

# Memo



**SUBJECT**  
2025 RACER Lansing Interim Monitoring Plan  
Semi-Annual Sampling Results

**TO**  
Joe Rogers, EGLE  
Shaun Shields, EGLE

**DATE**  
October 2, 2025

**PROJECT NUMBER**  
30267725

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This memorandum summarizes the results of the second quarter 2025 monitoring event completed as part of the revised 2025 RACER Lansing Interim Monitoring Plan (IMP) at the Revitalizing Auto Communities Environmental Response (RACER) Trust Lansing Site (Site) located in Lansing, Michigan. The semi-annual event consisted of gauging and sampling select monitoring wells, sampling of a soil vapor monitoring point (SVMP), and stormwater sampling. All monitoring activities were completed in accordance with the 2025 IMP. The sampling frequencies and analytes for each monitoring location included in the 2025 IMP are included in **Table 1**. The monitoring locations included in the second quarter semi-annual event are shown on **Figures 1A, 1B and 1C**.

On May 5, 2025, Arcadis began monitoring activities by gauging all the monitoring wells listed in the IMP for Plants 2, 3, and 6. Monitoring Well MW-18-100, located at Plant 3, was observed to be damaged and unable to be gauged. This monitoring well was repaired in June 2025. Following the gauging event, on May 6<sup>th</sup> through May 8<sup>th</sup>, monitoring wells were sampled for volatile organic compounds (VOCs) and/or 1,4-dioxane (1,4-D). The soil vapor monitoring point (SVMP) SVMP-20-01 was noted as saturated and not sampled. All groundwater samples were submitted to Merit Laboratories, Inc. (Merit) in Lansing, Michigan and analyzed for VOCs and 1,4-dioxane in accordance with United States Environmental Protection Agency (USEPA) Methods 8260 and 8260B-SIM, respectively. Semiannual storm sewer sampling was conducted on May 9, 2025, where six (6) outfalls on Plants 2, 3, and 6 were sampled and submitted to ALS Environmental (ALS) in Holland, Michigan for per- and polyfluoroalkyl substances (PFAS) analysis via USEPA Method 537M, including the Michigan List of 28 compounds. The analytical reports from Merit and ALS are provided as **Attachment 1**. The results of the gauging and sampling are provided in the attached tables:

- **Table 2** – Summary of Groundwater Elevations – May 2025
- **Table 3** – Summary of Monitoring Well Analytical Results – May 2025
- **Table 4** – Summary of Plant 2 Storm Sewer Sampling Results
- **Table 5** – Summary of Plant 3 Storm Sewer Sampling Results
- **Table 6** – Summary of Plant 6 Storm Sewer Sampling Results

## Groundwater Gauging

Monitoring wells were gauged sitewide for depth to water during the second quarter event using an electronic water level meter accurate to 0.01-feet. Groundwater contour figures will be provided in the 2025 Annual Groundwater Monitoring Report.

## Groundwater Analytical Summary

Groundwater samples were collected from forty-five (45) monitoring wells and submitted for analysis of VOCs and/or 1,4-dioxane. A summary of the monitoring wells sampled and exceedances of the Residential Drinking Water (DW) criteria, Groundwater Surface Water Interface (GSI) Criteria or Residential Site-Specific Volatilization to Indoor Air criteria (SSVIAC) within the perched or the deep overburden and weathered bedrock wells are shown on **Figures 2 and 3**, respectively. Groundwater sampling logs can be found in **Attachment 2**. The following is based on the analytical results from the groundwater sampling:

- *Plant 6 entrance at the intersection of Stanley and Osborn Streets:* In continuation of the vapor intrusion investigation in this area, MW-22-154 is sampled semi-annually and analyzed for VOCs to monitor the extent of SSVIAC exceedances in groundwater. During the second quarter event, MW-22-154 results did not show exceedances of DW, GSI or SSVIAC.
- *Plant 2 perched monitoring wells in the MW-14-58R Area:* The MW-14-58R area monitoring wells were sampled for VOCs and/or 1,4-dioxane. **Figure 2** provides a summary of the MW-14-58R area groundwater sampling results. The results from this area are consistent with previous sampling results. All seven (7) wells, MW-22-153, MW-22-155, MW-22-156, MW-22-157, MW-23-161, MW-23-162, and MW-23-163, sampled for 1,4-dioxane in this area exceeded the Residential DW criteria of 7.2 micrograms per liter ( $\mu\text{g/L}$ ). Three wells, MW-22-153, MW-22-156, and MW-22-157, were analyzed for VOCs. The VOC results for 1,1-dichloroethane at on-site wells MW-22-153 (141  $\mu\text{g/L}$ ) and MW-22-156 (200  $\mu\text{g/L}$ ) exceeded the residential SSVIAC of 67  $\mu\text{g/L}$ . MW-22-156 also exceeded SSVIAC for vinyl chloride (0.96  $\mu\text{g/L}$ ) with a concentration of 2  $\mu\text{g/L}$  and exceeded residential DW Criteria for 1,1-dichloroethene (7.0  $\mu\text{g/L}$ ) with a concentration of 15  $\mu\text{g/L}$ . There were no exceedances of SSVIAC in off-site well MW-22-157. No wells in the area exceeded GSI criteria.
- Thirty-seven (37) monitoring wells were sampled on Plants 2 and 3 for 1,4-dioxane within the deep overburden and weathered bedrock zones. The second quarter results are shown in **Figure 3**. The lower 1,4-dioxane plume interpolation was updated based on the second quarter 2025 results.

## Stormwater Analytical Summary

Storm sewer samples were collected from six (6) outfalls on Plants 2, 3, and 6 and submitted for analysis of PFAS. Analytical results are summarized in **Tables 4 through 6** with exceedances of Rule 57 Criteria shaded in gray. Figures containing a summary of storm sewer analytical results will be included in the 2025 Annual Report. Results of the sampling event are summarized below.

- P2-MH-2 exceeded Rule 57 Criteria for perfluorooctane sulfonic acid (PFOS) with a detection of 12.5 nanograms per liter (ng/L) in May 2025. No other outfall exceedances were noted on Plant 2.
- No exceedances were noted at Plant 3 in May 2025.
- Osborn-MH-1 exceeded Rule 57 Criteria for PFOS with a detection of 18.5 ng/L in May 2025. No other outfall exceedances were noted on Plant 6.

## Soil Vapor Analytical Summary

A soil vapor sample was unable to be collected from SVMP-20-01 due to saturation of the point. As discussed above, the groundwater monitoring well MW-22-154, closest to SVMP-20-01, was sampled and analytical results for VOCs were below both Part 201 Residential DW, GSI criteria and SSVIAC.

Joe Rogers  
Shaun Shields  
EGLE  
October 2, 2025

## Monitoring Well Status and Recommendations

There are no new additions to the monitoring well recommendations at this time. The Plant 3 well, MW-18-100, discovered to be damaged, was successfully repaired in June 2025 by cutting the outer metal protective casing and the PVC stickup casing at ground surface. A PVC coupler with new PVC stickup casing was installed along with a new protective metal casing. Well MW-18-100 will be resurveyed in the near future.

## Closing

No modifications to the approved IMP are recommended at this time. The fourth quarter 2025 IMP monitoring event is planned for October-November 2025. For any questions or concerns related to the second quarter 2025 IMP results contact Tiffany Linder by phone at 810-225-1928 or by email at [Tiffany.Linder@arcadis.com](mailto:Tiffany.Linder@arcadis.com) or Brendan Mullen at 313-486-2908 or by email at [bmullen@racertrust.org](mailto:bmullen@racertrust.org).

Enclosures:

### Tables:

Table 1 – IMP Sampling Matrix

Table 2 – Summary of Groundwater Elevations – May 2025

Table 3 – Summary of Monitoring Well Analytical Results – May 2025

Table 4 – Summary of Plant 2 Storm Sewer Sampling Results

Table 5 – Summary of Plant 3 Storm Sewer Sampling Results

Table 6 – Summary of Plant 6 Storm Sewer Sampling Results

### Figures:

Figure 1A – Summary of Plant 2 Monitoring Well Locations

Figure 1B – Summary of Plant 6 Monitoring Well Locations

Figure 1C – Summary of Plant 3 Monitoring Well Locations

Figure 2 – Summary of VOCs & 1,4-dioxane in Perched Wells in the MW-14-58R Area Analytical Results – May 2025

Figure 3 – Summary of 1,4-dioxane Analytical Results in Deep Overburden and Weathered Bedrock Wells – May 2025

### Attachments:

Attachment 1 – Laboratory Analytical Reports

Attachment 2 – Low-Flow Groundwater Sampling Logs

# Tables

Well	Screen Interval (ft bgs)	Gauging*	Analyte				Primary Function
			VOCs	1,4-Dioxane	SVOCs	PFAS	
<b>Plant 2</b>							
<i>Perched</i>							
LMW-12-01	7-12	SA					LNAPL Monitoring
LMW-12-03S	4-9	SA					LNAPL Monitoring
LMW-12-07	4-9	SA					LNAPL Monitoring
LMW-14-13D	17.5-22.5	SA					LNAPL Monitoring
MW-01(2)	10-20	SA	B				VOC sentinel
MW-12-07	10-15	SA					Groundwater elevation monitoring
MW-12-08	19-24	SA					Groundwater elevation monitoring
MW-12-09	14-19	SA	B	B		A	VOC Sentinel, perched 1,4-dioxane sentinel / PFAS sentinel
MW-12-18	28-33	SA	B			A	VOC sentinel / PFAS sentinel
MW-14-54	14-19	SA	B				VOC monitoring
MW-14-55	13-18	SA	Qd				VOC monitoring
MW-14-57	15-20	SA		A			Perched 1,4-dioxane monitoring
MW-14-58R	22-27	SA	B	A		A	Perched 1,4-dioxane monitoring / PFAS Sentinel
MW-14-59	12-17	SA	B	A	Qd	A	Perched 1,4-dioxane monitoring, SVOC evaluation / PFAS Sentinel
MW-14-60	15-20	SA	B	A	Qd	A	Perched 1,4-dioxane monitoring, SVOC evaluation / PFAS Sentinel
MW-14-62	12-17	SA	B	A	Qd	A	Perched 1,4-dioxane monitoring / PFAS Sentinel
MW-21-139	7-12	SA		SA ->A		SA ->A	Perched 1,4-dioxane monitoring / PFAS Sentinel
MW-22-153	25-30	SA	Q ->SA	Q ->SA			Perched 1,4-dioxane monitoring / Perimeter VOC monitoring
MW-22-155	25.5-30.5	SA		Q ->SA			Perched 1,4-dioxane monitoring
MW-22-156	23-28	SA	NS ->SA	Q ->SA			Perched 1,4-dioxane monitoring
MW-22-157	24-29	SA	NS ->SA	Q ->SA			Perched 1,4-dioxane monitoring
MW-23-161	20-25	SA	Q ->NS	Q ->SA			Perched 1,4-dioxane monitoring / Perimeter VOC monitoring
MW-23-162	29-34	SA	Q ->NS	Q ->SA			Perched 1,4-dioxane monitoring / Perimeter VOC monitoring
MW-23-163	20-25	SA	Q ->NS	Q ->SA			Perched 1,4-dioxane monitoring / Perimeter VOC monitoring
P2-MW-02	31-41	SA				A	Groundwater elevation monitoring
P2-MW-03	27-32	SA					Groundwater elevation monitoring
P2-MW-04	26-36	SA		A	Qd	A	Perched 1,4-dioxane monitoring, SVOC evaluation
P2-SB-03	14-19	SA					Groundwater elevation monitoring
P2-SB-06	24-29	SA					Groundwater elevation monitoring
P2-SB-20	8-13	SA					Groundwater elevation monitoring
PMW-02	2.59-7.59	SA					LNAPL Monitoring
<b>Deep Overburden and Weathered Bedrock</b>							
MW-13-43	72-77	SA		SA			Lower 1,4-dioxane monitoring / Biosparge PMW / Vertical Gradient Pair
MW-13-45	72-77	SA ->A		SA ->A			Lower 1,4-dioxane monitoring / Biosparge PMW
MW-13-51	77-87	SA ->A					GW Elevation Monitoring
MW-14-56	71-76	SA ->A		A		A	Lower 1,4-dioxane sentinel / PFAS Sentinel
MW-14-61	70-75	SA	A	SA	Qd	A	Lower 1,4-dioxane sentinel, SVOC Monitoring / Biosparge PMW / PFAS Sentinel / Vertical Gradient Pair
MW-14-63	68-73	SA		A			Lower 1,4-dioxane sentinel / Vertical Gradient Pair
MW-15-72	63-68	SA	B	SA ->A	Qd	A	Lower 1,4-dioxane monitoring / Biosparge PMW / PFAS Sentinel / Vertical Gradient Pair
MW-15-73	78-83	SA		B			Lower 1,4-dioxane sentinel / Vertical Gradient Pair
MW-16-74	66-71	SA ->A		A			Lower 1,4-dioxane sentinel / Biosparge PMW
MW-16-75	66-71	SA ->A		A			Lower 1,4-dioxane sentinel / Biosparge PMW
MW-16-76	70-75	SA		A			Lower 1,4-dioxane sentinel / Vertical Gradient Pair
MW-16-77	66-71	SA ->A		A			Lower 1,4-dioxane sentinel / Biosparge PMW
MW-16-78	68-73	SA ->A		A			Lower 1,4-dioxane sentinel / Biosparge PMW
MW-16-80	68-73	SA ->A		A			Lower 1,4-dioxane monitoring
MW-16-81	70-75	SA	B	SA		A	Lower 1,4-dioxane monitoring / Biosparge PMW / PFAS Sentinel
MW-16-82	70-75	SA ->A		A			Lower 1,4-dioxane monitoring / Biosparge PMW
MW-16-83	71-76	SA		B			Lower 1,4-dioxane sentinel / Vertical Gradient Pair
MW-16-84	72-77	SA	A	SA			Lower 1,4-dioxane monitoring / Biosparge PMW
MW-16-85	74-79	SA	B	SA			Lower 1,4-dioxane monitoring
MW-17-86	73-78	SA	B	SA			Lower 1,4-dioxane monitoring / Biosparge PMW

Well	Screen Interval (ft bgs)	Gauging*	Analyte				Primary Function
			VOCs	1,4-Dioxane	SVOCs	PFAS	
<b>Plant 2</b>							
MW-19-115	72.5-77.5	SA ->A		SA->A			Lower 1,4-dioxane monitoring / Biosparge PMW
MW-19-116	65-70	SA ->A		SA->A			Lower 1,4-dioxane monitoring / Biosparge PMW
MW-19-117	54-59	SA ->A		SA->A			Lower 1,4-dioxane monitoring / Biosparge PMW
MW-19-120	66-71	SA	A	SA			Lower 1,4-dioxane monitoring / Biosparge PMW
MW-19-121	66-71	SA		SA			Lower 1,4-dioxane monitoring / Biosparge PMW
MW-19-122	59-64	SA		SA			Lower 1,4-dioxane monitoring / Biosparge PMW
MW-19-123	66-71	SA		SA			Lower 1,4-dioxane monitoring / Biosparge PMW
MW-19-124	65-70	SA		SA			Lower 1,4-dioxane monitoring / Biosparge PMW
MW-20-126	69-74	SA		SA			Lower 1,4-dioxane monitoring / Biosparge PMW
MW-20-127	72-77	SA		SA			Lower 1,4-dioxane monitoring / Biosparge PMW / Vertical Gradient Pair
MW-20-128	65-70	SA		SA			Lower 1,4-dioxane monitoring / Biosparge PMW
MW-20-129	64-69	SA		SA			Lower 1,4-dioxane monitoring / Biosparge PMW
MW-20-130	63-68	SA ->A		SA ->A		SA ->A	Lower 1,4-dioxane monitoring / PFAS Sentinel
MW-21-140	67-72	SA ->A		SA ->A			Lower 1,4-dioxane monitoring
MW-21-142	71.5-76.5	SA ->A		SA ->A			Lower 1,4-dioxane monitoring / Biosparge PMW
PW-14-01	71.6-76.8	SA ->A		SA ->A			Lower 1,4-dioxane monitoring
PW-14-02	75-80	SA	Qd	SA			Lower 1,4-dioxane monitoring / Biosparge PMW
TW-14-02	67-72	SA	Qd	SA			Lower 1,4-dioxane monitoring / Biosparge PMW
TW-15-12	73-78	SA		SA			Lower 1,4-dioxane monitoring / Biosparge PMW
<b>Bedrock</b>							
MW-12-01	87-110	SA		B <sup>(1)</sup>			Bedrock sentinel / GW Elevation Monitoring / Vertical Gradient Pair
MW-12-02	87-110	SA		B <sup>(1)</sup>			Bedrock sentinel / GW Elevation Monitoring / Vertical Gradient Pair
MW-12-05R	100-112	SA		A <sup>(1)</sup>			Bedrock sentinel / GW Elevation Monitoring / Vertical Gradient Pair
MW-12-06	80.6-99.5	SA		A <sup>(1)</sup>			Bedrock sentinel / GW Elevation Monitoring / Vertical Gradient Pair
MW-13-44	96-115	SA		A <sup>(1)</sup>			Bedrock sentinel / GW Elevation Monitoring / Vertical Gradient Pair
MW-17-87	100-112	SA		A <sup>(1)</sup>			Bedrock sentinel / GW Elevation Monitoring / Vertical Gradient Pair
MW-19-118D	175-190	SA ->A		A <sup>(1)</sup>			Bedrock sentinel
MW-19-118S	145-160	SA ->A		A <sup>(1)</sup>			Bedrock sentinel / Vertical Gradient Pair
MW-19-125	100-115	SA		A <sup>(1)</sup>			Bedrock sentinel / GW Elevation Monitoring / Vertical Gradient Pair
<b>Lansing Township Wells</b>							
TWP-03	-	-		A <sup>(1)</sup>			Municipal Well
TWP-04	-	-		A <sup>(1)</sup>			Municipal Well
TWP-05	-	-		A <sup>(1)</sup>			Municipal Well
<b>Storm Sewer</b>							
P2-MH-2	-	-				Q -> SA	PFAS sewer monitoring
P2-MH-9	-	-				Q -> SA	PFAS sewer monitoring, typically dry, no sample
P2-MH-W	-	-				Q -> SA	PFAS sewer monitoring

**Notes:**

Wells shown in gray shading are part of biosparge performance monitoring completed on a semi-annual sampling frequency.

Yellow shaded locations show a change in frequency from the prior EGLE approved sampling plan

\* Site wide gauging to alternate between semi-annual events to account for seasonal variability. Semi-annual gauging includes all wells sampled semi-annually.

\*\* Select metals includes arsenic, nickel, lead, vanadium, chromium, and copper.

(1) = Analyzed for 1,4-dioxane via low-level USEPA Method 522

New wells will be added to the figures and incorporated into the annual monitoring once 4 samples are collected and a COC list is determined.

ft bgs = feet below ground surface

M = Monthly

Q = Quarterly

SA = Semi-annual

A = Annual (2Q or 4Q of each year, each year rotates which quarter)

B = biennial (starting 2nd quarter of 2026)

Qd = Quadrennial (every 4 years, starting 2028)

Table 1  
 Revised Interim Monitoring Work Plan Summary  
 Revised March 2025  
 RACER Trust Plants 2, 3, and 6 - Lansing, Michigan



Well	Screen Interval (ft bgs)	Gauging*	Analyte						Primary Function
			VOCs	1,4-Dioxane	Select Metals**	Hexavalent Chromium	SVOCs	PFAS	
<b>Plant 3</b>									
<b>Perched</b>									
CH-14-RO	7-12	SA			Qd	Qd		A	Metals monitoring
LMW-12-09	3-8	SA							LNAPL Monitoring
LMW-12-10	14-19	SA							LNAPL Monitoring
MW-13-32	5-10	SA			Qd		Qd		Groundwater elevation monitoring / perimeter SVOC & Metals monitoring
MW-18-88	6-11	SA	B		Qd	Qd		SA ->A	PFAS monitoring / sentinel VOC & Metals
MW-18-89	7-12	SA						A	PFAS monitoring
MW-18-90	15-20	SA						A	PFAS monitoring
MW-18-91	7-12	SA						A	PFAS monitoring
MW-18-92	23-28	SA						A	PFAS sentinel
MW-18-95	4.5-9.5	SA						SA ->A	PFAS monitoring
MW-18-96	7-12	SA						A	PFAS sentinel
MW-18-98	7-12	SA						SA ->A	PFAS sentinel
MW-18-99	9-14	SA						SA ->A	PFAS sentinel
MW-18-100	8-13	SA						SA ->A	PFAS sentinel
MW-18-102	10-15	SA						A	PFAS sentinel
MW-18-103	5-10	SA						A	PFAS monitoring
MW-18-104	5-10	SA						A	PFAS sentinel
MW-18-105	6-11	SA						SA ->A	PFAS monitoring
MW-18-106	5-10	SA							PFAS sentinel
MW-19-107	23-28	SA						SA ->A	PFAS sentinel
MW-19-108	23-28	SA						SA ->A	PFAS sentinel
MW-19-110	8-13	SA						A	PFAS sentinel
MW-19-111	20-25	SA						SA ->A	PFAS sentinel
MW-19-112	9-14	SA						A	PFAS sentinel
MW-19-113	16-21	SA						A	PFAS sentinel
MW-19-114	6-11	SA						A	PFAS sentinel
P3-SB-28	8-13	SA					Qd		Groundwater elevation monitoring
UNK-11	6.5-11.5	SA					Qd		VOC monitoring/SVOCs monitoring, VOCs sentinel well
UNK-15	11-16	SA						SA ->A	PFAS monitoring
<b>Deep Overburden and Weathered Bedrock</b>									
MW-02-01(3)	59-69	SA ->A							Groundwater elevation monitoring
MW-02-02(3)	74-84	SA ->A		B					Lower 1,4-dioxane sentinel
MW-02-03(3)	79-89	SA ->A							Groundwater elevation monitoring
MW-02-04(3)	76-86	SA ->A		B	Qd			A	Lower 1,4-dioxane/PFAS/metals sentinel
MW-04-03(3)	80-90	SA							Groundwater elevation monitoring / Vertical Gradient Pair
MW-04-04(3)	72-82	SA							Groundwater elevation monitoring / Vertical Gradient Pair
MW-12-20	75-80	SA ->A		B					Lower 1,4-dioxane sentinel
MW-12-21	70-75	SA	B	SA					Lower 1,4-dioxane monitoring / Biosparge PMW
MW-13-22	89-94	SA	B	A->SA					Lower 1,4-dioxane monitoring / Biosparge PMW / Vertical Gradient Pair
MW-13-23	69-74	SA ->A		B					Lower 1,4-dioxane sentinel
MW-13-24	69-74	SA ->A		B					Lower 1,4-dioxane sentinel
MW-13-25	67-72	SA ->A		A					Lower 1,4-dioxane monitoring
MW-13-26	72-77	SA ->A							Groundwater elevation monitoring
MW-13-27	67-72	SA ->A							Groundwater elevation monitoring
MW-13-29	68-73	SA ->A		A					Lower 1,4-dioxane monitoring / Biosparge PMW
MW-13-30	72-77	SA ->A							Groundwater elevation monitoring
MW-13-34	74-79	SA ->A	B	SA->A					Lower 1,4-dioxane monitoring / Biosparge PMW
MW-13-40	72-77	SA ->A							Groundwater elevation monitoring
MW-13-41	77-82	SA	B						Lower VOC sentinel / Vertical Gradient Pair
MW-13-46	68-73	SA		A					Lower 1,4-dioxane monitoring / Vertical Gradient Pair
MW-13-48	65-70	SA ->A	B	SA->A					Lower 1,4-dioxane monitoring / Biosparge PMW
MW-13-49	73-78	SA ->A		B					Lower 1,4-dioxane monitoring
MW-14-64	98.6-103.6	SA ->A		B					Lower 1,4-dioxane sentinel
MW-15-71	110-115	SA ->A		B					Lower 1,4-dioxane sentinel
MW-18-93	77.5-82.5	SA ->A						A	Lower PFAS Sentinel
MW-18-94	72-77	SA ->A						A	Lower PFAS, 1,4-Dioxane Sentinel
MW-18-97	85-90	SA ->A						A	Lower PFAS Sentinel
MW-18-101	80-85	SA ->A		B				SA ->A	Lower PFAS Sentinel
MW-22	52.5-62.5	SA ->A							Groundwater elevation monitoring
MW-23	52-62	SA ->A						A	PFAS sentinel
MW-91-2R	75-80	SA ->A		B	Qd	Qd		A	Lower 1,4-dioxane, PFAS and metals sentinel
MW-93-1	65-75	SA ->A							Groundwater elevation monitoring
PW-14-03	85-90	SA		SA					Lower 1,4-dioxane monitoring / Biosparge PMW
TW-15-11	85-90	SA		SA					Lower 1,4-dioxane monitoring / Biosparge PMW

Well	Screen Interval (ft bgs)	Gauging*	Analyte					Primary Function
			VOCs	1,4-Dioxane	Select Metals**	Hexavalent Chromium	SVOCs	
<b>Plant 3</b>								
<i>Bedrock</i>								
MW-04-01(3)	95-105	-						No longer part of sampling or gauging
MW-04-02(3)	126-136	SA						GW Elevation Monitoring / Vertical Gradient Pair
MW-12-04	77-100	SA ->A						GW Elevation Monitoring
MW-13-28	99-115.5	SA		A <sup>(1)</sup>				Bedrock sentinel / GW Elevation Monitoring / Vertical Gradient Pair
MW-13-37	97-112	SA		B <sup>(1)</sup>				Bedrock sentinel / GW Elevation Monitoring
MW-13-38	107-124	SA		B <sup>(1)</sup>				Bedrock sentinel / GW Elevation Monitoring / Vertical Gradient Pair
MW-13-39B	97-112	SA ->A						GW Elevation Monitoring
MW-13-47	99-119	SA		B <sup>(1)</sup>				Bedrock sentinel / GW Elevation Monitoring
MW-19-119D	180-195	SA ->A		A <sup>(1)</sup>				Bedrock sentinel
MW-19-119S	145-160	SA ->A		A <sup>(1)</sup>				Bedrock sentinel
MW-88-1	103.5-140	SA ->A						Bedrock sentinel
MW-91-3	105-117	SA ->A						Bedrock sentinel
MW-91-4	116-132.5	SA						GW Elevation Monitoring / Vertical Gradient Pair
MW-91-5	112.5-128	SA		B <sup>(1)</sup>				Bedrock sentinel / GW Elevation Monitoring
MW-91-6	82-98	SA		B <sup>(1)</sup>				Bedrock sentinel / GW Elevation Monitoring / Vertical Gradient Pair
<i>Storm Sewer</i>								
P3-MH-284	-	-					Q -> SA	PFAS sewer monitoring
P3-MH-NE	-	-					Q -> SA	PFAS sewer monitoring, typically dry, no sample

**Notes:**

Wells shown in gray shading are part of biosparge performance monitoring completed on a semi-annual sampling frequency.

Yellow shaded locations show a change in frequency from the prior EGLE approved sampling plan

\* Site wide gauging to alternate between semi-annual events to account for seasonal variability. Semi-annual gauging includes all wells sampled semi-annually.

\*\* Select metals includes arsenic, nickel, lead, vanadium, chromium, and copper.

