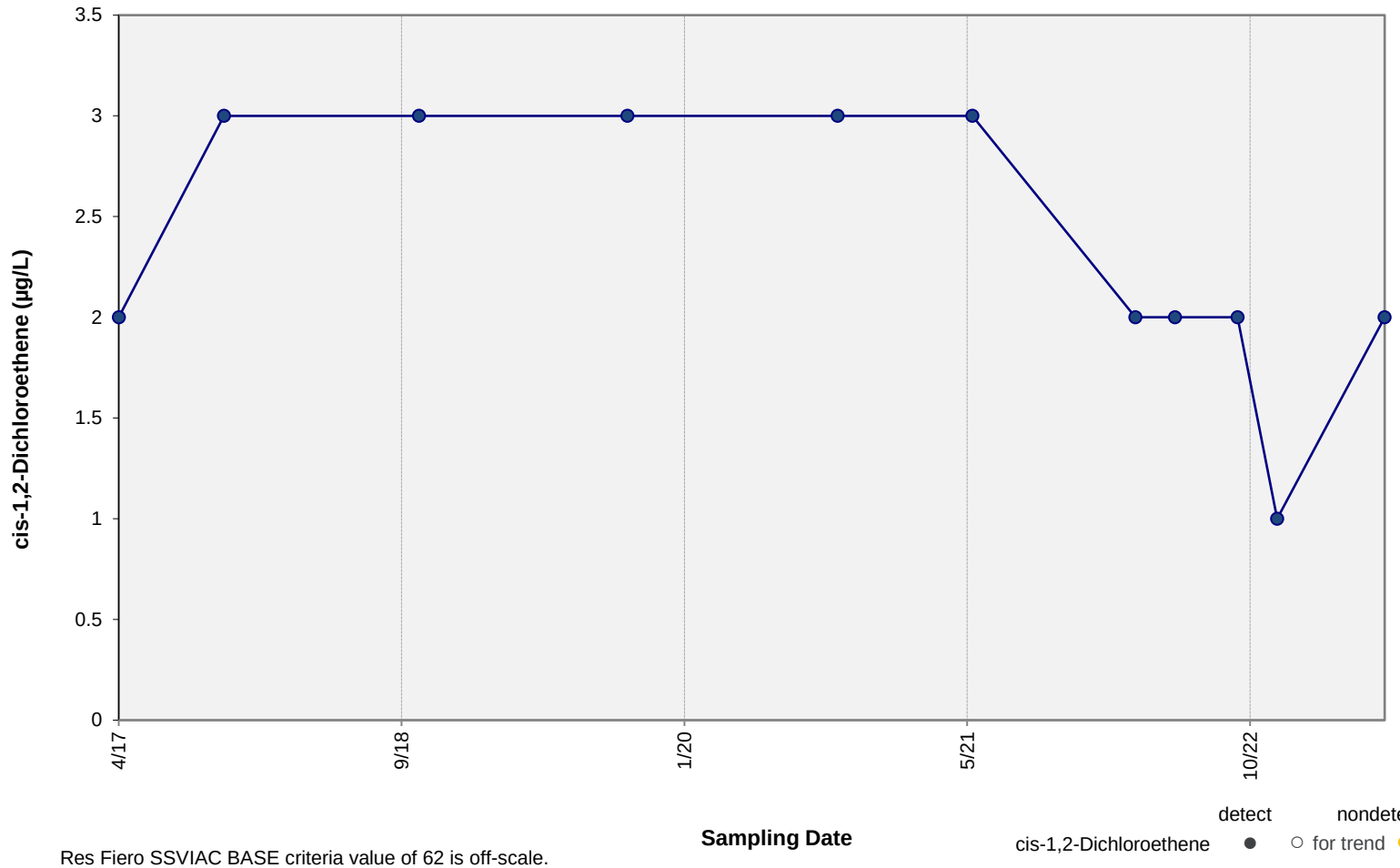
95% Confidence Interval = 1.7E-02 to 4.0E-02 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – cis-1,2-Dichloroethene in Well MWF16-25**

Racer PNC GW

**Figure D-37**




Res Fiero SSVIAC BASE criteria value of 62 is off-scale.

**Results of Mann-Kendall Test for Trend:** **DECREASING TREND**

p value = 0.028 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No trend**

Median Slope Estimate = -4.9E-04 µg/L Per Day

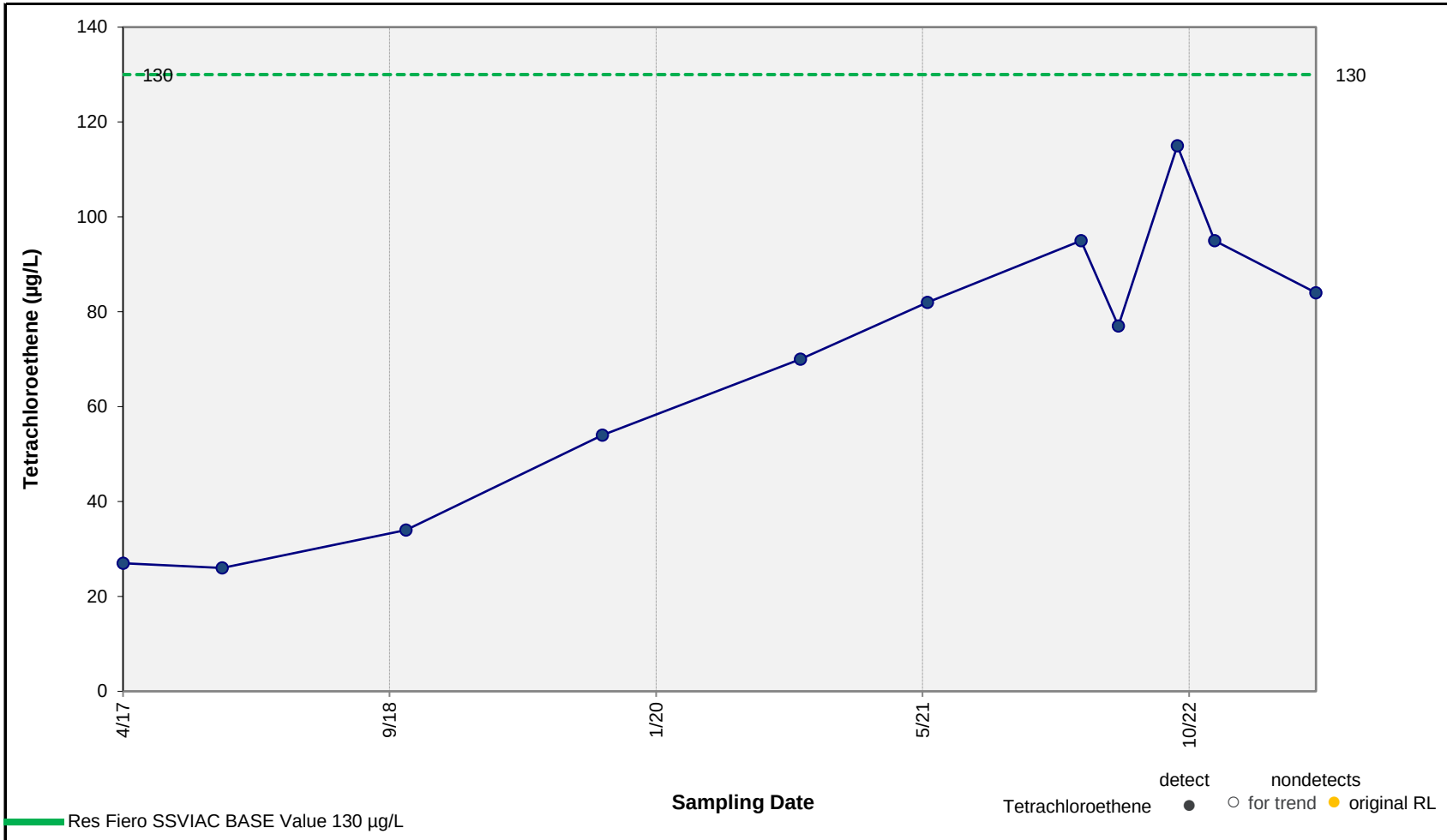
95% Confidence Interval = -1.1E-03 to 0.0E+00 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – cis-1,2-Dichloroethene in Well MWF7-02**

Racer PNC GW

**Figure D-38**




**Results of Mann-Kendall Test for Trend:** **INCREASING TREND**

p value = 0.001 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **INCREASING TREND**

Median Slope Estimate = 3.6E-02 µg/L Per Day

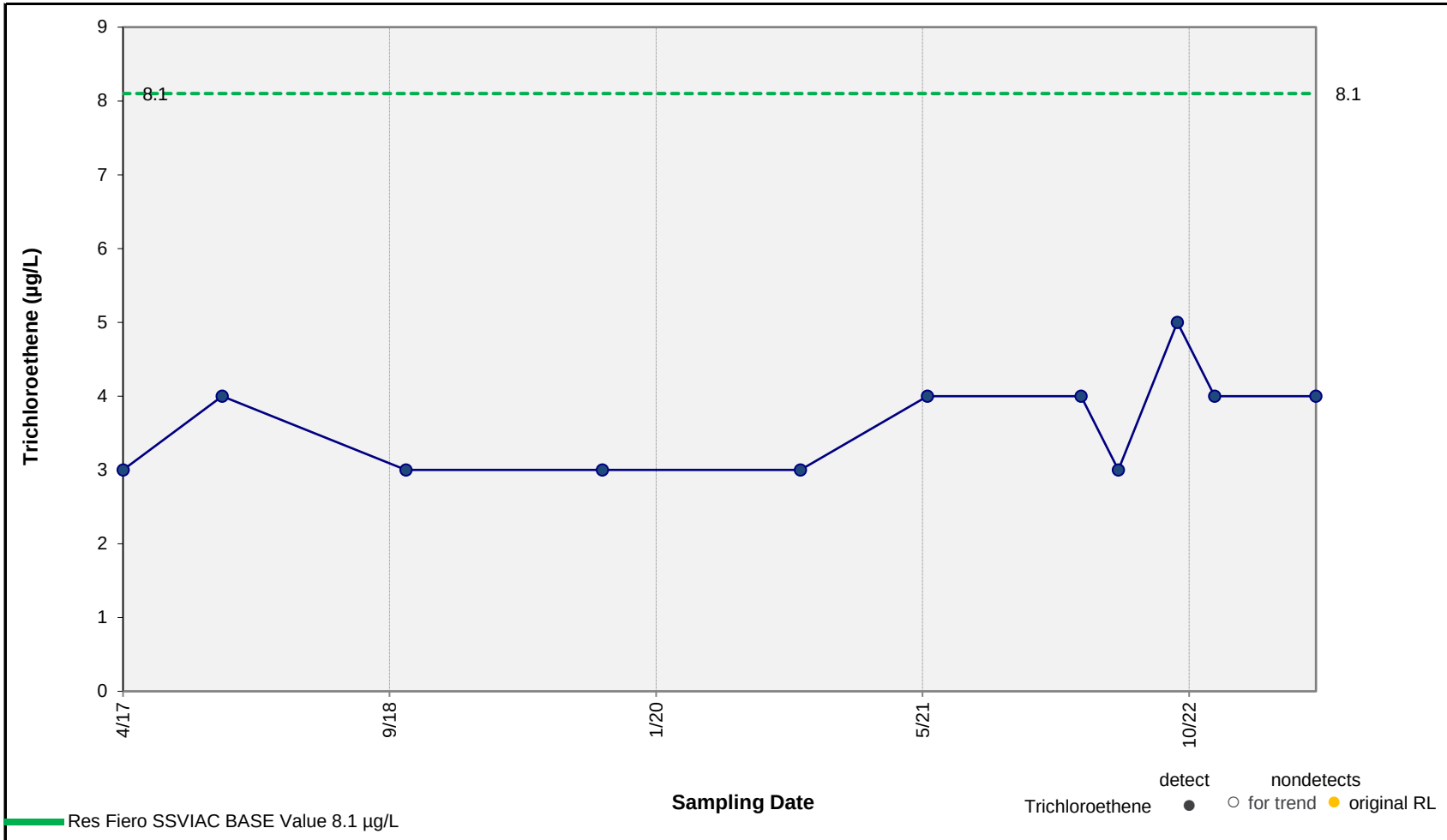
95% Confidence Interval = 2.3E-02 to 4.6E-02 µg/L Per Day

ARCADIS

## Concentration vs. Time Plot – Tetrachloroethene in Well MWF7-02

Racer PNC GW

**Figure D-39**




**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.058 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No trend**

Median Slope Estimate = 0.0E+00 µg/L Per Day

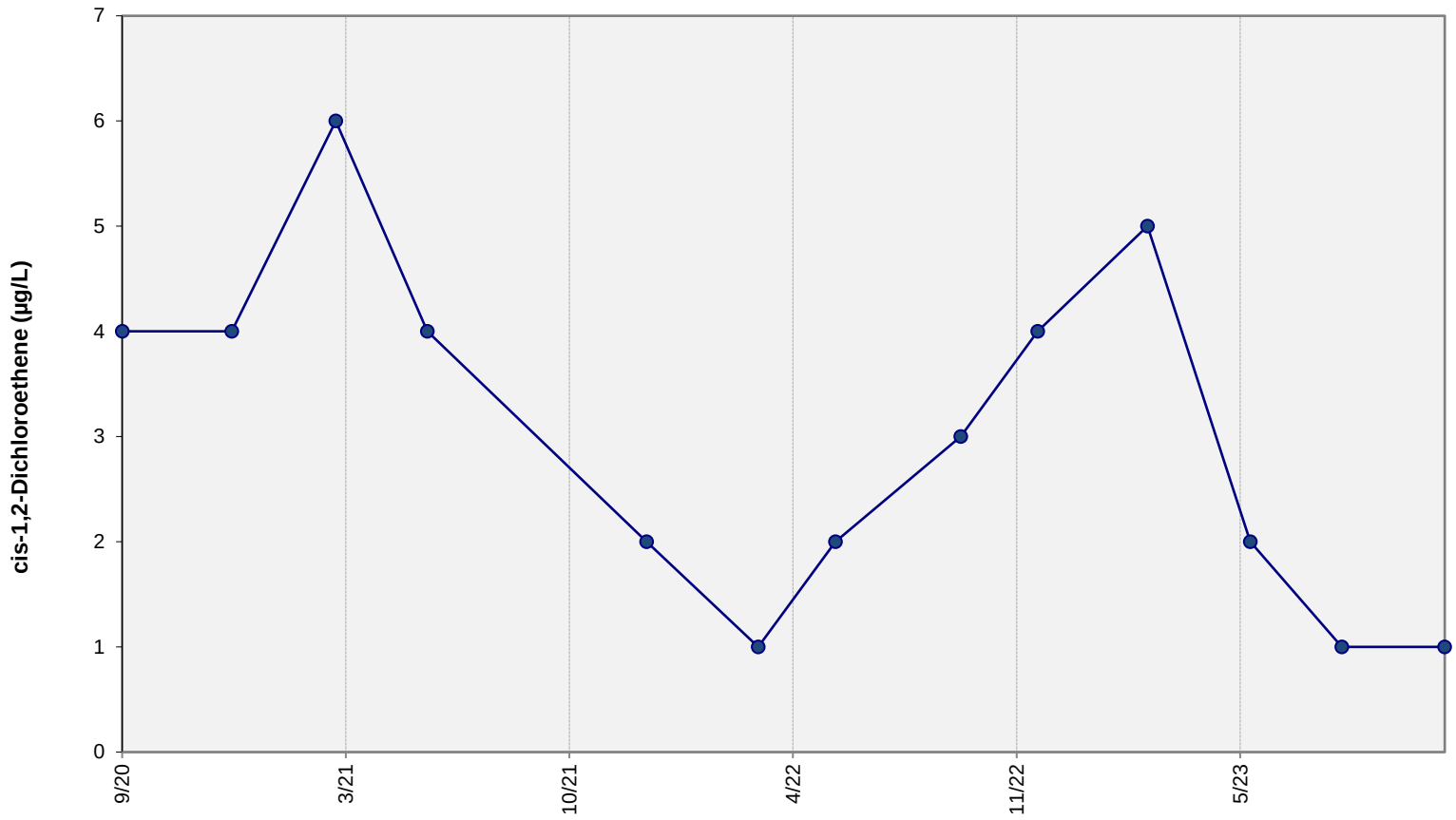
95% Confidence Interval = 0.0E+00 to 9.8E-04 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Trichloroethene in Well MWF7-02**

Racer PNC GW

**Figure D-40**




Res Fiero SSVIAC BASE criteria value of 62 is off-scale.

**Results of Mann-Kendall Test for Trend:** **DECREASING TREND**

p value = 0.045 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No trend**

Median Slope Estimate = -2.1E-03 µg/L Per Day

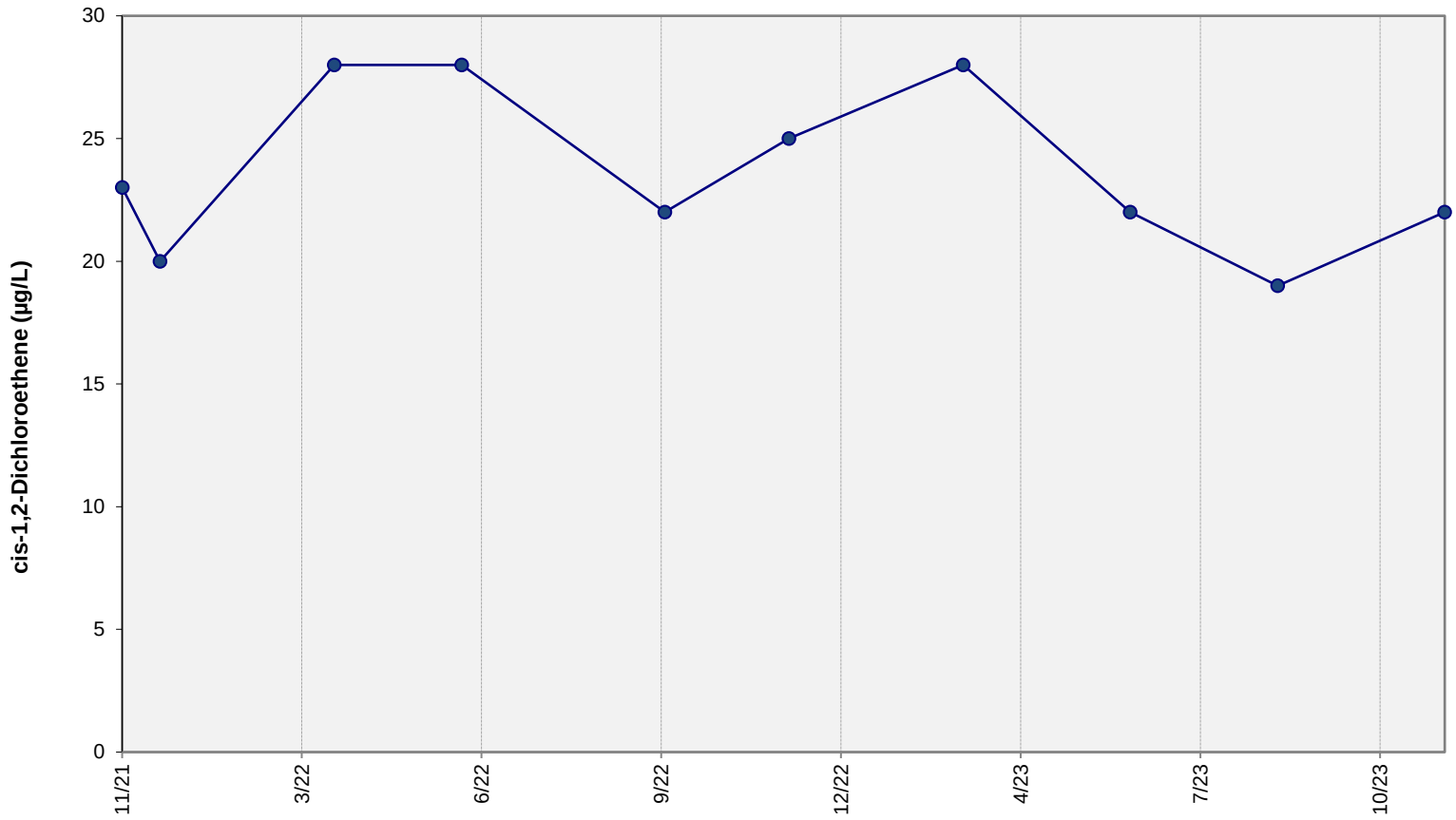
95% Confidence Interval = -5.0E-03 to 0.0E+00 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – cis-1,2-Dichloroethene in Well MWOS-08**

Racer PNC GW

**Figure D-41**




Res Fiero SSVIAC BASE criteria value of 62 is off-scale.