(1) - Analyzed for 1,4-dioxane via low-level USEPA Method 522

ft bgs = feet below ground surface

Q = quarterly

SA = semi-annual

A = annual

B = biennial (starting 2nd quarter of 2026)

Qd = Quadrennial (every 4 years, starting 2028)

Well	Screen Interval (ft bgs)	Gauging*	Analyte					Primary Function
			VOCs	1,4-Dioxane	Select Metals**	SVOCs	PFAS	
<b>Plant 6</b>								
<b>Perched</b>								
MW-02-02(6)	35-45	SA	B	A		Qd		Perched 1,4-dioxane monitoring, SVOC evaluation
MW-03-02	30-40	SA						Groundwater elevation monitoring
MW-03-05	35-45	SA	B	A				Perched 1,4-dioxane sentinel
MW-03-06	30-40	SA	B	A				Perched 1,4-dioxane sentinel
MW-04-05(6)	20-30	SA	SA ->A				A	Perched PFAS sentinel
MW-12-10R	10-15	SA					A	Groundwater elevation monitoring, PFAS
MW-12-11	13-18	SA					A	PFAS Sentinel
MW-12-12	13-18	SA					SA ->A	PFAS monitoring
MW-12-13	18.5-23.5	SA			Qd		SA ->A	PFAS monitoring
MW-12-14	25-30	SA						Groundwater elevation monitoring
MW-12-16	28-33	SA						Boundary monitoring
MW-13-35	25-30	-						Potential PFAS Monitoring if needed/ No gauging necessary
MW-13-36R	5.5-10.5	SA			Qd		SA ->A	PFAS monitoring
MW-14-66	14-19	SA			Qd			Metals sentinel
MW-14-67	13-18	SA			Qd		A	Metals/PFAS sentinel
MW-14-69	41-46	SA						Groundwater elevation monitoring
MW-14-70	16-21	SA					A	PFAS Sentinel
MW-20-131	5-10	SA	SA ->A				SA ->A	PFAS monitoring
MW-20-132	6-11	SA	SA ->A				SA ->A	PFAS monitoring
MW-21-133	10-15	SA					SA ->A	PFAS monitoring
MW-21-134	11-16	SA					SA ->A	PFAS monitoring
MW-21-135	22-27	SA					SA ->A	PFAS monitoring
MW-21-136	9-14	SA					A	PFAS monitoring
MW-21-137	7-12	SA					A	PFAS monitoring
MW-21-138	24-29	SA					A	PFAS monitoring
MW-22-143	26-31	SA					Q ->A	PFAS monitoring
MW-22-144	19.5-24.5	SA					Q ->A	PFAS monitoring
MW-22-145	10.5-15.5	SA					Q ->A	PFAS monitoring
MW-22-146	5.5-10.5	SA					Q ->A	PFAS monitoring
MW-22-147	7.5-12.5	SA					Q ->A	PFAS monitoring
MW-22-148	24.5-29.5	SA					Q ->A	PFAS monitoring
MW-22-149	5.5-10.5	SA					Q ->A	PFAS monitoring
MW-22-150	13-18	SA					Q ->A	PFAS monitoring
MW-22-151	13-18	SA					Q ->A	PFAS monitoring
MW-22-152	10-15	SA	SA->A				Q ->A	PFAS monitoring
MW-22-154	16-11	SA	Q->SA					VOCs monitoring
MW-22-158	16-21	SA					Q ->A	PFAS monitoring
MW-22-159	26-31	SA					Q ->A	PFAS monitoring
MW-22-160	14-19	SA					Q ->A	PFAS monitoring
MWBP-10-UST5-6	28-38	SA			Qd			VOCs/metal monitoring
MWBP-11-UST1-4	9-19	SA			Qd			VOCs/metal monitoring
MWBP-12-UST1-4	15-25	SA	B		Qd	Qd		VOCs/metal monitoring, SVOC evaluation
P6-MW-01	23-28	SA						Groundwater elevation monitoring
P6-SB-07	15-20	SA				Qd	A	PFAS monitoring
P6-SB-18	3-8	SA						Groundwater elevation monitoring
P6-SB-21	3-8	SA						Groundwater elevation monitoring
<b>Deep Overburden and Weathered Bedrock</b>								
MW-13-52	70-80	SA		B				Lower 1,4-dioxane sentinel / Vertical Gradient Pair
MW-13-53	73-83	SA ->A						Lower 1,4-dioxane sentinel
MW-21-141	72-77	SA ->A		SA->A				Lower 1,4-dioxane sentinel
<b>Bedrock</b>								
MW-04-01(6)	78-88	SA		B				Bedrock sentinel
MW-04-04R	82-110	SA ->A		B			A	Bedrock sentinel / GW Elevation Monitoring
MW-04-06R	74-99.5	SA ->A		B			A	Bedrock sentinel / GW Elevation Monitoring
MW-12-03	57-80	SA ->A						GW Elevation Monitoring
MW-13-50	85-107	SA		B				Bedrock sentinel / Vertical Gradient Pair

Well	Screen Interval (ft bgs)	Gauging*	Analyte					Primary Function
			VOCs	1,4-Dioxane	Select Metals**	SVOCs	PFAS	
<b>Plant 6</b>								
<b>Storm Sewer</b>								
Osborn-MH-1	-	-					Q ->SA	PFAS sewer monitoring
Verlinden-MH-1	-	-						PFAS sewer monitoring
Verlinden-MH-2	-	-						PFAS sewer monitoring
Verlinden-MH-3	-	-						PFAS sewer monitoring
Verlinden-MH-4	-	-						PFAS sewer monitoring
Verlinden-MH-5	-	-					Q ->SA	PFAS sewer monitoring
MichAve-MH-3	-	-					Q ->SA	PFAS sewer monitoring
MichAve-MH-4	-	-						PFAS sewer monitoring

**Notes:**

Yellow shaded locations show a change in frequency from the prior EGLE approved sampling plan

\* Site wide gauging to alternate between semi-annual events to account for seasonal variability. Semi-annual gauging includes all wells sampled semi-annually.

\*\* Select metals includes arsenic, nickel, lead, vanadium, chromium, and copper.

\*\*\*TAL metals defined in Table 3 of the Quality Assurance Project Plan (ARCADIS 2011b).

ft bgs = feet below ground surface

Q = quarterly

SA = semi-annual

A = annual

B = biennial (starting 2nd quarter of 2026)

Qd = Quadrennial (every 4 years, starting 2028)

**Table 2**  
**Summary of Groundwater Elevations - May 2025**  
**RACER Trust Plants 2, 3, and 6**  
**Lansing, Michigan**



Well ID	Date Collected	Screened Interval Top (feet bgs)	Screened Interval Bottom (feet bgs)	Reference Elevation - TOC (feet amsl)	Ground Surface Elevation (feet amsl)	Total Well Depth (feet below TOC)	Corrected Depth to Water (feet below TOC)	Corrected Groundwater Elevation (feet amsl)
<b>Plant 2</b>								
MW-01(2)	5/5/2025	10.0	20.0	875.79	876.10	19.69	8.56	867.23
MW-12-01	5/5/2025	87.0	110.0	867.94	865.46	112.48	79.65	788.29
MW-12-02	5/5/2025	87.0	110.0	853.91	851.88	112.03	68.56	785.35
MW-12-05R	5/5/2025	100.0	112.0	861.80	862.30	111.50	74.55	787.25
MW-12-06	5/5/2025	80.6	99.5	864.64	861.69	102.45	74.17	790.47
MW-12-07	5/5/2025	10.0	15.0	872.11	869.21	17.90	6.23	865.88
MW-12-08	5/5/2025	19.0	24.0	864.68	861.50	27.14	3.32	861.36
MW-12-09	5/5/2025	14.0	19.0	863.54	860.63	21.91	12.02	851.52
MW-12-18	5/5/2025	28.0	33.0	866.43	864.19	35.24	22.39	844.04
MW-13-43	5/5/2025	72.0	77.0	863.82	860.97	79.85	68.21	795.61
MW-13-44	5/5/2025	96.0	115.0	864.24	861.03	118.21	78.72	785.52
MW-13-45	5/5/2025	72.0	77.0	863.80	861.54	79.26	66.59	797.21
MW-14-54	5/5/2025	14.0	19.0	865.21	862.21	22.00	8.18	857.03
MW-14-55	5/5/2025	13.0	18.0	864.17	861.73	20.44	14.98	849.19
MW-14-57	5/5/2025	15.0	20.0	863.97	861.10	22.87	9.87	854.10
MW-14-58R	5/5/2025	22.0	27.0	862.93	860.09	29.84	12.43	850.50
MW-14-59	5/5/2025	12.0	17.0	865.13	861.63	20.49	4.20	860.93
MW-14-60	5/5/2025	15.0	20.0	864.65	861.70	22.95	8.77	855.88
MW-14-61	5/5/2025	70.0	75.0	865.51	862.30	NM	67.60	797.91
MW-14-62	5/5/2025	12.0	17.0	865.17	862.25	19.92	3.15	862.02
MW-14-63	5/5/2025	68.0	73.0	854.64	851.68	75.96	68.17	786.47
MW-15-72	5/5/2025	63.0	68.0	865.09	862.35	70.74	57.04	808.05
MW-15-73	5/5/2025	78.0	83.0	861.56	859.12	85.44	74.40	787.16
MW-16-74	5/5/2025	66.0	71.0	864.81	862.10	73.71	66.39	798.42
MW-16-75	5/5/2025	66.0	71.0	864.87	862.13	73.74	62.13	802.74
MW-16-76	5/5/2025	70.0	75.0	867.76	865.12	77.64	65.80	801.96
MW-16-77	5/5/2025	66.0	71.0	866.17	863.42	73.75	61.35	804.82
MW-16-78	5/5/2025	68.0	73.0	864.98	862.09	75.89	65.09	799.89
MW-16-81	5/5/2025	70.0	75.0	864.68	862.04	77.64	63.03	801.65
MW-16-82	5/5/2025	70.0	75.0	864.79	862.10	77.69	67.83	796.96
MW-16-83	5/5/2025	71.0	76.0	862.97	860.17	78.80	74.61	788.36
MW-16-84	5/5/2025	72.0	77.0	864.09	861.81	79.29	70.13	793.96
MW-16-85	5/5/2025	74.0	79.0	864.77	861.87	81.90	71.41	793.36
MW-17-86	5/5/2025	73.0	78.0	864.55	861.92	80.63	66.74	797.81
MW-17-87	5/5/2025	100.0	112.0	862.82	860.44	114.38	76.67	786.15
MW-19-115	5/5/2025	72.5	77.5	865.04	862.19	80.35	58.87	806.17
MW-19-116	5/5/2025	65.0	70.0	865.12	862.17	72.95	56.48	808.64
MW-19-117	5/5/2025	54.0	59.0	865.10	862.15	61.95	59.33	805.77
MW-19-120	5/5/2025	66.0	71.0	864.73	862.13	73.60	66.81	797.92
MW-19-121	5/5/2025	66.0	71.0	864.55	862.19	73.36	66.36	798.19
MW-19-122	5/5/2025	59.0	64.0	865.02	862.15	66.87	64.24	800.78
MW-19-123	5/5/2025	66.0	71.0	864.45	862.04	73.41	66.02	798.43
MW-19-124	5/5/2025	65.0	70.0	864.53	862.22	72.31	66.26	798.27
MW-19-125	5/5/2025	100.0	115.0	865.11	862.11	117.99	78.68	786.43
MW-20-126	5/5/2025	69.0	74.0	861.89	859.50	76.39	72.09	789.80
MW-20-127	5/5/2025	72.0	77.0	862.58	861.30	78.28	67.95	794.63

**Table 2**  
**Summary of Groundwater Elevations - May 2025**  
**RACER Trust Plants 2, 3, and 6**  
**Lansing, Michigan**



Well ID	Date Collected	Screened Interval Top (feet bgs)	Screened Interval Bottom (feet bgs)	Reference Elevation - TOC (feet amsl)	Ground Surface Elevation (feet amsl)	Total Well Depth (feet below TOC)	Corrected Depth to Water (feet below TOC)	Corrected Groundwater Elevation (feet amsl)
MW-20-128	5/5/2025	65.0	70.0	863.73	861.40	72.33	66.05	797.68
MW-20-129	5/5/2025	64.0	69.0	864.91	862.20	71.71	61.47	803.44
MW-21-139	5/5/2025	7.0	12.0	865.00	862.17	14.83	2.93	862.07
MW-21-142	5/5/2025	71.5	76.5	853.70	850.79	79.41	67.10	786.60
MW-22-153	5/5/2025	25.0	30.0	860.43	859.44	30.99	9.89	850.54
MW-22-155	5/5/2025	25.5	30.5	861.58	858.99	33.09	11.14	850.44
MW-22-156	5/5/2025	23.0	28.0	863.07	860.13	30.94	12.41	850.66
MW-22-157	5/5/2025	24.0	29.0	852.38	853.06	28.32	1.95	850.43
MW-23-161	5/5/2025	20.0	25.0	858.48	856.00	27.48	9.97	848.51
MW-23-162	5/5/2025	29.0	34.0	861.95	859.41	15.20	13.58	848.37
MW-23-163	5/5/2025	20.0	25.0	862.61	860.31	27.30	12.81	849.80
P2-MW-02	5/5/2025	31.0	41.0	872.24	872.70	40.54	36.11	836.13
P2-MW-03	5/5/2025	27.0	32.0	854.18	854.66	31.52	8.33	845.85
P2-MW-04	5/5/2025	26.0	36.0	866.12	862.75	39.37	11.31	854.81
P2-SB-03	5/5/2025	14.0	19.0	863.89	861.03	21.87	14.20	849.69
P2-SB-06	5/5/2025	24.0	29.0	866.06	862.09	32.97	16.15	849.91
P2-SB-20	5/5/2025	8.0	13.0	864.46	861.12	16.34	7.65	856.81
PW-14-01	5/5/2025	71.6	76.8	864.97	862.38	70.14	70.14	794.83
PW-14-02	5/5/2025	75.0	80.0	863.87	860.93	82.94	67.31	796.56
TW-14-02	5/5/2025	67.0	72.0	865.01	862.13	74.88	63.40	801.61
TW-15-12	5/5/2025	73.0	78.0	860.88	861.23	77.65	65.63	795.25
<b>Plant 3</b>								
CH-14-RO	5/5/2025	7.0	12.0	866.47	863.71	14.82	5.01	861.46
MW-04-04(3)	5/5/2025	72.0	82.0	855.72	856.11	81.50	57.85	797.87
MW-12-21	5/5/2025	70.0	75.0	864.50	861.45	78.10	66.55	797.95
MW-13-22	5/5/2025	89.0	94.0	864.37	861.50	96.15	70.33	794.04
MW-13-27	5/5/2025	67.0	72.0	864.50	861.54	75.70	66.11	798.39
MW-13-28	5/5/2025	99.0	115.5	864.42	861.61	114.75	71.49	792.93
MW-13-29	5/5/2025	68.0	73.0	862.81	859.81	76.30	64.90	797.91
MW-13-32	5/5/2025	5.0	10.0	860.11	857.32	12.65	5.67	854.44
MW-13-34	5/5/2025	74.0	79.0	853.92	851.82	79.80	66.38	787.54
MW-13-37	5/5/2025	97.0	112.0	866.02	863.75	119.80	70.32	795.70
MW-13-38	5/5/2025	107.0	124.0	866.47	863.71	132.00	70.89	795.58
MW-13-41	5/5/2025	77.0	82.0	863.41	863.68	82.22	55.95	807.46
MW-13-47	5/5/2025	99.0	119.0	853.74	851.89	113.65	65.86	787.88
MW-13-48	5/5/2025	65.0	70.0	854.83	852.17	73.05	56.72	798.11
MW-13-46	5/5/2025	68.0	73.0	854.54	852.12	74.65	63.78	790.76
MW-18-100	5/5/2025	8.0	13.0	863.94	861.49	NM	NM	NM
MW-18-101	5/5/2025	80.0	85.0	863.87	861.24	87.40	64.19	799.68
MW-18-102	5/5/2025	10.0	15.0	863.13	863.44	14.70	8.42	854.71
MW-18-103	5/5/2025	5.0	10.0	859.13	859.74	10.65	0.72	858.41
MW-18-104	5/5/2025	5.0	10.0	859.12	859.82	9.50	1.99	857.13
MW-18-105	5/5/2025	6.0	11.0	858.59	859.01	11.20	0.69	857.90
MW-18-106	5/5/2025	5.0	10.0	866.15	866.51	9.60	1.54	864.61
MW-18-88	5/5/2025	6.0	11.0	863.70	860.93	15.00	3.39	860.31
MW-18-89	5/5/2025	7.0	12.0	866.53	863.51	15.65	4.98	861.55
MW-18-90	5/5/2025	15.0	20.0	866.32	863.25	23.15	8.42	857.90
MW-18-91	5/5/2025	7.0	12.0	865.94	863.43	15.05	4.46	861.48
MW-18-92	5/5/2025	23.0	28.0	870.43	869.08	30.15	14.87	855.56
MW-18-95	5/5/2025	4.5	9.5	864.66	861.76	12.50	6.09	858.57
MW-18-96	5/5/2025	7.0	12.0	864.60	861.64	14.90	14.24	850.36
MW-18-98	5/5/2025	7.0	12.0	862.16	859.10	14.95	3.73	858.43

**Table 2**  
**Summary of Groundwater Elevations - May 2025**  
**RACER Trust Plants 2, 3, and 6**  
**Lansing, Michigan**



Well ID	Date Collected	Screened Interval Top (feet bgs)	Screened Interval Bottom (feet bgs)	Reference Elevation - TOC (feet amsl)	Ground Surface Elevation (feet amsl)	Total Well Depth (feet below TOC)	Corrected Depth to Water (feet below TOC)	Corrected Groundwater Elevation (feet amsl)
MW-18-99	5/5/2025	9.0	14.0	862.47	859.95	16.90	2.59	859.88
MW-19-107	5/5/2025	23.0	28.0	870.65	869.20	29.86	16.32	854.33
MW-19-108	5/5/2025	23.0	28.0	872.60	870.22	30.00	16.79	855.81
MW-19-110	5/5/2025	8.0	13.0	863.67	860.72	16.25	16.22	847.45
MW-19-111	5/5/2025	20.0	25.0	874.51	871.70	27.45	23.58	850.93
MW-19-112	5/5/2025	9.0	14.0	861.63	858.53	17.60	6.81	854.82
MW-19-113	5/5/2025	16.0	21.0	860.67	857.73	24.60	24.33	836.34
MW-19-114	5/5/2025	6.0	11.0	861.25	861.79	10.80	0.39	860.86
MW-91-4	5/5/2025	116.0	132.5	855.59	855.93	130.60	59.12	796.47
MW-91-5	5/5/2025	112.5	128.0	860.61	861.20	126.35	63.98	796.63
MW-91-6	5/5/2025	82.0	98.0	851.84	852.22	95.50	63.04	788.80
P3-SB-28	5/5/2025	8.0	13.0	866.43	863.63	10.35	3.95	862.48
PW-14-03R	5/5/2025	85.0	90.0	864.31	861.55	95.50	74.57	789.74
TW-15-11	5/5/2025	85.0	90.0	864.51	861.60	87.05	75.06	789.45
UNK-11	5/5/2025	6.5	11.5	859.91	860.17	11.24	0.04	859.87
UNK-15	5/5/2025	11.0	16.0	859.56	859.94	15.62	0.38	859.18
<b>Plant 6</b>								
MW-02-02(6)	5/5/2025	35.0	45.0	868.04	868.41	43.47	29.02	839.02
MW-03-02	5/5/2025	30.0	40.0	864.52	864.76	37.20	20.65	843.87
MW-03-05	5/5/2025	35.0	45.0	868.90	869.14	48.00	21.92	846.98
MW-03-06	5/5/2025	30.0	40.0	870.45	870.80	40.58	35.84	834.61
MW-04-01(6)	5/5/2025	78.0	88.0	866.85	867.15	89.05	70.56	796.29
MW-04-05(6)	5/5/2025	20.0	30.0	858.33	858.87	29.60	10.92	847.41
MW-12-10R	5/5/2025	10.0	15.0	862.29	858.92	17.97	9.88	852.41
MW-12-11	5/5/2025	13.0	18.0	857.26	857.68	17.58	3.58	853.68
MW-12-12	5/5/2025	13.0	18.0	874.34	874.61	17.20	6.51	867.83
MW-12-13	5/5/2025	18.5	23.5	882.60	880.51	25.06	9.88	872.72
MW-12-14	5/5/2025	25.0	30.0	872.56	869.28	32.05	25.40	847.16
MW-12-16	5/5/2025	28.0	33.0	864.24	864.73	32.51	22.84	841.40
MW-13-36R	5/5/2025	5.5	10.5	878.04	875.28	12.60	5.18	872.86
MW-13-50	5/5/2025	85.0	107.0	872.85	869.93	116.80	83.51	789.34
MW-13-52	5/5/2025	70.0	80.0	872.50	869.84	82.75	69.32	803.18
MW-14-66	5/5/2025	14.0	19.0	877.85	874.73	22.22	4.74	873.11
MW-14-67	5/5/2025	13.0	18.0	877.76	875.07	20.84	5.60	872.16
MW-14-69	5/5/2025	41.0	46.0	883.62	880.72	49	DRY	DRY
MW-14-70	5/5/2025	16.0	21.0	882.79	880.08	23.07	10.56	872.23
MW-20-131	5/5/2025	5.0	10.0	858.21	858.66	8.65	4.75	853.46
MW-20-132	5/5/2025	6.0	11.0	858.01	858.38	10.63	4.64	853.37
MW-21-133	5/5/2025	10.0	15.0	876.67	872.91	18.75	7.98	868.69
MW-21-134	5/5/2025	11.0	16.0	872.97	869.38	20.08	6.92	866.05
MW-21-135	5/5/2025	22.0	27.0	872.10	868.60	26.95	24.68	847.42
MW-21-136	5/5/2025	9.0	14.0	865.91	866.31	13.60	6.71	859.20
MW-21-137	5/5/2025	7.0	12.0	866.99	867.50	11.49	8.81	858.18
MW-21-138	5/5/2025	24.0	29.0	867.05	867.54	28.51	21.21	845.84
MW-22-143	5/5/2025	26.0	31.0	864.23	864.52	30.71	16.94	847.29
MW-22-144	5/5/2025	19.5	24.5	863.27	863.91	23.86	12.75	850.52
MW-22-145	5/5/2025	10.5	15.5	863.25	863.87	14.88	12.22	851.03
MW-22-146	5/5/2025	5.5	10.5	861.74	862.17	10.07	3.95	857.79
MW-22-147	5/5/2025	7.5	12.5	865.46	865.83	12.13	8.97	856.49
MW-22-148	5/5/2025	24.5	29.5	865.93	866.12	29.31	25.20	840.73
MW-22-149	5/5/2025	5.5	10.5	866.24	866.68	10.06	4.38	861.86
MW-22-150	5/5/2025	13.0	18.0	859.62	859.84	17.78	5.58	854.04
MW-22-151	5/5/2025	13.0	18.0	856.66	857.04	17.62	5.71	850.95

**Table 2**  
**Summary of Groundwater Elevations - May 2025**  
**RACER Trust Plants 2, 3, and 6**  
**Lansing, Michigan**



Well ID	Date Collected	Screened Interval Top (feet bgs)	Screened Interval Bottom (feet bgs)	Reference Elevation - TOC (feet amsl)	Ground Surface Elevation (feet amsl)	Total Well Depth (feet below TOC)	Corrected Depth to Water (feet below TOC)	Corrected Groundwater Elevation (feet amsl)
MW-22-152	5/5/2025	10.0	15.0	857.23	857.50	14.73	7.12	850.11
MW-22-154	5/5/2025	6.0	11.0	855.81	856.29	10.52	4.60	851.21
MW-22-158	5/5/2025	16.0	21.0	863.45	863.87	20.58	14.10	849.35
MW-22-159	5/5/2025	26.0	31.0	864.41	864.78	29.80	DRY	DRY
MW-22-160	5/5/2025	14.0	19.0	860.77	861.40	18.37	13.76	847.01
MWBP-10-UST5-6	5/5/2025	28.0	38.0	867.70	867.99	36.80	28.55	839.15
MWBP-11-UST1-4	5/5/2025	9.0	19.0	868.66	869.07	11.23	1.75	866.91
MWBP-12-UST1-4	5/5/2025	15.0	25.0	870.02	870.58	11.08	1.71	868.31
P6-MW-01	5/5/2025	23.0	28.0	870.10	866.87	31.20	28.84	841.26
P6-SB-07	5/5/2025	15.0	20.0	877.36	874.36	23.61	5.97	871.39
P6-SB-18	5/5/2025	3.0	8.0	878.72	874.65	12.10	4.25	874.47
P6-SB-21	5/5/2025	3.0	8.0	874.20	870.92	11.12	2.16	872.04

**Notes:**

- MW-18-100 was observed to be damaged and unable to be gauged. The monitoring well was repaired in June 2025.