**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.242 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = -1.6E-03 µg/L Per Day

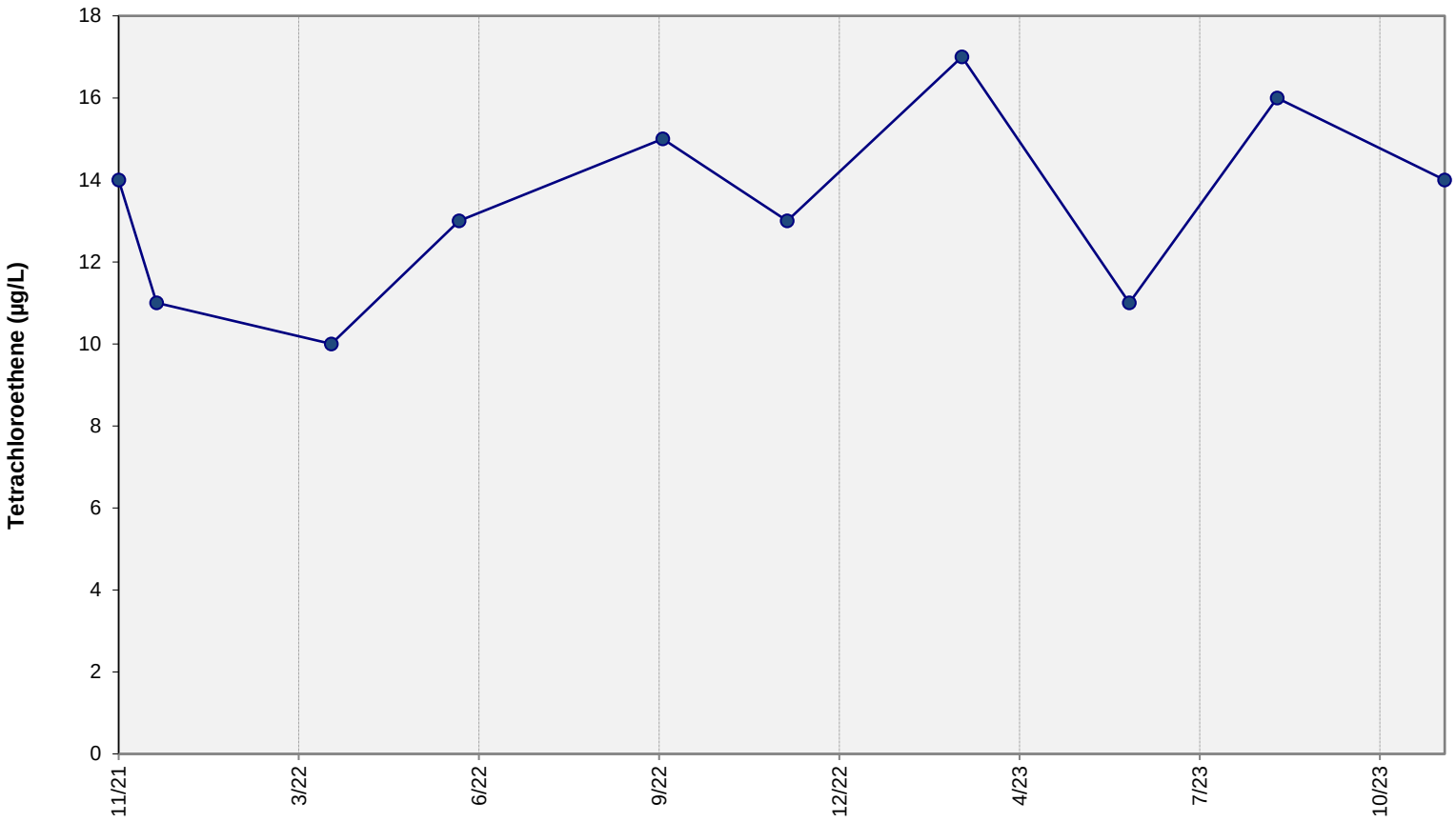
95% Confidence Interval = -1.6E-02 to 5.6E-03 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – cis-1,2-Dichloroethene in Well MWOS-09R**

Racer PNC GW

**Figure D-42**




Res Fiero SSVIAC BASE criteria value of 130 is off-scale.

**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.168 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 3.1E-03 µg/L Per Day

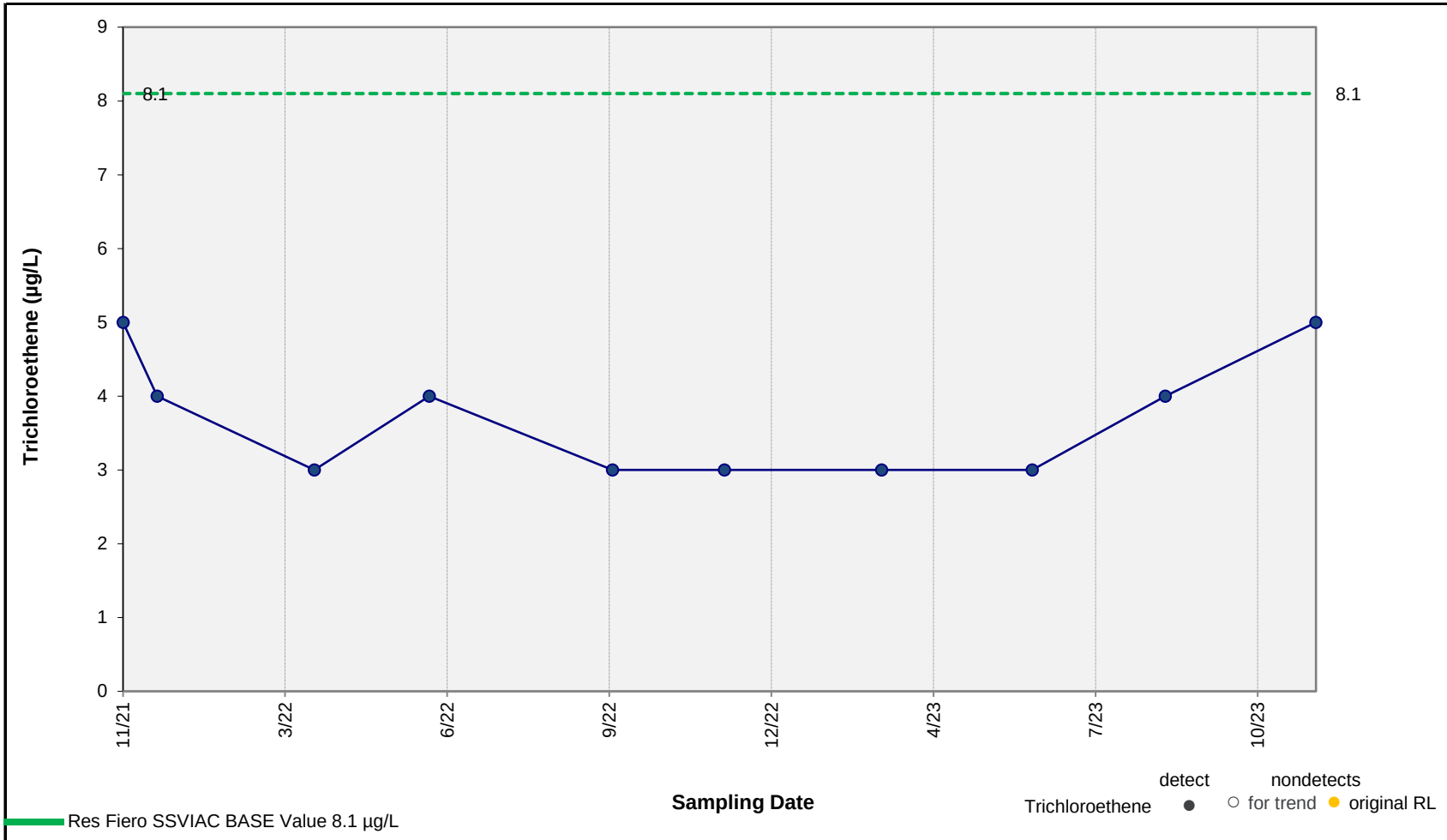
95% Confidence Interval = -5.4E-03 to 1.2E-02 µg/L Per Day

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**Concentration vs. Time Plot – Tetrachloroethene in Well MWOS-09R**

Racer PNC GW

**Figure D-43**




**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.431 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 0.0E+00 µg/L Per Day

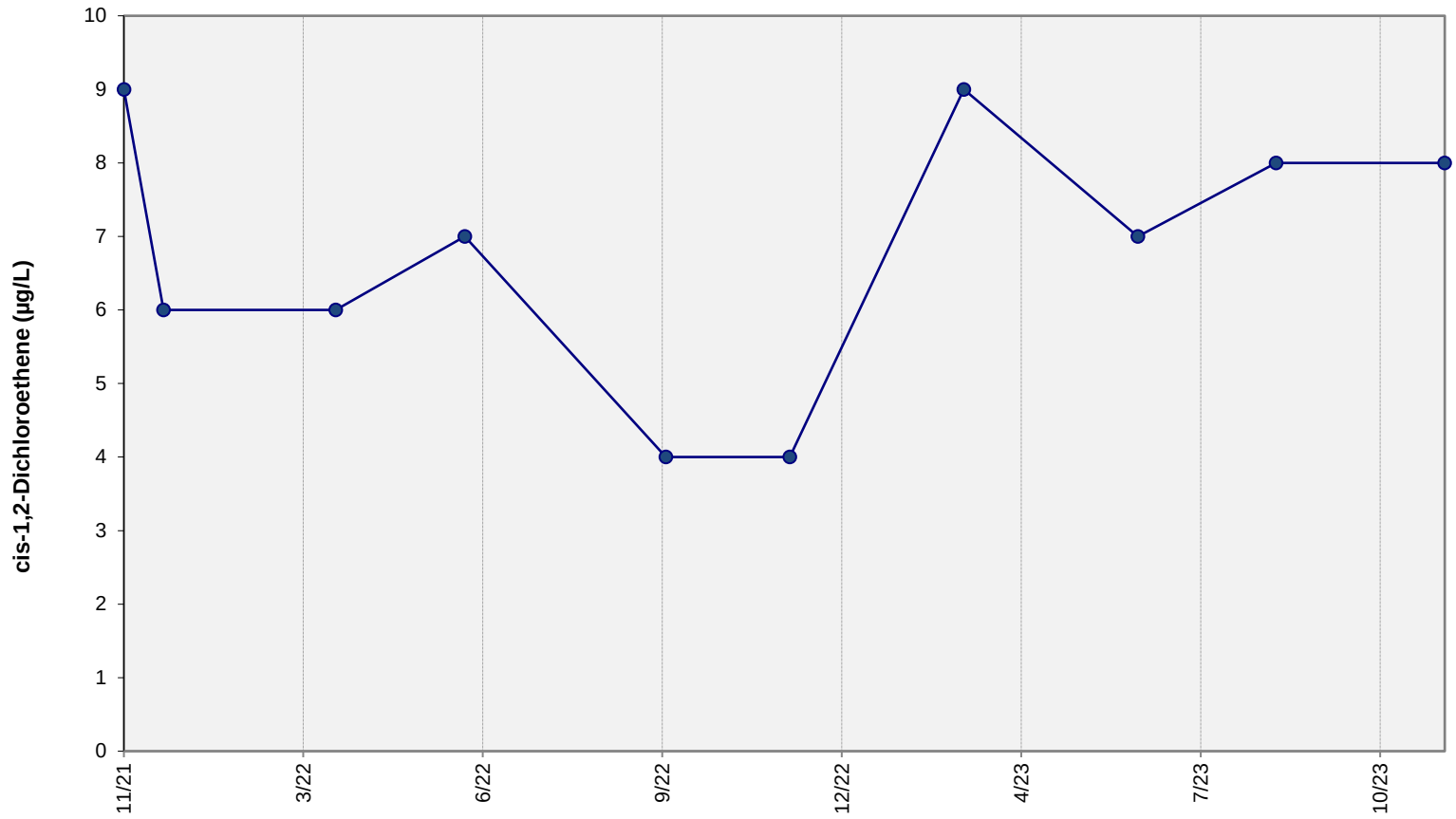
95% Confidence Interval = -3.2E-03 to 1.6E-03 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Trichloroethene in Well MWOS-09R**

Racer PNC GW

**Figure D-44**




Res Fiero SSVIAC BASE criteria value of 62 is off-scale.

**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.332 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 1.8E-03 µg/L Per Day

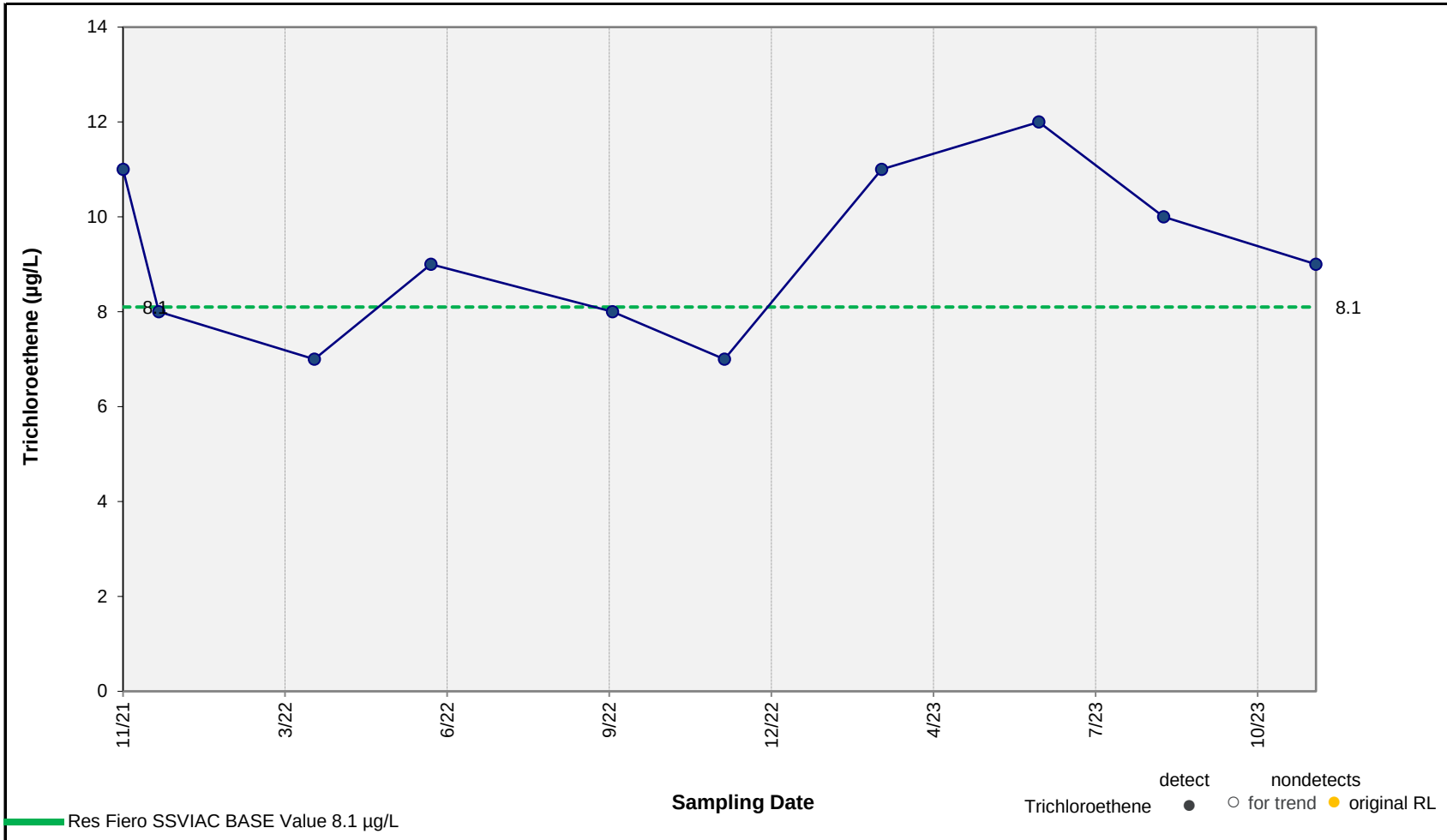
95% Confidence Interval = -6.1E-03 to 6.8E-03 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – cis-1,2-Dichloroethene in Well MWOS-10**

Racer PNC GW

**Figure D-45**




**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.300 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 1.8E-03 µg/L Per Day

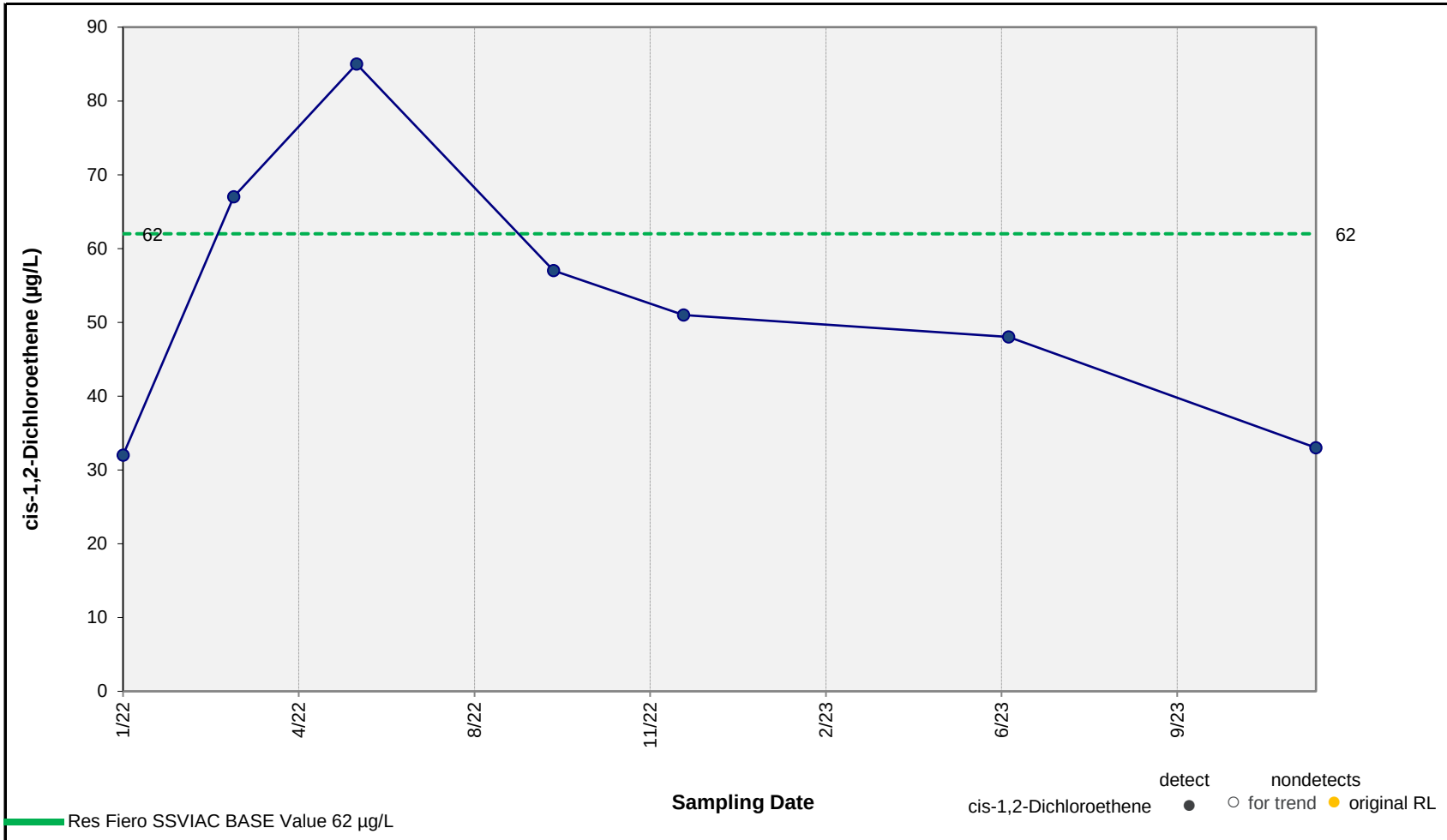
95% Confidence Interval = -9.2E-03 to 6.9E-03 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – Trichloroethene in Well MWOS-10**

Racer PNC GW

**Figure D-46**




**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.191 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = -5.0E-02 µg/L Per Day

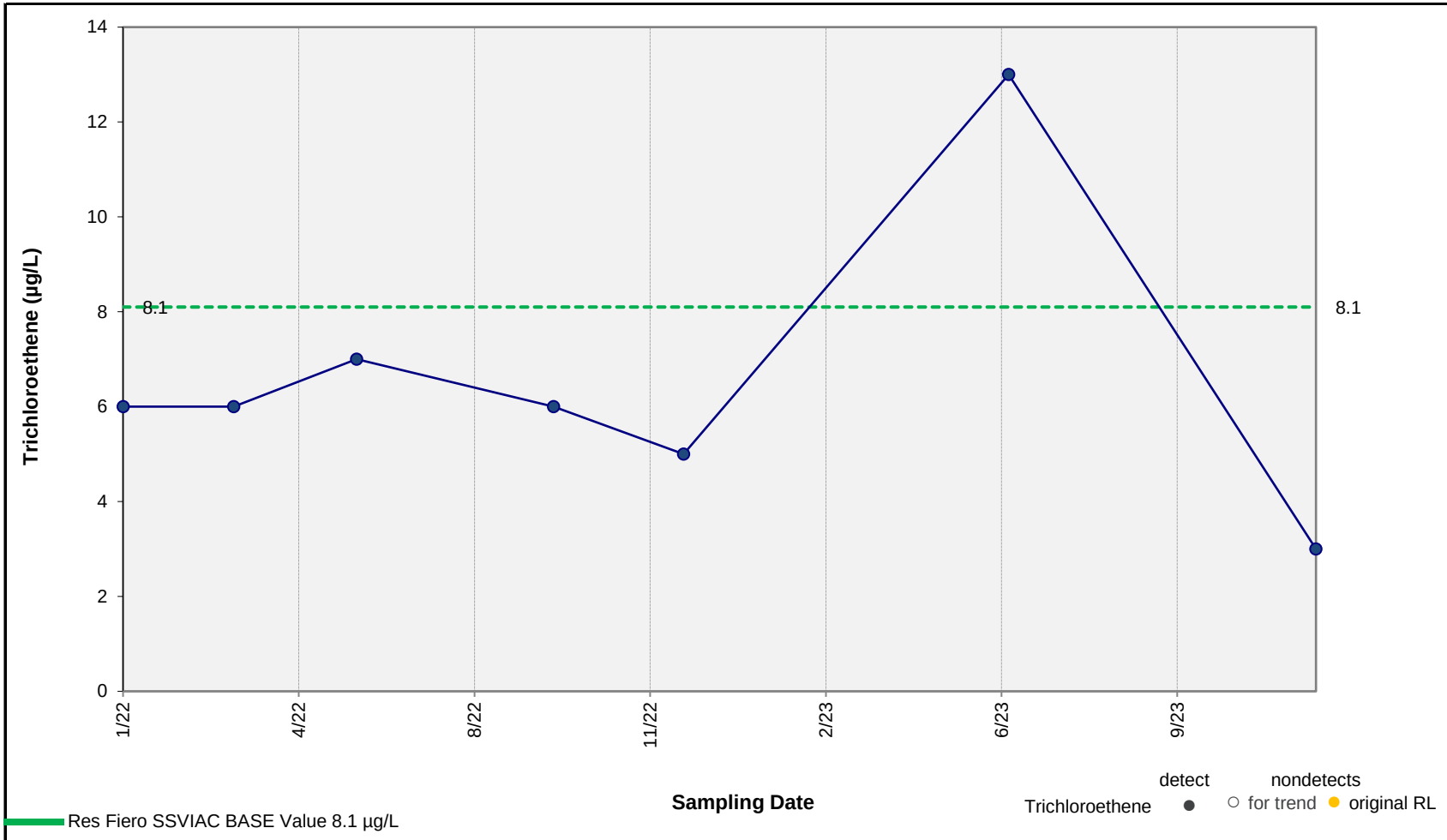
95% Confidence Interval = -9.5E-02 to 6.1E-02 µg/L Per Day