**Abbreviations:**

- amsl = above mean sea level
- bgs = below ground surface
- DRY = well was dry and depth to water could not be gauged
- NM = not measured
- RACER = Revitalizing Auto Communities Environmental Response
- TOC = top of casing

Table 3  
Summary of Groundwater Analytical Results - May 2025  
RACER Trust Plants 2, 3, and 6



Location ID: Date Collected: Sample Name: Sample Depth (ft. bgs):	Part 201 Residential Drinking Water	Part 201 Groundwater Surface Water Interface	Residential Site- Specific Volatilization to Indoor Air (SSVIAC)	Units	MW-12-21 5/9/2025 MW-12-21_050925 70-75	MW-13-22 5/9/2025 MW-13-22_050925 89-94	MW-13-29 5/6/2025 MW-13-29_050625 68-73	MW-13-34 5/9/2025 MW-13-34_050925 74-79	MW-13-48 5/9/2025 MW-13-48_050925 65-70	MW-13-43 5/7/2025 MW-13-43_050725 72-77	MW-13-45 5/7/2025 MW-13-45_050725 72-77	MW-14-61 5/7/2025 MW-14-61_050725 70-75	MW-15-72 5/7/2025 MW-15-72_050725 63-68	MW-16-74 5/7/2025 MW-16-74_050725 66-71
<b>Field Parameters</b>														
pH	6.5 to 8.5	6.5 to 9.0	--	s.u.	6.89	6.92	6.37	7.03	6.51	6.81	6.57	6.85	6.75	6.62
Conductivity	--	--	--	mS/cm	1.8	1.94	3.14	2.59	2.84	2.45	1.32	3.18	1.09	2.4
Turbidity	--	--	--	NTU	17.9	16.7	7.98	8.12	6.13	258	9.99	28.5	24.6	30.6
Dissolved oxygen (DO)	--	--	--	mg/L	0.56	3.01	0.89	0.86	0.23	2.69	0.4	0.34	0.4	0.46
Temperature	--	--	--	Deg C	14.6	12.9	13	17.1	16.2	18	17.8	21	18.7	19.3
Oxidation reduction potential (ORP)	--	--	--	millivolts	-85.5	131.2	41.6	-92.7	-2.3	192.9	0.1	101.6	-34.6	3
<b>Volatile Organics (via EPA Method SW5030C/8260C/8260B)</b>														
1,1-Dichloroethane	880	740	67	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,1-Dichloroethene	7.0	130	170	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,1,1-Trichloroethane	200	89	8,700	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,1,1,2-Tetrachloroethane	77	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,1,2-Trichloroethane	5.0	330	8.1	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,1,2,2-Tetrachloroethane	77	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	0.2	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,2-Dibromoethane (Ethylene dibromide)	0.5	5.7	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,2-Dichlorobenzene	600	13	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,2-Dichloroethane	5	360	21	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,2-Dichloropropane	5	230	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,2,3-Trichlorobenzene	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,2,3-Trichloropropane	42	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,2,3-Trimethylbenzene	--	--	800	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,2,4-Trichlorobenzene	70	99	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,2,4-Trimethylbenzene	63	17	440	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,3-Dichlorobenzene	6.6	28	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,3,5-Trimethylbenzene	72	45	310	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,4-Dichlorobenzene	75	17	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
1,4-Dioxane	7.2	280	14,000	ug/L	120 Y	94	2	80	62	5	17	6 [8]	14	2
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	2,200	1,500,000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
2-Hexanone	1,000	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
2-Methylnaphthalene	260	19	1,300	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
2-Phenylbutane (sec-Butylbenzene)	80	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Acetone	730	1,700	12,000,000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Acrylonitrile	3.0	2.0	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Benzene	5.0	200	14	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Bromobenzene	18	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Bromodichloromethane	80	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Bromoform	80	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Bromomethane (Methyl bromide)	10	5.0	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Carbon disulfide	800	--	970	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Carbon tetrachloride	5.0	38	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Chlorobenzene	100	25	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Chlorobromomethane	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Chloroethane	430	1,100	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Chloroform (Trichloromethane)	80	350	7.6	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Chloromethane (Methyl chloride)	260	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
cis-1,2-Dichloroethene	70	620	48	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
cis-1,3-Dichloropropene	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Cymene (p-Isopropyltoluene)	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Dibromochloromethane	80	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Dibromomethane	80	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Dichlorodifluoromethane (CFC-12)	1,700	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Ethyl ether	10	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Ethylbenzene	74	18	45	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Hexachloroethane	7.3	6.7	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Iodomethane	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Isopropyl benzene	800	28	10	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Methyl tert butyl ether (MTBE)	40	7,100	4,000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Methylene chloride	5.0	1,500	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Naphthalene	520	11	73	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
N-Butylbenzene	80	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
N-Propylbenzene	80	--	4,100	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Styrene	100	80	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
tert-Butylbenzene	80	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Tetrachloroethene	5.0	60	97	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Tetrahydrofuran	95	11,000	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Toluene	790	--	23,000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
trans-1,2-Dichloroethene	100	1,500	200	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
trans-1,3-Dichloropropene	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
trans-1,4-Dichloro-2-butene	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Trichloroethene	5.0	200	6.2	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Trichlorofluoromethane (CFC-11)	2,600	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Vinyl chloride	2.0	13	0.96	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
m&p-Xylene	280	49	1,200	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
o-Xylene	280	49	1,200	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA
Xylenes (total)	280	49	1,200	ug/L	NA	NA	NA	NA	NA	NA	NA	NA [NA]	NA	NA

Table 3  
Summary of Groundwater Analytical Results - May 2025  
RACER Trust Plants 2, 3, and 6

Location ID: Date Collected: Sample Name: Sample Depth (ft. bgs):	Part 201 Residential Drinking Water	Part 201 Groundwater Surface Water Interface	Residential Site- Specific Volatilization to Indoor Air (SSVIAC)	Units	MW-16-75 5/8/2025 MW-16-75_050825 66-71	MW-16-77 5/8/2025 MW-16-77_050825 66-71	MW-16-78 5/8/2025 MW-16-78_050825 68-73	MW-16-81 5/8/2025 MW-16-81_050825 70-75	MW-16-82 5/8/2025 MW-16-82_050825 70-75	MW-16-84 5/8/2025 MW-16-84_050825 72-77	MW-16-85 5/8/2025 MW-16-85_050825 74-79	MW-17-86 5/8/2025 MW-17-86_050825 73-78	MW-19-115 5/8/2025 MW-19-115_050825 72.5-77.5
<b>Field Parameters</b>													
pH	6.5 to 8.5	6.5 to 9.0	--	s.u.	6.94	6.98	6.99	6.87	6.86	6.89	7.33	7.2	6.89
Conductivity	--	--	--	mS/cm	1.41	2.4	1.36	2.49	1.55	2.13	1.17	2.33	0.66
Turbidity	--	--	--	NTU	24.7	7.12	3.22	10	0.02	33.1	8.31	72.9	18.6
Dissolved oxygen (DO)	--	--	--	mg/L	0.55	2.8	0.19	0.85	0.26	3.95	2.48	8.31	4.11
Temperature	--	--	--	Deg C	13	13.3	14.6	16.7	17.3	13.6	13.4	13.9	13.9
Oxidation reduction potential (ORP)	--	--	--	millivolts	-29.6	56.5	-29.2	96.2	-40.7	139.9	-104.5	-38.4	-9.3
<b>Volatile Organics (via EPA Method SW5030C/8260C/8260B)</b>													
1,1-Dichloroethane	880	740	67	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	7.0	130	170	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	200	89	8,700	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1,2-Tetrachloroethane	77	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	5.0	330	8.1	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	77	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	0.2	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane (Ethylene dibromide)	0.5	5.7	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	600	13	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	5	360	21	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	5	230	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	42	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trimethylbenzene	--	--	800	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	70	99	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	63	17	440	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	6.6	28	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	72	45	310	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	75	17	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dioxane	7.2	280	14,000	ug/L	1	< 1	< 1	37	11	14	4	10	6
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	2,200	1,500,000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	1,000	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	260	19	1,300	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Phenylbutane (sec-Butylbenzene)	80	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	730	1,700	12,000,000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	3.0	2.0	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5.0	200	14	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromobenzene	18	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	80	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	80	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane (Methyl bromide)	10	5.0	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	800	--	970	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	5.0	38	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	100	25	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobromomethane	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	430	1,100	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform (Trichloromethane)	80	350	7.6	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane (Methyl chloride)	260	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	70	620	48	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cymene (p-Isopropyltoluene)	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	80	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromomethane	80	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane (CFC-12)	1,700	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	10	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	74	18	45	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	7.3	6.7	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iodomethane	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropyl benzene	800	28	10	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert butyl ether (MTBE)	40	7,100	4,000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	5.0	1,500	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	520	11	73	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Butylbenzene	80	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Propylbenzene	80	--	4,100	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100	80	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	80	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	5.0	60	97	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrahydrofuran	95	11,000	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	790	270	23,000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	100	1,500	200	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,4-Dichloro-2-butene	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	5.0	200	6.2	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane (CFC-11)	2,600	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	2.0	13	0.96	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
m&p-Xylene	280	49	1,200	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	280	49	1,200	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	280	49	1,200	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 3  
 Summary of Groundwater Analytical Results - May 2025  
 RACER Trust Plants 2, 3, and 6



Location ID: Date Collected: Sample Name: Sample Depth (ft. bgs):	Part 201 Residential Drinking Water	Part 201 Groundwater Surface Water Interface	Residential Site- Specific Volatilization to Indoor Air (SSVIAC)	Units	MW-19-116 5/8/2025 MW-19-116_050825 65-70	MW-19-117 5/8/2025 MW-19-117_050825 54-59	MW-19-120 5/8/2025 MW-19-120_050825 66-71	MW-19-121 5/6/2025 MW-19-121_050625 66-71	MW-19-122 5/8/2025 MW-19-122_050825 59-64	MW-19-123 5/6/2025 MW-19-123_050625 66-71	MW-19-124 5/7/2025 MW-19-124_050725 65-70	MW-20-126 5/8/2025 MW-20-126_050825 69-74	MW-20-127 5/6/2025 MW-20-127_050625 72-77
<b>Field Parameters</b>													
pH	6.5 to 8.5	6.5 to 9.0	--	s.u.	6.92	6.9	7.16	6.64	6.82	6.73	6.65	7.06	6.6
Conductivity	--	--	--	mS/cm	1.6	1.17	1.87	2.62	4.75	1.71	3.31	1.66	3.18
Turbidity	--	--	--	NTU	9.17	19.1	69.7	4.93	37.3	3.99	7.28	17.9	6.29
Dissolved oxygen (DO)	--	--	--	mg/L	3.33	0.66	0.33	0.35	0.11	4.14	0.4	2.53	0.55
Temperature	--	--	--	Deg C	11.5	15.8	17.9	16.6	14.2	13.7	18	10.3	14.7
Oxidation reduction potential (ORP)	--	--	--	millivolts	-77.6	-79.9	74.2	199.7	142.8	163.8	-69.9	196.3	-32.8
<b>Volatile Organics (via EPA Method SW5030C/8260C/8260B)</b>													
1,1-Dichloroethane	880	740	67	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	7.0	130	170	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	200	89	8,700	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1,2-Tetrachloroethane	77	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	5.0	330	8.1	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	77	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	0.2	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane (Ethylene dibromide)	0.5	5.7	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	600	13	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	5	360	21	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	5	230	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	--	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	42	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trimethylbenzene	--	--	800	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	70	99	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	63	17	440	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	6.6	28	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	72	45	310	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	75	17	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dioxane	7.2	280	14,000	ug/L	76 [72]	< 1	7	5	< 1	30	184	8	113
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	2,200	1,500,000	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	1,000	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	260	19	1,300	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
2-Phenylbutane (sec-Butylbenzene)	80	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	730	1,700	12,000,000	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	3.0	2.0	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5.0	200	14	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Bromobenzene	18	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	80	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	80	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane (Methyl bromide)	10	5.0	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	800	--	970	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	5.0	38	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	100	25	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobromomethane	--	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	430	1,100	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform (Trichloromethane)	80	350	7.6	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane (Methyl chloride)	260	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethane	70	620	48	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	--	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Cymene (p-Isopropyltoluene)	--	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	80	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Dibromomethane	80	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane (CFC-12)	1,700	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	10	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	74	18	45	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	7.3	6.7	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Iodomethane	--	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Isopropyl benzene	800	28	10	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert butyl ether (MTBE)	40	7,100	4,000	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	5.0	1,500	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	520	11	73	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
N-Butylbenzene	80	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
N-Propylbenzene	80	--	4,100	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100	80	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	80	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	5.0	60	97	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Tetrahydrofuran	95	11,000	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	790	270	23,000	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethane	100	1,500	200	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	--	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,4-Dichloro-2-butene	--	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	5.0	200	6.2	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane (CFC-11)	2,600	--	--	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	2.0	13	0.96	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
m&p-Xylene	280	49	1,200	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	280	49	1,200	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	280	49	1,200	ug/L	NA [NA]	NA	NA	NA	NA	NA	NA	NA	NA

Table 3 - Summary of GWA\_May 2025

Table 3  
Summary of Groundwater Analytical Results - May 2025  
RACER Trust Plants 2, 3, and 6



Location ID: Date Collected: Sample Name: Sample Depth (ft. bgs):	Part 201 Residential Drinking Water	Part 201 Groundwater Surface Water Interface	Residential Site- Specific Volatilization to Indoor Air (SSVIAC)	Units	MW-20-128 5/7/2025 MW-20-128_050725 65-70	MW-20-129 5/7/2025 MW-20-129_050725 64-69	MW-21-142 5/7/2025 MW-21-142_050725 71.5-76.5	MW-22-153 5/7/2025 MW-22-153_050725 25-30	MW-22-154 5/8/2025 MW-22-154_050825 6-11	MW-22-155 5/7/2025 MW-22-155_050725 25.5-30.5	MW-22-156 5/6/2025 MW-22-156_050625 23-28	MW-22-157 5/7/2025 MW-22-157_050725 24-29	MW-23-161 5/7/2025 MW-23-161_050725 20-25
<b>Field Parameters</b>													
pH	6.5 to 8.5	6.5 to 9.0	--	s.u.	6.99	6.98	6.79	6.98	7.1	6.85	7.05	6.88	6.99
Conductivity	--	--	--	mS/cm	3.11	1.5	2.86	1.53	2.99	1.85	1.21	0.62	1.26
Turbidity	--	--	--	NTU	10.3	6.98	381	8.87	15.3	208	20.9	7.88	48.2
Dissolved oxygen (DO)	--	--	--	mg/L	0.96	0.32	3.41	0.21	0.31	0.22	0.27	0.22	0.18
Temperature	--	--	--	Deg C	17.2	18.8	14.1	13.8	10.2	13.7	13.1	14.7	12.7
Oxidation reduction potential (ORP)	--	--	--	millivolts	134.2	-79.8	-71.2	-71.2	60.3	-37.7	-91.3	-53.7	-57.9
<b>Volatile Organics (via EPA Method SW5030C/8260C/8260B)</b>													
1,1-Dichloroethane	880	740	67	ug/L	NA	NA	NA	141	< 1	NA	200 Yr [200 Yr]	< 1	NA
1,1-Dichloroethene	7.0	130	170	ug/L	NA	NA	NA	5	< 1	NA	15 r [14 r]	< 1	NA
1,1,1-Trichloroethane	200	89	8,700	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
1,1,1,2-Tetrachloroethane	77	--	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
1,1,2-Trichloroethane	5.0	330	8.1	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
1,1,2,2-Tetrachloroethane	77	--	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
1,2-Dibromo-3-chloropropane (DBCP)	0.2	--	--	ug/L	NA	NA	NA	< 5	< 5	NA	< 5 [ < 5 ]	< 5	NA
1,2-Dibromoethane (Ethylene dibromide)	0.5	5.7	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
1,2-Dichlorobenzene	600	13	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
1,2-Dichloroethane	5	360	21	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
1,2-Dichloropropane	5	230	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
1,2,3-Trichlorobenzene	--	--	--	ug/L	NA	NA	NA	< 5	< 5	NA	< 5 [ < 5 ]	< 5	NA
1,2,3-Trichloropropane	42	--	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
1,2,3-Trimethylbenzene	--	--	800	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
1,2,4-Trichlorobenzene	70	99	--	ug/L	NA	NA	NA	< 5	< 5	NA	< 5 [ < 5 ]	< 5	NA
1,2,4-Trimethylbenzene	63	17	440	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
1,3-Dichlorobenzene	6.6	28	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
1,3,5-Trimethylbenzene	72	45	310	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
1,4-Dichlorobenzene	75	17	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
1,4-Dioxane	7.2	280	14,000	ug/L	1	61	55	38	NA	153	42 [42]	74	42
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	2,200	1,500,000	ug/L	NA	NA	NA	< 25	< 25	NA	< 25 [ < 25 ]	< 25	NA
2-Hexanone	1,000	--	--	ug/L	NA	NA	NA	< 50	< 50	NA	< 50 [ < 50 ]	< 50	NA
2-Methylnaphthalene	260	19	1,300	ug/L	NA	NA	NA	< 5	< 5	NA	< 5 [ < 5 ]	< 5	NA
2-Phenylbutane (sec-Butylbenzene)	80	--	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	--	--	ug/L	NA	NA	NA	< 50	< 50	NA	< 50 [ < 50 ]	< 50	NA
Acetone	730	1,700	12,000,000	ug/L	NA	NA	NA	< 50	< 50	NA	< 50 [ < 50 ]	< 50	NA
Acrylonitrile	3.0	2.0	--	ug/L	NA	NA	NA	< 2	< 2	NA	< 2 [ < 2 ]	< 2	NA
Benzene	5.0	200	14	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
Bromobenzene	18	--	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
Bromodichloromethane	80	--	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
Bromoform	80	--	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
Bromomethane (Methyl bromide)	10	5.0	--	ug/L	NA	NA	NA	< 5	< 5	NA	< 5 [ < 5 ]	< 5	NA
Carbon disulfide	800	--	970	ug/L	NA	NA	NA	< 5	< 5	NA	< 5 [ < 5 ]	< 5	NA
Carbon tetrachloride	5.0	38	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
Chlorobenzene	100	25	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
Chlorobromomethane	--	--	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
Chloroethane	430	1,100	--	ug/L	NA	NA	NA	< 5	< 5	NA	9 r [7 r]	< 5	NA
Chloroform (Trichloromethane)	80	350	7.6	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
Chloromethane (Methyl chloride)	260	--	--	ug/L	NA	NA	NA	< 5	< 5	NA	< 5 [ < 5 ]	< 5	NA
cis-1,2-Dichloroethene	70	620	48	ug/L	NA	NA	NA	< 1	1	NA	< 1 [ < 1 ]	< 1	NA
cis-1,3-Dichloropropene	--	--	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
Cymene (p-Isopropyltoluene)	--	--	--	ug/L	NA	NA	NA	< 5	< 5	NA	< 5 [ < 5 ]	< 5	NA
Dibromochloromethane	80	--	--	ug/L	NA	NA	NA	< 5	< 5	NA	< 5 [ < 5 ]	< 5	NA
Dibromomethane	80	--	--	ug/L	NA	NA	NA	< 5	< 5	NA	< 5 [ < 5 ]	< 5	NA
Dichlorodifluoromethane (CFC-12)	1,700	--	--	ug/L	NA	NA	NA	< 5	< 5	NA	< 5 [ < 5 ]	< 5	NA
Ethyl ether	10	--	--	ug/L	NA	NA	NA	< 10	< 10	NA	< 10 [ < 10 ]	< 10	NA
Ethylbenzene	74	18	45	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
Hexachloroethane	7.3	6.7	--	ug/L	NA	NA	NA	< 5	< 5	NA	< 5 [ < 5 ]	< 5	NA
Iodomethane	--	--	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
Isopropyl benzene	800	28	10	ug/L	NA	NA	NA	< 5	< 5	NA	< 5 [ < 5 ]	< 5	NA
Methyl tert butyl ether (MTBE)	40	7,100	4,000	ug/L	NA	NA	NA	< 5	< 5	NA	< 5 [ < 5 ]	< 5	NA
Methylene chloride	5.0	1,500	--	ug/L	NA	NA	NA	< 5	< 5	NA	< 5 [ < 5 ]	< 5	NA
Naphthalene	520	11	73	ug/L	NA	NA	NA	< 5	< 5	NA	< 5 [ < 5 ]	< 5	NA
N-Butylbenzene	80	--	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
N-Propylbenzene	80	--	4,100	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
Styrene	100	80	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
tert-Butylbenzene	80	--	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
Tetrachloroethene	5.0	60	97	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
Tetrahydrofuran	95	11,000	--	ug/L	NA	NA	NA	< 90	< 90	NA	< 90 [ < 90 ]	< 90	NA
Toluene	790	270	23,000	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
trans-1,2-Dichloroethene	100	1,500	200	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
trans-1,3-Dichloropropene	--	--	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
trans-1,4-Dichloro-2-butene	--	--	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
Trichloroethene	5.0	200	6.2	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
Trichlorofluoromethane (CFC-11)	2,600	--	--	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
Vinyl chloride	2.0	13	0.96	ug/L	NA	NA	NA	< 1	< 1	NA	2 r [2 r]	< 1	NA
m&p-Xylene	280	49	1,200	ug/L	NA	NA	NA	< 2	< 2	NA	< 2 [ < 2 ]	< 2	NA
o-Xylene	280	49	1,200	ug/L	NA	NA	NA	< 1	< 1	NA	< 1 [ < 1 ]	< 1	NA
Xylenes (total)	280	49	1,200	ug/L	NA	NA	NA	< 2	< 2	NA	< 2 [ < 2 ]	< 2	NA

Table 3  
Summary of Groundwater Analytical Results - May 2025  
RACER Trust Plants 2, 3, and 6



Location ID: Date Collected: Sample Name: Sample Depth (ft. bgs):	Part 201 Residential Drinking Water	Part 201 Groundwater Surface Water Interface	Residential Site- Specific Volatilization to Indoor Air (SSVIAC)	Units	MW-23-162 5/8/2025 MW-23-162_050825 29-34	MW-23-163 5/7/2025 MW-23-163_050725 20-25	PW-14-01 5/7/2025 PW-14-01_050725 71.6-76.8	PW-14-02 5/7/2025 PW-14-02_050725 75-80	PW-14-03R 5/9/2025 PW-14-03R_050925 85-90	TW-14-02 5/6/2025 TW-14-02_050625 67-72	TW-15-11 5/9/2025 TW-15-11_050925 85-90	TW-15-12 5/6/2025 TW-15-12_050625 73-78
<b>Field Parameters</b>												
pH	6.5 to 8.5	6.5 to 9.0	--	s.u.	6.84	6.95	6.67	6.97	2.45	7.25	6.99	6.98
Conductivity	--	--	--	mS/cm	2.38	0.06	3.8	2.07	4.61	4.25	2.99	2.93
Turbidity	--	--	--	NTU	20.2	27.5	15	16.9	1.71	5.54	12.4	9.14
Dissolved oxygen (DO)	--	--	--	mg/L	0.7	0.2	1.21	0.71	0.41	0.62	3.74	0.74
Temperature	--	--	--	Deg C	11.9	12.3	20.5	18.2	17.3	16.5	14.6	13.9
Oxidation reduction potential (ORP)	--	--	--	millivolts	-38.6	-70	107.8	152	509.1	183.7	81.1	146.3
<b>Volatile Organics (via EPA Method SW5030C/8260C/8260B)</b>												
1,1-Dichloroethane	880	740	67	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,1-Dichloroethene	7.0	130	170	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,1,1-Trichloroethane	200	89	8,700	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,1,1,2-Tetrachloroethane	77	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,1,2-Trichloroethane	5.0	330	8.1	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,1,2,2-Tetrachloroethane	77	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	0.2	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,2-Dibromoethane (Ethylene dibromide)	0.5	5.7	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,2-Dichlorobenzene	600	13	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,2-Dichloroethane	5	360	21	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,2-Dichloropropane	5	230	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,2,3-Trichlorobenzene	--	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,2,3-Trichloropropane	42	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,2,3-Trimethylbenzene	--	--	800	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,2,4-Trichlorobenzene	70	99	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,2,4-Trimethylbenzene	63	17	440	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,3-Dichlorobenzene	6.6	28	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,3,5-Trimethylbenzene	72	45	310	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,4-Dichlorobenzene	75	17	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
1,4-Dioxane	7.2	280	14,000	ug/L	24	8	4	26	14 [14]	2 [< 1]	32	< 1
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	2,200	1,500,000	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
2-Hexanone	1,000	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
2-Methylnaphthalene	260	19	1,300	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
2-Phenylbutane (sec-Butylbenzene)	80	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Acetone	730	1,700	12,000,000	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Acrylonitrile	3.0	2.0	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Benzene	5.0	200	14	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Bromobenzene	18	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Bromodichloromethane	80	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Bromoform	80	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Bromomethane (Methyl bromide)	10	5.0	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Carbon disulfide	800	--	970	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Carbon tetrachloride	5.0	38	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Chlorobenzene	100	25	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Chlorobromomethane	--	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Chloroethane	430	1,100	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Chloroform (Trichloromethane)	80	350	7.6	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Chloromethane (Methyl chloride)	260	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
cis-1,2-Dichloroethene	70	620	48	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
cis-1,3-Dichloropropene	--	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Cymene (p-Isopropyltoluene)	--	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Dibromochloromethane	80	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Dibromomethane	80	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Dichlorodifluoromethane (CFC-12)	1,700	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Ethyl ether	10	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Ethylbenzene	74	18	45	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Hexachloroethane	7.3	6.7	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Iodomethane	--	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Isopropyl benzene	800	28	10	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Methyl tert butyl ether (MTBE)	40	7,100	4,000	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Methylene chloride	5.0	1,500	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Naphthalene	520	11	73	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
N-Butylbenzene	80	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
N-Propylbenzene	80	--	4,100	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Styrene	100	80	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
tert-Butylbenzene	80	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Tetrachloroethene	5.0	60	97	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Tetrahydrofuran	95	11,000	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Toluene	790	270	23,000	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
trans-1,2-Dichloroethene	100	1,500	200	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
trans-1,3-Dichloropropene	--	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
trans-1,4-Dichloro-2-butene	--	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Trichloroethene	5.0	200	6.2	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Trichlorofluoromethane (CFC-11)	2,600	--	--	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Vinyl chloride	2.0	13	0.96	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
m&p-Xylene	280	49	1,200	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
o-Xylene	280	49	1,200	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA
Xylenes (total)	280	49	1,200	ug/L	NA	NA	NA	NA	NA [NA]	NA [NA]	NA	NA

**Table 3**  
**Summary of Groundwater Analytical Results - 2024**  
**RACER Trust Plants 2, 3, and 6**  
**Lansing, Michigan**



**Data Flagging:**

**Bold font** represents data where detections were noted above the laboratory method detection limit.

**Gray shading** represents result exceeding either or both the EGLE Part 201 Generic Cleanup Criteria and Screening Levels or the EGLE GSI Criteria (Updated October 12, 2023)

*Italic* represents result exceeding the EGLE Site-Specific Volatilization to Indoor Air Criteria (SSVIAC) (dated July 11, 2018)

1. EGLE Part 201 Residential Drinking Water Criteria and Groundwater Surface Water Interface Criteria from the Generic Cleanup Criteria and Screening Levels (dated October 12, 2023) are used for comparison with all VOC and Inorganic data.
2. 1,4-Dioxane is compared to a drinking water criteria of 7.2 µg/L per the EGLE Establishment of Cleanup Criteria for 1,4 -Dioxane: Emergency Rules dated October 27, 2016.
3. EGLE Site-Specific Volatilization to Indoor Air Criteria (SSVIAC) (dated July 11, 2018) are used for comparison with all VOC data.
4. Duplicate analyses are presented in brackets next to the parent sample.

**Abbreviations:**

-- = Not listed in the EGLE Criteria Tables

Deg C = degrees Celsius

EGLE = Michigan Department of Environment, Great Lakes, and Energy

EPA = Environmental Protection Agency

ft. bgs = feet below ground surface

mg/L = milligrams per liter

NA = Not Analyzed

NTU = Nephelometric Turbidity Unit

s.u. = standard unit

ug/L = micrograms per liter

mS/cm = milliSiemens per centimeter

**Lab and Validation Data Qualifiers:**

< = The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

Y = Elevated reporting limit due to high target concentration.

r = This analyte is being reported for the best result from multiple runs.

**Table 4**  
**Summary of Plant 2 Storm Sewer Sampling Results**  
**RACER Trust - Plant 2 Industrial Land, Lansing, Michigan**

Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	P2-MH-2 5/9/2025	P2-MH-W 5/9/2025
<b>Results</b>				
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	12.5	1.2 J
Perfluorooctanoic acid (PFOA)	ng/L	170	15.2	1.9 J
Perfluorobutanesulfonic acid (PFBS)	ng/L	670,000	1.6 J	1.2 J
Perfluorohexanesulfonic acid (PFHxS)	ng/L	210	3.4 J	1.7 J
Perfluorononanoic acid (PFNA)	ng/L	30	1.8 J	< 0.8
Other PFAS	ng/L	NC	23.9	3.6

**Notes:**

Shaded Exceeds Rule 57 Human Non-Cancer Screening  
 Value for Surface Water from a Non-Drinking Water  
 Source for PFOS or PFOA

NC = No criteria

ng/L = Nanograms per liter

PFAS = Per- and polyfluoroalkyl substances

J = Indicates an estimated value below laboratory reporting limit

< = The compound was analyzed for but not detected.

All samples analyzed using USEPA Method 537M, Michigan List of 28

**Table 5**  
**Summary of Plant 3 Storm Sewer Sampling Results**  
**RACER Trust - Plant 3 Industrial Land, Lansing, Michigan**



Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	P3-MH-284 5/9/2025
<b>Results</b>			
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	3.5
Perfluorooctanoic acid (PFOA)	ng/L	170	< 0.6
Perfluorobutanesulfonic acid (PFBS)	ng/L	670,000	1.2 J
Perfluorohexanesulfonic acid (PFHxS)	ng/L	210	< 0.9
Perfluorononanoic acid (PFNA)	ng/L	30	< 0.8
Other PFAS	ng/L	NC	1.3

**Notes:**

Shaded Exceeds Rule 57 Human Non-Cancer Screening  
Value for Surface Water from a Non-Drinking Water  
Source for PFOS or PFOA

NC = No criteria

ng/L = Nanograms per liter

PFAS = Per- and polyfluoroalkyl substances

J = Indicates an estimated value below laboratory reporting limit

< = The compound was analyzed for but not detected.

All samples analyzed using USEPA Method 537M, Michigan List of 28

**Table 6**  
**Summary of Plant 6 Storm Sewer Sampling Results**  
**RACER Trust - Plant 6 Industrial Land, Lansing, Michigan**



Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	MichAve-MH-3 5/9/2025	Verlinden-MH-5 5/9/2025	Osborn-MH-1 5/9/2025
<b>Results</b>					
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	4.6	8.5	18.4 [19.2]
Perfluorooctanoic acid (PFOA)	ng/L	170	6.3	14.8	16.0 [18.2]
Perfluorobutanesulfonic acid (PFBS)	ng/L	670,000	3.5 J	2.3 J	1.0 J [0.9 J]
Perfluorohexanesulfonic acid (PFHxS)	ng/L	210	2.8 J	1.1 J	1.5 J [1.5 J]
Perfluorononanoic acid (PFNA)	ng/L	30	< 0.8	1.7 J	3.4 J [3.6 J]
Other PFAS	ng/L	NC	148.4	46.7	38.5 [39.3]

**Notes:**

Shaded Exceeds Rule 57 Human Non-Cancer Screening  
Value for Surface Water from a Non-Drinking Water  
Source for PFOS or PFOA

NC = No criteria

ng/L = Nanograms per liter

PFAS = Per- and polyfluoroalkyl substances

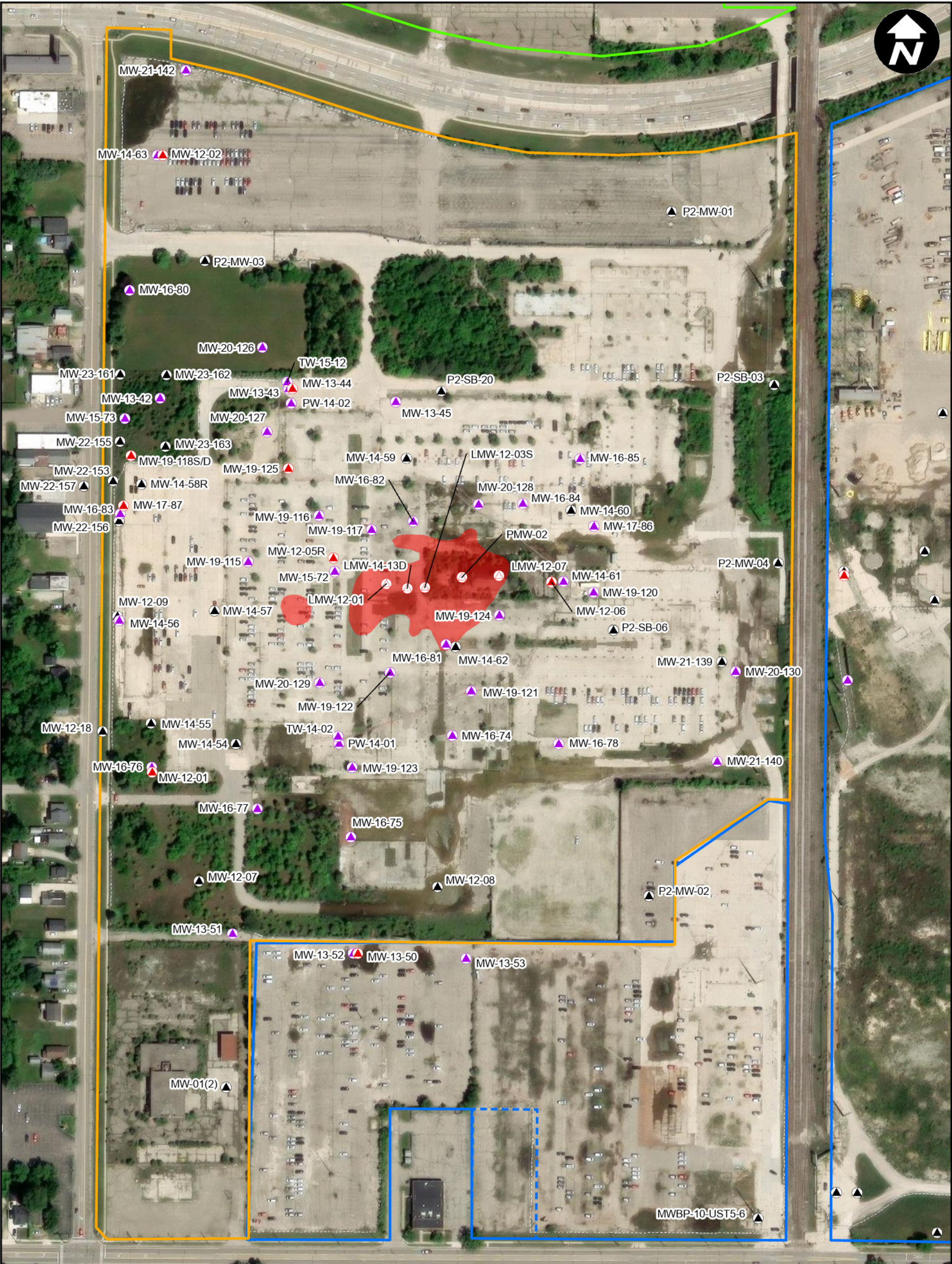
[ ] Indicates duplicate sample

J = Indicates an estimated value below laboratory reporting limit

< = The compound was analyzed for but not detected.

All samples analyzed using USEPA Method 537M, Michigan List of 28

# Figures



CITY: Novi DIV: ENV PIC: J. BARRETT PM: T. LINDER TM: K. HUNT TR: PROJECT NUMBER: 3026725 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl T:\ENV\RACER\Lansing\_BuffaloData\MXDs\2024 Annual Groundwater Monitoring Report.aprx PLOTTED: 6/23/2025 9:43 AM BY: V.Davis

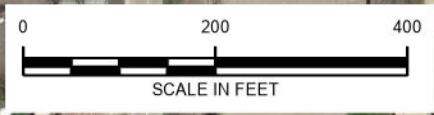
**LEGEND**

- LNAPL MONITORING WELL
- PERCHED ZONE MONITORING WELL
- DEEP OVBURDEN MONITORING WELL
- WEATHERED BEDROCK MONITORING WELL
- BEDROCK MONITORING WELL
- APPROXIMATE EXTENT LNAPL
- PLANT 2
- PLANT 3
- PLANT 6 (Dashed Where Sold)

**NOTE:**

THE PARKING LOT SOUTH OF PLANT 2 IS PART OF THE PLANT 6 RCRA FACILITY BUT CONSIDERED BY RACER TRUST TO BE PART OF LANSING PART 2 INDUSTRIAL LAND

-AERIAL IMAGERY FROM ESRI ARCGIS ONLINE DATED JULY 2023.



RACER TRUST  
PLANTS 2, 3 & 6  
LANSING, MICHIGAN

**SUMMARY OF PLANT 2  
MONITORING WELL LOCATIONS**

**ARCADIS**

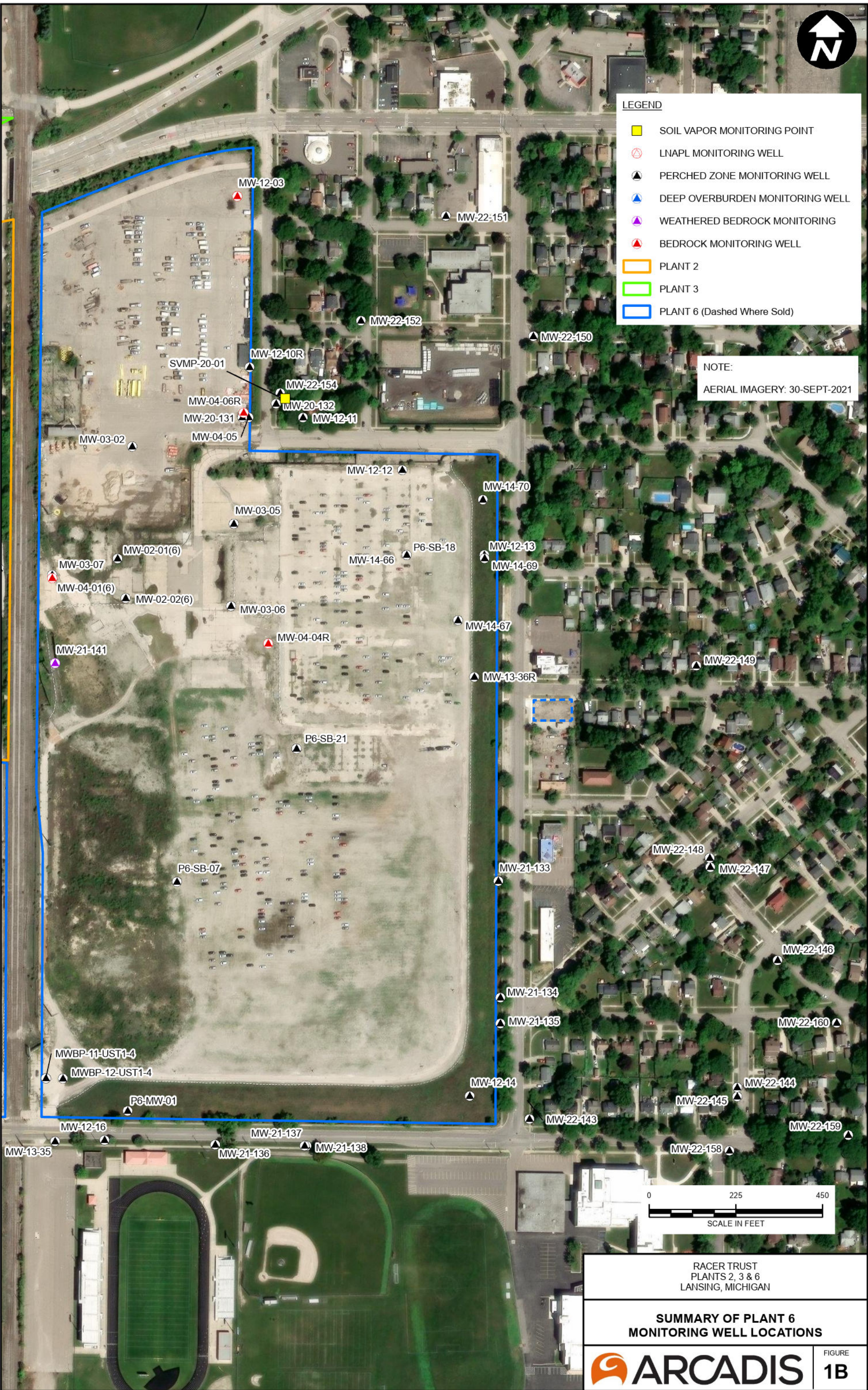
FIGURE  
**1A**



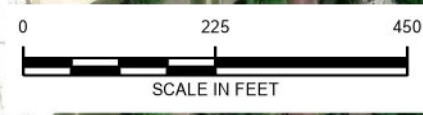
LEGEND

- SOIL VAPOR MONITORING POINT
- ⊗ LNAPL MONITORING WELL
- ▲ PERCHED ZONE MONITORING WELL
- ▲ DEEP OVBURDEN MONITORING WELL
- ▲ WEATHERED BEDROCK MONITORING
- ▲ BEDROCK MONITORING WELL
- PLANT 2
- PLANT 3
- PLANT 6 (Dashed Where Sold)

NOTE:  
AERIAL IMAGERY: 30-SEPT-2021



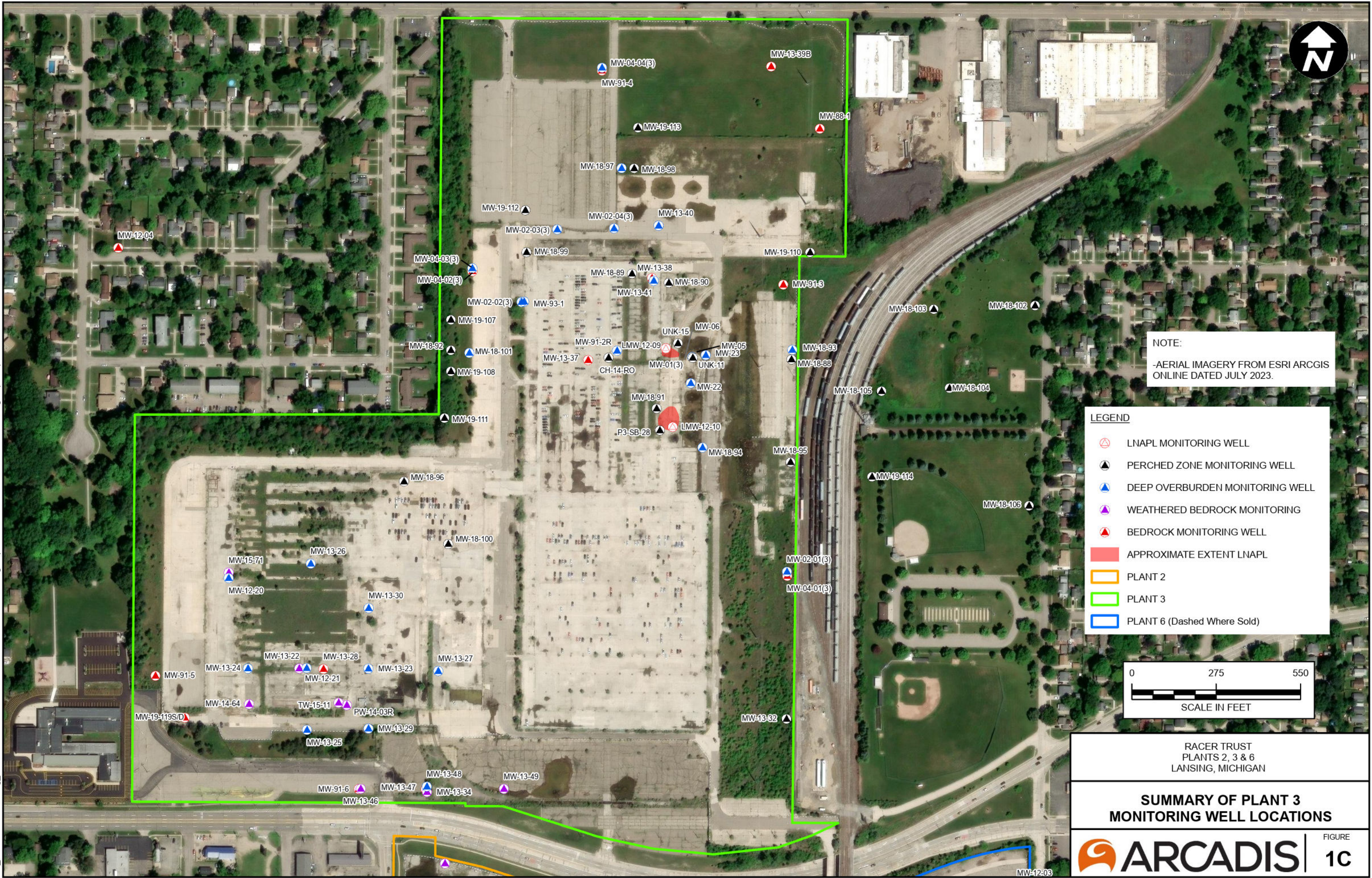
CITY: Novi DIV: ENV PIC: J. BARRETT PM: T. LINDER TM: K. HUNT TR: PROJECT NUMBER: 30267725 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl  
T:\ENV\RACER\Lansing\_BuffaloData\MXD\2024 Annual Groundwater Monitoring Report.aprx PLOTTED: 6/23/2025 9:43 AM BY: V.Davis



RACER TRUST  
PLANTS 2, 3 & 6  
LANSING, MICHIGAN

SUMMARY OF PLANT 6  
MONITORING WELL LOCATIONS

CITY: KNOXVILLE DIV: ENV DB: A.SMITH PIC: J. Barrett PM: T. LINDER TR: K. HUNT TR: PROJECT NUMBER: 30267725 COORDINATE SYSTEM: T:\ENVRACER\Lansing\_BuffaloData\MXDs\2024 Annual Groundwater Monitoring Report.aprx PLOTTED: 6/23/2025 9:43 AM BY: V.Davis





**NOTES:**

APPROXIMATE EXTENT OF PERCHED VOC'S PLUME AND LNAPL IMPACTS SHOWN ARE BASED ON SEVERAL INVESTIGATIONS PREVIOUSLY COMPLETED AT THE SITE.

APPROXIMATE EXTENT OF PERCHED 1,4-DIOXANE PLUME IS BASED ON THE ANALYTICAL DATA FROM 2024.

ANALYTICAL DATA FROM MAY 2025 IS POSTED.

SAMPLES ANALYZED VIA EPA METHOD SW5030C/8260C AND EPA METHOD 8260B SIM.

ALL ANALYTICAL DATA IS IN ug/L.

DW: EGLE Part 201 RESIDENTIAL DRINKING WATER CRITERIA.

GSI: EGLE Part 201 GROUNDWATER SURFACE WATER INTERFACE CRITERIA.

SSVIAC: EGLE SITE-SPECIFIC VOLATILIZATION TO INDOOR AIR CRITERIA

EGLE: MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

EPA: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

ug/L: MICROGRAMS PER LITER.

VOC: VOLATILE ORGANIC COMPOUND

1,1-DCA: 1,1-DICHLOROETHANE

1,1-DCE: 1,1-DICHLOROETHENE

1,4-D: 1,4-DIOXANE

VC: VINYL CHLORIDE

LNAPL: LIGHT NON-AQUEOUS PHASE LIQUID

-AERIAL IMAGERY FROM ESRI ARCGIS ONLINE DATED JULY 2023.

VOCs	Res Drinking Water	GSI Criteria	Res SSVIAC
1,1-DCA	880	740	67
1,1-DCE	7	130	170
1,4-Dioxane	7.2	280	14,000
Vinyl Chloride	2	13	0.96

**MW-23-161 (5/7/2025)**

Analyte	ug/l
1,4-D	42

**MW-23-162 (5/8/2025)**

Analyte	ug/l
1,4-D	24

**MW-23-163 (5/7/2025)**

Analyte	ug/l
1,4-D	8

**MW-22-155 (5/7/2025)**

Analyte	ug/l
1,4-D	153

**MW-22-153 (5/7/2025)**

Analyte	ug/l
1,4-D	38
1,1-DCA	141

**MW-22-157 (5/7/2025)**

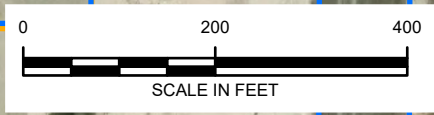
Analyte	ug/l
1,4-D	74

**MW-22-156 (5/6/2025)**

Analyte	ug/l
1,4-D	42
1,1-DCE	15
1,1-DCA	200
VC	2

**LEGEND**

- PERCHED ZONE MONITORING WELL
- WELLS SAMPLED AND EITHER 1,4-D OR VOCs EXCEED CRITERIA
- WELLS SAMPLED AND 1,4-D AND VOCs DO NOT EXCEED CRITERIA
- APPROXIMATE EXTENT LNAPL
- EXTENT VOC'S IN PERCHED ZONE > DW CRITERIA
- PERCHED 1,4-DIOXANE IMPACTS > DW CRITERIA (7.2 ug/L)
- PLANT 2
- PLANT 3
- PLANT 6 (DASHED WHERE SOLD)



RACER TRUST  
PLANTS 2, 3 & 6  
LANSING, MICHIGAN

**SUMMARY OF VOCs & 1,4-DIOXANE IN PERCHED WELLS IN THE MW-14-58R AREA ANALYTICAL RESULTS - MAY 2025**

FIGURE 2

CITY: Novi DIV: ENV PIC: J. BARRETT PM: T. LINDER TM: K. HUNT TR: PROJECT NUMBER: 30267725 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl T:\GIS\Processing\ENV\RACER\Lansing\_BuffaloData\MXDs\2025 Semi-Annual GW Monitoring Report.aprx PLOTTED: 9/30/2025 10:14 AM BY: SGarza



**NOTES:**

LOWER 1,4-DIOXANE PLUME IS BASED ON ANALYTICAL DATA FROM 2024.

ANALYTICAL DATA FROM MAY 2025 IS POSTED.

SAMPLES ANALYZED VIA EPA METHOD SW-846 8260B SIM.

ALL ANALYTICAL DATA IS IN ug/L.

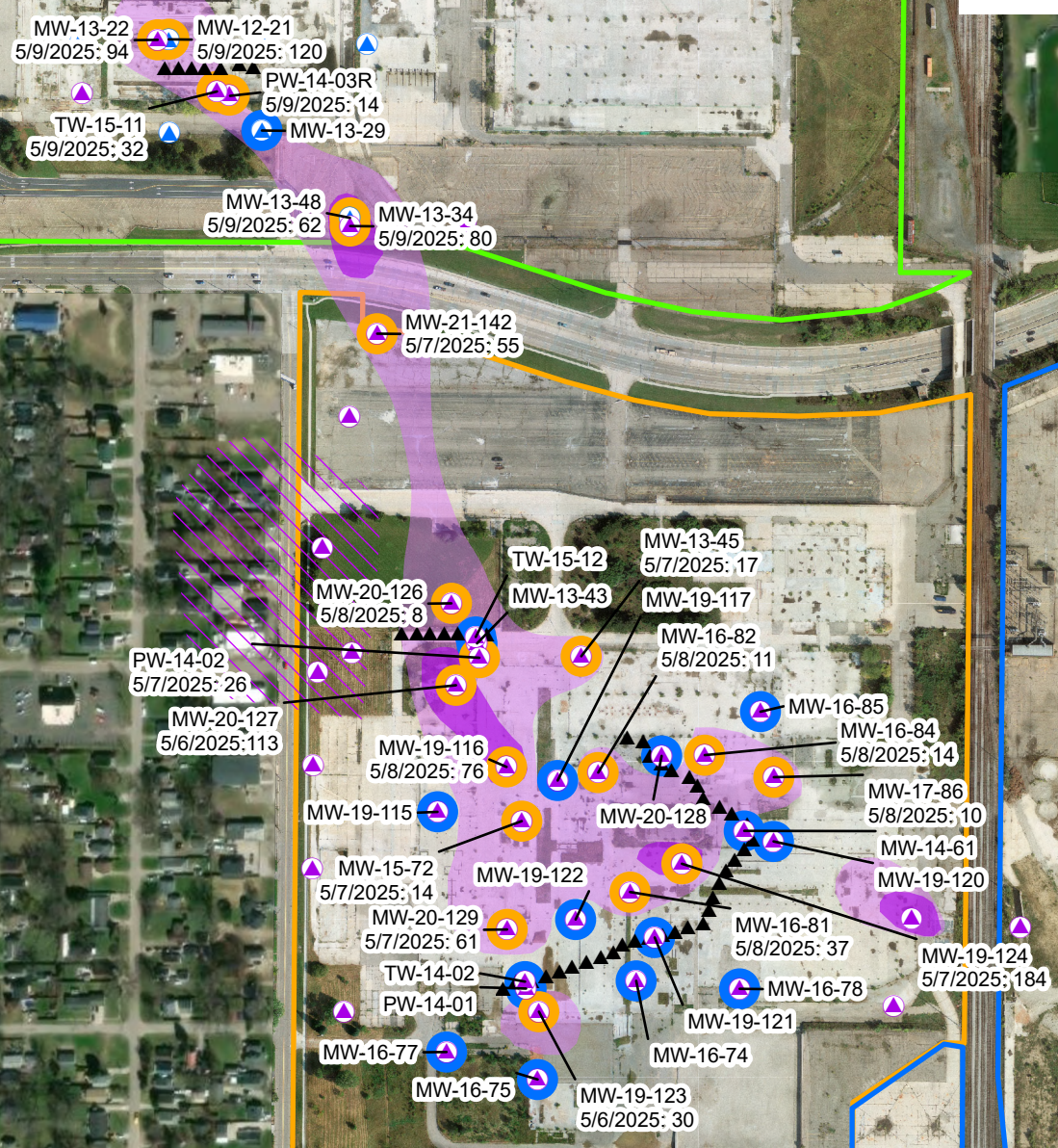
DW: EGLE Part 201 RESIDENTIAL DRINKING WATER CRITERIA.

EGLE: MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

EPA: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

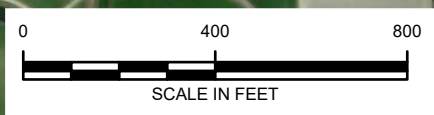
ug/L: MICROGRAMS PER LITER.

-AERIAL IMAGERY FROM ESRI ARCGIS ONLINE DATED JULY 2023.



**LEGEND**

- DEEP OVERBURDEN MONITORING WELL
- WEATHERED BEDROCK MONITORING WELL
- BIOSPARGE
- WELLS SAMPLED AND 1,4-DIOXANE EXCEEDS DW CRITERIA (7.2 ug/L)
- WELLS SAMPLED AND 1,4-DIOXANE DOES NOT EXCEED DW CRITERIA
- LOWER 1,4-DIOXANE PLUME > 72 ug/L
- LOWER 1,4-DIOXANE IMPACTS > DW CRITERIA
- POTENTIAL OFF-SITE LOWER 1,4-DIOXANE PLUME > DW CRITERIA
- PLANT 2
- PLANT 3
- PLANT 6 (Dashed Where Sold)
- Plant 6 - Sold



RACER TRUST  
PLANTS 2, 3 & 6  
LANSING, MICHIGAN

**SUMMARY OF 1,4-DIOXANE ANALYTICAL RESULTS IN DEEP OVERBURDEN AND WEATHERED BEDROCK WELLS - MAY 2025**

**ARCADIS**

FIGURE  
**3**

CITY: Novi DIV: ENV PIC: J. BARRETT PM: T. LINDER TM: K. HUNT TR: PROJECT NUMBER: 30267725 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl T:\GIS\Processing\ENV\RACER\Lansing\_BuffaloData\MXD\2025 Semi-Annual GW Monitoring Report.aprx PLOTTED: 9/29/2025 9:15 AM BY: S.Garza

# **Attachment 1**

**Laboratory Analytical Reports**



# Analytical Laboratory Report

Report ID: S74201.01(01)+QC01  
Generated on 05/13/2025

Report to

Attention: Kaitlyn Hunt  
Arcadis  
28550 Cabot Drive  
Suite 500  
Novi, MI 48377

Phone: O:248-809-4013 C:947-777-5215 FAX:  
Email: Kaitlyn.Hunt@arcadis.com

Additional Contacts: Marina Samp, Tiffany Linder

Report produced by

Merit Laboratories, Inc.  
2680 East Lansing Drive  
East Lansing, MI 48823

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

Contacts for report questions:  
John Lavery (johnlavery@meritlabs.com)  
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S74201.01  
Project: 30267725.0470B / RACER Lansing GWS  
Collected Date(s): 05/06/2025  
Submitted Date/Time: 05/06/2025 15:45  
Sampled by: Billy Cobern  
P.O. #: US3460024033

Table of Contents

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- QC Report (Pages 7-16)

Maya Murshak  
Technical Director



# Analytical Laboratory Report

## General Report Notes

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

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

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

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

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

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

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



# Analytical Laboratory 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
o	Associated EIS outside of control limits
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
q	Qualifier ion ratio outside of control limits
x	Preserved from bulk sample

## Glossary of Abbreviations

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



# Analytical Laboratory Report

## Method Summary

Method	Version
E300.0	EPA Method 300.0 Revision 2.1 (1993)
N/A	Not Applicable
SM4500-N/NH3 G	Standard Method 4500 N(org)B 2021 / 4500 NH3 G 2021
SM4500-PE	Standard Method 4500 P E 2021 / 4500 P B(5) 2021
SW8260B - SIM	SW 846 Method 8260B Revision 2 December 1996 SIMs



# Analytical Laboratory Report

## Sample Summary (1 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S74201.01	MW-13-29_050625	Groundwater	05/06/25 10:55



# Analytical Laboratory Report

Lab Sample ID: S74201.01

Sample Tag: MW-13-29\_050625

Collected Date/Time: 05/06/2025 10:55

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40mL Glass	HCL	Yes	6.4	IR
1	250mL Plastic	H2SO4	Yes	6.4	IR
1	125mL Plastic	None	Yes	6.4	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	05/08/25 10:20	NDK	

**Inorganics**

**Method: E300.0, Run Date: 05/08/25 10:20, Analyst: SRH**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Nitrate-N	Not detected	0.50		mg/L	5	14797-55-8	

**Method: SM4500-N/NH3 G, Run Date: 05/09/25 13:40, Analyst: MJC**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Kjeldahl Nitrogen*	0.4	0.1		mg/L	4		

**Method: SM4500-PE, Run Date: 05/09/25 12:57, Analyst: MJC**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Phosphorus*	0.02	0.01	0.009	mg/L	1	7723-14-0	

**Organics - Volatiles**

**Method: SW8260B - SIM, Run Date: 05/07/25 16:19, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	2	1		ug/L	1	123-91-1	



# Quality Control Report

Report ID: S74201.01(01)+QC01

Generated on 05/13/2025

Report to

Attention: Kaitlyn Hunt

Arcadis

28550 Cabot Drive

Suite 500

Novi, MI 48377

Phone: O:248-809-4013 C:947-777-5215 FAX:

Report Produced by

Merit Laboratories

2680 East Lansing Drive

East Lansing, MI 48823

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

Report Summary

Lab Sample ID(s): S74201.01

Project: 30267725.0470B / RACER Lansing GWS

Submitted Date/Time: 05/06/2025 15:45

Sampled by: Billy Cobern

P.O. #: US3460024033

QC Report Sections

Cover Page (Page 7)

Analysis Summary (Page 8)

Prep Batch Summary (Page 9)

Surrogates per QC Sample (Page 10)

Internal Standards per Lab Sample (Page 11)

Internal Standards per QC Sample (Page 12)

Batch QC Results (Pages 13-16)