ARCADIS

**Concentration vs. Time Plot – cis-1,2-Dichloroethene in Well TW-12-22**

Racer PNC GW

**Figure D-47**




**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.334 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = -3.1E-03 µg/L Per Day

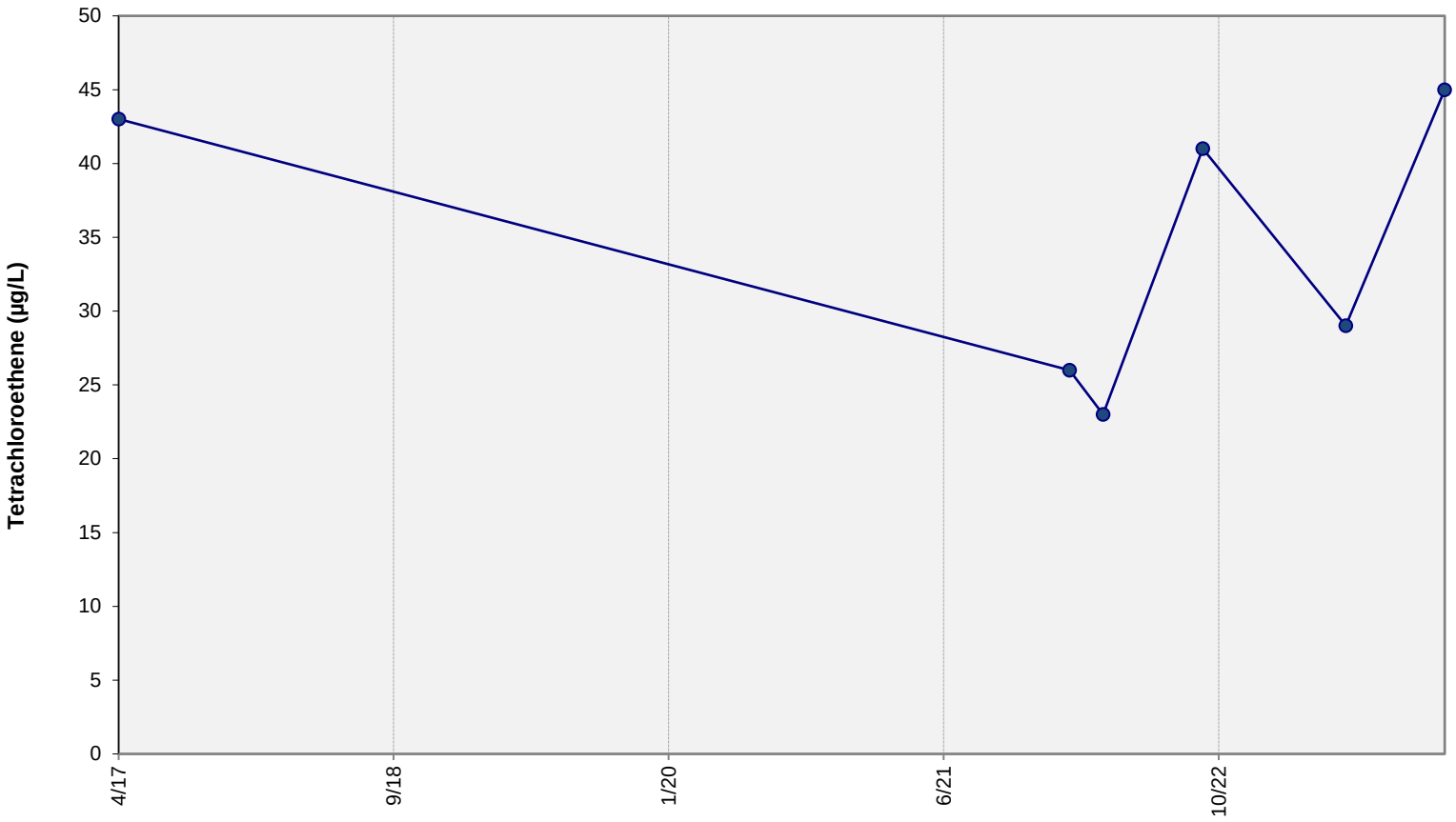
95% Confidence Interval = -8.5E-03 to 1.4E-02 µg/L Per Day

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**Concentration vs. Time Plot – Trichloroethene in Well TW-12-22**

Racer PNC GW

**Figure D-48**




Res Fiero SSVIAC BASE criteria value of 130 is off-scale.

**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.360 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 6.0E-03 µg/L Per Day

95% Confidence Interval = -3.6E-02 to 5.4E-02 µg/L Per Day

ARCADIS

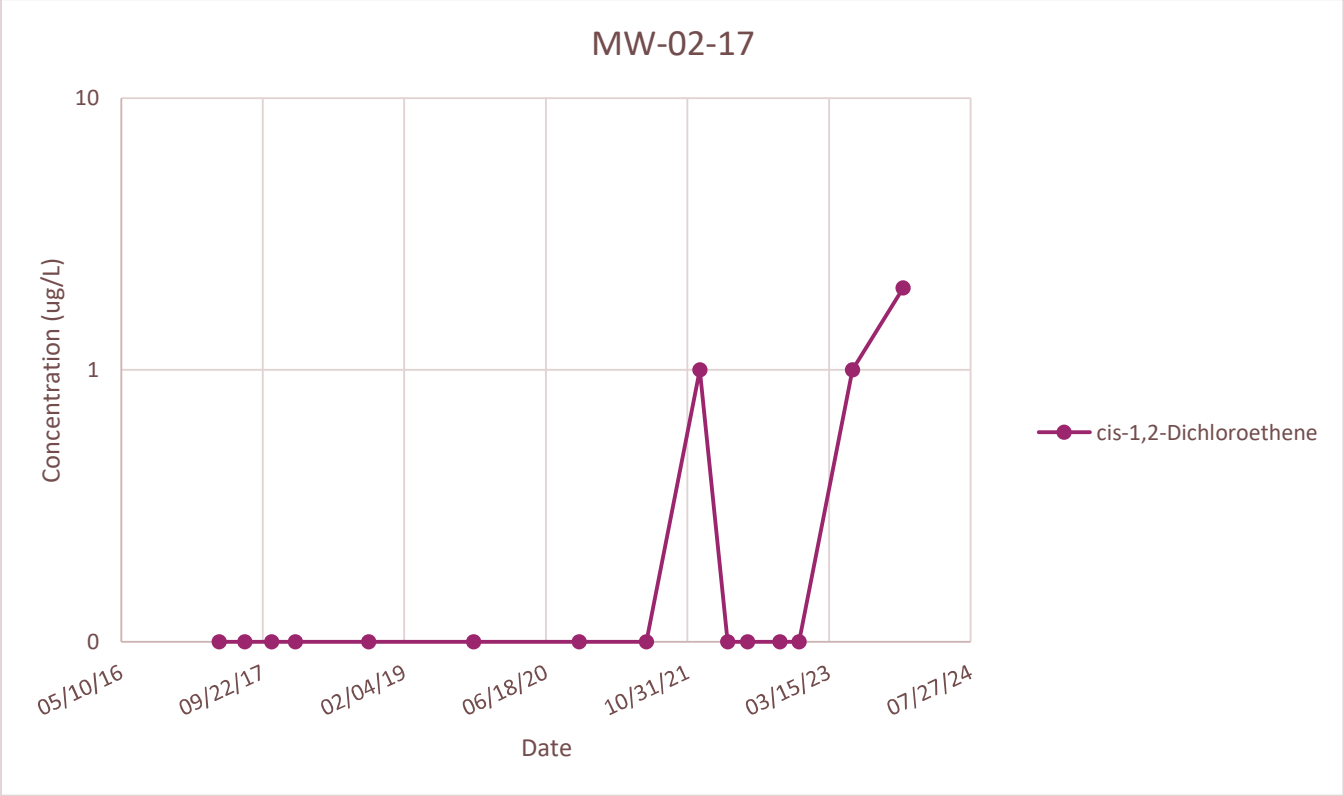
**Concentration vs. Time Plot – Tetrachloroethene in Well Unknown-01**