Report Flag Descriptions

\*: QC result is outside of indicated control limits

W: Surrogate result not applicable due to sample dilution

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

Barbara Ball

Quality Assurance Manager

## QC Report - Analysis Summary

**Lab Sample ID: S74201.01**

Sample Tag: MW-13-29\_050625

Collected Date/Time: 05/06/2025 10:55

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b><i>Inorganics</i></b>						
Nitrate-N	E300.0	05/08/25 10:20	NTRA250508-W1-B	NTRA250508-W1-B	No	BLK/LCS/MS/MSD/DU
Total Kjeldahl Nitrogen	SM4500-N/NH3 G	05/09/25 13:40	TKN250509B	TKN250509B	No	BLK/LCS/MS/DUP
Total Phosphorus	SM4500-PE	05/09/25 12:57	PHS250509QC	PHS250509QC	No	BLK/LCS/MS/DUP
<b><i>Organics - Volatiles</i></b>						
1,4-Dioxane	SW8260B - SIM	05/07/25 16:19	250507A9	VS250507W1	Yes	BLK/LCS/LCSD

## QC Report - Prep Batch Summary

### Inorganics, Prep Batch ID: NTRA250508-W1-B

Surrogates: No, QC Types: BLK/LCS/MS/MSD/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74201.01	Nitrate-N	E300.0	05/08/25 10:20	NTRA250508-W1-B

### Inorganics, Prep Batch ID: PHS250509QC

Surrogates: No, QC Types: BLK/LCS/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74201.01	Total Phosphorus	SM4500-PE	05/09/25 12:57	PHS250509QC

### Inorganics, Prep Batch ID: TKN250509B

Surrogates: No, QC Types: BLK/LCS/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74201.01	Total Kjeldahl Nitrogen	SM4500-N/NH3 G	05/09/25 13:40	TKN250509B

### Organics - Volatiles, Prep Batch ID: VS250507W1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74201.01	1,4-Dioxane	SW8260B - SIM	05/07/25 16:19	250507A9

# QC Report - Surrogates per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250507W1

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250507A9.BLKW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 14:12, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
No Surrogates				

### Laboratory Control Sample (LCS)

Lab Sample ID: 250507A9.LCSW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 12:32, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
No Surrogates				

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250507A9.LCSDW07A, Parent Sample ID: 250507A9.LCSW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 12:57, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
No Surrogates				

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74201.01

Sample Tag: MW-13-29\_050625

Collected Date/Time: 05/06/2025 10:55

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250507A9, Run Date: 05/07/2025 16:19, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		85.8	50.0	200.0

# QC Report - Internal Standards per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250507W1

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250507A9.BLKW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 14:12, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		93.4	50.0	200.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250507A9.LCSW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 12:32, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		94.0	50.0	200.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250507A9.LCSDW07A, Parent Sample ID: 250507A9.LCSW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 12:57, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		103.7	50.0	200.0

# QC Report - Batch QC Results

## Inorganics, Prep Batch ID: NTRA250508-W1-B

Surrogates: No, QC Types: BLK/LCS/MS/MSD/DUP

### Blank (BLK)

Lab Sample ID: NTRA250508-W1-B.LRB1

Run in Batch: NTRA250508-W1-B, Run Date: 05/08/2025 13:32, Prep Date: 05/08/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Nitrate-N		ND	0.10	mg/L

### Laboratory Control Sample (LCS)

Lab Sample ID: NTRA250508-W1-B.LCS1

Run in Batch: NTRA250508-W1-B, Run Date: 05/08/2025 10:10, Prep Date: 05/08/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Nitrate-N		93.0	90	110

### Matrix Spike (MS)

Lab Sample ID: NTRA250508-W1-B.MS1, Parent Sample ID: S74219.02

Run in Batch: NTRA250508-W1-B, Run Date: 05/08/2025 14:22, Prep Date: 05/08/2025, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL
Nitrate-N		108.2	80	120

### Matrix Spike Duplicate (MSD)

Lab Sample ID: NTRA250508-W1-B.MSD1, Parent Sample ID: NTRA250508-W1-B.MS1

Run in Batch: NTRA250508-W1-B, Run Date: 05/08/2025 14:32, Prep Date: 05/08/2025, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Nitrate-N		106.6	80	120	1	15

### Duplicate (DUP)

Lab Sample ID: NTRA250508-W1-B.DP1, Parent Sample ID: S74219.02

Run in Batch: NTRA250508-W1-B, Run Date: 05/08/2025 14:12, Prep Date: 05/08/2025, Matrix: Liquid, Dilution: 5

Analyte	Flags	RPD	RPD CL
Nitrate-N		1.0	15

# QC Report - Batch QC Results

## Inorganics, Prep Batch ID: PHS250509QC

Surrogates: No, QC Types: BLK/LCS/MS/DUP

### Blank (BLK)

Lab Sample ID: PHS250509QC.LRB1

Run in Batch: PHS250509QC, Run Date: 05/09/2025 12:15, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Total Phosphorus		ND	0.01	mg/L

### Blank (BLK)

Lab Sample ID: PHS250509QC.LRB2

Run in Batch: PHS250509QC, Run Date: 05/09/2025 12:21, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Total Phosphorus		ND	0.01	mg/L

### Laboratory Control Sample (LCS)

Lab Sample ID: PHS250509QC.LCS1

Run in Batch: PHS250509QC, Run Date: 05/09/2025 12:28, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Phosphorus		100	90	110

### Matrix Spike (MS)

Lab Sample ID: PHS250509QC.MS1, Parent Sample ID: S74085.01

Run in Batch: PHS250509QC, Run Date: 05/09/2025 17:45, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Phosphorus		86	80	120

### Duplicate (DUP)

Lab Sample ID: PHS250509QC.DP1, Parent Sample ID: S74103.01

Run in Batch: PHS250509QC, Run Date: 05/09/2025 17:42, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Total Phosphorus		9.3	20

# QC Report - Batch QC Results

## Inorganics, Prep Batch ID: TKN250509B

Surrogates: No, QC Types: BLK/LCS/MS/DUP

### Blank (BLK)

Lab Sample ID: TKN250509B.LRB1

Run in Batch: TKN250509B, Run Date: 05/09/2025 13:10, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Total Kjeldahl Nitrogen		ND	0.02	mg/L

### Blank (BLK)

Lab Sample ID: TKN250509B.LRB2

Run in Batch: TKN250509B, Run Date: 05/09/2025 13:18, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Total Kjeldahl Nitrogen		ND	0.1	mg/L

### Laboratory Control Sample (LCS)

Lab Sample ID: TKN250509B.LCS1

Run in Batch: TKN250509B, Run Date: 05/09/2025 13:22, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Kjeldahl Nitrogen		90.2	90	110

### Matrix Spike (MS)

Lab Sample ID: TKN250509B.MS1, Parent Sample ID: S74202.01

Run in Batch: TKN250509B, Run Date: 05/09/2025 13:58, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 4

Analyte	Flags	% Rec	LCL	UCL
Total Kjeldahl Nitrogen		99.3	80	120

### Duplicate (DUP)

Lab Sample ID: TKN250509B.DP1, Parent Sample ID: S74181.01

Run in Batch: TKN250509B, Run Date: 05/09/2025 13:26, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 50

Analyte	Flags	RPD	RPD CL
Total Kjeldahl Nitrogen		1.2	20

# QC Report - Batch QC Results

## Organics - Volatiles, Prep Batch ID: VS250507W1

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

### Blank (BLK)

Lab Sample ID: 250507A9.BLKW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 14:12, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
1,4-Dioxane		ND	1.00	ug/l

### Laboratory Control Sample (LCS)

Lab Sample ID: 250507A9.LCSW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 12:32, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
1,4-Dioxane		97.8	70.0	130.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250507A9.LCSDW07A, Parent Sample ID: 250507A9.LCSW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 12:57, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,4-Dioxane		88.2	70.0	130.0	10.4	30.0

# Merit Laboratories Login Checklist

Lab Set ID:S74201

Attention: Kaitlyn Hunt  
 Address: Arcadis  
 28550 Cabot Drive  
 Suite 500  
 Novi, MI 48377

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

Project: 30267725.0470B / RACER Lansing GWS

Submitted:05/06/2025 15:45 Login User: MMC

Phone: O:248-809-4013 FAX:  
 Email: Kaitlyn.Hunt@arcadis.com

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

**Sample Receiving**

- |     |  |  |        |
|-----|--|--|--------|
| 01. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples are received at 4C +/- 2C Thermometer #        | IR 6.4 |
| 02. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Received on ice/ cooling process begun                 |        |
| 03. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples shipped  |        |
| 04. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples left in 24 hr. drop box                        |        |
| 05. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Are there custody seals/tape or is the drop box locked |        |

**Chain of Custody**

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

**Preservation**

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

**Bottle Conditions**

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

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

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

# Merit Laboratories Bottle Preservation Check

Lab Set ID: S74201      Submitted: 05/06/2025 15:45

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

Project: 30267725.0470B / RACER Lansing GWS

Initial Preservation Check: 05/06/2025 16:42 MMC

Preservation Recheck (E200.8): N/A

Attention: Kaitlyn Hunt

Address: Arcadis

28550 Cabot Drive

Suite 500

Novi, MI 48377

Phone: O:248-809-4013      FAX:

Email: Kaitlyn.Hunt@arcadis.com

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S74201.01	250mL Plastic H2SO4	<2			

Plant 3



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

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME Tiffany Linder, Kaitlyn Hunt  
 COMPANY Arcadis  
 ADDRESS 28550 Cabot Drive, STE 500  
 CITY Novi STATE MI ZIP CODE 48377  
 PHONE NO. 947-777-5215 FAX NO. \_\_\_\_\_ P.O. NO. US3460024033  
 E-MAIL ADDRESS kaitlyn.hunt@arcadis.com QUOTE NO. \_\_\_\_\_

CONTACT NAME \_\_\_\_\_  SAME  
 COMPANY \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_  
 PHONE NO. \_\_\_\_\_ E-MAIL ADDRESS tiffany.linder@arcadis.com

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME 30267725.0470B / RACER Lansing GWS SAMPLER(S) - PLEASE PRINT/SIGN NAME Billy J. Cohen  
 TURNAROUND TIME REQUIRED  1 DAY  2 DAYS  3 DAYS  STANDARD  OTHER \_\_\_\_\_  
 DELIVERABLES REQUIRED  STD  LEVEL II  LEVEL III  LEVEL IV  EDD  OTHER \_\_\_\_\_

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

# Containers & Preservatives

1,4-Dioxane - 8260 SIMS																				
T. Phosphorus																				
TKN																				
Nitrate																				

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

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives															
	DATE	TIME				NONE	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	MeOH	OTHER	1,4-Dioxane - 8260 SIMS	T. Phosphorus	TKN	Nitrate					
74201.01	5/6/25	1055	MW-13-29-050625	GW	3		3	1													

RELINQUISHED BY: Arcadis Sampler DATE 5/6/25 TIME 1545  
 RECEIVED BY: Merit Drop Box DATE 5/6/25 TIME 1345  
 \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_

RELINQUISHED BY: Merit Drop Box DATE 5/6/25 TIME 1545  
 RECEIVED BY: M. Calcutt DATE 5/6/25 TIME 1515  
 SEAL NO. SEAL INTACT YES  NO  INITIALS \_\_\_\_\_ NOTES: TEMP. ON ARRIVAL \_\_\_\_\_  
 SEAL NO. SEAL INTACT YES  NO  INITIALS \_\_\_\_\_



# Analytical Laboratory Report

Report ID: S74202.01(01)+QC01  
Generated on 05/13/2025

Report to

Attention: Kaitlyn Hunt  
Arcadis  
28550 Cabot Drive  
Suite 500  
Novi, MI 48377

Phone: O:248-809-4013 C:947-777-5215 FAX:  
Email: Kaitlyn.Hunt@arcadis.com

Additional Contacts: Marina Samp, Tiffany Linder

Report produced by

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East Lansing, MI 48823

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

Contacts for report questions:  
John Lavery (johnlavery@meritlabs.com)  
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S74202.01-S74202.06  
Project: 30267725.0470B / RACER Lansing GWS  
Collected Date(s): 05/06/2025  
Submitted Date/Time: 05/06/2025 15:45  
Sampled by: Unknown  
P.O. #: US3460024033

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Maya Murshak  
Technical Director



# Analytical Laboratory Report

## General Report Notes

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

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

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

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

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

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

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

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There is no additional narrative for this analytical report



# Analytical Laboratory 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
o	Associated EIS outside of control limits
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
q	Qualifier ion ratio outside of control limits
x	Preserved from bulk sample

## Glossary of Abbreviations

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



# Analytical Laboratory Report

## Method Summary

Method	Version
E300.0	EPA Method 300.0 Revision 2.1 (1993)
N/A	Not Applicable
SM4500-N/NH3 G	Standard Method 4500 N(org)B 2021 / 4500 NH3 G 2021
SM4500-PE	Standard Method 4500 P E 2021 / 4500 P B(5) 2021
SW8260B - SIM	SW 846 Method 8260B Revision 2 December 1996 SIMs



# Analytical Laboratory Report

## Sample Summary (6 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S74202.01	MW-20-127_050625	Groundwater	05/06/25 12:35
S74202.02	TW-15-12_050625	Groundwater	05/06/25 13:50
S74202.03	TW-14-02_050625	Groundwater	05/06/25 15:10
S74202.04	DUP-04_050625	Groundwater	05/06/25 00:01
S74202.05	MW-19-123_050625	Groundwater	05/06/25 11:20
S74202.06	MW-19-121_050625	Groundwater	05/06/25 13:40



# Analytical Laboratory Report

Lab Sample ID: S74202.01

Sample Tag: MW-20-127\_050625

Collected Date/Time: 05/06/2025 12:35

Matrix: Groundwater

COC Reference:

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40mL Glass	HCL	Yes	6.4	IR
1	250mL Plastic	H2SO4	Yes	6.4	IR
1	125mL Plastic	None	Yes	6.4	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	05/08/25 10:20	NDK	

### Inorganics

Method: E300.0, Run Date: 05/08/25 11:07, Analyst: SRH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Nitrate-N	Not detected	0.50		mg/L	5	14797-55-8	

Method: SM4500-N/NH3 G, Run Date: 05/09/25 13:56, Analyst: MJC

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Kjeldahl Nitrogen*	0.7	0.1		mg/L	4		

Method: SM4500-PE, Run Date: 05/09/25 13:01, Analyst: MJC

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Phosphorus*	0.04	0.01	0.009	mg/L	1	7723-14-0	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/07/25 19:41, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	113	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74202.02

Sample Tag: TW-15-12\_050625

Collected Date/Time: 05/06/2025 13:50

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40mL Glass	HCL	Yes	6.4	IR
1	250mL Plastic	H2SO4	Yes	6.4	IR
1	125mL Plastic	None	Yes	6.4	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	05/08/25 10:20	NDK	

**Inorganics**

**Method: E300.0, Run Date: 05/08/25 10:57, Analyst: SRH**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Nitrate-N	Not detected	0.50		mg/L	5	14797-55-8	

**Method: SM4500-N/NH3 G, Run Date: 05/09/25 14:00, Analyst: MJC**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Kjeldahl Nitrogen*	Not detected	0.1		mg/L	4		

**Method: SM4500-PE, Run Date: 05/09/25 13:05, Analyst: MJC**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Phosphorus*	0.12	0.01	0.009	mg/L	1	7723-14-0	

**Organics - Volatiles**

**Method: SW8260B - SIM, Run Date: 05/07/25 16:44, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74202.03

Sample Tag: TW-14-02\_050625

Collected Date/Time: 05/06/2025 15:10

Matrix: Groundwater

COC Reference:

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40mL Glass	HCL	Yes	6.4	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	05/08/25 10:20	NDK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/07/25 17:09, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	2	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74202.04

Sample Tag: DUP-04\_050625

Collected Date/Time: 05/06/2025 00:01

Matrix: Groundwater

COC Reference:

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40mL Glass	HCL	Yes	6.4	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	05/08/25 10:20	NDK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/07/25 17:34, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74202.05

Sample Tag: MW-19-123\_050625

Collected Date/Time: 05/06/2025 11:20

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40mL Glass	HCL	Yes	6.4	IR
1	250mL Plastic	H2SO4	Yes	6.4	IR
1	125mL Plastic	None	Yes	6.4	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	05/08/25 10:20	NDK	

**Inorganics**

**Method: E300.0, Run Date: 05/08/25 10:44, Analyst: SRH**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Nitrate-N	Not detected	0.50		mg/L	5	14797-55-8	

**Method: SM4500-N/NH3 G, Run Date: 05/09/25 14:02, Analyst: MJC**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Kjeldahl Nitrogen*	Not detected	0.1		mg/L	4		

**Method: SM4500-PE, Run Date: 05/09/25 13:09, Analyst: MJC**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Phosphorus*	Not detected	0.01	0.009	mg/L	1	7723-14-0	

**Organics - Volatiles**

**Method: SW8260B - SIM, Run Date: 05/07/25 18:00, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	30	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74202.06

Sample Tag: MW-19-121\_050625

Collected Date/Time: 05/06/2025 13:40

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40mL Glass	HCL	Yes	6.4	IR
1	250mL Plastic	H2SO4	Yes	6.4	IR
1	125mL Plastic	None	Yes	6.4	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	05/08/25 10:20	NDK	

**Inorganics**

**Method: E300.0, Run Date: 05/08/25 11:17, Analyst: SRH**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Nitrate-N	6.49	0.50		mg/L	5	14797-55-8	

**Method: SM4500-N/NH3 G, Run Date: 05/09/25 14:04, Analyst: MJC**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Kjeldahl Nitrogen*	2.2	0.1		mg/L	4		

**Method: SM4500-PE, Run Date: 05/09/25 13:17, Analyst: MJC**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Phosphorus*	4.4	0.3	0.2	mg/L	25	7723-14-0	

**Organics - Volatiles**

**Method: SW8260B - SIM, Run Date: 05/07/25 18:25, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	5	1		ug/L	1	123-91-1	



# Quality Control Report

Report ID: S74202.01(01)+QC01  
Generated on 05/13/2025

Report to  
Attention: Kaitlyn Hunt  
Arcadis  
28550 Cabot Drive  
Suite 500  
Novi, MI 48377

Report Produced by  
Merit Laboratories  
2680 East Lansing Drive  
East Lansing, MI 48823  
  
Phone: (517) 332-0167 FAX: (517) 332-6333

Phone: O:248-809-4013 C:947-777-5215 FAX:

## Report Summary

Lab Sample ID(s): S74202.01-S74202.06  
Project: 30267725.0470B / RACER Lansing GWS  
Submitted Date/Time: 05/06/2025 15:45  
Sampled by: Unknown  
P.O. #: US3460024033

## QC Report Sections

Cover Page (Page 12)  
Analysis Summary (Pages 13-18)  
Prep Batch Summary (Page 19)  
Surrogates per QC Sample (Page 20)  
Internal Standards per Lab Sample (Pages 21-26)  
Internal Standards per QC Sample (Page 27)  
Batch QC Results (Pages 28-31)

## Report Flag Descriptions

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

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

Barbara Ball  
Quality Assurance Manager

## QC Report - Analysis Summary

**Lab Sample ID: S74202.01**

Sample Tag: MW-20-127\_050625

Collected Date/Time: 05/06/2025 12:35

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b><i>Inorganics</i></b>						
Nitrate-N	E300.0	05/08/25 11:07	NTRA250508-W1-B	NTRA250508-W1-B	No	BLK/LCS/MS/MSD/DU
Total Kjeldahl Nitrogen	SM4500-N/NH3 G	05/09/25 13:56	TKN250509B	TKN250509B	No	BLK/LCS/MS/DUP
Total Phosphorus	SM4500-PE	05/09/25 13:01	PHS250509QC	PHS250509QC	No	BLK/LCS/MS/DUP
<b><i>Organics - Volatiles</i></b>						
1,4-Dioxane	SW8260B - SIM	05/07/25 19:41	250507A9	VS250507W1	Yes	BLK/LCS/LCSD

## QC Report - Analysis Summary

**Lab Sample ID: S74202.02**

Sample Tag: TW-15-12\_050625

Collected Date/Time: 05/06/2025 13:50

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b><i>Inorganics</i></b>						
Nitrate-N	E300.0	05/08/25 10:57	NTRA250508-W1-B	NTRA250508-W1-B	No	BLK/LCS/MS/MSD/DU
Total Kjeldahl Nitrogen	SM4500-N/NH3 G	05/09/25 14:00	TKN250509B	TKN250509B	No	BLK/LCS/MS/DUP
Total Phosphorus	SM4500-PE	05/09/25 13:05	PHS250509QC	PHS250509QC	No	BLK/LCS/MS/DUP
<b><i>Organics - Volatiles</i></b>						
1,4-Dioxane	SW8260B - SIM	05/07/25 16:44	250507A9	VS250507W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74202.03

Sample Tag: TW-14-02\_050625

Collected Date/Time: 05/06/2025 15:10

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/07/25 17:09	250507A9	VS250507W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74202.04

Sample Tag: DUP-04\_050625

Collected Date/Time: 05/06/2025 00:01

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/07/25 17:34	250507A9	VS250507W1	Yes	BLK/LCS/LCSD

## QC Report - Analysis Summary

**Lab Sample ID: S74202.05**

Sample Tag: MW-19-123\_050625

Collected Date/Time: 05/06/2025 11:20

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b><i>Inorganics</i></b>						
Nitrate-N	E300.0	05/08/25 10:44	NTRA250508-W1-B	NTRA250508-W1-B	No	BLK/LCS/MS/MSD/DU
Total Kjeldahl Nitrogen	SM4500-N/NH3 G	05/09/25 14:02	TKN250509B	TKN250509B	No	BLK/LCS/MS/DUP
Total Phosphorus	SM4500-PE	05/09/25 13:09	PHS250509QC	PHS250509QC	No	BLK/LCS/MS/DUP
<b><i>Organics - Volatiles</i></b>						
1,4-Dioxane	SW8260B - SIM	05/07/25 18:00	250507A9	VS250507W1	Yes	BLK/LCS/LCSD

## QC Report - Analysis Summary

**Lab Sample ID: S74202.06**

Sample Tag: MW-19-121\_050625

Collected Date/Time: 05/06/2025 13:40

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b><i>Inorganics</i></b>						
Nitrate-N	E300.0	05/08/25 11:17	NTRA250508-W1-B	NTRA250508-W1-B	No	BLK/LCS/MS/MSD/DU
Total Kjeldahl Nitrogen	SM4500-N/NH3 G	05/09/25 14:04	TKN250509B	TKN250509B	No	BLK/LCS/MS/DUP
Total Phosphorus	SM4500-PE	05/09/25 13:17	PHS250509QC	PHS250509QC	No	BLK/LCS/MS/DUP
<b><i>Organics - Volatiles</i></b>						
1,4-Dioxane	SW8260B - SIM	05/07/25 18:25	250507A9	VS250507W1	Yes	BLK/LCS/LCSD

## QC Report - Prep Batch Summary

### Inorganics, Prep Batch ID: NTRA250508-W1-B

Surrogates: No, QC Types: BLK/LCS/MS/MSD/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74202.01	Nitrate-N	E300.0	05/08/25 11:07	NTRA250508-W1-B
S74202.02	Nitrate-N	E300.0	05/08/25 10:57	NTRA250508-W1-B
S74202.05	Nitrate-N	E300.0	05/08/25 10:44	NTRA250508-W1-B
S74202.06	Nitrate-N	E300.0	05/08/25 11:17	NTRA250508-W1-B

### Inorganics, Prep Batch ID: PHS250509QC

Surrogates: No, QC Types: BLK/LCS/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74202.01	Total Phosphorus	SM4500-PE	05/09/25 13:01	PHS250509QC
S74202.02	Total Phosphorus	SM4500-PE	05/09/25 13:05	PHS250509QC
S74202.05	Total Phosphorus	SM4500-PE	05/09/25 13:09	PHS250509QC
S74202.06	Total Phosphorus	SM4500-PE	05/09/25 13:17	PHS250509QC

### Inorganics, Prep Batch ID: TKN250509B

Surrogates: No, QC Types: BLK/LCS/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74202.01	Total Kjeldahl Nitrogen	SM4500-N/NH3 G	05/09/25 13:56	TKN250509B
S74202.02	Total Kjeldahl Nitrogen	SM4500-N/NH3 G	05/09/25 14:00	TKN250509B
S74202.05	Total Kjeldahl Nitrogen	SM4500-N/NH3 G	05/09/25 14:02	TKN250509B
S74202.06	Total Kjeldahl Nitrogen	SM4500-N/NH3 G	05/09/25 14:04	TKN250509B

### Organics - Volatiles, Prep Batch ID: VS250507W1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74202.01	1,4-Dioxane	SW8260B - SIM	05/07/25 19:41	250507A9
S74202.02	1,4-Dioxane	SW8260B - SIM	05/07/25 16:44	250507A9
S74202.03	1,4-Dioxane	SW8260B - SIM	05/07/25 17:09	250507A9
S74202.04	1,4-Dioxane	SW8260B - SIM	05/07/25 17:34	250507A9
S74202.05	1,4-Dioxane	SW8260B - SIM	05/07/25 18:00	250507A9
S74202.06	1,4-Dioxane	SW8260B - SIM	05/07/25 18:25	250507A9

# QC Report - Surrogates per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250507W1

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250507A9.BLKW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 14:12, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
-----------	-------	------	-----	-----

No Surrogates

### Laboratory Control Sample (LCS)

Lab Sample ID: 250507A9.LCSW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 12:32, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
-----------	-------	------	-----	-----

No Surrogates

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250507A9.LCSDW07A, Parent Sample ID: 250507A9.LCSW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 12:57, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
-----------	-------	------	-----	-----

No Surrogates

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74202.01

Sample Tag: MW-20-127\_050625

Collected Date/Time: 05/06/2025 12:35

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250507A9, Run Date: 05/07/2025 19:41, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		91.6	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74202.02

Sample Tag: TW-15-12\_050625

Collected Date/Time: 05/06/2025 13:50

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250507A9, Run Date: 05/07/2025 16:44, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		93.0	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74202.03

Sample Tag: TW-14-02\_050625

Collected Date/Time: 05/06/2025 15:10

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250507A9, Run Date: 05/07/2025 17:09, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		93.8	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74202.04

Sample Tag: DUP-04\_050625

Collected Date/Time: 05/06/2025 00:01

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250507A9, Run Date: 05/07/2025 17:34, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		95.2	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74202.05

Sample Tag: MW-19-123\_050625

Collected Date/Time: 05/06/2025 11:20

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250507A9, Run Date: 05/07/2025 18:00, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		78.6	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74202.06

Sample Tag: MW-19-121\_050625

Collected Date/Time: 05/06/2025 13:40

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250507A9, Run Date: 05/07/2025 18:25, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		88.2	50.0	200.0

# QC Report - Internal Standards per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250507W1

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250507A9.BLKW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 14:12, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		93.4	50.0	200.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250507A9.LCSW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 12:32, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		94.0	50.0	200.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250507A9.LCSDW07A, Parent Sample ID: 250507A9.LCSW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 12:57, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		103.7	50.0	200.0

# QC Report - Batch QC Results

## Inorganics, Prep Batch ID: NTRA250508-W1-B

Surrogates: No, QC Types: BLK/LCS/MS/MSD/DUP

### Blank (BLK)

Lab Sample ID: NTRA250508-W1-B.LRB1

Run in Batch: NTRA250508-W1-B, Run Date: 05/08/2025 13:32, Prep Date: 05/08/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Nitrate-N		ND	0.10	mg/L

### Laboratory Control Sample (LCS)

Lab Sample ID: NTRA250508-W1-B.LCS1

Run in Batch: NTRA250508-W1-B, Run Date: 05/08/2025 10:10, Prep Date: 05/08/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Nitrate-N		93.0	90	110

### Matrix Spike (MS)

Lab Sample ID: NTRA250508-W1-B.MS1, Parent Sample ID: S74219.02

Run in Batch: NTRA250508-W1-B, Run Date: 05/08/2025 14:22, Prep Date: 05/08/2025, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL
Nitrate-N		108.2	80	120