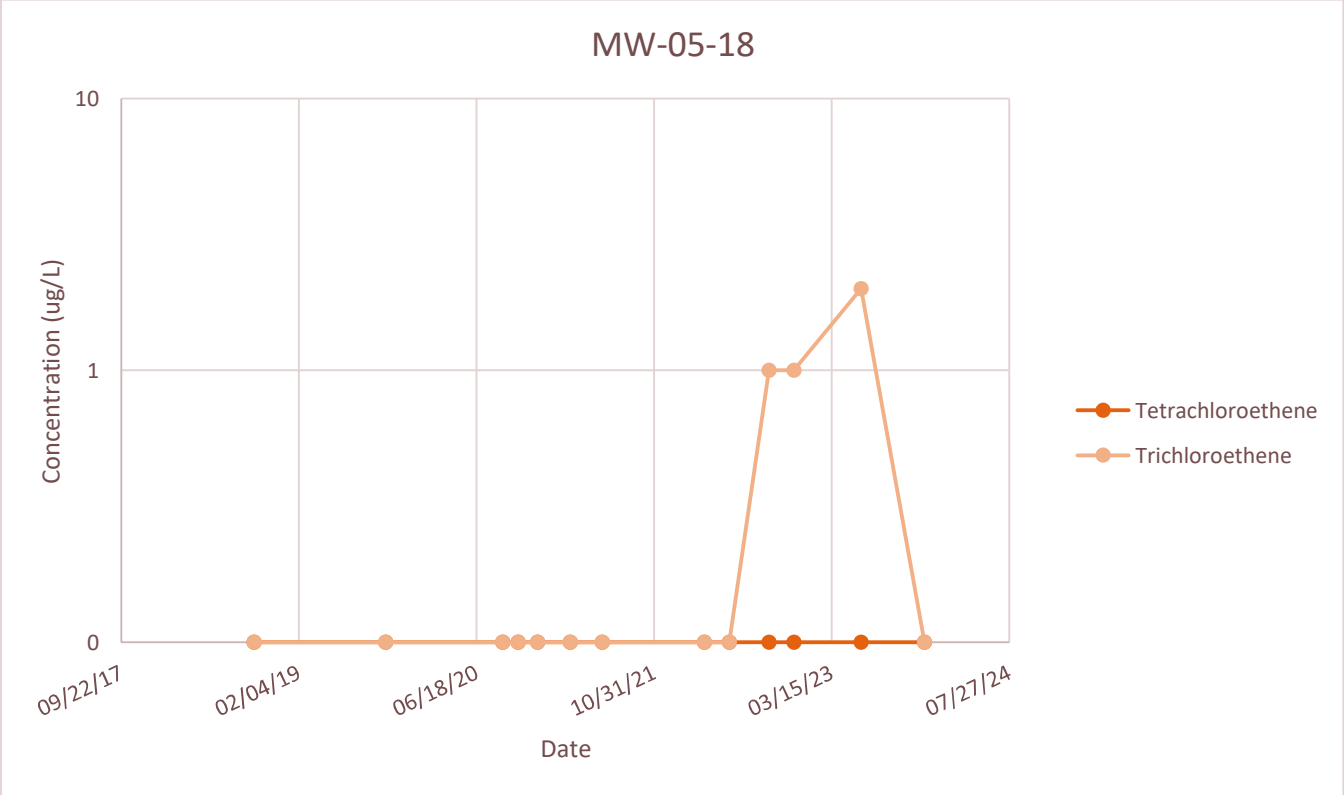
Racer PNC GW

**Figure D-49**

**Appendix D**

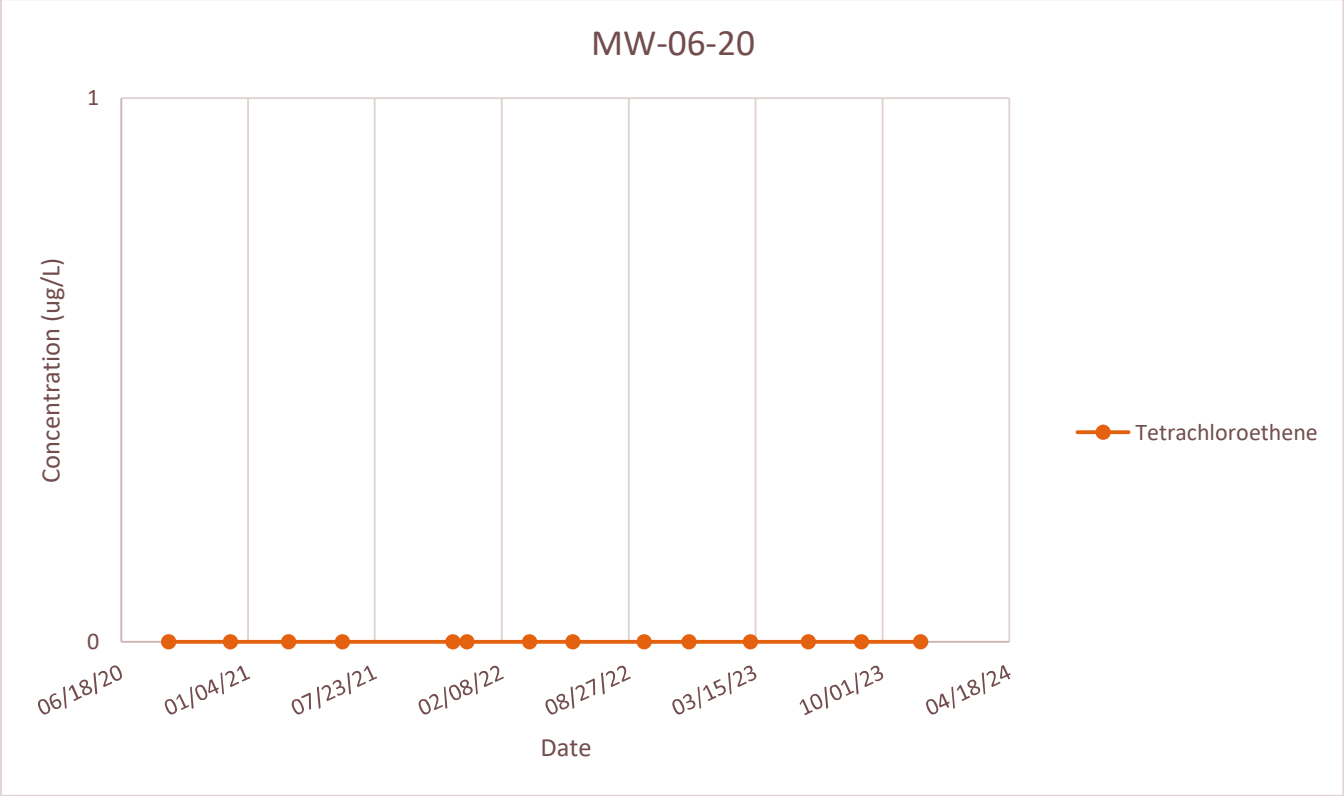
**Groundwater Trend Graphs**

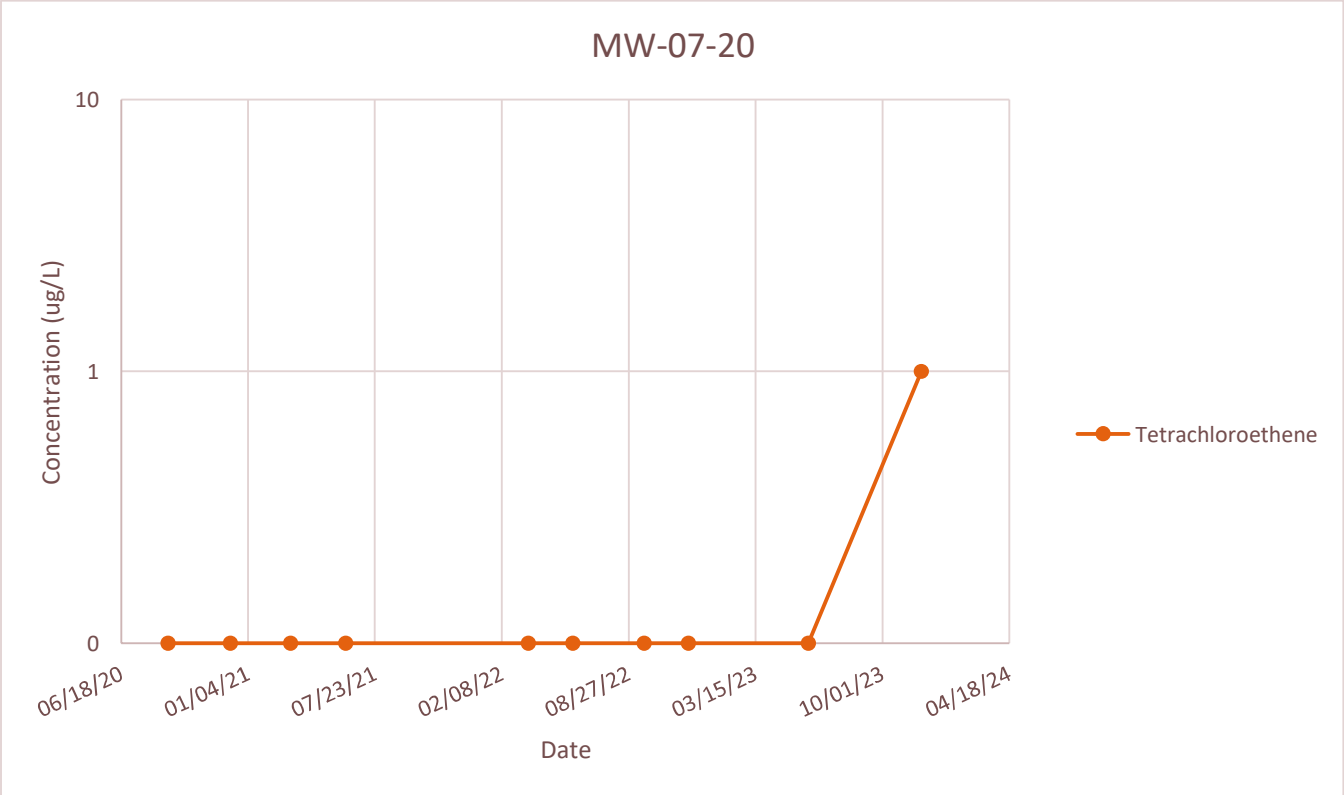


**Appendix D**

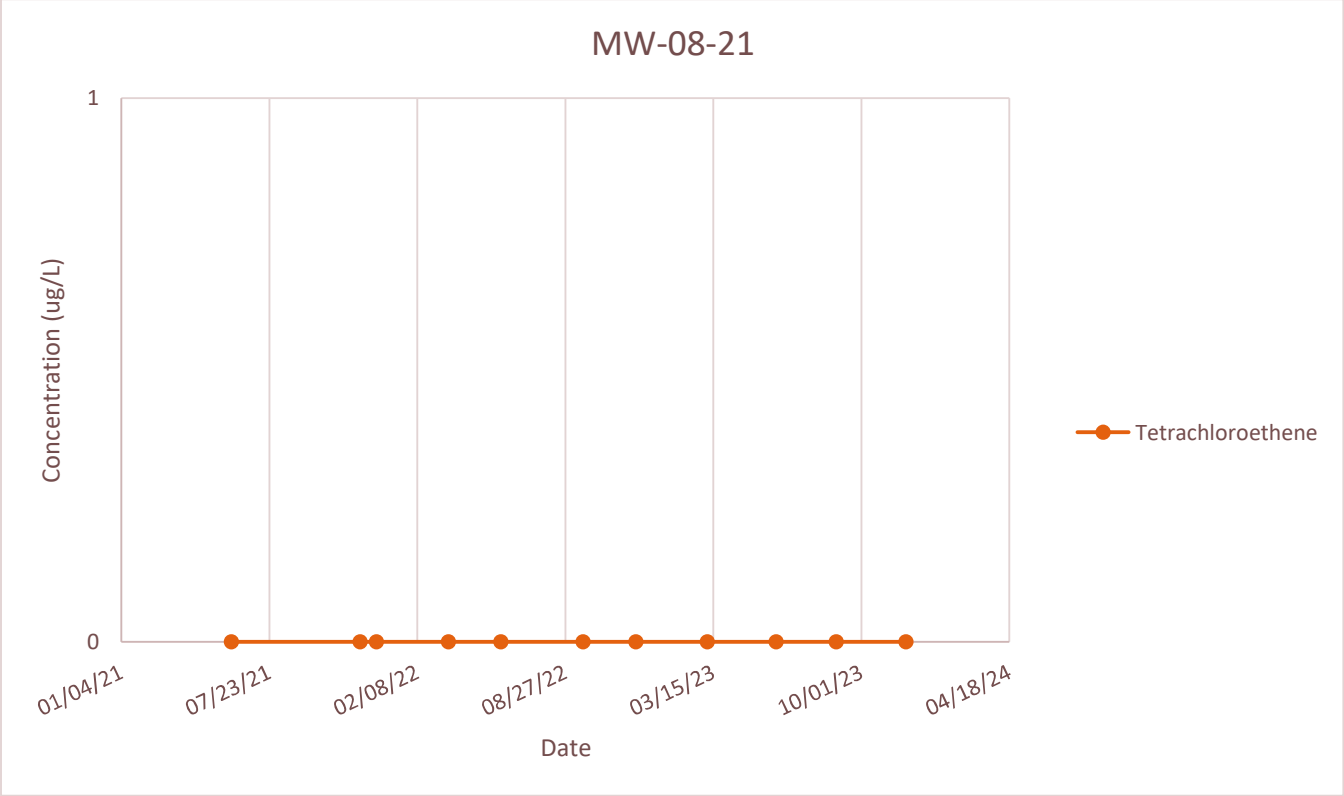
**Groundwater Trend Graphs**

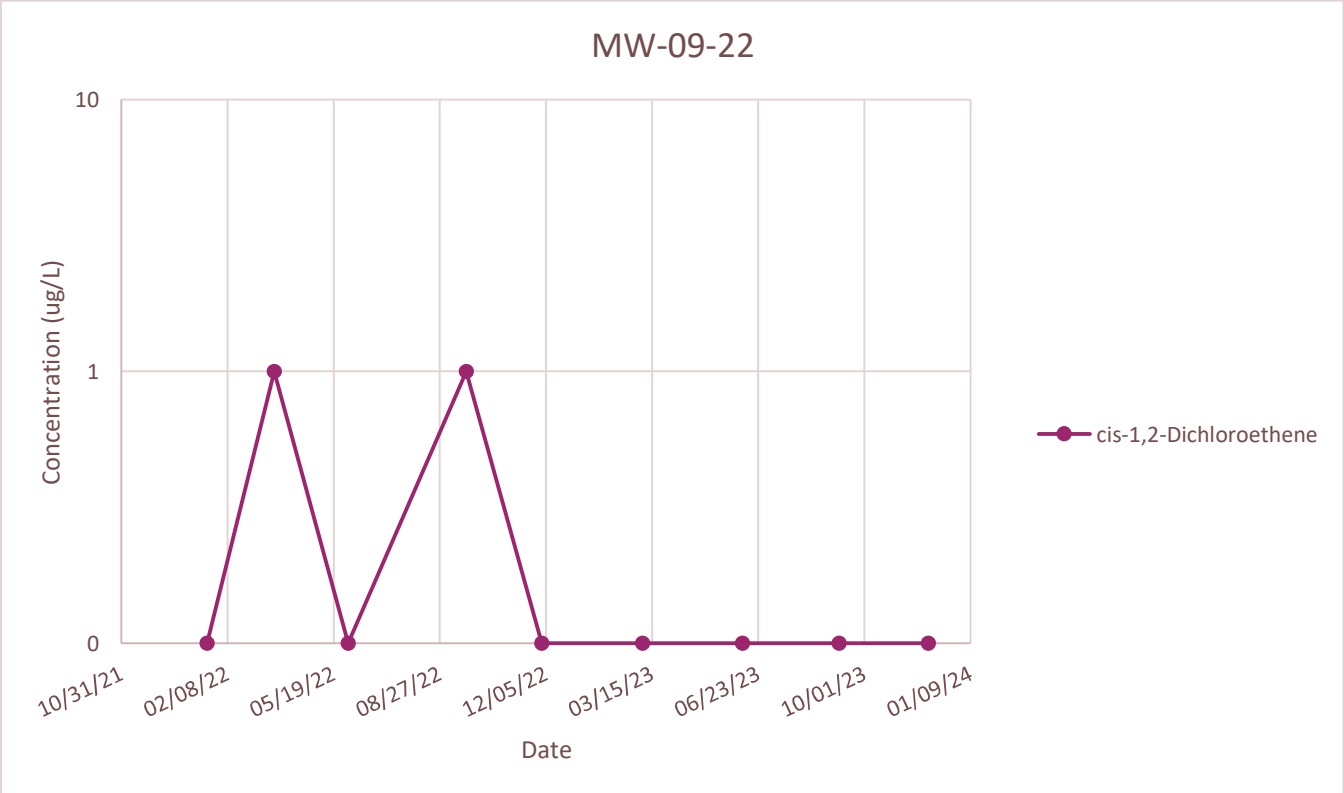


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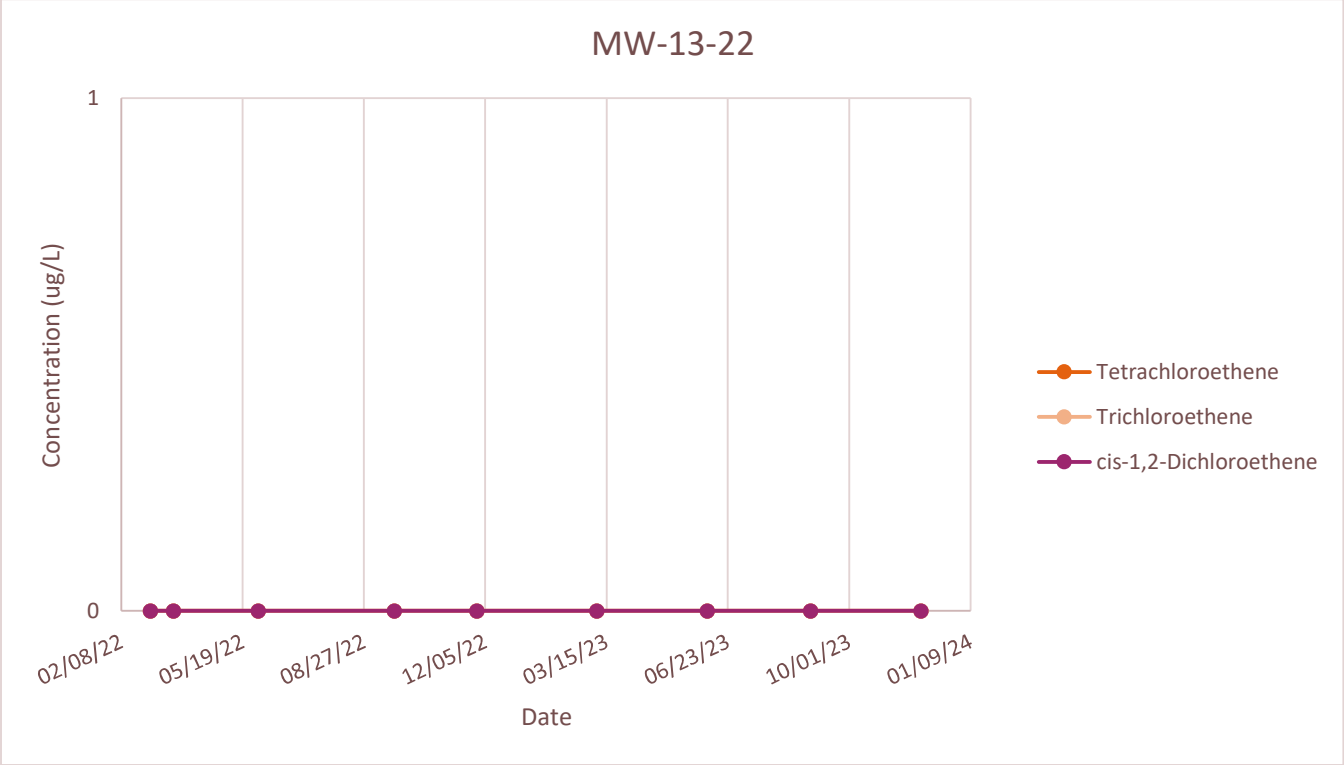
**Groundwater Trend Graphs**

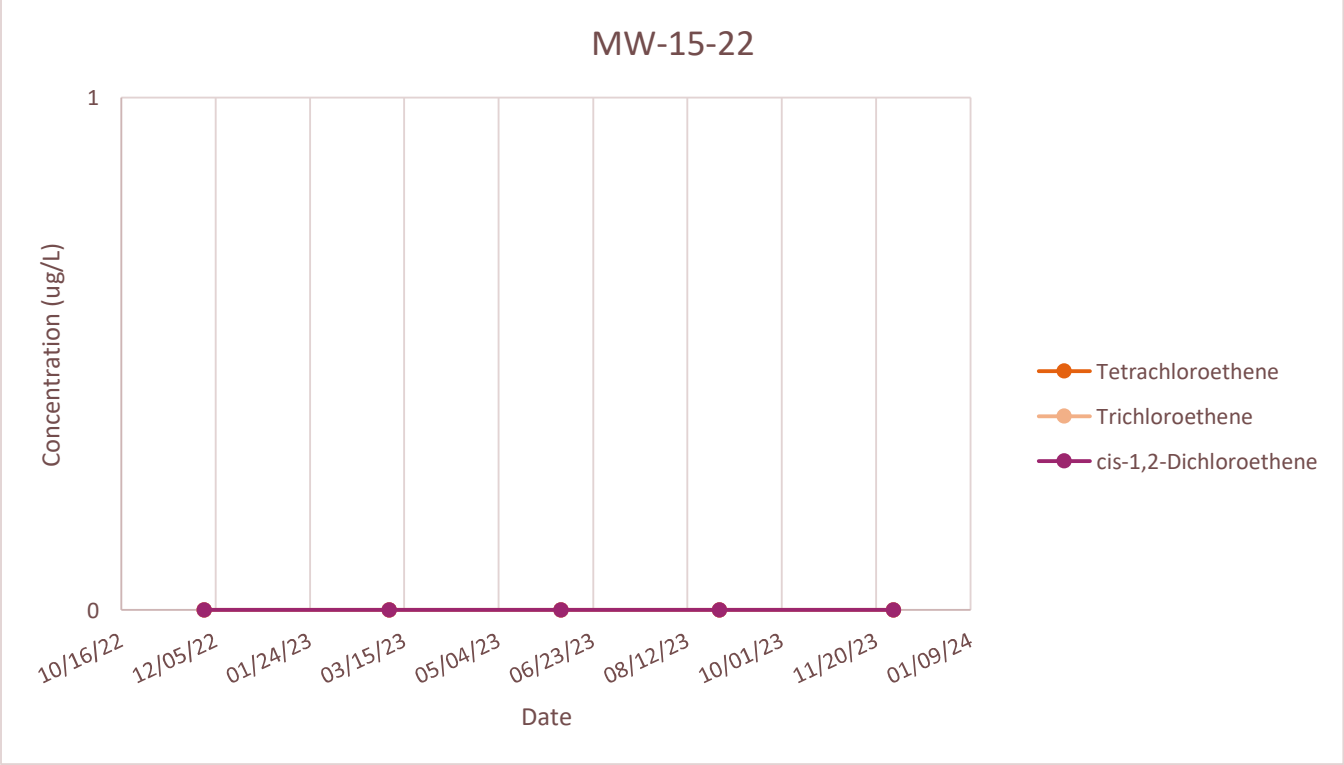


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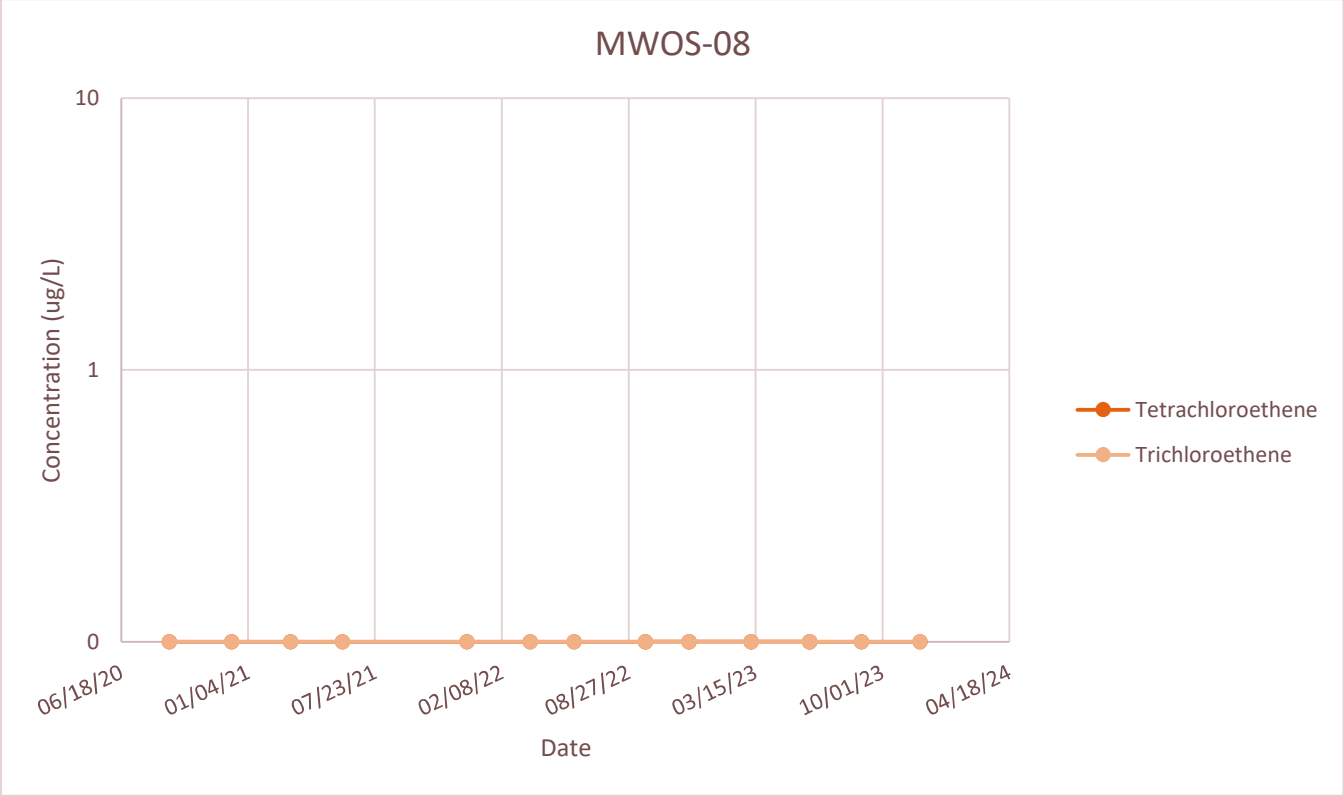
**Groundwater Trend Graphs**

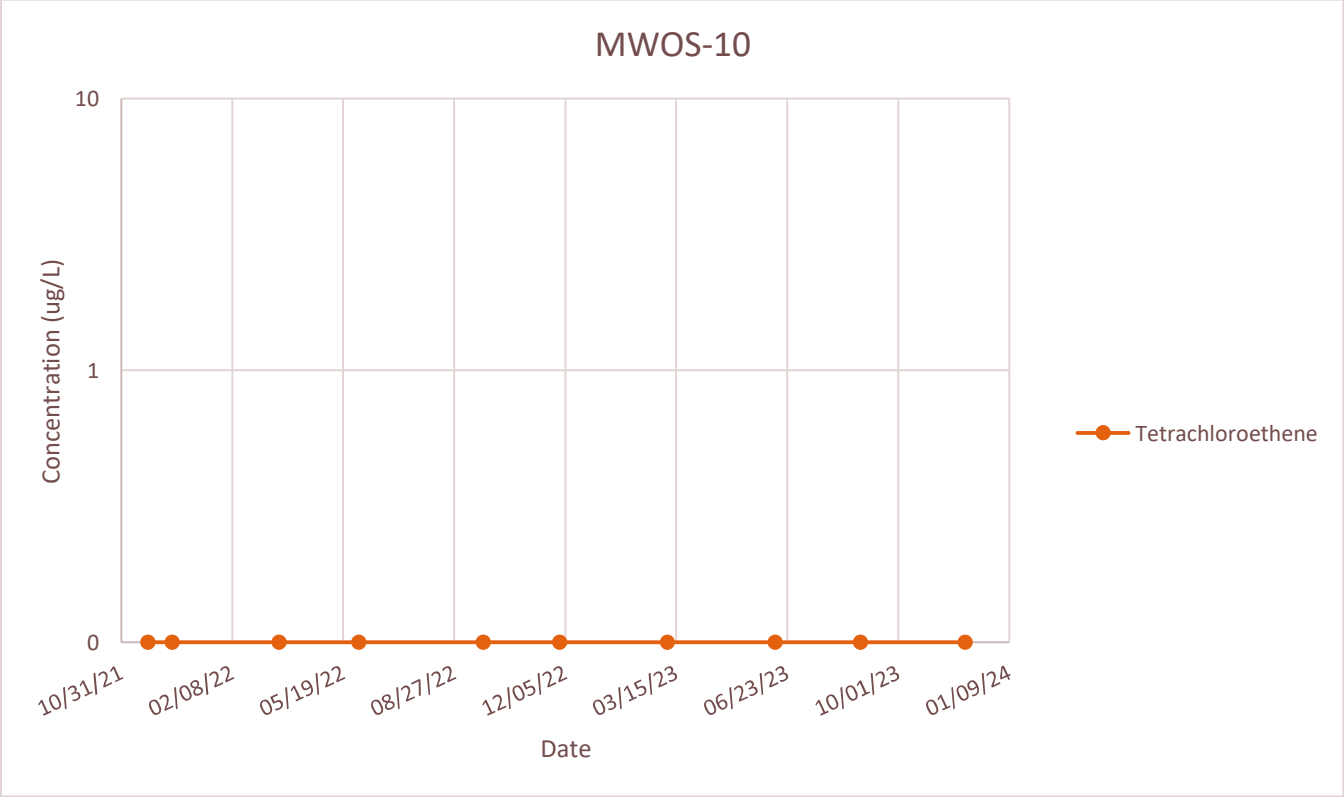


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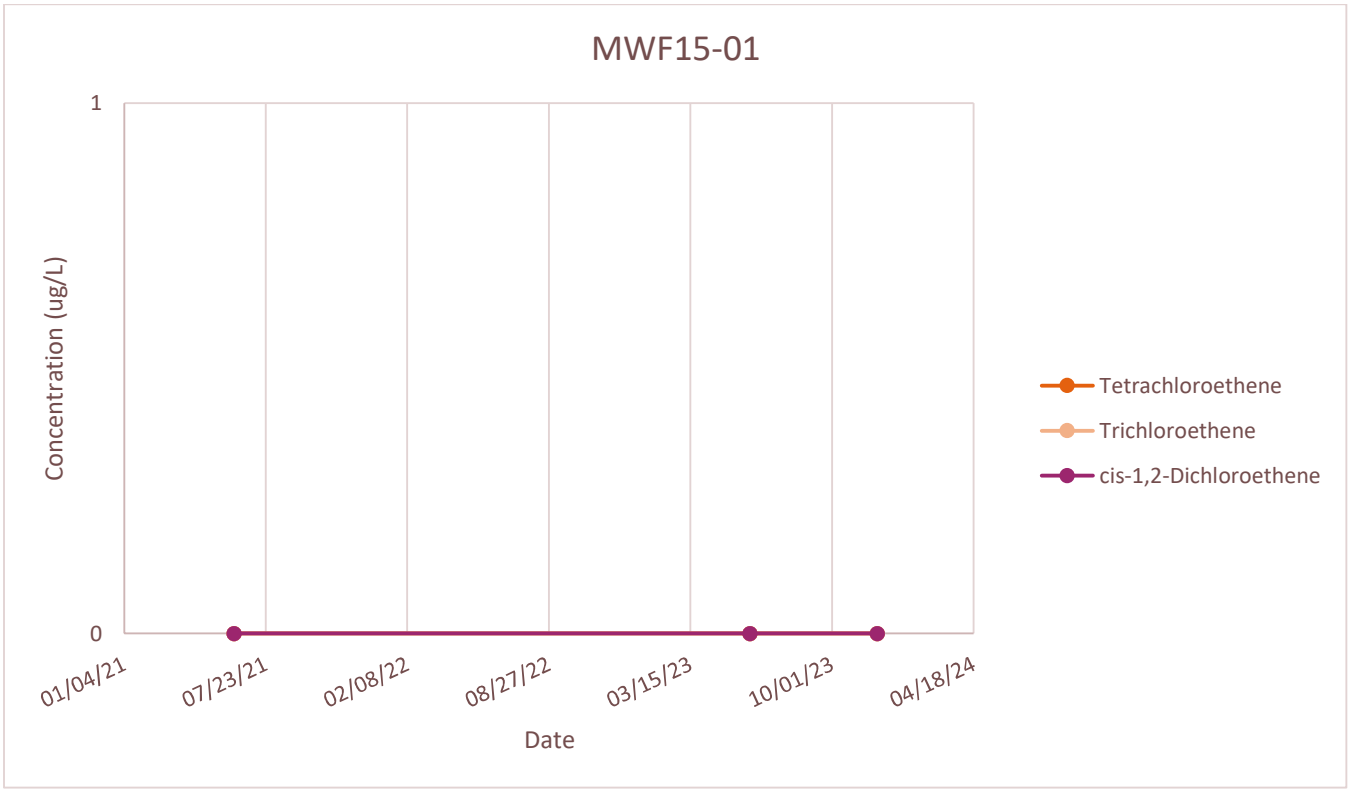
**Groundwater Trend Graphs**