### Matrix Spike Duplicate (MSD)

Lab Sample ID: NTRA250508-W1-B.MSD1, Parent Sample ID: NTRA250508-W1-B.MS1

Run in Batch: NTRA250508-W1-B, Run Date: 05/08/2025 14:32, Prep Date: 05/08/2025, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Nitrate-N		106.6	80	120	1	15

### Duplicate (DUP)

Lab Sample ID: NTRA250508-W1-B.DP1, Parent Sample ID: S74219.02

Run in Batch: NTRA250508-W1-B, Run Date: 05/08/2025 14:12, Prep Date: 05/08/2025, Matrix: Liquid, Dilution: 5

Analyte	Flags	RPD	RPD CL
Nitrate-N		1.0	15

# QC Report - Batch QC Results

## Inorganics, Prep Batch ID: PHS250509QC

Surrogates: No, QC Types: BLK/LCS/MS/DUP

### Blank (BLK)

Lab Sample ID: PHS250509QC.LRB1

Run in Batch: PHS250509QC, Run Date: 05/09/2025 12:15, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Total Phosphorus		ND	0.01	mg/L

### Blank (BLK)

Lab Sample ID: PHS250509QC.LRB2

Run in Batch: PHS250509QC, Run Date: 05/09/2025 12:21, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Total Phosphorus		ND	0.01	mg/L

### Laboratory Control Sample (LCS)

Lab Sample ID: PHS250509QC.LCS1

Run in Batch: PHS250509QC, Run Date: 05/09/2025 12:28, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Phosphorus		100	90	110

### Matrix Spike (MS)

Lab Sample ID: PHS250509QC.MS1, Parent Sample ID: S74085.01

Run in Batch: PHS250509QC, Run Date: 05/09/2025 17:45, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Phosphorus		86	80	120

### Duplicate (DUP)

Lab Sample ID: PHS250509QC.DP1, Parent Sample ID: S74103.01

Run in Batch: PHS250509QC, Run Date: 05/09/2025 17:42, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Total Phosphorus		9.3	20

# QC Report - Batch QC Results

## Inorganics, Prep Batch ID: TKN250509B

Surrogates: No, QC Types: BLK/LCS/MS/DUP

### Blank (BLK)

Lab Sample ID: TKN250509B.LRB1

Run in Batch: TKN250509B, Run Date: 05/09/2025 13:10, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Total Kjeldahl Nitrogen		ND	0.02	mg/L

### Blank (BLK)

Lab Sample ID: TKN250509B.LRB2

Run in Batch: TKN250509B, Run Date: 05/09/2025 13:18, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Total Kjeldahl Nitrogen		ND	0.1	mg/L

### Laboratory Control Sample (LCS)

Lab Sample ID: TKN250509B.LCS1

Run in Batch: TKN250509B, Run Date: 05/09/2025 13:22, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Kjeldahl Nitrogen		90.2	90	110

### Matrix Spike (MS)

Lab Sample ID: TKN250509B.MS1, Parent Sample ID: S74202.01

Run in Batch: TKN250509B, Run Date: 05/09/2025 13:58, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 4

Analyte	Flags	% Rec	LCL	UCL
Total Kjeldahl Nitrogen		99.3	80	120

### Duplicate (DUP)

Lab Sample ID: TKN250509B.DP1, Parent Sample ID: S74181.01

Run in Batch: TKN250509B, Run Date: 05/09/2025 13:26, Prep Date: 05/09/2025, Matrix: Liquid, Dilution: 50

Analyte	Flags	RPD	RPD CL
Total Kjeldahl Nitrogen		1.2	20

# QC Report - Batch QC Results

## Organics - Volatiles, Prep Batch ID: VS250507W1

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

### Blank (BLK)

Lab Sample ID: 250507A9.BLKW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 14:12, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
1,4-Dioxane		ND	1.00	ug/l

### Laboratory Control Sample (LCS)

Lab Sample ID: 250507A9.LCSW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 12:32, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
1,4-Dioxane		97.8	70.0	130.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250507A9.LCSDW07A, Parent Sample ID: 250507A9.LCSW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 12:57, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,4-Dioxane		88.2	70.0	130.0	10.4	30.0

# Merit Laboratories Login Checklist

Lab Set ID:S74202

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

Project: 30267725.0470B / RACER Lansing GWS

Submitted:05/06/2025 15:45 Login User: MMC

Attention: Kaitlyn Hunt

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

Phone: O:248-809-4013 FAX:

Email: Kaitlyn.Hunt@arcadis.com

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

## Sample Receiving

- |     |  |  |
|-----|--|--|
| 01. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples are received at 4C +/- 2C Thermometer # IR 6.4 |
| 02. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Received on ice/ cooling process begun                 |
| 03. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples shipped  |
| 04. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples left in 24 hr. drop box                        |
| 05. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Are there custody seals/tape or is the drop box locked |

## Chain of Custody

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

## Preservation

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

## Bottle Conditions

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

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

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

# Merit Laboratories Bottle Preservation Check

Lab Set ID: S74202      Submitted: 05/06/2025 15:45

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

Project: 30267725.0470B / RACER Lansing GWS

Initial Preservation Check: 05/06/2025 16:45 MMC

Preservation Recheck (E200.8): N/A

Attention: Kaitlyn Hunt

Address: Arcadis

28550 Cabot Drive

Suite 500

Novi, MI 48377

Phone: O:248-809-4013      FAX:

Email: Kaitlyn.Hunt@arcadis.com

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S74202.01	250mL Plastic H2SO4	<2			
S74202.02	250mL Plastic H2SO4	<2			
S74202.05	250mL Plastic H2SO4	<2			
S74202.06	250mL Plastic H2SO4	<2			

Plant 2



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

**REPORT TO** **CHAIN OF CUSTODY RECORD** **INVOICE TO**

CONTACT NAME Tiffany Linder, Kaitlyn Hunt  
 COMPANY Arcadis  
 ADDRESS 28550 Cabot Drive, STE 500  
 CITY Novi STATE MI ZIP CODE 48377  
 PHONE NO. 947-777-5215 FAX NO. \_\_\_\_\_ P.O. NO. 053460024033  
 E-MAIL ADDRESS kaitlyn.hunt@arcadis.com QUOTE NO. \_\_\_\_\_

CONTACT NAME  SAME  
 COMPANY \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_  
 PHONE NO. \_\_\_\_\_ E-MAIL ADDRESS tiffany.linder@arcadis.com

PROJECT NO./NAME 30267725.0470B / RACER Lansing GWS 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: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID  
 SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIFE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

# Containers & Preservatives	1,4-Dioxane - 8260 SIMS	T. Phosphorus	TKN	Nitrate	Certifications
					<input type="checkbox"/> OHIO_VAP <input type="checkbox"/> Drinking Water
					<input type="checkbox"/> DoD <input type="checkbox"/> NPDES
					Project Locations
					<input type="checkbox"/> Detroit <input type="checkbox"/> New York
					<input type="checkbox"/> Other _____
					Special Instructions

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	MeOH	OTHER	1,4-Dioxane - 8260 SIMS	T. Phosphorus	TKN	Nitrate
	DATE	TIME														
74202.01	5/6/25	1235	MW-20-127-050625	GW	3	1	3	1					X	X	X	X
.02	5/6/25	1350	TW-15-12-050625	GW	5	1	3	1					X	X	X	X
.03	5/6/25	1510	TW-14-02-050625	GW	3	3							X			
.04	5/6/25	—	Dup-04-050625	GW	3	3							X			
.05	5/6/25	1120	MW-19-123-050625	GW	5	1	3	1					X	X	X	X
.06	5/6/25	1340	MW-19-121-050625	GW	5	1	3	1					X	X	X	X

RELINQUISHED BY: Am Linder/Arcadis  Sampler DATE 5/6/25 TIME 1545  
 RECEIVED BY: Merit Drop Box DATE 5/6/25 TIME 1545  
 \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_  
 \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_

RELINQUISHED BY: Merit Drop Box DATE 5/6/25 TIME 1545  
 RECEIVED BY: M. Clabots DATE 5/6/25 TIME 1545  
 \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_

SEAL NO. SEAL INTACT YES  NO  INITIALS \_\_\_\_\_  
 SEAL NO. SEAL INTACT YES  NO  INITIALS \_\_\_\_\_

NOTES: TEMP. ON ARRIVAL 6.4

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



# Analytical Laboratory Report

Report ID: S74203.01(01)+QC01  
Generated on 05/09/2025

Report to

Attention: Kaitlyn Hunt  
Arcadis  
28550 Cabot Drive  
Suite 500  
Novi, MI 48377

Phone: O:248-809-4013 C:947-777-5215 FAX:  
Email: Kaitlyn.Hunt@arcadis.com

Additional Contacts: Marina Samp, Tiffany Linder

Report produced by

Merit Laboratories, Inc.  
2680 East Lansing Drive  
East Lansing, MI 48823

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

Contacts for report questions:  
John Lavery (johnlavery@meritlabs.com)  
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S74203.01-S74203.03  
Project: 30267725.0470A / RACER Lansing GWS  
Collected Date(s): 05/06/2025  
Submitted Date/Time: 05/06/2025 15:45  
Sampled by: Unknown  
P.O. #: 30267725.0470A

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- QC Report (Pages 11-37)

Maya Murshak  
Technical Director



# Analytical Laboratory Report

## General Report Notes

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

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

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

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

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

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

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

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There is no additional narrative for this analytical report



# Analytical Laboratory 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
o	Associated EIS outside of control limits
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
q	Qualifier ion ratio outside of control limits
x	Preserved from bulk sample

## Glossary of Abbreviations

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



# Analytical Laboratory Report

## Method Summary

Method	Version
N/A	Not Applicable
SW5030C/8260C	SW 846 Method 8260C Revision 3 August 2006 / 5030C Revision 3 May 2003
SW8260B - SIM	SW 846 Method 8260B Revision 2 December 1996 SIMs



# Analytical Laboratory Report

## Sample Summary (3 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S74203.01	MW-22-156_050625	Groundwater	05/06/25 12:05
S74203.02	DUP-01_050625	Groundwater	05/06/25 00:01
S74203.03	Trip Blank	Groundwater	05/06/25 00:01



# Analytical Laboratory Report

Lab Sample ID: S74203.01

Sample Tag: MW-22-156\_050625

Collected Date/Time: 05/06/2025 12:05

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40mL Glass	HCL	Yes	6.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	05/08/25 10:20	NDK	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/07/25 18:50, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	42	1		ug/L	1	123-91-1	

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run #1: 05/08/25 07:41, #2: 05/08/25 21:03, Analyst: ACK

Parameter	Result	RL	MDL	Units	Dilution	Run #	Flags
Diethyl ether	Not detected	10		ug/L	1	Run #1	r
Acetone	Not detected	50		ug/L	1	Run #1	r
Methyl iodide	Not detected	1		ug/L	1	Run #1	r
Carbon disulfide	Not detected	5		ug/L	1	Run #1	r
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	Run #1	r
Acrylonitrile	Not detected	2		ug/L	1	Run #1	r
2-Butanone (MEK)	Not detected	25		ug/L	1	Run #1	r
Dichlorodifluoromethane	Not detected	5		ug/L	1	Run #1	r
Chloromethane	Not detected	5		ug/L	1	Run #1	r
Vinyl chloride	2	1		ug/L	1	Run #1	r
Bromomethane	Not detected	5		ug/L	1	Run #1	r
Chloroethane	9	5		ug/L	1	Run #1	r
Trichlorofluoromethane	Not detected	1		ug/L	1	Run #1	r
1,1-Dichloroethene	15	1		ug/L	1	Run #1	r
Methylene chloride	Not detected	5		ug/L	1	Run #1	r
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	Run #1	r
1,1-Dichloroethane	200	10		ug/L	10	Run #2	Yr
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	Run #1	r
Tetrahydrofuran	Not detected	90		ug/L	1	Run #1	r
Chloroform	Not detected	1		ug/L	1	Run #1	r
Bromochloromethane	Not detected	1		ug/L	1	Run #1	r
1,1,1-Trichloroethane	Not detected	1		ug/L	1	Run #1	r
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	Run #1	r
2-Hexanone	Not detected	50		ug/L	1	Run #1	r
Carbon tetrachloride	Not detected	1		ug/L	1	Run #1	r
Benzene	Not detected	1		ug/L	1	Run #1	r
1,2-Dichloroethane	Not detected	1		ug/L	1	Run #1	r
Trichloroethene	Not detected	1		ug/L	1	Run #1	r
1,2-Dichloropropane	Not detected	1		ug/L	1	Run #1	r
Bromodichloromethane	Not detected	1		ug/L	1	Run #1	r
Dibromomethane	Not detected	5		ug/L	1	Run #1	r

r-This analyte is being reported as the best result from multiple runs

Y-Elevated reporting limit due to high target concentration



# Analytical Laboratory Report

Lab Sample ID: S74203.01 (continued)

Sample Tag: MW-22-156\_050625

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run #1: 05/08/25 07:41, #2: 05/08/25 21:03, Analyst: ACK (continued)**

Parameter	Result	RL	MDL	Units	Dilution	Run #	Flags
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	Run #1	r
Toluene	Not detected	1		ug/L	1	Run #1	r
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	Run #1	r
1,1,2-Trichloroethane	Not detected	1		ug/L	1	Run #1	r
Tetrachloroethene	Not detected	1		ug/L	1	Run #1	r
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	Run #1	r
Dibromochloromethane	Not detected	5		ug/L	1	Run #1	r
1,2-Dibromoethane	Not detected	1		ug/L	1	Run #1	r
Chlorobenzene	Not detected	1		ug/L	1	Run #1	r
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	Run #1	r
Ethylbenzene	Not detected	1		ug/L	1	Run #1	r
p,m-Xylene	Not detected	2		ug/L	1	Run #1	r
o-Xylene	Not detected	1		ug/L	1	Run #1	r
Styrene	Not detected	1		ug/L	1	Run #1	r
Isopropylbenzene	Not detected	5		ug/L	1	Run #1	r
Bromoform	Not detected	1		ug/L	1	Run #1	r
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	Run #1	r
1,2,3-Trichloropropane	Not detected	1		ug/L	1	Run #1	r
n-Propylbenzene	Not detected	1		ug/L	1	Run #1	r
Bromobenzene	Not detected	1		ug/L	1	Run #1	r
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	Run #1	r
tert-Butylbenzene	Not detected	1		ug/L	1	Run #1	r
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	Run #1	r
sec-Butylbenzene	Not detected	1		ug/L	1	Run #1	r
p-Isopropyltoluene	Not detected	5		ug/L	1	Run #1	r
1,3-Dichlorobenzene	Not detected	1		ug/L	1	Run #1	r
1,4-Dichlorobenzene	Not detected	1		ug/L	1	Run #1	r
1,2-Dichlorobenzene	Not detected	1		ug/L	1	Run #1	r
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	Run #1	r
n-Butylbenzene	Not detected	1		ug/L	1	Run #1	r
Hexachloroethane	Not detected	5		ug/L	1	Run #1	r
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	Run #1	r
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	Run #1	r
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	Run #1	r
Naphthalene	Not detected	5		ug/L	1	Run #1	r
2-Methylnaphthalene	Not detected	5		ug/L	1	Run #1	r

r-This analyte is being reported as the best result from multiple runs



# Analytical Laboratory Report

Lab Sample ID: S74203.02

Sample Tag: DUP-01\_050625

Collected Date/Time: 05/06/2025 00:01

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40mL Glass	HCL	Yes	6.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	05/08/25 10:20	NDK	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/07/25 19:16, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	42	1		ug/L	1	123-91-1	

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run #1: 05/08/25 08:05, #2: 05/08/25 21:27, Analyst: ACK

Parameter	Result	RL	MDL	Units	Dilution	Run #	Flags
Diethyl ether	Not detected	10		ug/L	1	Run #1	r
Acetone	Not detected	50		ug/L	1	Run #1	r
Methyl iodide	Not detected	1		ug/L	1	Run #1	r
Carbon disulfide	Not detected	5		ug/L	1	Run #1	r
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	Run #1	r
Acrylonitrile	Not detected	2		ug/L	1	Run #1	r
2-Butanone (MEK)	Not detected	25		ug/L	1	Run #1	r
Dichlorodifluoromethane	Not detected	5		ug/L	1	Run #1	r
Chloromethane	Not detected	5		ug/L	1	Run #1	r
Vinyl chloride	2	1		ug/L	1	Run #1	r
Bromomethane	Not detected	5		ug/L	1	Run #1	r
Chloroethane	7	5		ug/L	1	Run #1	r
Trichlorofluoromethane	Not detected	1		ug/L	1	Run #1	r
1,1-Dichloroethene	14	1		ug/L	1	Run #1	r
Methylene chloride	Not detected	5		ug/L	1	Run #1	r
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	Run #1	r
1,1-Dichloroethane	200	10		ug/L	10	Run #2	Yr
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	Run #1	r
Tetrahydrofuran	Not detected	90		ug/L	1	Run #1	r
Chloroform	Not detected	1		ug/L	1	Run #1	r
Bromochloromethane	Not detected	1		ug/L	1	Run #1	r
1,1,1-Trichloroethane	Not detected	1		ug/L	1	Run #1	r
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	Run #1	r
2-Hexanone	Not detected	50		ug/L	1	Run #1	r
Carbon tetrachloride	Not detected	1		ug/L	1	Run #1	r
Benzene	Not detected	1		ug/L	1	Run #1	r
1,2-Dichloroethane	Not detected	1		ug/L	1	Run #1	r
Trichloroethene	Not detected	1		ug/L	1	Run #1	r
1,2-Dichloropropane	Not detected	1		ug/L	1	Run #1	r
Bromodichloromethane	Not detected	1		ug/L	1	Run #1	r
Dibromomethane	Not detected	5		ug/L	1	Run #1	r

r-This analyte is being reported as the best result from multiple runs

Y-Elevated reporting limit due to high target concentration



# Analytical Laboratory Report

Lab Sample ID: S74203.02 (continued)

Sample Tag: DUP-01\_050625

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run #1: 05/08/25 08:05, #2: 05/08/25 21:27, Analyst: ACK (continued)**

Parameter	Result	RL	MDL	Units	Dilution	Run #	Flags
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	Run #1	r
Toluene	Not detected	1		ug/L	1	Run #1	r
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	Run #1	r
1,1,2-Trichloroethane	Not detected	1		ug/L	1	Run #1	r
Tetrachloroethene	Not detected	1		ug/L	1	Run #1	r
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	Run #1	r
Dibromochloromethane	Not detected	5		ug/L	1	Run #1	r
1,2-Dibromoethane	Not detected	1		ug/L	1	Run #1	r
Chlorobenzene	Not detected	1		ug/L	1	Run #1	r
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	Run #1	r
Ethylbenzene	Not detected	1		ug/L	1	Run #1	r
p,m-Xylene	Not detected	2		ug/L	1	Run #1	r
o-Xylene	Not detected	1		ug/L	1	Run #1	r
Styrene	Not detected	1		ug/L	1	Run #1	r
Isopropylbenzene	Not detected	5		ug/L	1	Run #1	r
Bromoform	Not detected	1		ug/L	1	Run #1	r
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	Run #1	r
1,2,3-Trichloropropane	Not detected	1		ug/L	1	Run #1	r
n-Propylbenzene	Not detected	1		ug/L	1	Run #1	r
Bromobenzene	Not detected	1		ug/L	1	Run #1	r
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	Run #1	r
tert-Butylbenzene	Not detected	1		ug/L	1	Run #1	r
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	Run #1	r
sec-Butylbenzene	Not detected	1		ug/L	1	Run #1	r
p-Isopropyltoluene	Not detected	5		ug/L	1	Run #1	r
1,3-Dichlorobenzene	Not detected	1		ug/L	1	Run #1	r
1,4-Dichlorobenzene	Not detected	1		ug/L	1	Run #1	r
1,2-Dichlorobenzene	Not detected	1		ug/L	1	Run #1	r
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	Run #1	r
n-Butylbenzene	Not detected	1		ug/L	1	Run #1	r
Hexachloroethane	Not detected	5		ug/L	1	Run #1	r
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	Run #1	r
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	Run #1	r
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	Run #1	r
Naphthalene	Not detected	5		ug/L	1	Run #1	r
2-Methylnaphthalene	Not detected	5		ug/L	1	Run #1	r

r-This analyte is being reported as the best result from multiple runs



# Analytical Laboratory Report

Lab Sample ID: S74203.03

Sample Tag: Trip Blank

Collected Date/Time: 05/06/2025 00:01

Matrix: Groundwater

COC Reference:

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40mL Glass	HCL	Yes	6.4	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	05/08/25 10:20	NDK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/07/25 15:28, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	



# Quality Control Report

Report ID: S74203.01(01)+QC01

Generated on 05/09/2025

Report to

Attention: Kaitlyn Hunt

Arcadis

28550 Cabot Drive

Suite 500

Novi, MI 48377

Phone: O:248-809-4013 C:947-777-5215 FAX:

Report Produced by

Merit Laboratories

2680 East Lansing Drive

East Lansing, MI 48823

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

Report Summary

Lab Sample ID(s): S74203.01-S74203.03

Project: 30267725.0470A / RACER Lansing GWS

Submitted Date/Time: 05/06/2025 15:45

Sampled by: Unknown

P.O. #: 30267725.0470A

QC Report Sections

Cover Page (Page 11)

Analysis Summary (Pages 12-14)

Prep Batch Summary (Page 15)

Surrogates per Lab Sample (Pages 16-17)

Surrogates per QC Sample (Pages 18-20)

Internal Standards per Lab Sample (Pages 21-23)

Internal Standards per QC Sample (Pages 24-26)

Batch QC Results (Pages 27-37)

Report Flag Descriptions

\*: QC result is outside of indicated control limits

W: Surrogate result not applicable due to sample dilution

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

Barbara Ball

Quality Assurance Manager

# QC Report - Analysis Summary

Lab Sample ID: S74203.01

Sample Tag: MW-22-156\_050625

Collected Date/Time: 05/06/2025 12:05

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/07/25 18:50	250507A9	VS250507W1	Yes	BLK/LCS/LCSD
Volatile Organics - DEQ List	SW5030C/8260C	05/08/25 07:41	250507B11	VF250507W3	Yes	BLK/LCS/LCSD
Volatile Organics - DEQ List (Replicate 01)	SW5030C/8260C	05/08/25 21:03	250508A11	VF250508W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74203.02

Sample Tag: DUP-01\_050625

Collected Date/Time: 05/06/2025 00:01

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/07/25 19:16	250507A9	VS250507W1	Yes	BLK/LCS/LCSD
Volatile Organics - DEQ List	SW5030C/8260C	05/08/25 08:05	250507B11	VF250507W3	Yes	BLK/LCS/LCSD
Volatile Organics - DEQ List (Replicate 01)	SW5030C/8260C	05/08/25 21:27	250508A11	VF250508W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74203.03

Sample Tag: Trip Blank

Collected Date/Time: 05/06/2025 00:01

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/07/25 15:28	250507A9	VS250507W1	Yes	BLK/LCS/LCSD

## QC Report - Prep Batch Summary

### Organics - Volatiles, Prep Batch ID: VF250507W3

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74203.01	Volatile Organics - DEQ List	SW5030C/8260C	05/08/25 07:41	250507B11
S74203.02	Volatile Organics - DEQ List	SW5030C/8260C	05/08/25 08:05	250507B11

### Organics - Volatiles, Prep Batch ID: VF250508W1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74203.01	Volatile Organics - DEQ List (Replicate 01)	SW5030C/8260C	05/08/25 21:03	250508A11
S74203.02	Volatile Organics - DEQ List (Replicate 01)	SW5030C/8260C	05/08/25 21:27	250508A11

### Organics - Volatiles, Prep Batch ID: VS250507W1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74203.01	1,4-Dioxane	SW8260B - SIM	05/07/25 18:50	250507A9
S74203.02	1,4-Dioxane	SW8260B - SIM	05/07/25 19:16	250507A9
S74203.03	1,4-Dioxane	SW8260B - SIM	05/07/25 15:28	250507A9

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74203.01

Sample Tag: MW-22-156\_050625

Collected Date/Time: 05/06/2025 12:05

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 250507B11, Run Date: 05/08/2025 07:41, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		97.2	80.0	124.0
1,2-Dichloroethane-D4		105.4	72.0	125.0
Toluene-D8		100.7	89.0	112.0

## Organics - Volatiles, Analysis: Volatile Organics - DEQ List (Replicate 01)

Run in Batch: 250508A11, Run Date: 05/08/2025 21:03, Matrix: WW, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		98.7	80.0	124.0
1,2-Dichloroethane-D4		109.2	72.0	125.0
Toluene-D8		100.2	89.0	112.0

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74203.02

Sample Tag: DUP-01\_050625

Collected Date/Time: 05/06/2025 00:01

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 250507B11, Run Date: 05/08/2025 08:05, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		97.2	80.0	124.0
1,2-Dichloroethane-D4		100.4	72.0	125.0
Toluene-D8		101.0	89.0	112.0

## Organics - Volatiles, Analysis: Volatile Organics - DEQ List (Replicate 01)

Run in Batch: 250508A11, Run Date: 05/08/2025 21:27, Matrix: WW, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		98.2	80.0	124.0
1,2-Dichloroethane-D4		104.8	72.0	125.0
Toluene-D8		99.6	89.0	112.0

# QC Report - Surrogates per QC Sample

## Organics - Volatiles, Prep Batch ID: VF250507W3

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250507B11.BLKW07B

Run in Batch: 250507B11, Run Date: 05/08/2025 00:34, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		100.1	80.0	124.0
1,2-Dichloroethane-D4		96.8	72.0	125.0
Toluene-D8		99.6	89.0	112.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250507B11.LCSW07B

Run in Batch: 250507B11, Run Date: 05/07/2025 22:59, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		100.6	80.0	124.0
1,2-Dichloroethane-D4		110.8	72.0	125.0
Toluene-D8		101.4	89.0	112.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250507B11.LCSDW07B, Parent Sample ID: 250507B11.LCSW07B

Run in Batch: 250507B11, Run Date: 05/07/2025 23:23, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		100.2	80.0	124.0
1,2-Dichloroethane-D4		105.1	72.0	125.0
Toluene-D8		102.8	89.0	112.0

# QC Report - Surrogates per QC Sample

## Organics - Volatiles, Prep Batch ID: VF250508W1

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250508A11.BLKW08A

Run in Batch: 250508A11, Run Date: 05/08/2025 13:10, Prep Date: 05/08/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		96.7	80.0	124.0
1,2-Dichloroethane-D4		102.8	72.0	125.0
Toluene-D8		100.5	89.0	112.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250508A11.LCSW08A

Run in Batch: 250508A11, Run Date: 05/08/2025 11:36, Prep Date: 05/08/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		100.5	80.0	124.0
1,2-Dichloroethane-D4		104.9	72.0	125.0
Toluene-D8		101.9	89.0	112.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250508A11.LCSDW08A, Parent Sample ID: 250508A11.LCSW08A

Run in Batch: 250508A11, Run Date: 05/08/2025 11:59, Prep Date: 05/08/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		103.6	80.0	124.0
1,2-Dichloroethane-D4		101.3	72.0	125.0
Toluene-D8		101.6	89.0	112.0

# QC Report - Surrogates per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250507W1

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250507A9.BLKW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 14:12, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
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No Surrogates

### Laboratory Control Sample (LCS)

Lab Sample ID: 250507A9.LCSW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 12:32, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
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No Surrogates

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250507A9.LCSDW07A, Parent Sample ID: 250507A9.LCSW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 12:57, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
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No Surrogates

# QC Report - Internal Standards per Lab Sample

**Lab Sample ID: S74203.01**

Sample Tag: MW-22-156\_050625

Collected Date/Time: 05/06/2025 12:05

Matrix: Groundwater

COC Reference:

**Organics - Volatiles, Analysis: 1,4-Dioxane**

Run in Batch: 250507A9, Run Date: 05/07/2025 18:50, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		<b>93.7</b>	50.0	200.0

**Organics - Volatiles, Analysis: Volatile Organics - DEQ List**

Run in Batch: 250507B11, Run Date: 05/08/2025 07:41, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		<b>97.7</b>	50.0	200.0
1,4-Difluorobenzene		<b>96.8</b>	50.0	200.0
Chlorobenzene-D5		<b>93.9</b>	50.0	200.0
1,4-Dichlorobenzene-D4		<b>92.0</b>	50.0	200.0

**Organics - Volatiles, Analysis: Volatile Organics - DEQ List (Replicate 01)**

Run in Batch: 250508A11, Run Date: 05/08/2025 21:03, Matrix: WW, Dilution: 10

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		<b>101.8</b>	50.0	200.0
1,4-Difluorobenzene		<b>101.6</b>	50.0	200.0
Chlorobenzene-D5		<b>102.2</b>	50.0	200.0
1,4-Dichlorobenzene-D4		<b>99.3</b>	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74203.02

Sample Tag: DUP-01\_050625

Collected Date/Time: 05/06/2025 00:01

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250507A9, Run Date: 05/07/2025 19:16, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		92.5	50.0	200.0

## Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 250507B11, Run Date: 05/08/2025 08:05, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		101.3	50.0	200.0
1,4-Difluorobenzene		97.1	50.0	200.0
Chlorobenzene-D5		94.2	50.0	200.0
1,4-Dichlorobenzene-D4		90.2	50.0	200.0

## Organics - Volatiles, Analysis: Volatile Organics - DEQ List (Replicate 01)

Run in Batch: 250508A11, Run Date: 05/08/2025 21:27, Matrix: WW, Dilution: 10

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		99.6	50.0	200.0
1,4-Difluorobenzene		99.2	50.0	200.0
Chlorobenzene-D5		97.0	50.0	200.0
1,4-Dichlorobenzene-D4		93.7	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74203.03

Sample Tag: Trip Blank

Collected Date/Time: 05/06/2025 00:01

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250507A9, Run Date: 05/07/2025 15:28, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		89.5	50.0	200.0

# QC Report - Internal Standards per QC Sample

## Organics - Volatiles, Prep Batch ID: VF250507W3

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250507B11.BLKW07B

Run in Batch: 250507B11, Run Date: 05/08/2025 00:34, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		<b>130.3</b>	50.0	200.0
1,4-Difluorobenzene		<b>131.7</b>	50.0	200.0
Chlorobenzene-D5		<b>125.5</b>	50.0	200.0
1,4-Dichlorobenzene-D4		<b>126.0</b>	50.0	200.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250507B11.LCSW07B

Run in Batch: 250507B11, Run Date: 05/07/2025 22:59, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		<b>100.7</b>	50.0	200.0
1,4-Difluorobenzene		<b>101.1</b>	50.0	200.0
Chlorobenzene-D5		<b>100.6</b>	50.0	200.0
1,4-Dichlorobenzene-D4		<b>100.3</b>	50.0	200.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250507B11.LCSDW07B, Parent Sample ID: 250507B11.LCSW07B

Run in Batch: 250507B11, Run Date: 05/07/2025 23:23, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		<b>103.8</b>	50.0	200.0
1,4-Difluorobenzene		<b>101.5</b>	50.0	200.0
Chlorobenzene-D5		<b>102.3</b>	50.0	200.0
1,4-Dichlorobenzene-D4		<b>102.9</b>	50.0	200.0

# QC Report - Internal Standards per QC Sample

## Organics - Volatiles, Prep Batch ID: VF250508W1

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250508A11.BLKW08A

Run in Batch: 250508A11, Run Date: 05/08/2025 13:10, Prep Date: 05/08/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		<b>101.3</b>	50.0	200.0
1,4-Difluorobenzene		<b>100.8</b>	50.0	200.0
Chlorobenzene-D5		<b>100.8</b>	50.0	200.0
1,4-Dichlorobenzene-D4		<b>94.7</b>	50.0	200.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250508A11.LCSW08A

Run in Batch: 250508A11, Run Date: 05/08/2025 11:36, Prep Date: 05/08/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		<b>101.1</b>	50.0	200.0
1,4-Difluorobenzene		<b>100.5</b>	50.0	200.0
Chlorobenzene-D5		<b>100.9</b>	50.0	200.0
1,4-Dichlorobenzene-D4		<b>104.0</b>	50.0	200.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250508A11.LCSDW08A, Parent Sample ID: 250508A11.LCSW08A

Run in Batch: 250508A11, Run Date: 05/08/2025 11:59, Prep Date: 05/08/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		<b>102.2</b>	50.0	200.0
1,4-Difluorobenzene		<b>101.1</b>	50.0	200.0
Chlorobenzene-D5		<b>101.8</b>	50.0	200.0
1,4-Dichlorobenzene-D4		<b>104.1</b>	50.0	200.0

# QC Report - Internal Standards per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250507W1

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250507A9.BLKW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 14:12, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		93.4	50.0	200.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250507A9.LCSW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 12:32, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		94.0	50.0	200.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250507A9.LCSDW07A, Parent Sample ID: 250507A9.LCSW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 12:57, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		103.7	50.0	200.0

## QC Report - Batch QC Results

**Organics - Volatiles, Prep Batch ID: VF250507W3**

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

**Blank (BLK)**

Lab Sample ID: 250507B11.BLKW07B

Run in Batch: 250507B11, Run Date: 05/08/2025 00:34, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Diethyl ether		ND	1.00	ug/l
Acetone		ND	10.00	ug/l
Methyl iodide		ND	1.00	ug/l
Carbon disulfide		ND	1.00	ug/l
tert-Methyl butyl ether (MTBE)		ND	1.00	ug/l
Acrylonitrile		ND	1.00	ug/l
2-Butanone (MEK)		ND	10.00	ug/l
Dichlorodifluoromethane		ND	1.00	ug/l
Chloromethane		ND	1.00	ug/l
Vinyl chloride		ND	1.00	ug/l
Bromomethane		ND	1.00	ug/l
Chloroethane		ND	1.00	ug/l
Trichlorofluoromethane		ND	1.00	ug/l
1,1-Dichloroethene		ND	1.00	ug/l
Methylene chloride		ND	1.00	ug/l
trans-1,2-Dichloroethene		ND	1.00	ug/l
1,1-Dichloroethane		ND	1.00	ug/l
cis-1,2-Dichloroethene		ND	1.00	ug/l
Tetrahydrofuran		ND	10.00	ug/l
Chloroform		ND	1.00	ug/l
Bromochloromethane		ND	1.00	ug/l
1,1,1-Trichloroethane		ND	1.00	ug/l
4-Methyl-2-pentanone (MIBK)		ND	10.00	ug/l
2-Hexanone		ND	10.00	ug/l
Carbon tetrachloride		ND	1.00	ug/l
Benzene		ND	1.00	ug/l
1,2-Dichloroethane		ND	1.00	ug/l
Trichloroethene		ND	1.00	ug/l
1,2-Dichloropropane		ND	1.00	ug/l
Bromodichloromethane		ND	1.00	ug/l
Dibromomethane		ND	1.00	ug/l
cis-1,3-Dichloropropene		ND	1.00	ug/l
Toluene		ND	1.00	ug/l
trans-1,3-Dichloropropene		ND	1.00	ug/l
1,1,2-Trichloroethane		ND	1.00	ug/l
Tetrachloroethene		ND	1.00	ug/l
trans-1,4-Dichloro-2-butene		ND	1.00	ug/l
Dibromochloromethane		ND	1.00	ug/l
1,2-Dibromoethane		ND	1.00	ug/l
Chlorobenzene		ND	1.00	ug/l
1,1,1,2-Tetrachloroethane		ND	1.00	ug/l
Ethylbenzene		ND	1.00	ug/l
p,m-Xylene		ND	2.00	ug/l
o-Xylene		ND	1.00	ug/l
Styrene		ND	1.00	ug/l
Isopropylbenzene		ND	1.00	ug/l

**QC Report - Batch QC Results**

**Organics - Volatiles, Prep Batch ID: VF250507W3 (continued)**

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

**Blank (BLK) (continued)**

Lab Sample ID: 250507B11.BLKW07B

Run in Batch: 250507B11, Run Date: 05/08/2025 00:34, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Bromoform		ND	1.00	ug/l
1,1,2,2-Tetrachloroethane		ND	1.00	ug/l
1,2,3-Trichloropropane		ND	1.00	ug/l
n-Propylbenzene		ND	1.00	ug/l
Bromobenzene		ND	1.00	ug/l
1,3,5-Trimethylbenzene		ND	1.00	ug/l
tert-Butylbenzene		ND	1.00	ug/l
1,2,4-Trimethylbenzene		ND	1.00	ug/l
sec-Butylbenzene		ND	1.00	ug/l
p-Isopropyltoluene		ND	1.00	ug/l
1,3-Dichlorobenzene		ND	1.00	ug/l
1,4-Dichlorobenzene		ND	1.00	ug/l
1,2-Dichlorobenzene		ND	1.00	ug/l
1,2,3-Trimethylbenzene		ND	1.00	ug/l
n-Butylbenzene		ND	1.00	ug/l
Hexachloroethane		ND	1.00	ug/l
1,2-Dibromo-3-chloropropane		ND	1.00	ug/l
1,2,4-Trichlorobenzene		ND	1.00	ug/l
1,2,3-Trichlorobenzene		ND	1.00	ug/l
Naphthalene		ND	1.00	ug/l
2-Methylnaphthalene		ND	1.00	ug/l

**Laboratory Control Sample (LCS)**

Lab Sample ID: 250507B11.LCSW07B

Run in Batch: 250507B11, Run Date: 05/07/2025 22:59, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Diethyl ether		115.2	67.4	121.2
Acetone		107.5	29.9	161.5
Methyl iodide		110.0	68.8	116.4
Carbon disulfide		106.4	63.8	137.4
tert-Methyl butyl ether (MTBE)		115.8	73.2	122.4
Acrylonitrile		112.5	69.9	128.9
2-Butanone (MEK)		108.4	44.0	134.4
Dichlorodifluoromethane		105.3	10.0	222.8
Chloromethane		110.4	23.8	166.5
Vinyl chloride		108.7	43.5	149.1
Bromomethane		112.4	56.8	151.3
Chloroethane		116.6	53.4	149.4
Trichlorofluoromethane		96.5	59.7	151.8
1,1-Dichloroethene		106.4	69.6	139.4
Methylene chloride		111.4	73.3	121.1
trans-1,2-Dichloroethene		109.3	73.6	129.3
1,1-Dichloroethane		113.4	71.5	126.2
cis-1,2-Dichloroethene		114.2	76.6	122.1
Tetrahydrofuran		111.9	59.0	117.9
Chloroform		114.4	78.4	124.0

**QC Report - Batch QC Results**

**Organics - Volatiles, Prep Batch ID: VF250507W3 (continued)**

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

**Laboratory Control Sample (LCS) (continued)**

Lab Sample ID: 250507B11.LCSW07B

Run in Batch: 250507B11, Run Date: 05/07/2025 22:59, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Bromochloromethane		113.4	78.2	120.8
1,1,1-Trichloroethane		109.6	79.4	130.9
4-Methyl-2-pentanone (MIBK)		105.3	71.6	125.2
2-Hexanone		104.9	55.4	136.9
Carbon tetrachloride		102.6	72.6	133.0
Benzene		107.5	79.9	124.9
1,2-Dichloroethane		109.6	76.0	126.3
Trichloroethene		107.4	79.7	124.2
1,2-Dichloropropane		108.2	78.6	126.4
Bromodichloromethane		111.2	80.4	128.2
Dibromomethane		107.4	76.9	122.1
cis-1,3-Dichloropropene		109.0	79.8	129.9
Toluene		109.3	79.8	124.5
trans-1,3-Dichloropropene		109.2	74.0	131.3
1,1,2-Trichloroethane		108.8	78.7	123.1
Tetrachloroethene		103.6	74.5	124.5
trans-1,4-Dichloro-2-butene		115.1	68.6	135.4
Dibromochloromethane		107.2	74.6	127.2
1,2-Dibromoethane		106.7	70.3	133.7
Chlorobenzene		107.0	79.2	122.7
1,1,1,2-Tetrachloroethane		108.4	80.3	128.2
Ethylbenzene		108.1	79.5	129.1
p,m-Xylene		107.5	79.4	132.2
o-Xylene		111.0	80.2	131.0
Styrene		111.7	69.5	126.7
Isopropylbenzene		109.1	74.4	121.5
Bromoform		108.1	69.4	128.0
1,1,2,2-Tetrachloroethane		107.8	79.8	126.3
1,2,3-Trichloropropane		109.9	78.3	138.8
n-Propylbenzene		109.6	82.0	130.7
Bromobenzene		110.1	78.7	124.6
1,3,5-Trimethylbenzene		110.6	81.3	128.9
tert-Butylbenzene		112.3	80.7	128.9
1,2,4-Trimethylbenzene		114.6	81.4	130.8
sec-Butylbenzene		109.3	77.4	129.8
p-Isopropyltoluene		112.0	79.8	137.5
1,3-Dichlorobenzene		110.1	77.0	131.3
1,4-Dichlorobenzene		109.8	20.7	137.7
1,2-Dichlorobenzene		110.4	10.0	166.2
1,2,3-Trimethylbenzene		113.1	76.3	124.2
n-Butylbenzene		107.7	80.0	133.3
Hexachloroethane		110.0	23.8	138.1
1,2-Dibromo-3-chloropropane		111.6	21.2	189.4
1,2,4-Trichlorobenzene		113.7	27.4	143.4
1,2,3-Trichlorobenzene		113.1	75.4	131.4
Naphthalene		113.7	32.9	135.8

**QC Report - Batch QC Results**

**Organics - Volatiles, Prep Batch ID: VF250507W3 (continued)**

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

**Laboratory Control Sample (LCS) (continued)**

Lab Sample ID: 250507B11.LCSW07B

Run in Batch: 250507B11, Run Date: 05/07/2025 22:59, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
2-Methylnaphthalene		111.1	25.5	165.5

**Laboratory Control Sample Duplicate (LCSD)**

Lab Sample ID: 250507B11.LCSDW07B, Parent Sample ID: 250507B11.LCSW07B

Run in Batch: 250507B11, Run Date: 05/07/2025 23:23, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Diethyl ether		108.6	67.4	121.2	5.9	30.0
Acetone		105.7	29.9	161.5	1.7	30.0
Methyl iodide		105.8	68.8	116.4	3.9	30.0
Carbon disulfide		99.6	63.8	137.4	6.6	30.0
tert-Methyl butyl ether (MTBE)		108.7	73.2	122.4	6.3	30.0
Acrylonitrile		111.1	69.9	128.9	1.2	30.0
2-Butanone (MEK)		114.7	44.0	134.4	5.7	30.0
Dichlorodifluoromethane		99.7	10.0	222.8	5.4	30.0
Chloromethane		107.5	23.8	166.5	2.6	30.0
Vinyl chloride		101.1	43.5	149.1	7.2	30.0
Bromomethane		114.1	56.8	151.3	1.5	30.0
Chloroethane		107.4	53.4	149.4	8.2	30.0
Trichlorofluoromethane		89.4	59.7	151.8	7.7	30.0
1,1-Dichloroethene		98.9	69.6	139.4	7.3	30.0
Methylene chloride		106.0	73.3	121.1	5.0	30.0
trans-1,2-Dichloroethene		102.8	73.6	129.3	6.1	30.0
1,1-Dichloroethane		106.0	71.5	126.2	6.7	30.0
cis-1,2-Dichloroethene		107.6	76.6	122.1	5.9	30.0
Tetrahydrofuran		108.5	59.0	117.9	3.1	30.0
Chloroform		107.6	78.4	124.0	6.1	30.0
Bromochloromethane		108.5	78.2	120.8	4.5	30.0
1,1,1-Trichloroethane		103.1	79.4	130.9	6.2	30.0
4-Methyl-2-pentanone (MIBK)		106.1	71.6	125.2	0.8	30.0
2-Hexanone		105.8	55.4	136.9	0.8	30.0
Carbon tetrachloride		98.9	72.6	133.0	3.7	30.0
Benzene		105.1	79.9	124.9	2.3	30.0
1,2-Dichloroethane		105.3	76.0	126.3	3.9	30.0
Trichloroethene		103.2	79.7	124.2	4.0	30.0
1,2-Dichloropropane		106.6	78.6	126.4	1.5	30.0
Bromodichloromethane		107.9	80.4	128.2	3.1	30.0
Dibromomethane		106.9	76.9	122.1	0.5	30.0
cis-1,3-Dichloropropene		106.1	79.8	129.9	2.6	30.0
Toluene		106.7	79.8	124.5	2.4	30.0
trans-1,3-Dichloropropene		107.2	74.0	131.3	1.9	30.0
1,1,2-Trichloroethane		105.3	78.7	123.1	3.2	30.0
Tetrachloroethene		100.8	74.5	124.5	2.8	30.0
trans-1,4-Dichloro-2-butene		103.9	68.6	135.4	10.2	30.0
Dibromochloromethane		103.6	74.6	127.2	3.5	30.0
1,2-Dibromoethane		105.0	70.3	133.7	1.6	30.0
Chlorobenzene		103.3	79.2	122.7	3.5	30.0

**QC Report - Batch QC Results**

**Organics - Volatiles, Prep Batch ID: VF250507W3 (continued)**

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

**Laboratory Control Sample Duplicate (LCSD) (continued)**

Lab Sample ID: 250507B11.LCSDW07B, Parent Sample ID: 250507B11.LCSW07B

Run in Batch: 250507B11, Run Date: 05/07/2025 23:23, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,1,1,2-Tetrachloroethane		104.8	80.3	128.2	3.4	30.0
Ethylbenzene		104.2	79.5	129.1	3.7	30.0
p,m-Xylene		104.6	79.4	132.2	2.8	30.0
o-Xylene		106.1	80.2	131.0	4.5	30.0
Styrene		109.1	69.5	126.7	2.4	30.0
Isopropylbenzene		104.6	74.4	121.5	4.1	30.0
Bromoform		105.0	69.4	128.0	2.9	30.0
1,1,2,2-Tetrachloroethane		108.2	79.8	126.3	0.3	30.0
1,2,3-Trichloropropane		107.4	78.3	138.8	2.3	30.0
n-Propylbenzene		105.1	82.0	130.7	4.2	30.0
Bromobenzene		105.1	78.7	124.6	4.6	30.0
1,3,5-Trimethylbenzene		108.2	81.3	128.9	2.2	30.0
tert-Butylbenzene		108.0	80.7	128.9	3.9	30.0
1,2,4-Trimethylbenzene		110.3	81.4	130.8	3.8	30.0
sec-Butylbenzene		104.5	77.4	129.8	4.5	30.0
p-Isopropyltoluene		107.2	79.8	137.5	4.4	30.0
1,3-Dichlorobenzene		106.5	77.0	131.3	3.3	30.0
1,4-Dichlorobenzene		106.8	20.7	137.7	2.8	30.0
1,2-Dichlorobenzene		107.4	10.0	166.2	2.8	30.0
1,2,3-Trimethylbenzene		107.6	76.3	124.2	5.0	30.0
n-Butylbenzene		103.3	80.0	133.3	4.1	30.0
Hexachloroethane		105.2	23.8	138.1	4.5	30.0
1,2-Dibromo-3-chloropropane		109.4	21.2	189.4	1.9	30.0
1,2,4-Trichlorobenzene		112.9	27.4	143.4	0.7	30.0
1,2,3-Trichlorobenzene		112.5	75.4	131.4	0.5	30.0
Naphthalene		112.7	32.9	135.8	0.9	30.0
2-Methylnaphthalene		114.9	25.5	165.5	3.3	30.0

# QC Report - Batch QC Results

**Organics - Volatiles, Prep Batch ID: VF250508W1**

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

**Blank (BLK)**

Lab Sample ID: 250508A11.BLKW08A

Run in Batch: 250508A11, Run Date: 05/08/2025 13:10, Prep Date: 05/08/2025, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Diethyl ether		ND	1.00	ug/l
Acetone		ND	10.00	ug/l
Methyl iodide		ND	1.00	ug/l
Carbon disulfide		ND	1.00	ug/l
tert-Methyl butyl ether (MTBE)		ND	1.00	ug/l
Acrylonitrile		ND	1.00	ug/l
2-Butanone (MEK)		ND	10.00	ug/l
Dichlorodifluoromethane		ND	1.00	ug/l
Chloromethane		ND	1.00	ug/l
Vinyl chloride		ND	1.00	ug/l
Bromomethane		ND	1.00	ug/l
Chloroethane		ND	1.00	ug/l
Trichlorofluoromethane		ND	1.00	ug/l
1,1-Dichloroethene		ND	1.00	ug/l
Methylene chloride		ND	1.00	ug/l
trans-1,2-Dichloroethene		ND	1.00	ug/l
1,1-Dichloroethane		ND	1.00	ug/l
cis-1,2-Dichloroethene		ND	1.00	ug/l
Tetrahydrofuran		ND	10.00	ug/l
Chloroform		ND	1.00	ug/l
Bromochloromethane		ND	1.00	ug/l
1,1,1-Trichloroethane		ND	1.00	ug/l
4-Methyl-2-pentanone (MIBK)		ND	10.00	ug/l
2-Hexanone		ND	10.00	ug/l
Carbon tetrachloride		ND	1.00	ug/l
Benzene		ND	1.00	ug/l
1,2-Dichloroethane		ND	1.00	ug/l
Trichloroethene		ND	1.00	ug/l
1,2-Dichloropropane		ND	1.00	ug/l
Bromodichloromethane		ND	1.00	ug/l
Dibromomethane		ND	1.00	ug/l
cis-1,3-Dichloropropene		ND	1.00	ug/l
Toluene		ND	1.00	ug/l
trans-1,3-Dichloropropene		ND	1.00	ug/l
1,1,2-Trichloroethane		ND	1.00	ug/l
Tetrachloroethene		ND	1.00	ug/l
trans-1,4-Dichloro-2-butene		ND	1.00	ug/l
Dibromochloromethane		ND	1.00	ug/l
1,2-Dibromoethane		ND	1.00	ug/l
Chlorobenzene		ND	1.00	ug/l
1,1,1,2-Tetrachloroethane		ND	1.00	ug/l
Ethylbenzene		ND	1.00	ug/l
p,m-Xylene		ND	2.00	ug/l
o-Xylene		ND	1.00	ug/l
Styrene		ND	1.00	ug/l
Isopropylbenzene		ND	1.00	ug/l

**QC Report - Batch QC Results**

**Organics - Volatiles, Prep Batch ID: VF250508W1 (continued)**

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

**Blank (BLK) (continued)**

Lab Sample ID: 250508A11.BLKW08A

Run in Batch: 250508A11, Run Date: 05/08/2025 13:10, Prep Date: 05/08/2025, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Bromoform		ND	1.00	ug/l
1,1,2,2-Tetrachloroethane		ND	1.00	ug/l
1,2,3-Trichloropropane		ND	1.00	ug/l
n-Propylbenzene		ND	1.00	ug/l
Bromobenzene		ND	1.00	ug/l
1,3,5-Trimethylbenzene		ND	1.00	ug/l
tert-Butylbenzene		ND	1.00	ug/l
1,2,4-Trimethylbenzene		ND	1.00	ug/l
sec-Butylbenzene		ND	1.00	ug/l
p-Isopropyltoluene		ND	1.00	ug/l
1,3-Dichlorobenzene		ND	1.00	ug/l
1,4-Dichlorobenzene		ND	1.00	ug/l
1,2-Dichlorobenzene		ND	1.00	ug/l
1,2,3-Trimethylbenzene		ND	1.00	ug/l
n-Butylbenzene		ND	1.00	ug/l
Hexachloroethane		ND	1.00	ug/l
1,2-Dibromo-3-chloropropane		ND	1.00	ug/l
1,2,4-Trichlorobenzene		ND	1.00	ug/l
1,2,3-Trichlorobenzene		ND	1.00	ug/l
Naphthalene		ND	1.00	ug/l
2-Methylnaphthalene		ND	1.00	ug/l

**Laboratory Control Sample (LCS)**

Lab Sample ID: 250508A11.LCSW08A

Run in Batch: 250508A11, Run Date: 05/08/2025 11:36, Prep Date: 05/08/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Diethyl ether		107.5	67.4	121.2
Acetone		99.7	29.9	161.5
Methyl iodide		109.9	68.8	116.4
Carbon disulfide		103.7	63.8	137.4
tert-Methyl butyl ether (MTBE)		108.7	73.2	122.4
Acrylonitrile		107.4	69.9	128.9
2-Butanone (MEK)		107.1	44.0	134.4
Dichlorodifluoromethane		105.7	10.0	222.8
Chloromethane		107.5	23.8	166.5
Vinyl chloride		108.6	43.5	149.1
Bromomethane		108.9	56.8	151.3
Chloroethane		99.7	53.4	149.4
Trichlorofluoromethane		96.7	59.7	151.8
1,1-Dichloroethene		102.8	69.6	139.4
Methylene chloride		106.0	73.3	121.1
trans-1,2-Dichloroethene		105.3	73.6	129.3
1,1-Dichloroethane		105.9	71.5	126.2
cis-1,2-Dichloroethene		106.5	76.6	122.1
Tetrahydrofuran		105.2	59.0	117.9
Chloroform		108.2	78.4	124.0

## QC Report - Batch QC Results

### Organics - Volatiles, Prep Batch ID: VF250508W1 (continued)

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

### Laboratory Control Sample (LCS) (continued)

Lab Sample ID: 250508A11.LCSW08A

Run in Batch: 250508A11, Run Date: 05/08/2025 11:36, Prep Date: 05/08/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Bromochloromethane		108.8	78.2	120.8
1,1,1-Trichloroethane		105.8	79.4	130.9
4-Methyl-2-pentanone (MIBK)		102.8	71.6	125.2
2-Hexanone		103.6	55.4	136.9
Carbon tetrachloride		102.8	72.6	133.0
Benzene		105.4	79.9	124.9
1,2-Dichloroethane		105.3	76.0	126.3
Trichloroethene		104.5	79.7	124.2
1,2-Dichloropropane		105.2	78.6	126.4
Bromodichloromethane		106.2	80.4	128.2
Dibromomethane		104.5	76.9	122.1
cis-1,3-Dichloropropene		108.9	79.8	129.9
Toluene		106.7	79.8	124.5
trans-1,3-Dichloropropene		108.4	74.0	131.3
1,1,2-Trichloroethane		104.8	78.7	123.1
Tetrachloroethene		103.9	74.5	124.5
trans-1,4-Dichloro-2-butene		106.4	68.6	135.4
Dibromochloromethane		104.1	74.6	127.2
1,2-Dibromoethane		104.9	70.3	133.7
Chlorobenzene		105.6	79.2	122.7
1,1,1,2-Tetrachloroethane		106.9	80.3	128.2
Ethylbenzene		107.2	79.5	129.1
p,m-Xylene		107.4	79.4	132.2
o-Xylene		109.0	80.2	131.0
Styrene		110.2	69.5	126.7
Isopropylbenzene		109.0	74.4	121.5
Bromoform		102.2	69.4	128.0
1,1,2,2-Tetrachloroethane		107.5	79.8	126.3
1,2,3-Trichloropropane		106.7	78.3	138.8
n-Propylbenzene		109.2	82.0	130.7
Bromobenzene		106.3	78.7	124.6
1,3,5-Trimethylbenzene		110.3	81.3	128.9
tert-Butylbenzene		111.5	80.7	128.9
1,2,4-Trimethylbenzene		114.2	81.4	130.8
sec-Butylbenzene		105.6	77.4	129.8
p-Isopropyltoluene		108.2	79.8	137.5
1,3-Dichlorobenzene		104.6	77.0	131.3
1,4-Dichlorobenzene		104.1	20.7	137.7
1,2-Dichlorobenzene		105.4	10.0	166.2
1,2,3-Trimethylbenzene		107.5	76.3	124.2
n-Butylbenzene		106.5	80.0	133.3
Hexachloroethane		107.4	23.8	138.1
1,2-Dibromo-3-chloropropane		105.3	21.2	189.4
1,2,4-Trichlorobenzene		108.6	27.4	143.4
1,2,3-Trichlorobenzene		109.3	75.4	131.4
Naphthalene		108.3	32.9	135.8

**QC Report - Batch QC Results**

**Organics - Volatiles, Prep Batch ID: VF250508W1 (continued)**

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

**Laboratory Control Sample (LCS) (continued)**

Lab Sample ID: 250508A11.LCSW08A

Run in Batch: 250508A11, Run Date: 05/08/2025 11:36, Prep Date: 05/08/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
2-Methylnaphthalene		111.1	25.5	165.5