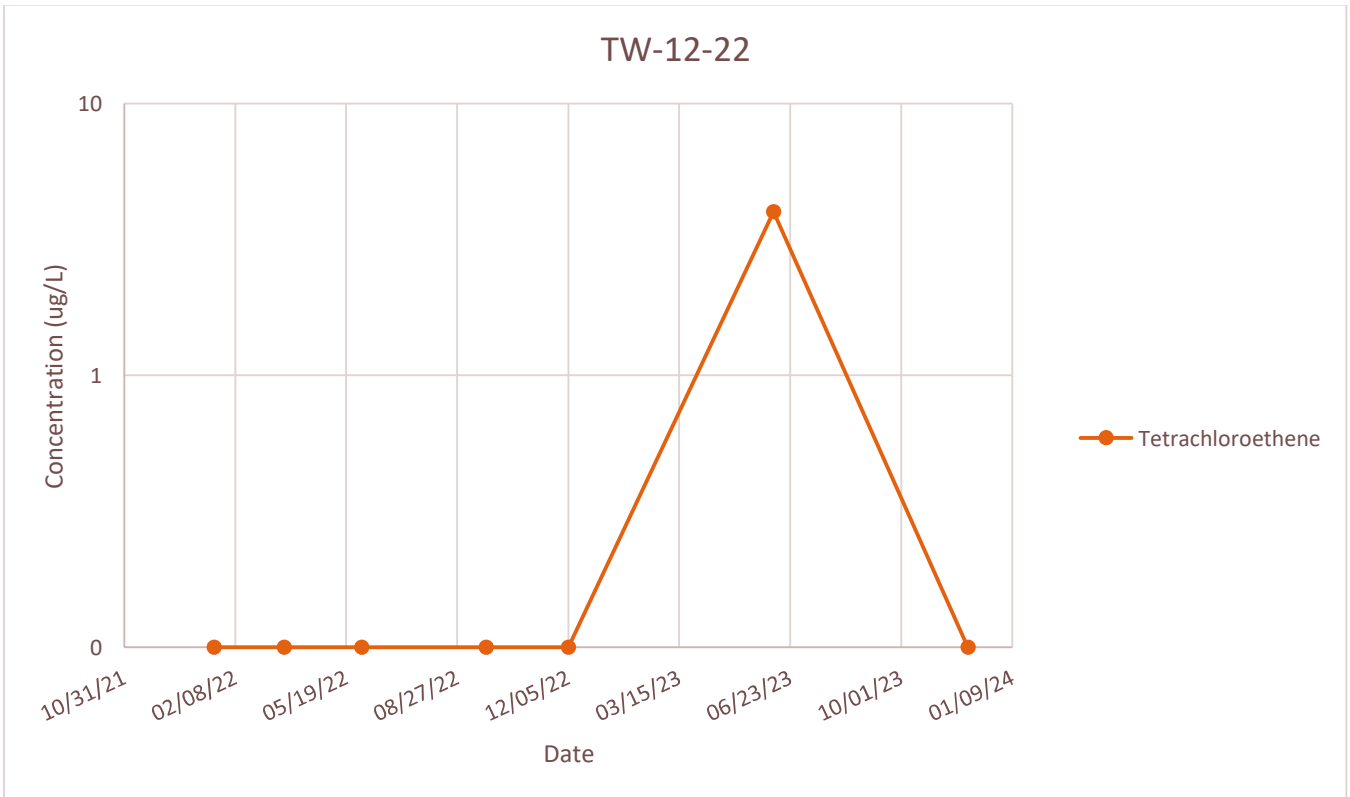


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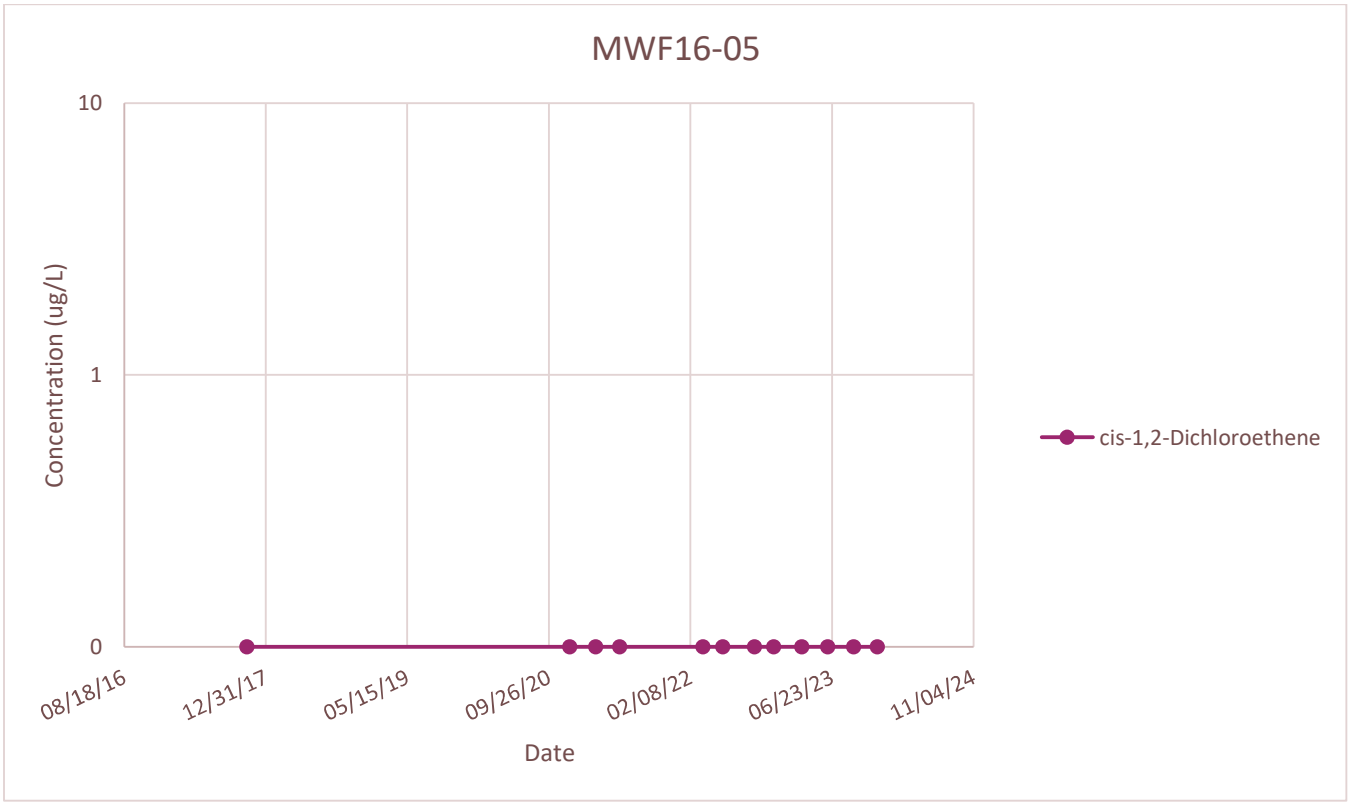
**Groundwater Trend Graphs**

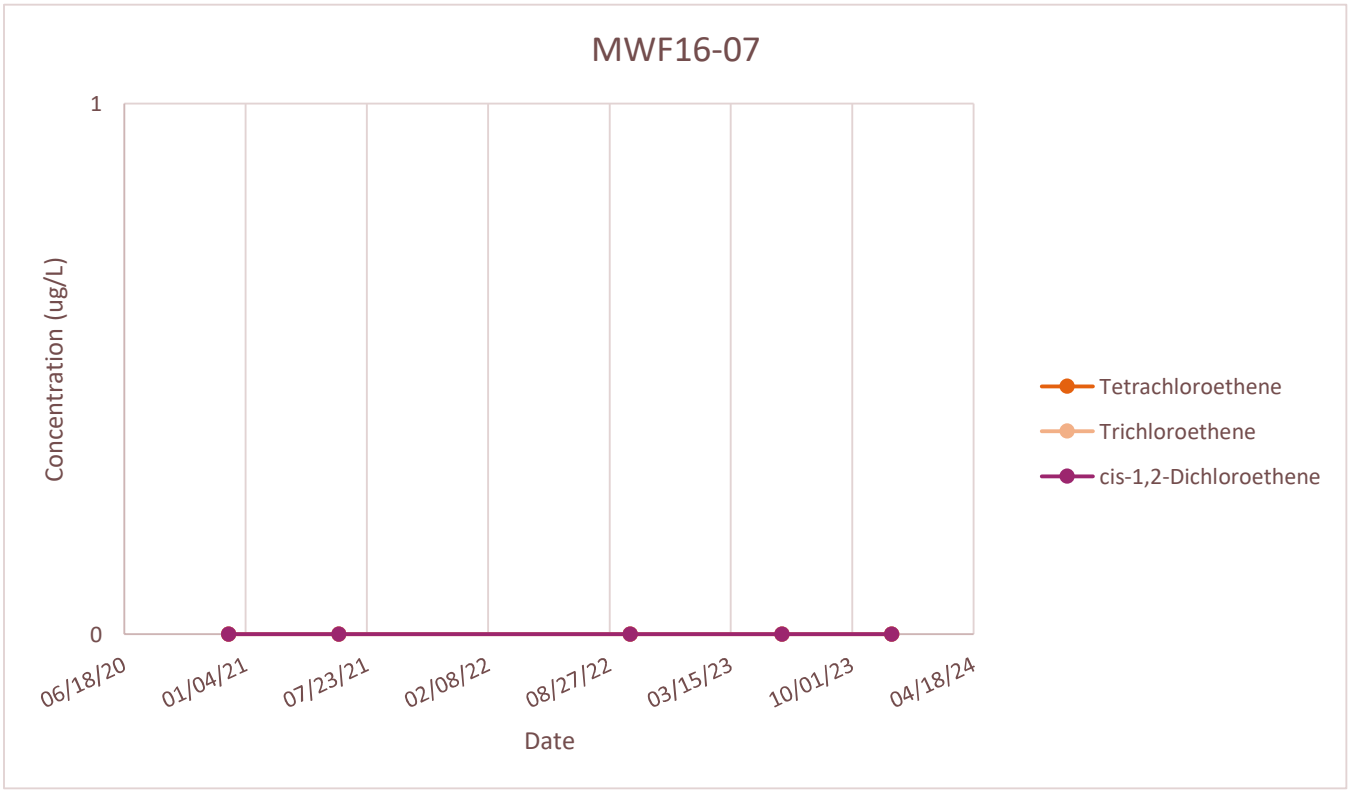


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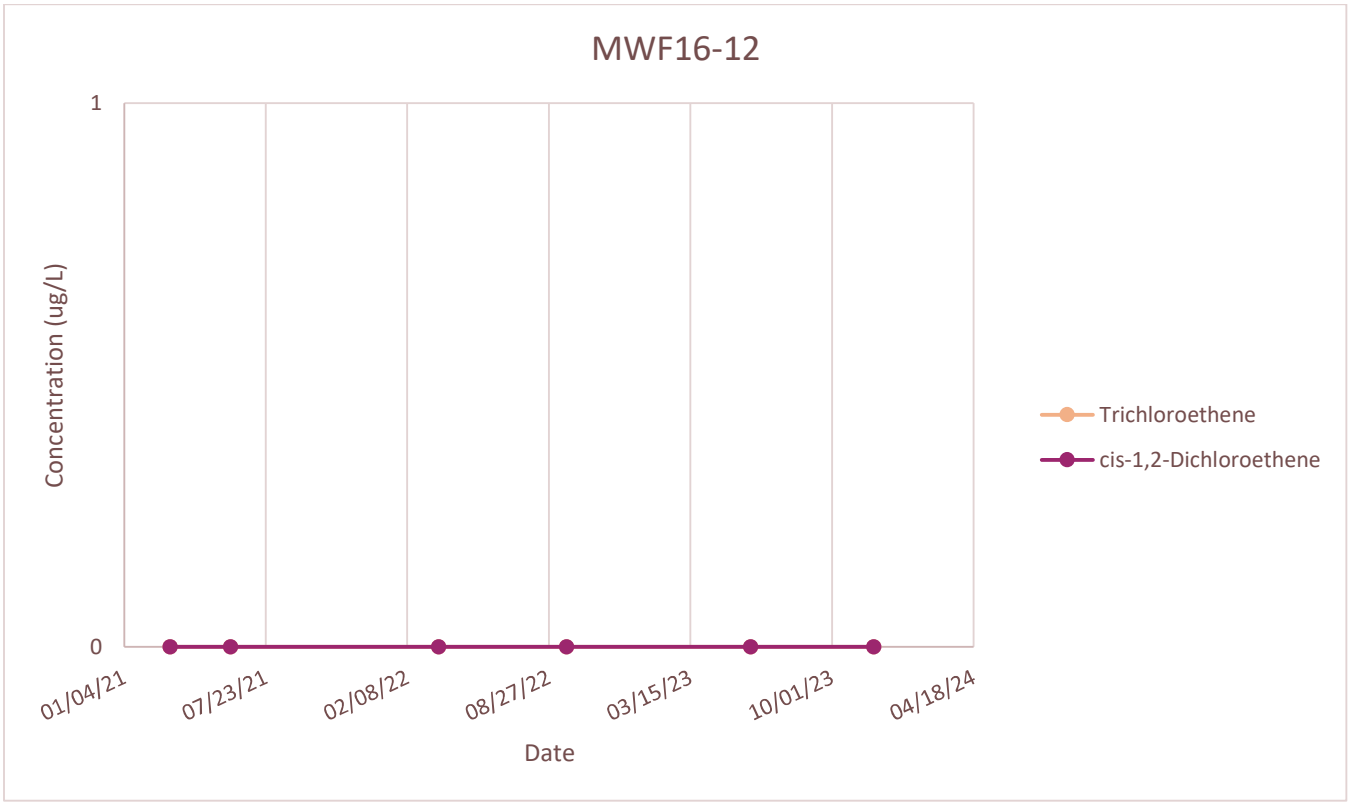
**Groundwater Trend Graphs**

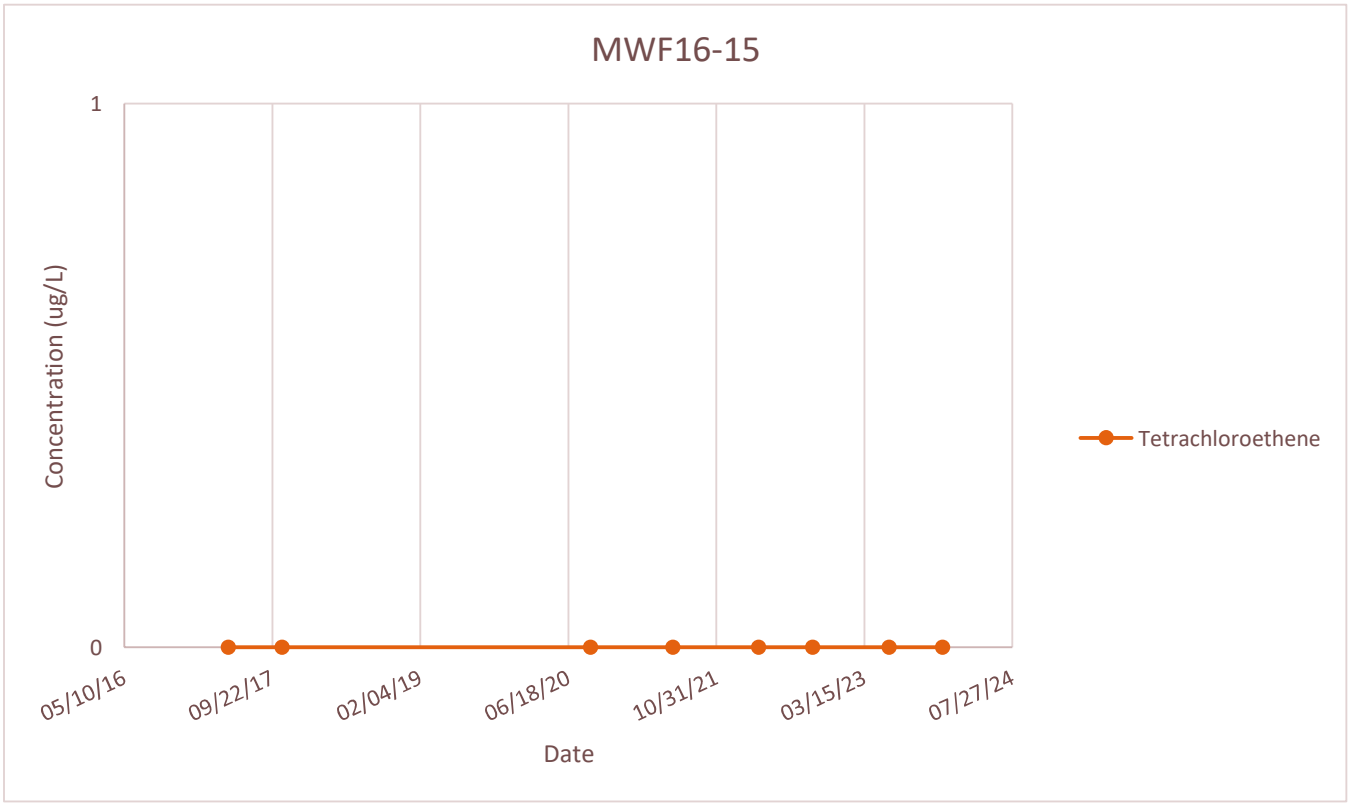


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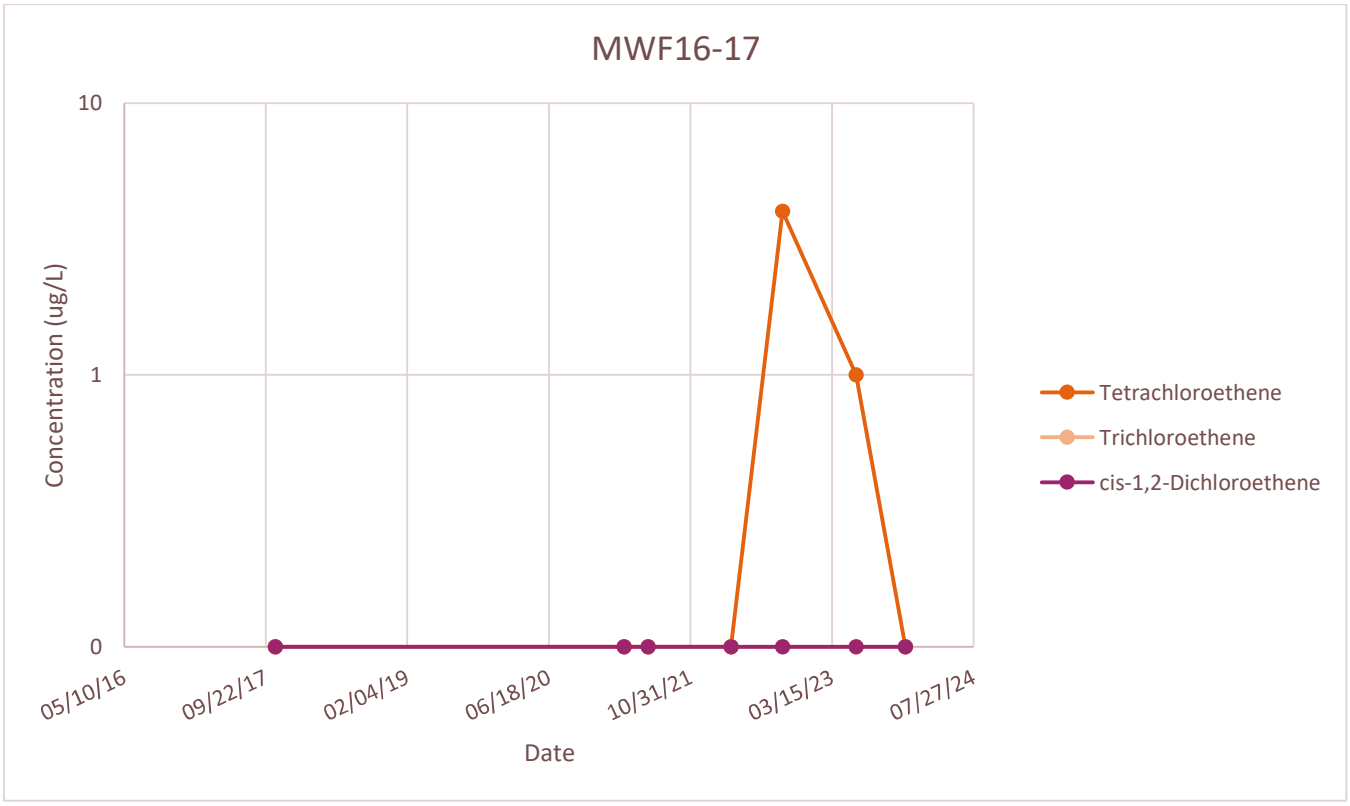
**Groundwater Trend Graphs**

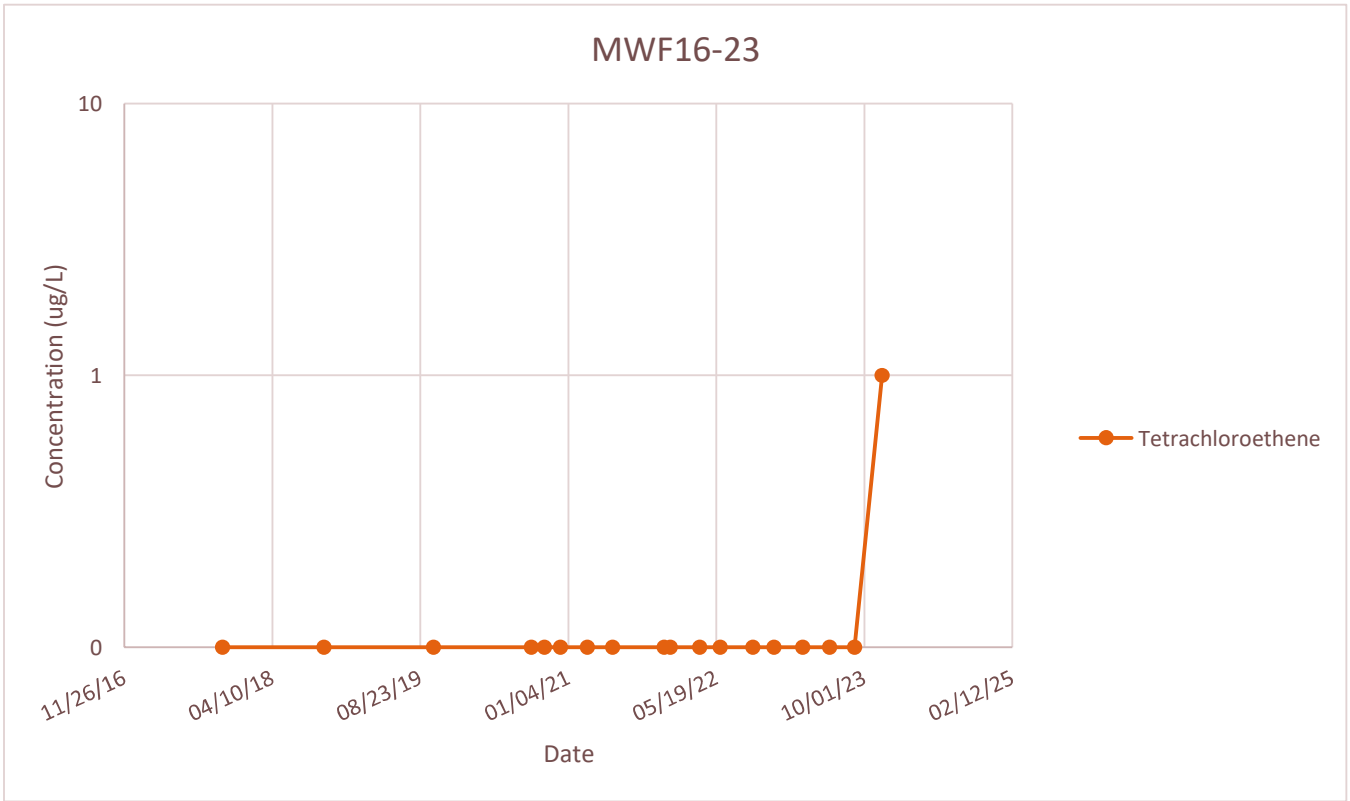


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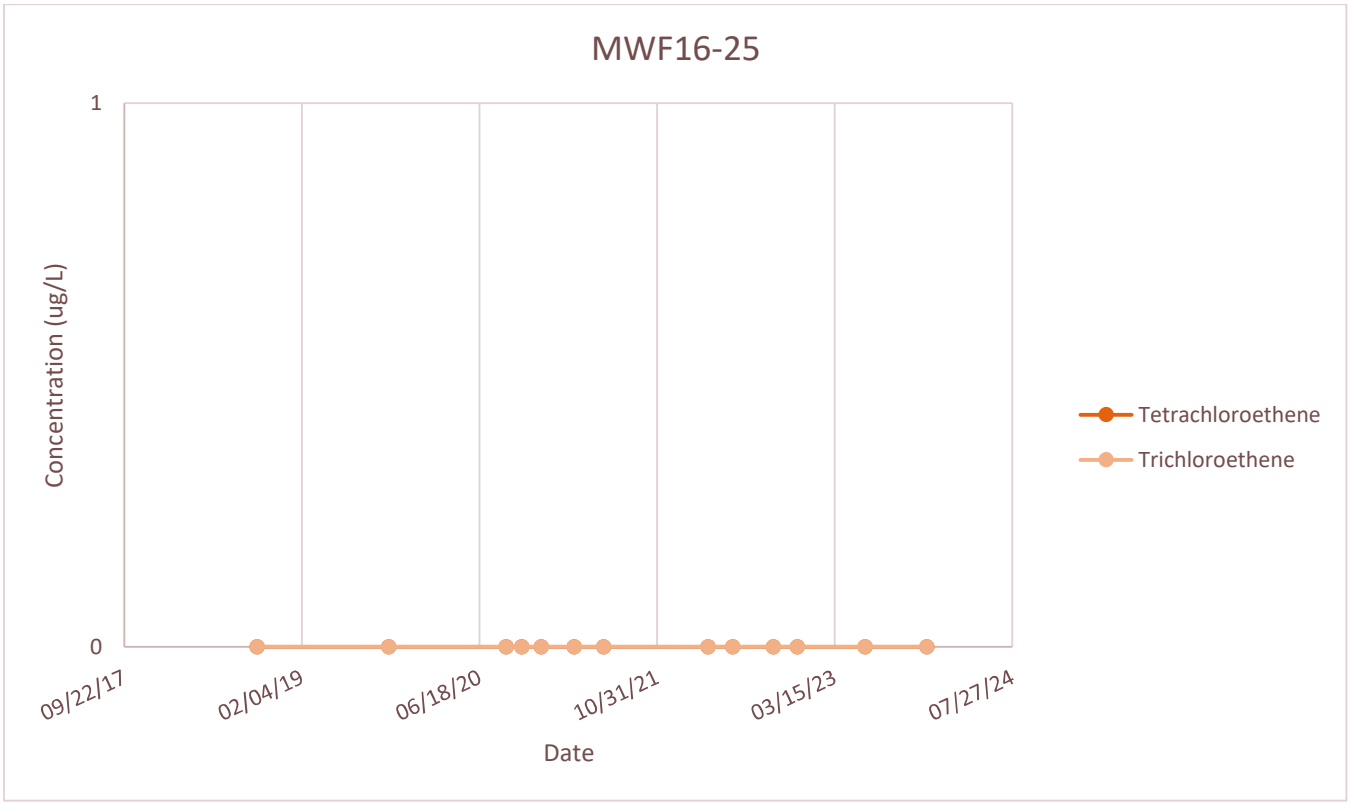
**Groundwater Trend Graphs**

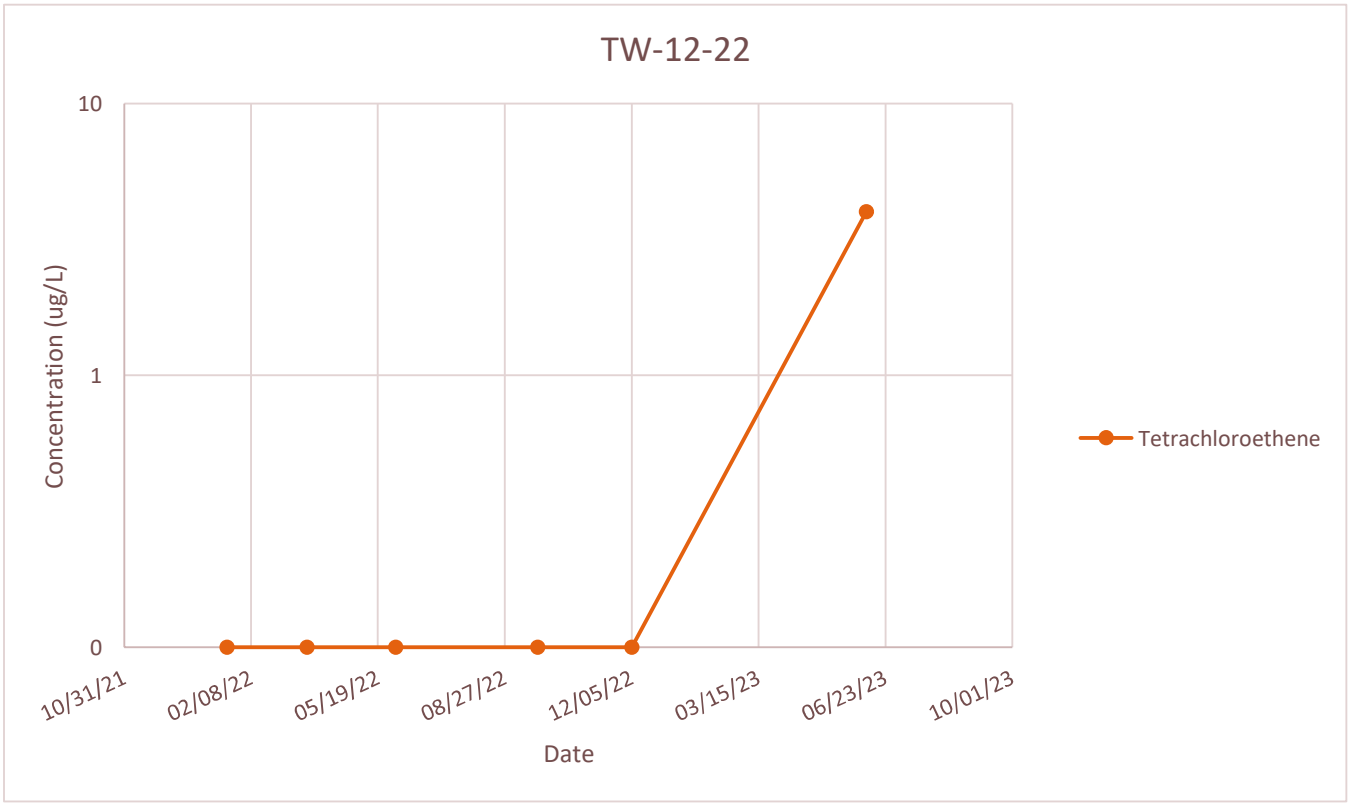


**Appendix D**

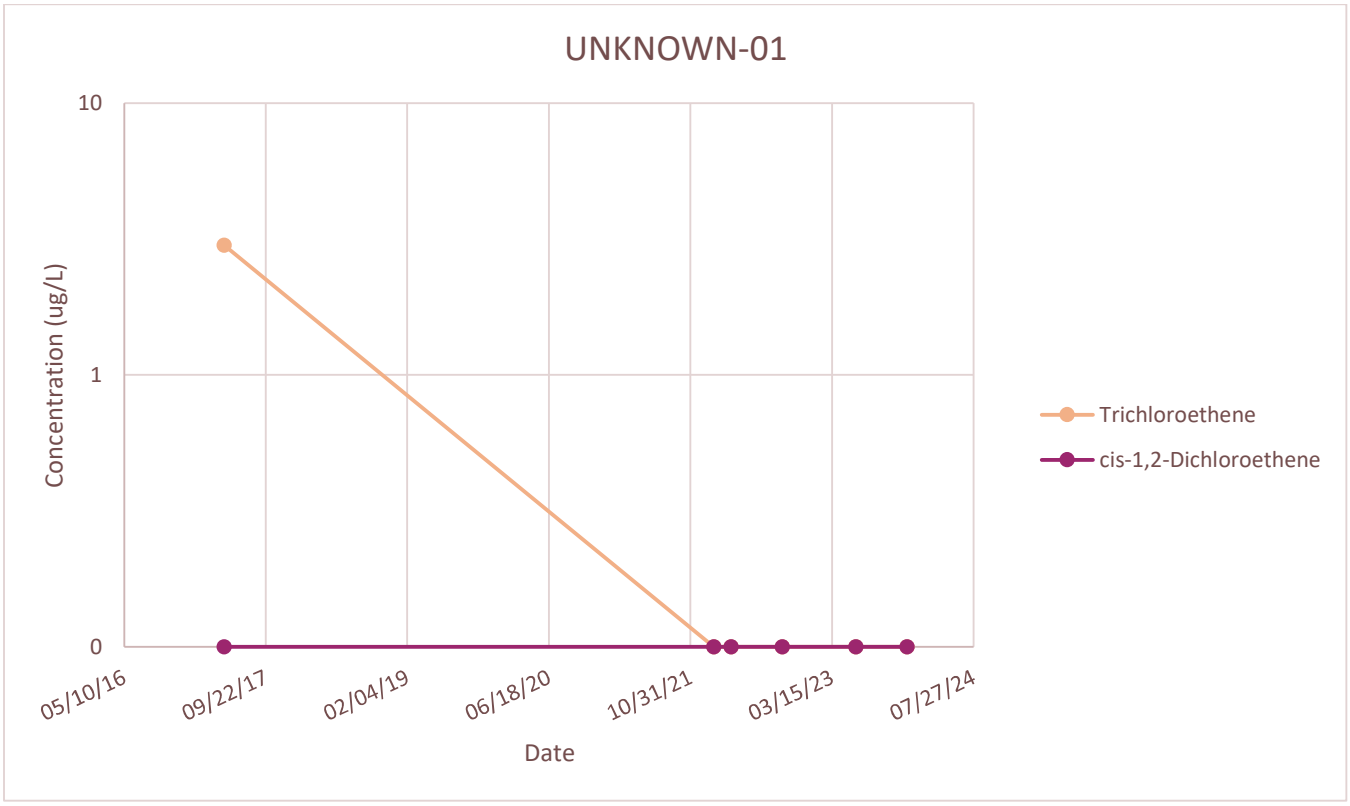
**Groundwater Trend Graphs**



**Appendix D**

**Groundwater Trend Graphs**



ARCADIS Design & Consultancy for natural and built assets

## TABLE D-1
## Soil Vapor Summary Statistics and Trend Results (Excluding November 2022)
## March, 2024

| 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 - 11/23 | D-1 | 8 / 10 | 7.5 - 17 | 11.9 | 11.5 | 3.1 | NST | -- | 0.500 | -1 | NST | -- | 0 | -0.0139 to 0.0121 |
| SV-01-21 | Trichloroethylene | 05/21 - 11/23 | D-2 | 10 / 10 | 8 - 32 | 15.6 | 14 | 7.6 | NST | -- | 0.466 | -2 | NST | -- | -0.00165 | -0.0164 to 0.0211 |
| SV-02-21 | Tetrachloroethylene | 05/21 - 11/23 | D-3 | 9 / 10 | 7.5 - 12 | 9 | 8.3 | 1.5 | NST | -- | 0.466 | 2 | NST | -- | 0.000186 | -0.00578 to 0.00461 |
| SV-02-21 | Trichloroethylene | 05/21 - 11/23 | D-4 | 10 / 10 | 50 - 83 | 60.9 | 57.5 | 11.7 | DWN | -- | 0.023 | -23 | DWN | -- | -0.0223 | -0.0531 to -0.00137 |
| SV-04-21 | Trichloroethylene | 10/21 - 11/23 | D-5 | 9 / 9 | 11 - 18 | 15.6 | 16 | 2.7 | NST | -- | 0.460 | -2 | NST | -- | 0 | -0.0118 to 0.00988 |
| SV-06-21 | Trichloroethylene | 03/22 - 11/23 | D-6 | 7 / 7 | 13 - 48 | 20 | 16 | 12.4 | NST | 5a | 0.052 | 12 | NST | 5a | 0.00650 | -0.00371 to 0.0187 |

**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

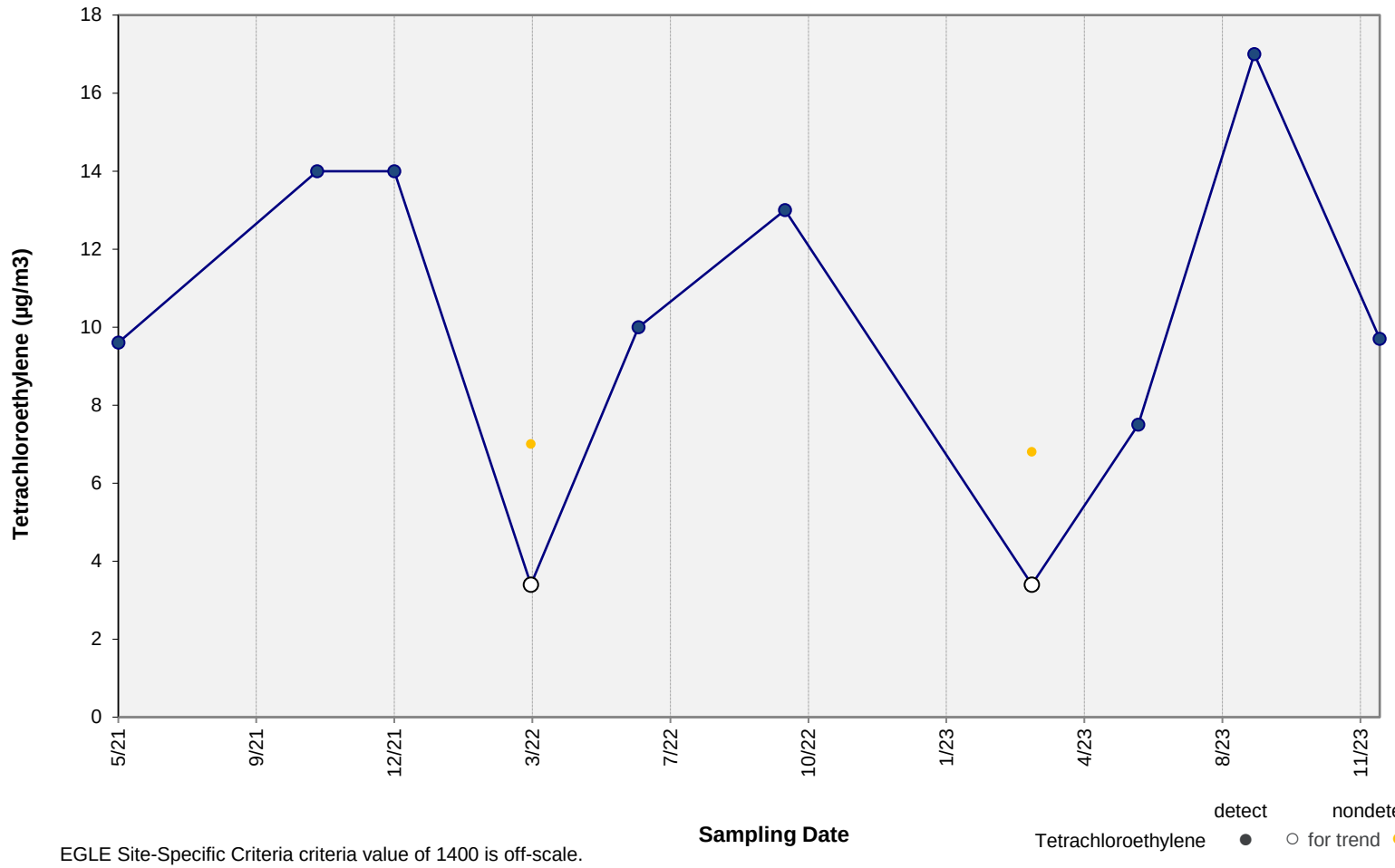
$H_0$ = null hypothesis: no significant trend (slope = 0)
$H_a$ = alternative hypothesis: significant trend (slope ≠ 0)
95% CI = 95% confidence interval

**Notes:**

1. All analytical results are in µg/L.
2. Trend results are presented when at least four samples and one detected value are available. Significance of trends evaluated at 95% confidence (alpha = 0.05).
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 ≤ 0.05, or 95% 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.




EGLE Site-Specific Criteria criteria value of 1400 is off-scale.

**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.500 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 0.0E+00 µg/m3 Per Day

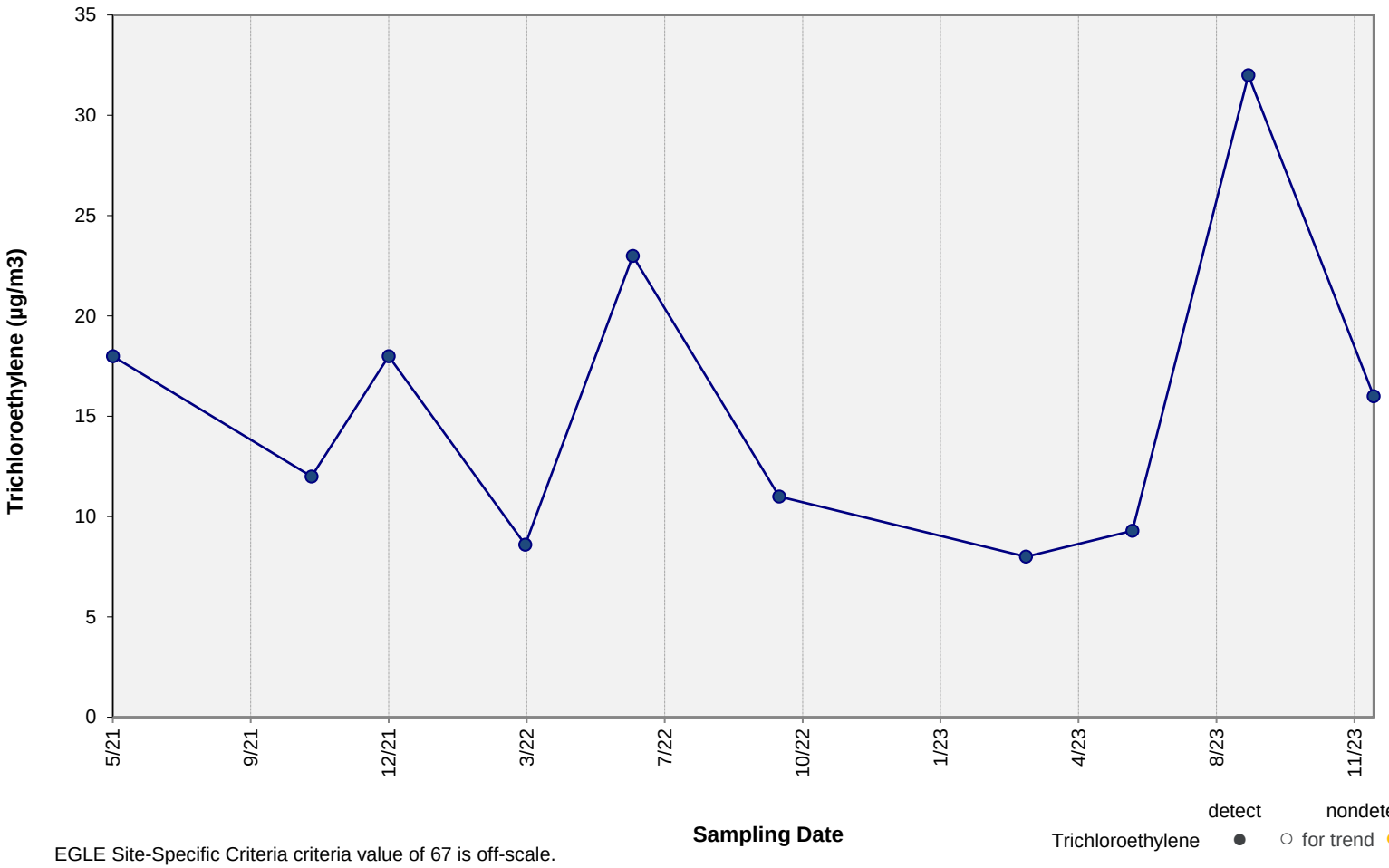
95% Confidence Interval = -1.4E-02 to 1.2E-02 µg/m3 Per Day

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## Concentration vs. Time Plot – Tetrachloroethylene in Well SV-01-21

Racer PNC Soil Vapor (Excluding November 2022)

**Figure D-1**




EGLE Site-Specific Criteria criteria value of 67 is off-scale.

**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.466 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = -1.7E-03 µg/m3 Per Day

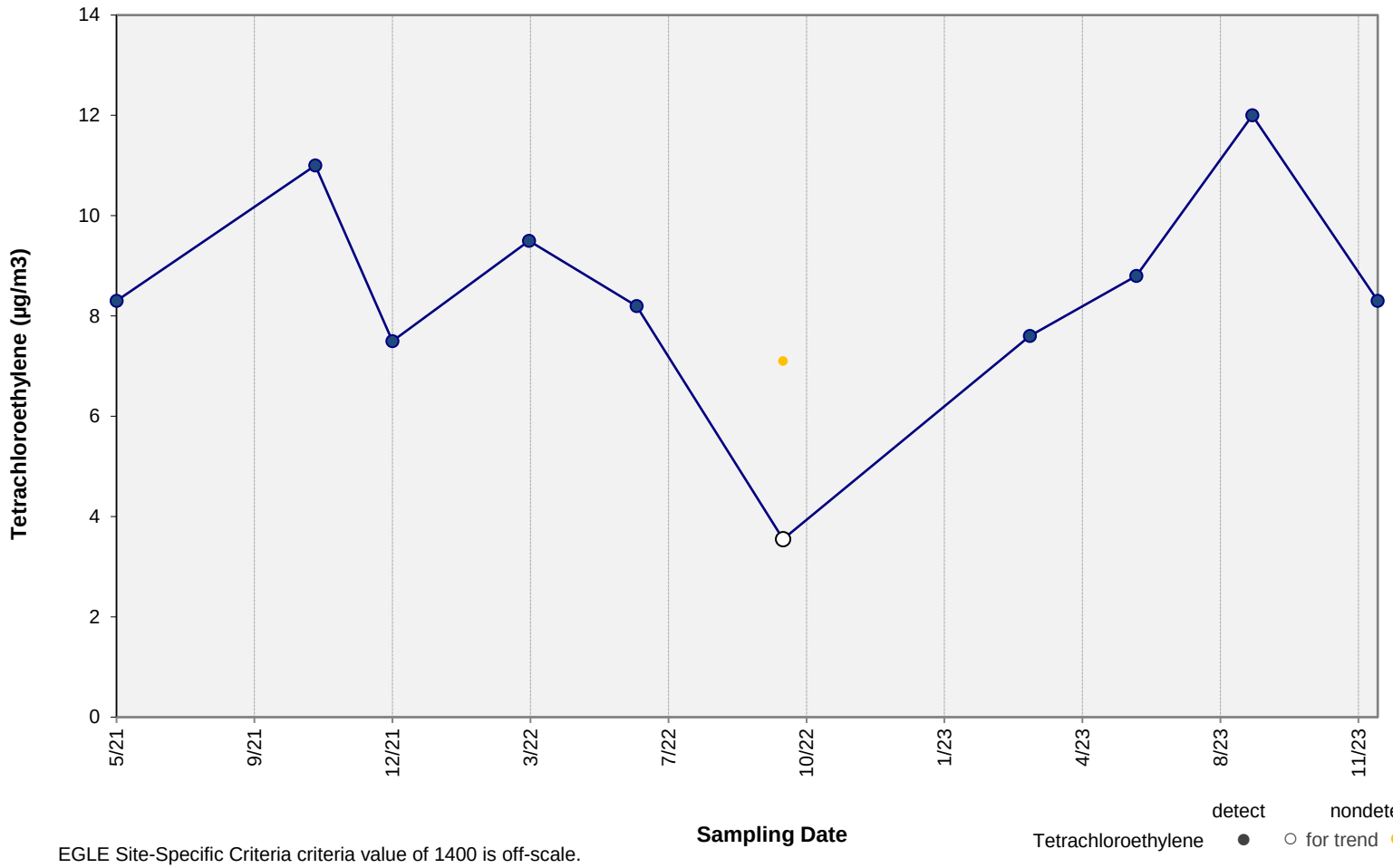
95% Confidence Interval = -1.6E-02 to 2.1E-02 µg/m3 Per Day

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## Concentration vs. Time Plot – Trichloroethylene in Well SV-01-21

Racer PNC Soil Vapor (Excluding November 2022)

**Figure D-2**




EGLE Site-Specific Criteria criteria value of 1400 is off-scale.

**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.466 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 1.9E-04 µg/m3 Per Day

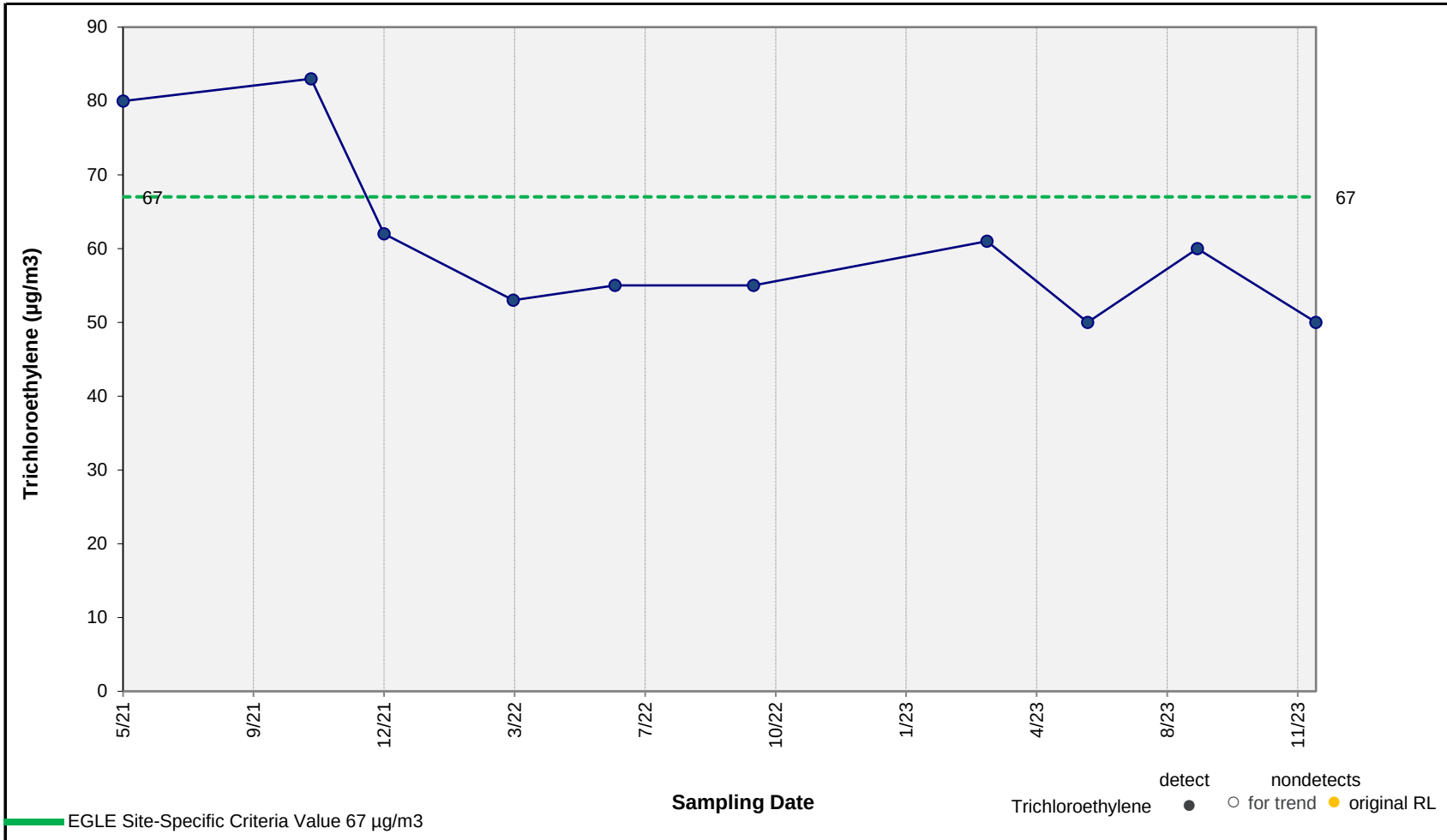
95% Confidence Interval = -5.8E-03 to 4.6E-03 µg/m3 Per Day

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## Concentration vs. Time Plot – Tetrachloroethylene in Well SV-02-21

Racer PNC Soil Vapor (Excluding November 2022)

**Figure D-3**




**Results of Mann-Kendall Test for Trend:** **DECREASING TREND**

p value = 0.023 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **DECREASING TREND**

Median Slope Estimate = -2.2E-02 µg/m3 Per Day

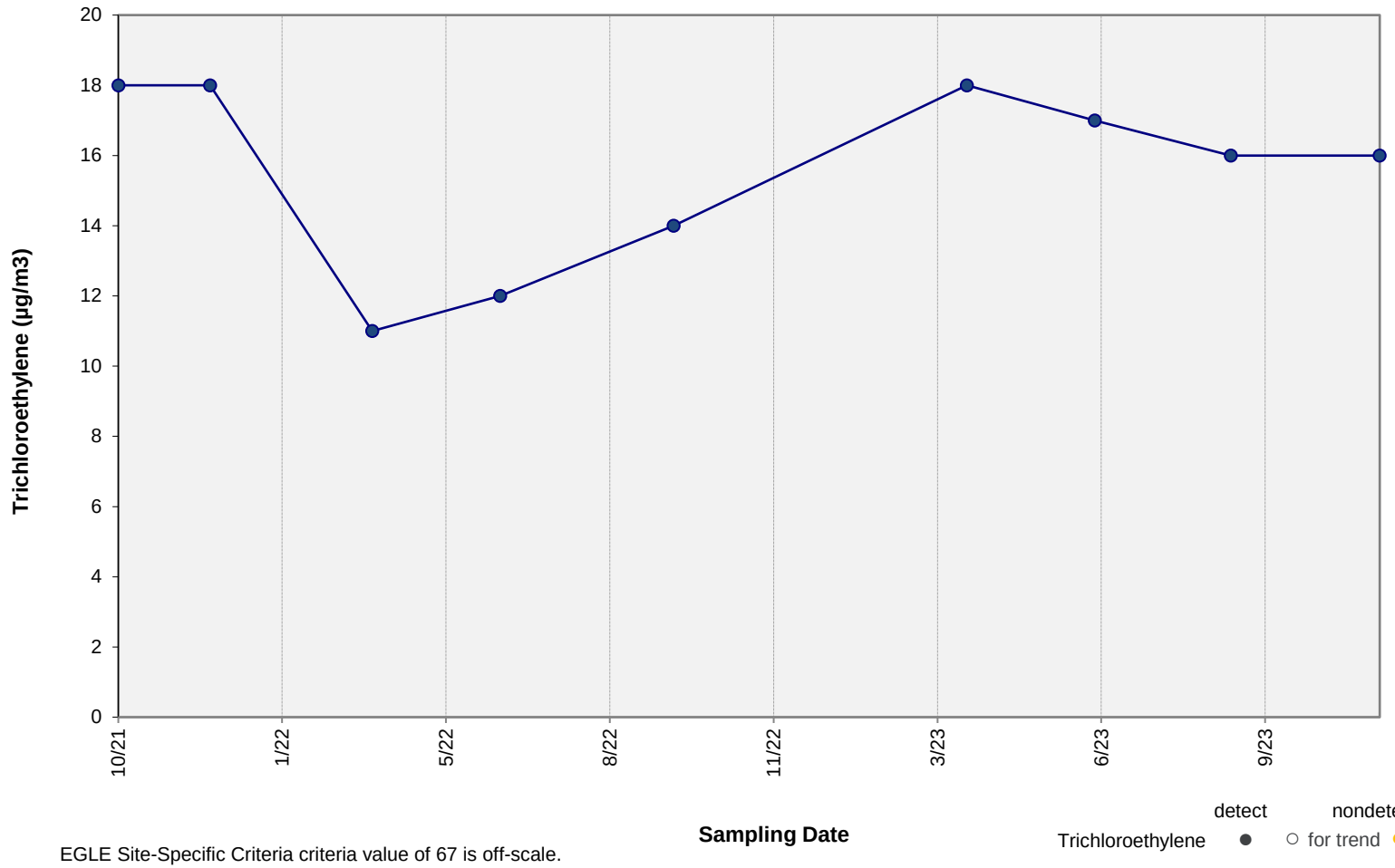
95% Confidence Interval = -5.3E-02 to -1.4E-03 µg/m3 Per Day

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**Concentration vs. Time Plot – Trichloroethylene in Well SV-02-21**

Racer PNC Soil Vapor (Excluding November 2022)

**Figure D-4**




EGLE Site-Specific Criteria criteria value of 67 is off-scale.

**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.460 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 0.0E+00 µg/m3 Per Day

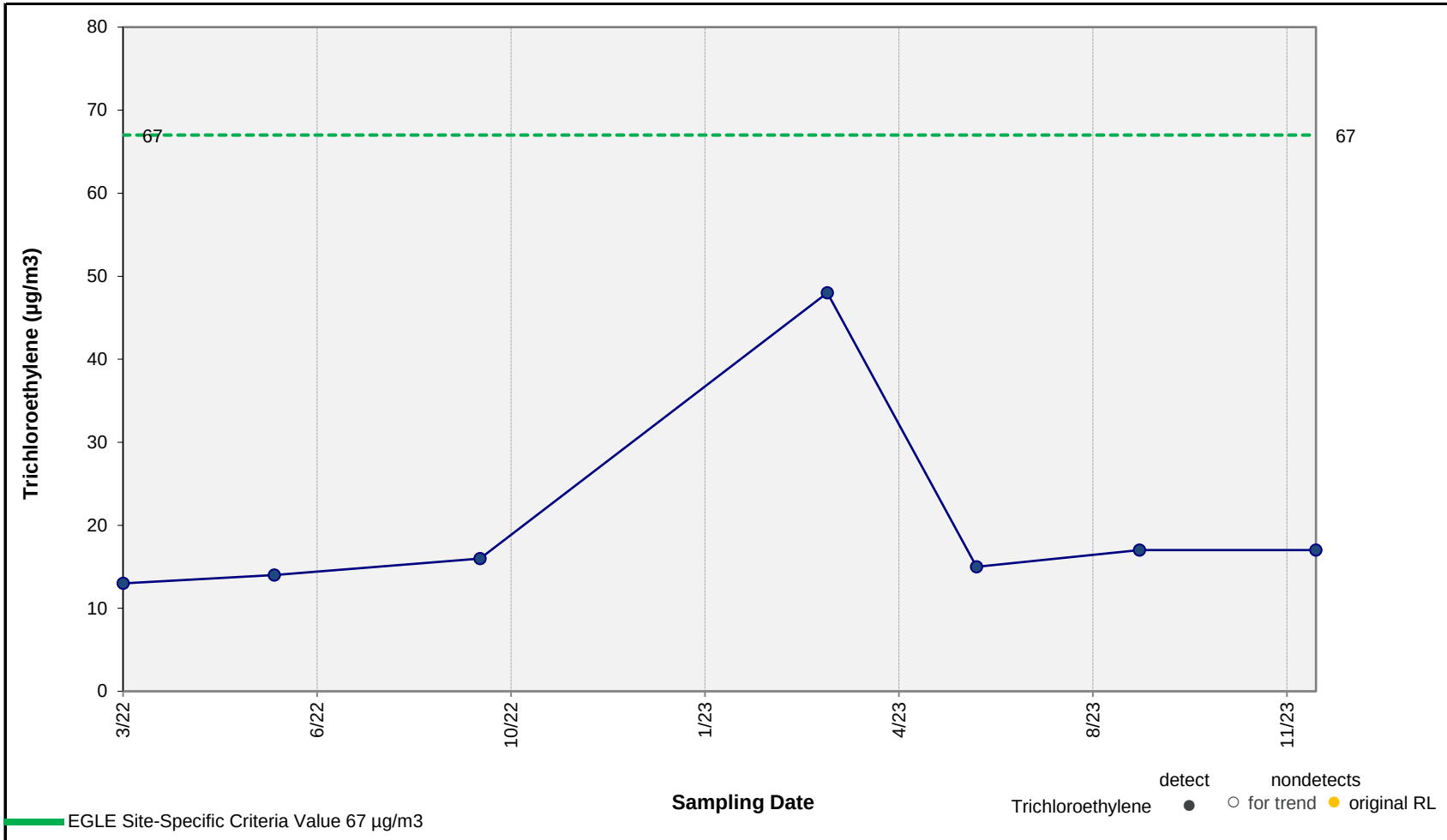
95% Confidence Interval = -1.2E-02 to 9.9E-03 µg/m3 Per Day

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## Concentration vs. Time Plot – Trichloroethylene in Well SV-04-21

Racer PNC Soil Vapor (Excluding November 2022)

**Figure D-5**




**Results of Mann-Kendall Test for Trend:** **No Significant Trend**

p value = 0.052 Note: p value < 0.05 indicates a statistically significant trend (95% confidence level).

**Results of Sen's Estimator of Slope:** **No Significant Trend**

Median Slope Estimate = 6.5E-03 µg/m3 Per Day

95% Confidence Interval = -3.7E-03 to 1.9E-02 µg/m3 Per Day

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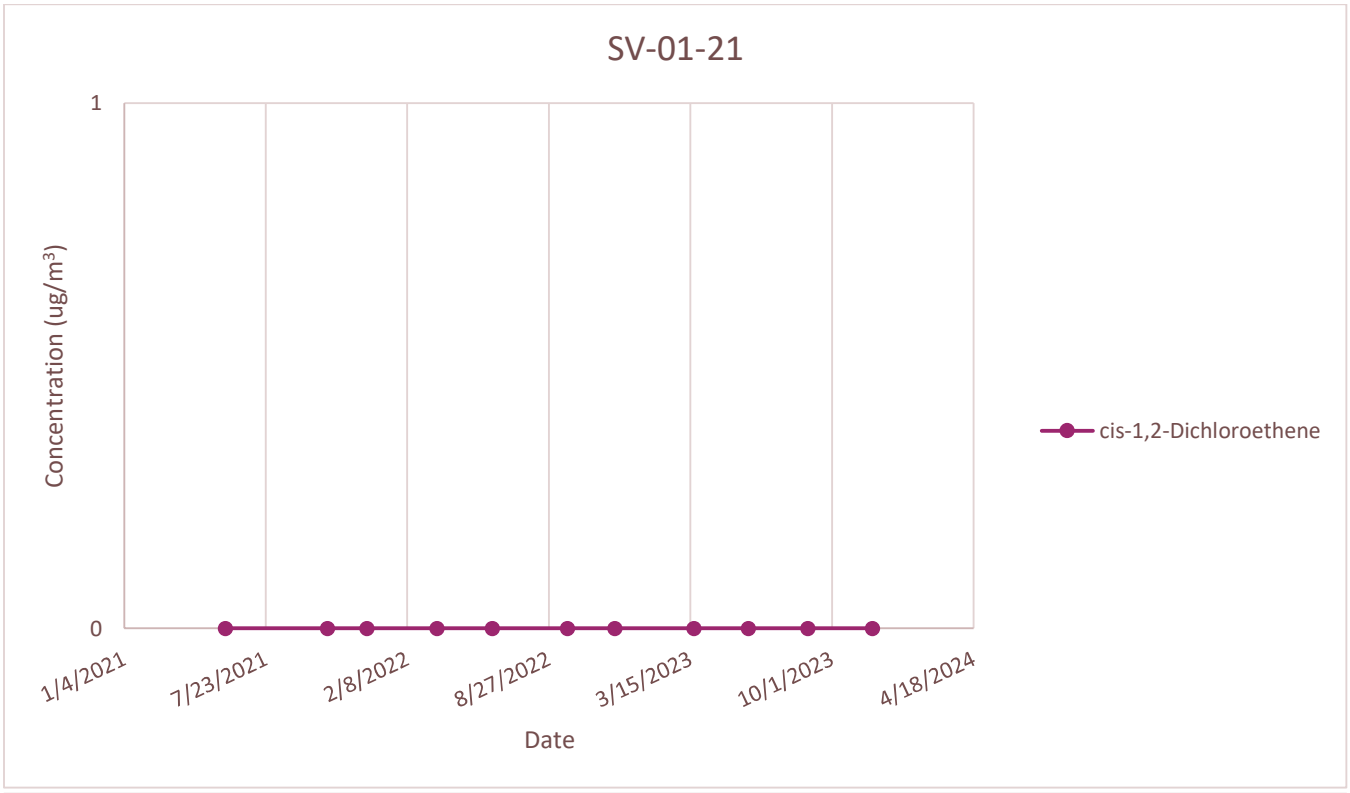
**Concentration vs. Time Plot – Trichloroethylene in Well SV-06-21**

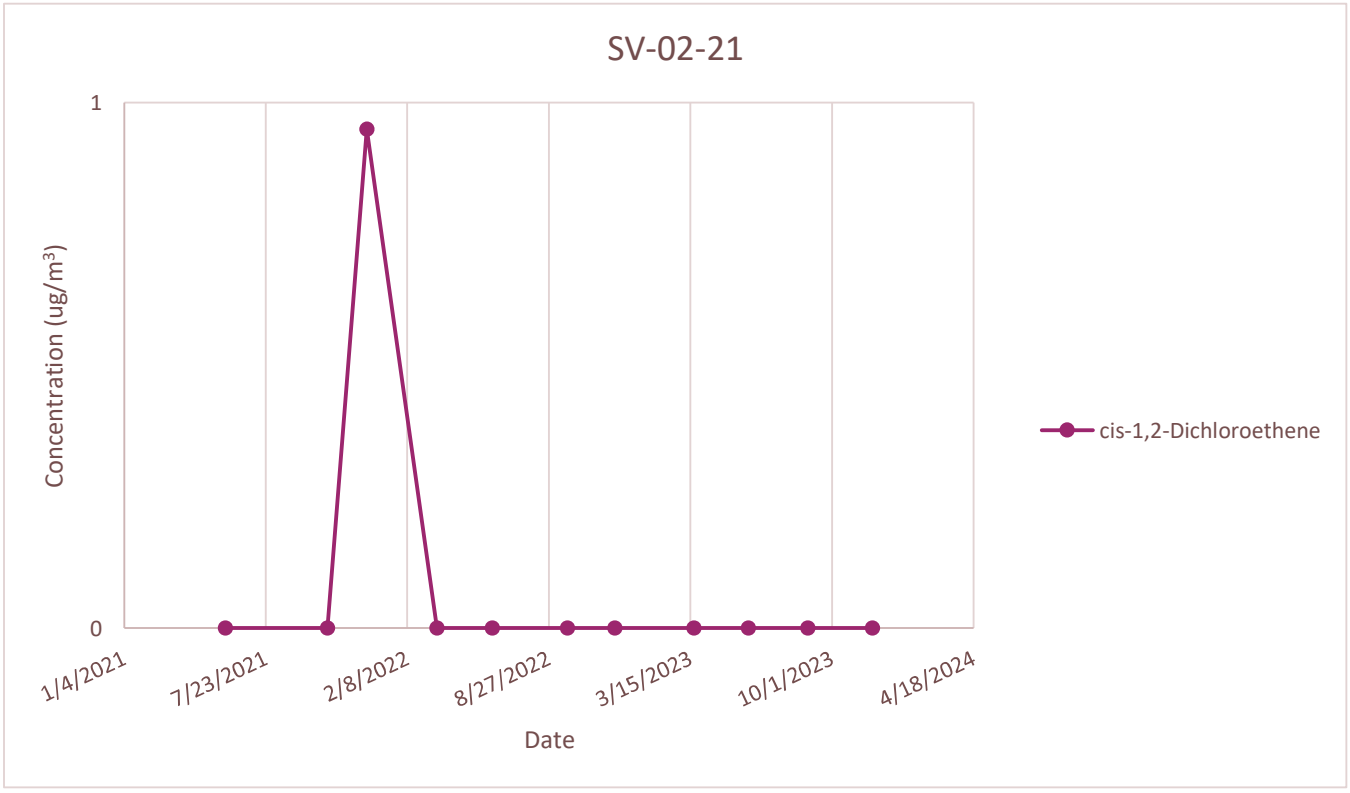
Racer PNC Soil Vapor (Excluding November 2022)

**Figure D-6**

**Appendix D**

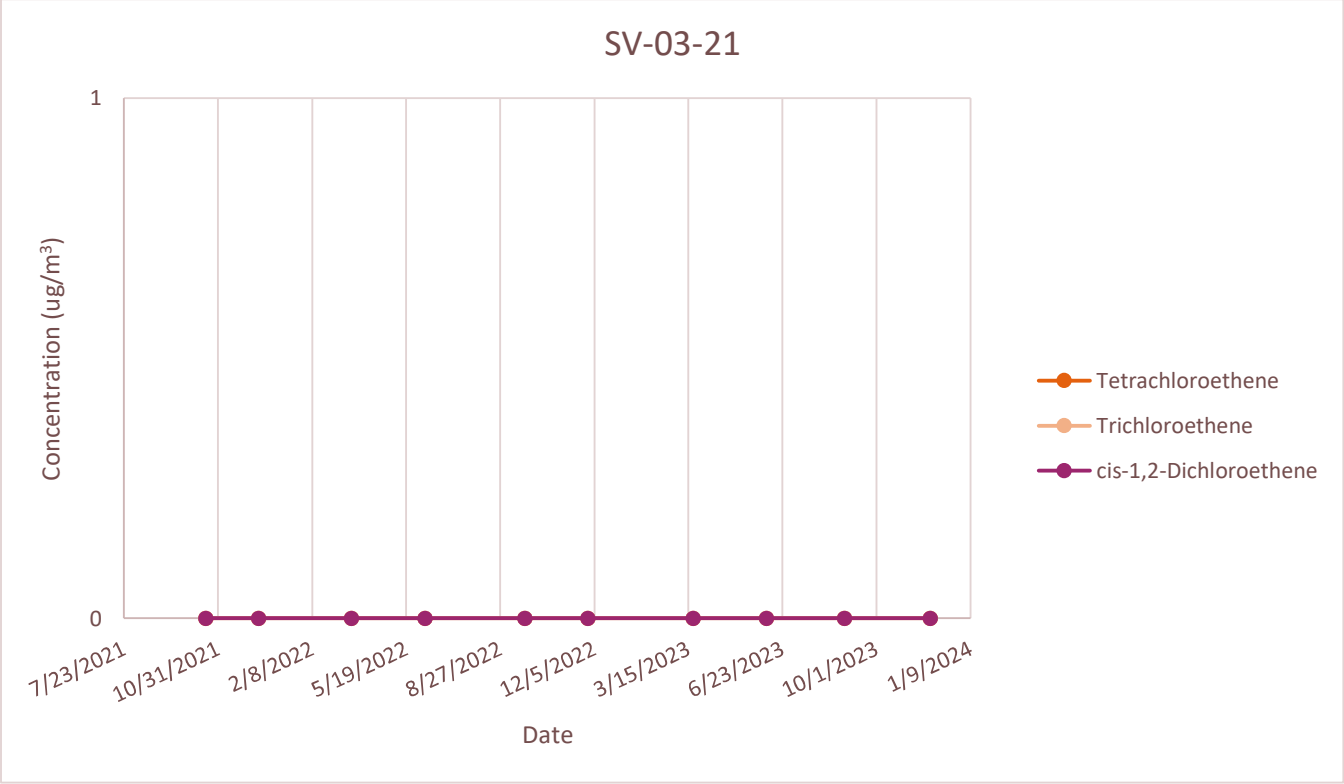
**Soil Vapor Trend Graphs**

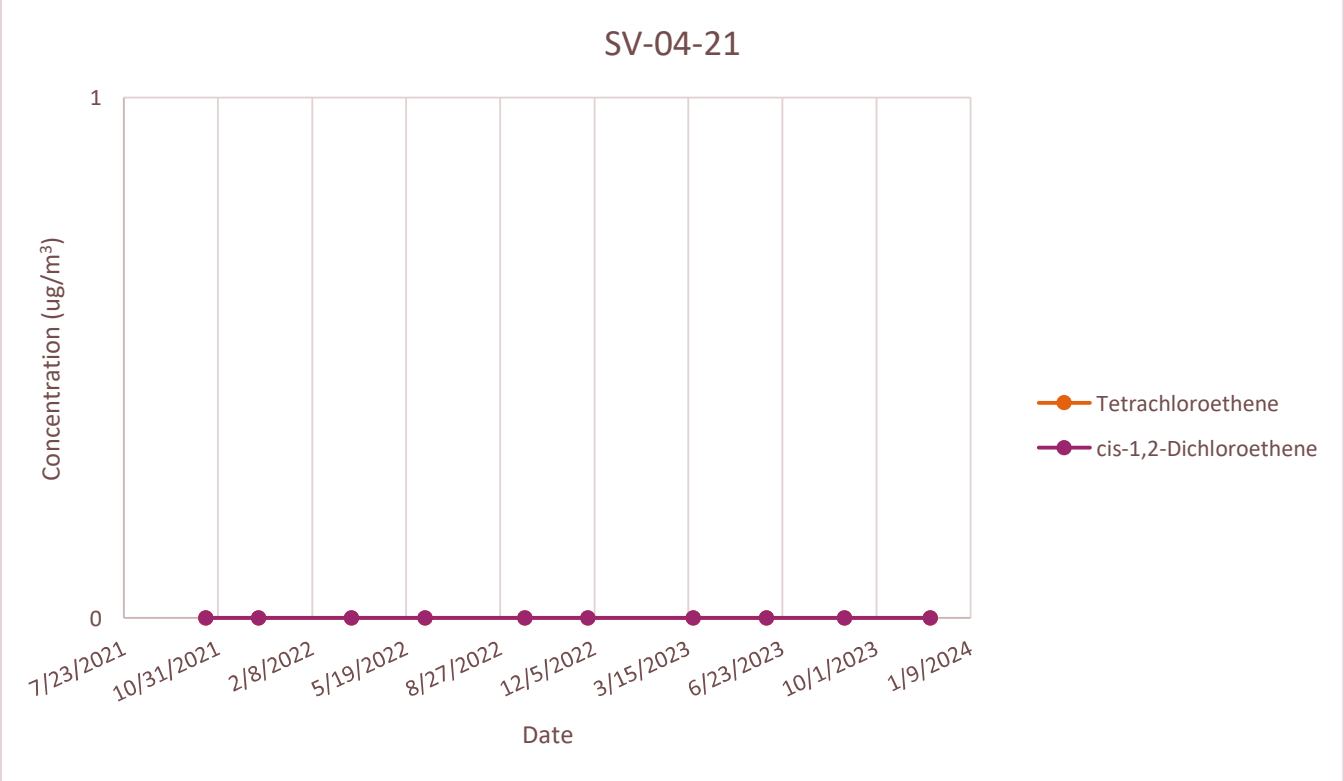


**Appendix D**

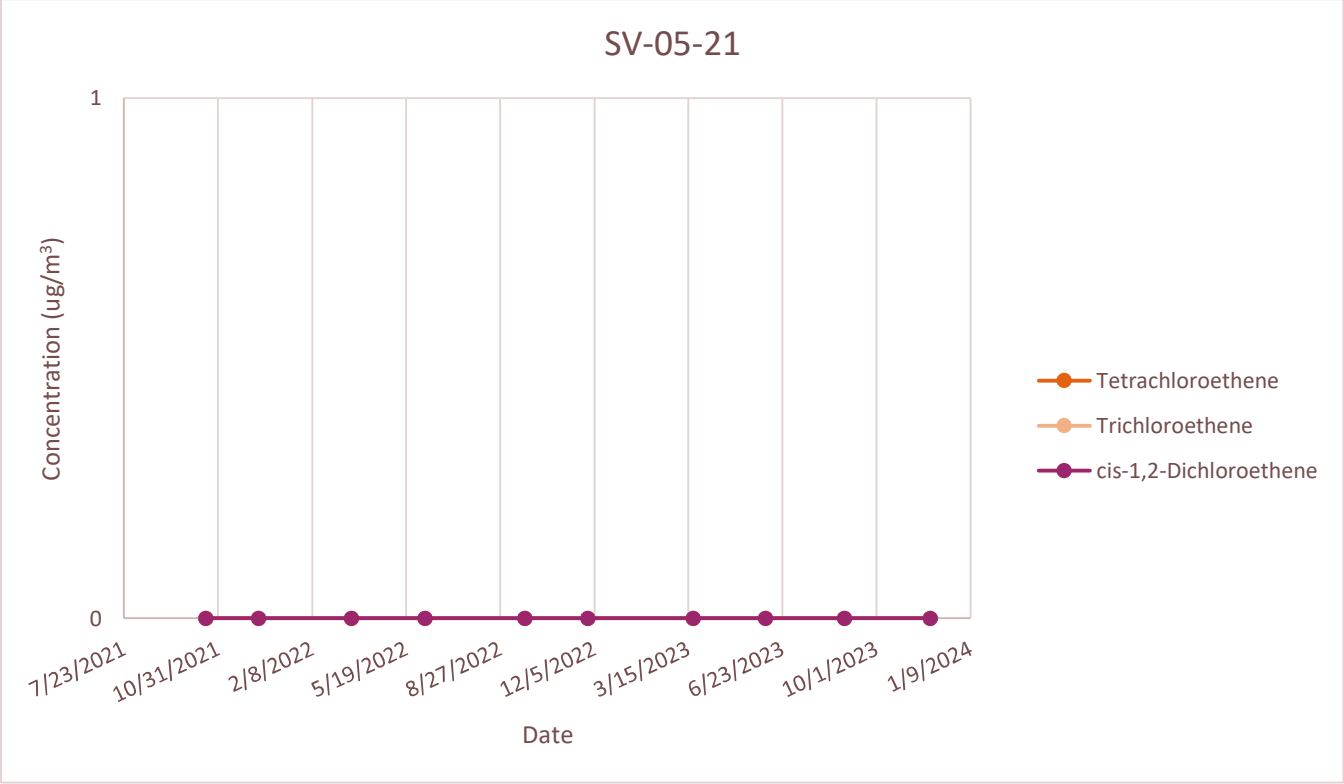
**Soil Vapor Trend Graphs**

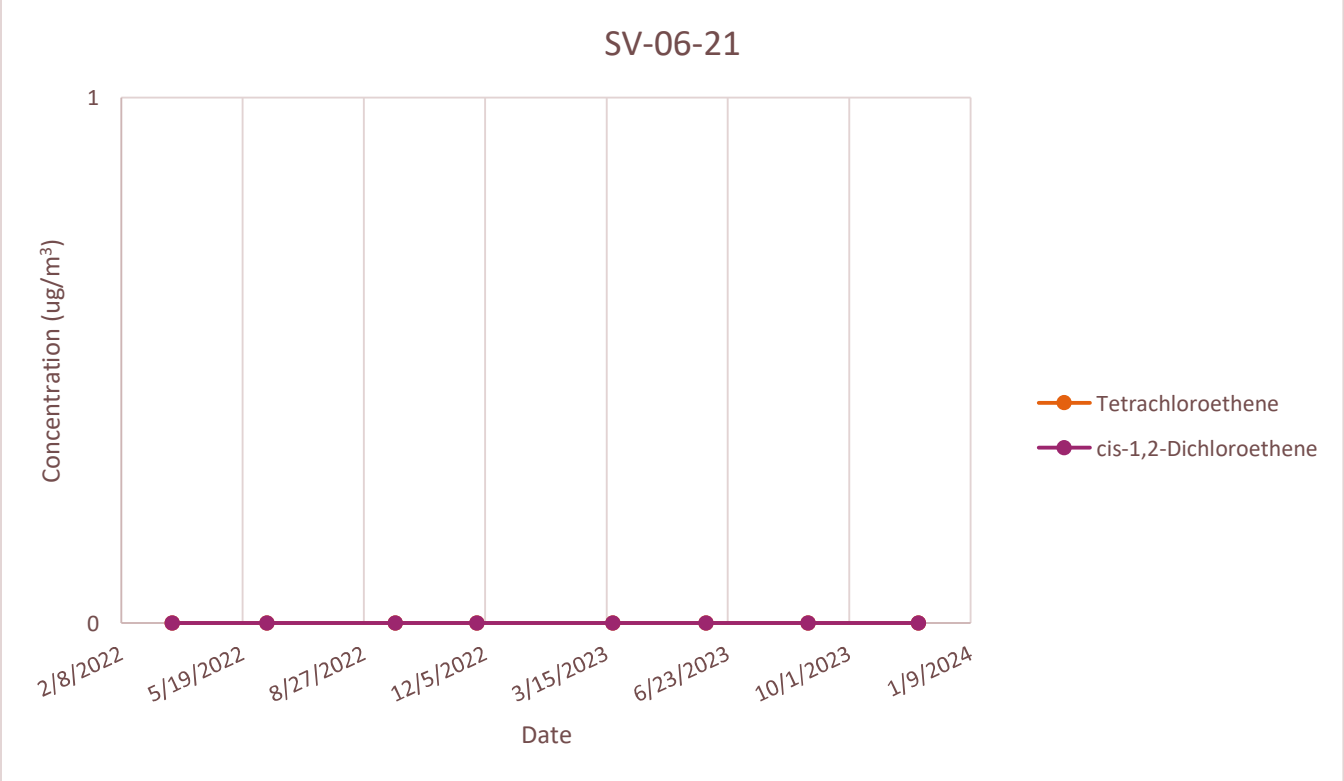


**Appendix D**

**Soil Vapor Trend Graphs**



# Appendix E

## 2024 Fiero Temporary Monitoring Plan

**Table 1**
**Fiero Temporary Groundwater Monitoring Plan Summary**
**July 2024**
**RACER Trust Pontiac North, Pontiac, Michigan**

| Well | Gauging | VOCs | Primary Function |
|---|---|---|---|
| MW-02-17 | SA | SA | SW perimeter well to monitor for downgradient migration of CVOC impacts |
| MW-05-18 | SA | SA | SW perimeter well to monitor for downgradient migration of CVOC impacts |
| MW-06-20 | SA | SA | SW perimeter well to monitor for downgradient migration of CVOC impacts |
| MW-07-20 | SA | SA | SW perimeter well to monitor for downgradient migration of CVOC impacts |
| MW-08-21 | SA | SA | SW perimeter well to monitor for downgradient migration of CVOC impacts |
| MW-09-22 | SA | SA | Monitoring well to monitor the concentration and stability of the CVOC plume core |
| MW-11-22 | SA | SA | SW perimeter well to monitor for downgradient migration of CVOC impacts |
| MW-13-22 | NM | NM | Not monitored, no longer need performance monitoring of the ZVI barrier |
| MW-14-22 | NM | NM | Not monitored, no longer need performance monitoring of the ZVI barrier |
| MW-15-22 | NM | NM | Not monitored, no longer need performance monitoring of the ZVI barrier |
| MW-16-22 | SA | SA | Monitoring well to monitor the concentration and stability of the CVOC plume core |
| MWF12-01R | SA | NM | Gauging only to assist with GW elevation contour |
| MWF12-02R | SA | NM | Gauging only to assist with GW elevation contour |
| MWF15-01 | SA | SA | Monitoring well to monitor area of historic elevated soil concentrations |
| MWF16-05 | SA | SA | Monitoring well to monitor the concentration and stability of the CVOC plume core |
| MWF16-06 | SA | SA | Monitoring well to monitor the concentration and stability of the CVOC plume source area |
| MWF16-07 | SA | SA | Delineation well to monitor and define the southern plume boundary |
| MWF16-12 | SA | SA | Delineation well to monitor and define the upgradient plume boundary |
| MWF16-15 | SA | SA | Delineation well to monitor and define the plume boundary |
| MWF16-16 | SA | SA | Monitoring well to monitor the concentration and stability of the CVOC plume core |

**Table 1**
**Fiero Temporary Groundwater Monitoring Plan Summary**
**July 2024**
**RACER Trust Pontiac North, Pontiac, Michigan**

| Well | Gauging | VOCs | Primary Function |
|---|---|---|---|
| MWF16-17 | SA | SA | Delineation well to monitor and define the plume northern boundary |
| MWF16-18 | SA | SA | Monitoring well to monitor the concentration and stability of the CVOC plume core |
| MWF16-19 | NM | NM | Well damaged as part of new construction. To be properly abandoned. Plume boundary well understood. |
| MWF16-20 | NM | NM | Well damaged as part of new construction. To be properly abandoned. Plume boundary well understood. |
| MWF16-22 | SA | SA | Monitoring well to monitor the concentration and stability of the CVOC plume core |
| MWF16-23 | SA | SA | SW perimeter well to monitor for downgradient migration of CVOC impacts |
| MWF16-24 | SA | NM | Gauging only to assist with GW elevation contour |
| MWF16-25 | SA | SA | Perimeter well to monitor for migration of CVOC impacts |
| MWF16-26 | SA | SA | Perimeter well to monitor for migration of CVOC impacts |
| MWF2 | SA | NM | Gauging only to assist with GW elevation contour |
| MWF7-02 | SA | SA | Monitoring well to monitor the concentration and migration of the CVOC plume core |
| MWF7-03 | SA | NM | Gauging only to assist with GW elevation contour |
| MWF8-01 | SA | NM | Gauging only to assist with GW elevation contour |
| MWOS-08 | SA | SA | Offsite well to monitor for downgradient migration of CVOC impacts |
| MWOS-09R | SA | SA | Offsite well to monitor for downgradient migration of CVOC impacts |
| MWOS-10 | Q | Q | Offsite well to monitor for downgradient migration of CVOC impacts |
| PZF17-02 | SA | NM | Gauging only to assist with GW elevation contour |
| PZF17-04 | SA | NM | Gauging only to assist with GW elevation contour |
| PZF17-05 | SA | NM | Gauging only to assist with GW elevation contour |
| TW-12-22 | SA | SA | Monitoring well to monitor the concentration and migration of the CVOC plume core |
| Unknown-01 | SA | SA | Delineation well to monitor and define the plume boundary |
| SV-01-21 | NM | SA | SW perimeter - soil vapor monitoring |
| SV-02-21 | NM | SA | SW perimeter - soil vapor monitoring |

**Table 1**
**Fiero Temporary Groundwater Monitoring Plan Summary**
**July 2024**
**RACER Trust Pontiac North, Pontiac, Michigan**

| Well | Gauging | VOCs | Primary Function |
|---|---|---|---|
| SV-03-21 | NM | SA | SW perimeter - soil vapor monitoring |
| SV-04-21 | NM | SA | SW perimeter - soil vapor monitoring |
| SV-05-21 | NM | SA | SW perimeter - soil vapor monitoring |
| SV-06-21 | NM | SA | SW perimeter - soil vapor monitoring |

**Notes:**

SV locations will be monitored for soil vapor only

Semi-annual wells will alternate monitoring between first quarter (1Q) and third quarter (3Q)

Q = Quarterly

SA = Semi-annual (1Q and 3Q)

NM = Not Monitored

Service Layer Credits: Tiled service layer: © OpenStreetMap (and) contributors, CC-BY-SA
Google Earth Pro Aerial Dated March 19, 2021

PZF17-01
PZF17-02
PZF17-03
PZF17-04
PZF17-05
MWF2
MWF8-01
MWF16-17
MWF16-05
MWF16-12
MW-09-22
MWF16-18
MWF16-06
MWF16-20
MWF16-24
MWF16-26
TW-12-22
MWF16-19
MWF16-16
MWF16-22
MW-14-22
MW-13-22
MW-16-22
MW-15-22
MWF16-07
MWF16-15
MWF7-03
MW-11-22
MWF16-25
MWF16-23
MWF7-02
MWOS-08
MWOS-09R
UNKNOWN-01
MW-06-20
MWF15-01
SV-01-21
SV-02-21
MW-08-21
SV-06-21
SV-05-21
MWOS-10
MW-07-20
SV-04-21
SV-03-21
MW-05-18
SV-07-24
SV-08-24
MW-02-17
MWF12-01R
MWF12-02R

**LEGEND**

- EXISTING MONITORING WELL
- SOIL VAPOR MONITORING POINT
- PROPOSED SOIL VAPOR MONITORING POINT
- SEMI-ANNUAL GAUGING ONLY
- SEMI-ANNUAL GW SAMPLING
- QUARTERLY GW SAMPLING
- NOT MONITORED
- CURRENT OR FORMER RACER PROPERTY

0 200 400
SCALE IN FEET

RACER TRUST
PONTIAC NORTH CAMPUS
PONTIAC, MICHIGAN

# 2024 TEMPORARY MONITORING PLAN LOCATIONS

ARCADIS

FIGURE
1

CITY: NOVI DIV: ENV DB: TRY PIC: S.INSALACO PM: T. LINDER TM: L. CRISP TR: PROJECT NUMBER: 30075936.0005 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
D:\GIS\Project Files\MotorsLiquidationCompany\PontiacNorthCampus\Documents\Former_Fiero_Property\SiteInvestigation_2023\MonitoringPlan_2024\MonitoringPlan_2024.aprx PLOTTED: 7/2/2024 6:25 PM BY: TYarbrough

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