**Laboratory Control Sample Duplicate (LCSD)**

Lab Sample ID: 250508A11.LCSDW08A, Parent Sample ID: 250508A11.LCSW08A

Run in Batch: 250508A11, Run Date: 05/08/2025 11:59, Prep Date: 05/08/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Diethyl ether	*	140.7	67.4	121.2	26.8	30.0
Acetone		117.9	29.9	161.5	16.7	30.0
Methyl iodide	*	139.9	68.8	116.4	24.0	30.0
Carbon disulfide		127.9	63.8	137.4	20.9	30.0
tert-Methyl butyl ether (MTBE)	*	135.1	73.2	122.4	21.7	30.0
Acrylonitrile	*	135.5	69.9	128.9	23.1	30.0
2-Butanone (MEK)		133.0	44.0	134.4	21.6	30.0
Dichlorodifluoromethane		102.9	10.0	222.8	2.7	30.0
Chloromethane		105.1	23.8	166.5	2.3	30.0
Vinyl chloride		103.1	43.5	149.1	5.1	30.0
Bromomethane		110.4	56.8	151.3	1.4	30.0
Chloroethane		108.2	53.4	149.4	8.2	30.0
Trichlorofluoromethane		111.8	59.7	151.8	14.6	30.0
1,1-Dichloroethene		121.4	69.6	139.4	16.6	30.0
Methylene chloride	*	134.3	73.3	121.1	23.6	30.0
trans-1,2-Dichloroethene		125.5	73.6	129.3	17.5	30.0
1,1-Dichloroethane	*	130.3	71.5	126.2	20.7	30.0
cis-1,2-Dichloroethene	*	132.9	76.6	122.1	22.1	30.0
Tetrahydrofuran	*	132.7	59.0	117.9	23.1	30.0
Chloroform	*	127.3	78.4	124.0	16.2	30.0
Bromochloromethane	*	135.0	78.2	120.8	21.5	30.0
1,1,1-Trichloroethane		103.0	79.4	130.9	2.6	30.0
4-Methyl-2-pentanone (MIBK)		106.3	71.6	125.2	3.4	30.0
2-Hexanone		107.5	55.4	136.9	3.7	30.0
Carbon tetrachloride		101.3	72.6	133.0	1.5	30.0
Benzene		104.1	79.9	124.9	1.2	30.0
1,2-Dichloroethane		107.4	76.0	126.3	2.0	30.0
Trichloroethene		102.8	79.7	124.2	1.7	30.0
1,2-Dichloropropane		105.7	78.6	126.4	0.5	30.0
Bromodichloromethane		107.5	80.4	128.2	1.2	30.0
Dibromomethane		105.9	76.9	122.1	1.2	30.0
cis-1,3-Dichloropropene		109.5	79.8	129.9	0.5	30.0
Toluene		105.6	79.8	124.5	1.1	30.0
trans-1,3-Dichloropropene		110.8	74.0	131.3	2.2	30.0
1,1,2-Trichloroethane		107.3	78.7	123.1	2.3	30.0
Tetrachloroethene		102.5	74.5	124.5	1.3	30.0
trans-1,4-Dichloro-2-butene		109.0	68.6	135.4	2.4	30.0
Dibromochloromethane		106.9	74.6	127.2	2.6	30.0
1,2-Dibromoethane		107.7	70.3	133.7	2.6	30.0
Chlorobenzene		104.2	79.2	122.7	1.4	30.0

**QC Report - Batch QC Results**

**Organics - Volatiles, Prep Batch ID: VF250508W1 (continued)**

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

**Laboratory Control Sample Duplicate (LCSD) (continued)**

Lab Sample ID: 250508A11.LCSDW08A, Parent Sample ID: 250508A11.LCSW08A

Run in Batch: 250508A11, Run Date: 05/08/2025 11:59, Prep Date: 05/08/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,1,1,2-Tetrachloroethane		106.6	80.3	128.2	0.2	30.0
Ethylbenzene		105.7	79.5	129.1	1.5	30.0
p,m-Xylene		107.0	79.4	132.2	0.3	30.0
o-Xylene		108.4	80.2	131.0	0.6	30.0
Styrene		110.3	69.5	126.7	0.1	30.0
Isopropylbenzene		107.4	74.4	121.5	1.5	30.0
Bromoform		106.2	69.4	128.0	3.8	30.0
1,1,2,2-Tetrachloroethane		109.6	79.8	126.3	1.9	30.0
1,2,3-Trichloropropane		110.3	78.3	138.8	3.3	30.0
n-Propylbenzene		109.1	82.0	130.7	0.1	30.0
Bromobenzene		108.3	78.7	124.6	1.8	30.0
1,3,5-Trimethylbenzene		107.8	81.3	128.9	2.2	30.0
tert-Butylbenzene		110.6	80.7	128.9	0.8	30.0
1,2,4-Trimethylbenzene		112.6	81.4	130.8	1.4	30.0
sec-Butylbenzene		105.0	77.4	129.8	0.6	30.0
p-Isopropyltoluene		108.0	79.8	137.5	0.2	30.0
1,3-Dichlorobenzene		105.2	77.0	131.3	0.6	30.0
1,4-Dichlorobenzene		104.2	20.7	137.7	0.1	30.0
1,2-Dichlorobenzene		105.9	10.0	166.2	0.5	30.0
1,2,3-Trimethylbenzene		108.4	76.3	124.2	0.8	30.0
n-Butylbenzene		104.4	80.0	133.3	1.9	30.0
Hexachloroethane		105.5	23.8	138.1	1.8	30.0
1,2-Dibromo-3-chloropropane		109.0	21.2	189.4	3.4	30.0
1,2,4-Trichlorobenzene		111.4	27.4	143.4	2.6	30.0
1,2,3-Trichlorobenzene		110.7	75.4	131.4	1.3	30.0
Naphthalene		111.9	32.9	135.8	3.3	30.0
2-Methylnaphthalene		115.6	25.5	165.5	4.0	30.0

# QC Report - Batch QC Results

## Organics - Volatiles, Prep Batch ID: VS250507W1

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

### Blank (BLK)

Lab Sample ID: 250507A9.BLKW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 14:12, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
1,4-Dioxane		ND	1.00	ug/l

### Laboratory Control Sample (LCS)

Lab Sample ID: 250507A9.LCSW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 12:32, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
1,4-Dioxane		97.8	70.0	130.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250507A9.LCSDW07A, Parent Sample ID: 250507A9.LCSW07A

Run in Batch: 250507A9, Run Date: 05/07/2025 12:57, Prep Date: 05/07/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,4-Dioxane		88.2	70.0	130.0	10.4	30.0

# Merit Laboratories Login Checklist

Lab Set ID:S74203

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

Project: 30267725.0470A / RACER Lansing GWS

Submitted:05/06/2025 15:45 Login User: MMC

Attention: Kaitlyn Hunt

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

Phone: O:248-809-4013 FAX:

Email: Kaitlyn.Hunt@arcadis.com

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

### Sample Receiving

- |     |  |  |
|-----|--|--|
| 01. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples are received at 4C +/- 2C Thermometer # IR 6.4 |
| 02. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Received on ice/ cooling process begun                 |
| 03. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples shipped  |
| 04. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples left in 24 hr. drop box                        |
| 05. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Are there custody seals/tape or is the drop box locked |

### Chain of Custody

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

### Preservation

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

### Bottle Conditions

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

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

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

Plant 2



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

**REPORT TO**

**CHAIN OF CUSTODY RECORD**

**INVOICE TO**

CONTACT NAME Tiffany Linder, Kaitlyn Hunt  
 COMPANY Arcadis  
 ADDRESS 28550 Cabot Drive, STE 500  
 CITY Novi STATE MI ZIP CODE 48377  
 PHONE NO. 947-777-5215 FAX NO. \_\_\_\_\_ P.O. NO. \_\_\_\_\_  
 E-MAIL ADDRESS kaitlyn.hunt@arcadis.com QUOTE NO. \_\_\_\_\_

CONTACT NAME \_\_\_\_\_  SAME  
 COMPANY \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_  
 PHONE NO. \_\_\_\_\_ E-MAIL ADDRESS tiffany.linder@arcadis.com

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

PROJECT NO./NAME 30267725.0470A / RACER Lansing GWS 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: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID  
 SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIFE A=AIR W=WASTE

**# Containers & Preservatives**

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	MeOH	OTHER	I,4-Dioxane - 8260 SIMS	VOC - 8260 SIMS	Certifications		Project Locations		Special Instructions
	DATE	TIME													<input type="checkbox"/> OHIO VAP	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> DoD	<input type="checkbox"/> NPDES	
<u>74203.01</u>	<u>5/6/25</u>	<u>1205</u>	<u>MW-22-156-050625</u>	<u>GW</u>	<u>3</u>		<u>3</u>						<u>X</u>	<u>X</u>					
<u>.02</u>	<u>5/6/25</u>	<u>---</u>	<u>DUP-01_050625</u>	<u>GW</u>	<u>3</u>		<u>3</u>						<u>X</u>	<u>X</u>					
<u>.03</u>	<u>5/6/25</u>	<u>---</u>	<u>Trip Blank</u>	<u>GW</u>	<u>1</u>		<u>1</u>						<u>X</u>						

RELINQUISHED BY: Arcadis 5/6/25 1545  
 SIGNATURE/ORGANIZATION \_\_\_\_\_ DATE TIME  
 RECEIVED BY: Merit Drop Box 5/6/25 1545  
 SIGNATURE/ORGANIZATION \_\_\_\_\_ DATE TIME

RELINQUISHED BY: Merit Drop Box 5/6/25 1545  
 SIGNATURE/ORGANIZATION \_\_\_\_\_ DATE TIME  
 RECEIVED BY: M. Clifton 5/6/25 1545  
 SIGNATURE/ORGANIZATION \_\_\_\_\_ DATE TIME

SEAL NO. \_\_\_\_\_ SEAL INTACT YES  NO  INITIALS \_\_\_\_\_  
 SEAL NO. \_\_\_\_\_ SEAL INTACT YES  NO  INITIALS \_\_\_\_\_

NOTES: \_\_\_\_\_ TEMP. ON ARRIVAL 6.4

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



# Analytical Laboratory Report

Report ID: S74371.01(01)+QC01  
Generated on 05/15/2025

Report to

Attention: Kaitlyn Hunt  
Arcadis  
28550 Cabot Drive  
Suite 500  
Novi, MI 48377

Phone: O:248-809-4013 C:947-777-5215 FAX:  
Email: Kaitlyn.Hunt@arcadis.com

Additional Contacts: Marina Samp, Tiffany Linder

Report produced by

Merit Laboratories, Inc.  
2680 East Lansing Drive  
East Lansing, MI 48823

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

Contacts for report questions:  
John Lavery (johnlavery@meritlabs.com)  
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S74371.01-S74371.09  
Project: 30267725.0470B / RACER Lansing GWS  
Collected Date(s): 05/09/2025  
Submitted Date/Time: 05/09/2025 14:25  
Sampled by: Austin Westhuis  
P.O. #: US3460024033

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- Sample Summary (Page 5)
- QC Report (Pages 15-47)

Maya Murshak  
Technical Director



# Analytical Laboratory Report

## General Report Notes

---

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

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

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

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

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

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

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

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There is no additional narrative for this analytical report



# Analytical Laboratory 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
o	Associated EIS outside of control limits
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
q	Qualifier ion ratio outside of control limits
x	Preserved from bulk sample

## Glossary of Abbreviations

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



# Analytical Laboratory Report

## Method Summary

Method	Version
N/A	Not Applicable
SW8260B - SIM	SW 846 Method 8260B Revision 2 December 1996 SIMs



# Analytical Laboratory Report

## Sample Summary (9 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S74371.01	MW-12-21_050925	Groundwater	05/09/25 10:30
S74371.02	MW-12-21_050925 MS	Groundwater	05/09/25 10:30
S74371.03	MW-12-21_050925 MSD	Groundwater	05/09/25 10:30
S74371.04	MW-13-22_050925	Groundwater	05/09/25 09:30
S74371.05	MW-13-34_050925	Groundwater	05/09/25 12:20
S74371.06	MW-13-48_050925	Groundwater	05/09/25 12:55
S74371.07	PW-14-03R_050925	Groundwater	05/09/25 10:55
S74371.08	TW-15-11_050925	Groundwater	05/09/25 09:55
S74371.09	DUP-05_050925	Groundwater	05/09/25 00:01



# Analytical Laboratory Report

Lab Sample ID: S74371.01

Sample Tag: MW-12-21\_050925

Collected Date/Time: 05/09/2025 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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/14/25 19:20, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	120	10		ug/L	10	123-91-1	Y

Y-Elevated reporting limit due to high target concentration



# Analytical Laboratory Report

Lab Sample ID: S74371.02

Sample Tag: MW-12-21\_050925 MS

Collected Date/Time: 05/09/2025 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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/14/25 14:40, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	680	10		ug/L	10	123-91-1	Y1

Y-Elevated reporting limit due to high target concentration 1-Sample spiked at 500 mg/l



# Analytical Laboratory Report

Lab Sample ID: S74371.03

Sample Tag: MW-12-21\_050925 MSD

Collected Date/Time: 05/09/2025 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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/14/25 15:06, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	710	10		ug/L	10	123-91-1	Y1

Y-Elevated reporting limit due to high target concentration 1-Sample spiked at 500 mg/l



# Analytical Laboratory Report

Lab Sample ID: S74371.04

Sample Tag: MW-13-22\_050925

Collected Date/Time: 05/09/2025 09:30

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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/12/25 22:58, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	94	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74371.05

Sample Tag: MW-13-34\_050925

Collected Date/Time: 05/09/2025 12:20

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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/12/25 22:33, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	80	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74371.06

Sample Tag: MW-13-48\_050925

Collected Date/Time: 05/09/2025 12:55

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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/12/25 21:17, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	62	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74371.07

Sample Tag: PW-14-03R\_050925

Collected Date/Time: 05/09/2025 10:55

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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/12/25 20:51, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	14	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74371.08

Sample Tag: TW-15-11\_050925

Collected Date/Time: 05/09/2025 09:55

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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 20:53, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	32	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74371.09

Sample Tag: DUP-05\_050925

Collected Date/Time: 05/09/2025 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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/12/25 21:42, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	14	1		ug/L	1	123-91-1	



# Quality Control Report

Report ID: S74371.01(01)+QC01  
Generated on 05/15/2025

Report to  
Attention: Kaitlyn Hunt  
Arcadis  
28550 Cabot Drive  
Suite 500  
Novi, MI 48377

Report Produced by  
Merit Laboratories  
2680 East Lansing Drive  
East Lansing, MI 48823  
  
Phone: (517) 332-0167 FAX: (517) 332-6333

Phone: O:248-809-4013 C:947-777-5215 FAX:

## Report Summary

Lab Sample ID(s): S74371.01-S74371.09  
Project: 30267725.0470B / RACER Lansing GWS  
Submitted Date/Time: 05/09/2025 14:25  
Sampled by: Austin Westhuis  
P.O. #: US3460024033

## QC Report Sections

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Analysis Summary (Pages 16-24)  
Prep Batch Summary (Page 25)  
Surrogates per Lab Sample (Pages 26-31)  
Surrogates per QC Sample (Pages 32-34)  
Internal Standards per Lab Sample (Pages 35-41)  
Internal Standards per QC Sample (Pages 42-44)  
Batch QC Results (Pages 45-47)

## Report Flag Descriptions

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

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

Barbara Ball  
Quality Assurance Manager

# QC Report - Analysis Summary

Lab Sample ID: S74371.01

Sample Tag: MW-12-21\_050925

Collected Date/Time: 05/09/2025 10:30

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/14/25 19:20	250514A9	VS250514W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74371.02

Sample Tag: MW-12-21\_050925 MS

Collected Date/Time: 05/09/2025 10:30

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/14/25 14:40	250514A9	VS250514W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74371.03

Sample Tag: MW-12-21\_050925 MSD

Collected Date/Time: 05/09/2025 10:30

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/14/25 15:06	250514A9	VS250514W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74371.04

Sample Tag: MW-13-22\_050925

Collected Date/Time: 05/09/2025 09:30

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/12/25 22:58	250512A9	VS250512W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74371.05

Sample Tag: MW-13-34\_050925

Collected Date/Time: 05/09/2025 12:20

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/12/25 22:33	250512A9	VS250512W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74371.06

Sample Tag: MW-13-48\_050925

Collected Date/Time: 05/09/2025 12:55

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/12/25 21:17	250512A9	VS250512W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74371.07

Sample Tag: PW-14-03R\_050925

Collected Date/Time: 05/09/2025 10:55

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/12/25 20:51	250512A9	VS250512W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74371.08

Sample Tag: TW-15-11\_050925

Collected Date/Time: 05/09/2025 09:55

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 20:53	250513A9	VS250513W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74371.09

Sample Tag: DUP-05\_050925

Collected Date/Time: 05/09/2025 00:01

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/12/25 21:42	250512A9	VS250512W1	Yes	BLK/LCS/LCSD

## QC Report - Prep Batch Summary

### Organics - Volatiles, Prep Batch ID: VS250512W1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74371.04	1,4-Dioxane	SW8260B - SIM	05/12/25 22:58	250512A9
S74371.05	1,4-Dioxane	SW8260B - SIM	05/12/25 22:33	250512A9
S74371.06	1,4-Dioxane	SW8260B - SIM	05/12/25 21:17	250512A9
S74371.07	1,4-Dioxane	SW8260B - SIM	05/12/25 20:51	250512A9
S74371.09	1,4-Dioxane	SW8260B - SIM	05/12/25 21:42	250512A9

### Organics - Volatiles, Prep Batch ID: VS250513W1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74371.08	1,4-Dioxane	SW8260B - SIM	05/13/25 20:53	250513A9

### Organics - Volatiles, Prep Batch ID: VS250514W1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74371.01	1,4-Dioxane	SW8260B - SIM	05/14/25 19:20	250514A9
S74371.02	1,4-Dioxane	SW8260B - SIM	05/14/25 14:40	250514A9
S74371.03	1,4-Dioxane	SW8260B - SIM	05/14/25 15:06	250514A9

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74371.04

Sample Tag: MW-13-22\_050925

Collected Date/Time: 05/09/2025 09:30

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512A9, Run Date: 05/12/2025 22:58, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		100.4	60.0	140.0

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74371.05

Sample Tag: MW-13-34\_050925

Collected Date/Time: 05/09/2025 12:20

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512A9, Run Date: 05/12/2025 22:33, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		101.3	60.0	140.0

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74371.06

Sample Tag: MW-13-48\_050925

Collected Date/Time: 05/09/2025 12:55

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512A9, Run Date: 05/12/2025 21:17, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		100.7	60.0	140.0

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74371.07

Sample Tag: PW-14-03R\_050925

Collected Date/Time: 05/09/2025 10:55

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512A9, Run Date: 05/12/2025 20:51, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		108.8	60.0	140.0

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74371.08

Sample Tag: TW-15-11\_050925

Collected Date/Time: 05/09/2025 09:55

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250513A9, Run Date: 05/13/2025 20:53, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		87.4	60.0	140.0

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74371.09

Sample Tag: DUP-05\_050925

Collected Date/Time: 05/09/2025 00:01

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512A9, Run Date: 05/12/2025 21:42, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		101.2	60.0	140.0

# QC Report - Surrogates per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250512W1

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250512A9.BLKW12A

Run in Batch: 250512A9, Run Date: 05/12/2025 14:32, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		97.7	60.0	140.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250512A9.LCSW12A

Run in Batch: 250512A9, Run Date: 05/12/2025 12:51, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		97.4	60.0	140.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250512A9.LCSDW12A, Parent Sample ID: 250512A9.LCSW12A

Run in Batch: 250512A9, Run Date: 05/12/2025 13:17, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		96.4	60.0	140.0

# QC Report - Surrogates per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250513W1

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250513A9.BLKW13A

Run in Batch: 250513A9, Run Date: 05/13/2025 17:05, Prep Date: 05/13/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		109.2	60.0	140.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250513A9.LCSW13B

Run in Batch: 250513A9, Run Date: 05/13/2025 15:24, Prep Date: 05/13/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		93.5	60.0	140.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250513A9.LCSDW13B, Parent Sample ID: 250513A9.LCSW13B

Run in Batch: 250513A9, Run Date: 05/13/2025 15:49, Prep Date: 05/13/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		95.0	60.0	140.0

# QC Report - Surrogates per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250514W1

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250514A9.BLKW14A

Run in Batch: 250514A9, Run Date: 05/14/2025 16:22, Prep Date: 05/14/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
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No Surrogates

### Laboratory Control Sample (LCS)

Lab Sample ID: 250514A9.LCSW14A

Run in Batch: 250514A9, Run Date: 05/14/2025 12:59, Prep Date: 05/14/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
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No Surrogates

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250514A9.LCSDW14A, Parent Sample ID: 250514A9.LCSW14A

Run in Batch: 250514A9, Run Date: 05/14/2025 13:24, Prep Date: 05/14/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
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No Surrogates

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74371.01

Sample Tag: MW-12-21\_050925

Collected Date/Time: 05/09/2025 10:30

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250514A9, Run Date: 05/14/2025 19:20, Matrix: WW, Dilution: 10

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		131.5	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74371.04

Sample Tag: MW-13-22\_050925

Collected Date/Time: 05/09/2025 09:30

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512A9, Run Date: 05/12/2025 22:58, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		91.8	50.0	200.0
1,4-Dioxane-D8		96.2	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		93.3	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74371.05

Sample Tag: MW-13-34\_050925

Collected Date/Time: 05/09/2025 12:20

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512A9, Run Date: 05/12/2025 22:33, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		94.2	50.0	200.0
1,4-Dioxane-D8		109.6	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		93.6	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74371.06

Sample Tag: MW-13-48\_050925

Collected Date/Time: 05/09/2025 12:55

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512A9, Run Date: 05/12/2025 21:17, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		<b>117.5</b>	50.0	200.0
1,4-Dioxane-D8		<b>104.8</b>	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		<b>118.8</b>	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74371.07

Sample Tag: PW-14-03R\_050925

Collected Date/Time: 05/09/2025 10:55

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512A9, Run Date: 05/12/2025 20:51, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		117.4	50.0	200.0
1,4-Dioxane-D8		107.9	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		122.4	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74371.08

Sample Tag: TW-15-11\_050925

Collected Date/Time: 05/09/2025 09:55

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250513A9, Run Date: 05/13/2025 20:53, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		105.4	50.0	200.0
1,4-Dioxane-D8		100.2	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		105.3	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74371.09

Sample Tag: DUP-05\_050925

Collected Date/Time: 05/09/2025 00:01

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512A9, Run Date: 05/12/2025 21:42, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		117.9	50.0	200.0
1,4-Dioxane-D8		108.6	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		119.4	50.0	200.0

# QC Report - Internal Standards per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250512W1

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250512A9.BLKW12A

Run in Batch: 250512A9, Run Date: 05/12/2025 14:32, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		97.3	50.0	200.0
1,4-Dioxane-D8		90.5	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		87.6	50.0	200.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250512A9.LCSW12A

Run in Batch: 250512A9, Run Date: 05/12/2025 12:51, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		89.6	50.0	200.0
1,4-Dioxane-D8		77.9	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		88.7	50.0	200.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250512A9.LCSDW12A, Parent Sample ID: 250512A9.LCSW12A

Run in Batch: 250512A9, Run Date: 05/12/2025 13:17, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		99.7	50.0	200.0
1,4-Dioxane-D8		99.7	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		96.9	50.0	200.0

# QC Report - Internal Standards per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250513W1

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250513A9.BLKW13A

Run in Batch: 250513A9, Run Date: 05/13/2025 17:05, Prep Date: 05/13/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		85.3	50.0	200.0
1,4-Dioxane-D8		86.3	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		100.2	50.0	200.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250513A9.LCSW13B

Run in Batch: 250513A9, Run Date: 05/13/2025 15:24, Prep Date: 05/13/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		98.8	50.0	200.0
1,4-Dioxane-D8		96.3	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		98.7	50.0	200.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250513A9.LCSDW13B, Parent Sample ID: 250513A9.LCSW13B

Run in Batch: 250513A9, Run Date: 05/13/2025 15:49, Prep Date: 05/13/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		93.8	50.0	200.0
1,4-Dioxane-D8		100.7	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		98.7	50.0	200.0

# QC Report - Internal Standards per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250514W1

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250514A9.BLKW14A

Run in Batch: 250514A9, Run Date: 05/14/2025 16:22, Prep Date: 05/14/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		97.0	50.0	200.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250514A9.LCSW14A

Run in Batch: 250514A9, Run Date: 05/14/2025 12:59, Prep Date: 05/14/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		104.3	50.0	200.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250514A9.LCSDW14A, Parent Sample ID: 250514A9.LCSW14A

Run in Batch: 250514A9, Run Date: 05/14/2025 13:24, Prep Date: 05/14/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		120.7	50.0	200.0

# QC Report - Batch QC Results

## Organics - Volatiles, Prep Batch ID: VS250512W1

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

### Blank (BLK)

Lab Sample ID: 250512A9.BLKW12A

Run in Batch: 250512A9, Run Date: 05/12/2025 14:32, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
1,4-Dioxane		ND	1.00	ug/l

### Laboratory Control Sample (LCS)

Lab Sample ID: 250512A9.LCSW12A

Run in Batch: 250512A9, Run Date: 05/12/2025 12:51, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
1,4-Dioxane		126.4	70.0	130.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250512A9.LCSDW12A, Parent Sample ID: 250512A9.LCSW12A

Run in Batch: 250512A9, Run Date: 05/12/2025 13:17, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,4-Dioxane		94.7	70.0	130.0	28.7	30.0

# QC Report - Batch QC Results

## Organics - Volatiles, Prep Batch ID: VS250513W1

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

### Blank (BLK)

Lab Sample ID: 250513A9.BLKW13A

Run in Batch: 250513A9, Run Date: 05/13/2025 17:05, Prep Date: 05/13/2025, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
1,4-Dioxane		ND	1.00	ug/l

### Laboratory Control Sample (LCS)

Lab Sample ID: 250513A9.LCSW13B

Run in Batch: 250513A9, Run Date: 05/13/2025 15:24, Prep Date: 05/13/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
1,4-Dioxane		94.0	70.0	130.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250513A9.LCSDW13B, Parent Sample ID: 250513A9.LCSW13B

Run in Batch: 250513A9, Run Date: 05/13/2025 15:49, Prep Date: 05/13/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,4-Dioxane		83.1	70.0	130.0	12.4	30.0

# QC Report - Batch QC Results

## Organics - Volatiles, Prep Batch ID: VS250514W1

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

### Blank (BLK)

Lab Sample ID: 250514A9.BLKW14A

Run in Batch: 250514A9, Run Date: 05/14/2025 16:22, Prep Date: 05/14/2025, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
1,4-Dioxane		ND	1.00	ug/l

### Laboratory Control Sample (LCS)

Lab Sample ID: 250514A9.LCSW14A

Run in Batch: 250514A9, Run Date: 05/14/2025 12:59, Prep Date: 05/14/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
1,4-Dioxane		96.6	70.0	130.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250514A9.LCSDW14A, Parent Sample ID: 250514A9.LCSW14A

Run in Batch: 250514A9, Run Date: 05/14/2025 13:24, Prep Date: 05/14/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,4-Dioxane		94.8	70.0	130.0	1.9	30.0

# Merit Laboratories Login Checklist

Lab Set ID:S74371

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

Project: 30267725.0470B / RACER Lansing GWS

Submitted:05/09/2025 14:25 Login User: MMC

Attention: Kaitlyn Hunt

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

Phone: O:248-809-4013 FAX:

Email: Kaitlyn.Hunt@arcadis.com

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

### Sample Receiving

- |     |  |  |        |
|-----|--|--|--------|
| 01. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Samples are received at 4C +/- 2C Thermometer #        | IR 4.1 |
| 02. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Received on ice/ cooling process begun                 |        |
| 03. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples shipped  |        |
| 04. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples left in 24 hr. drop box                        |        |
| 05. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Are there custody seals/tape or is the drop box locked |        |

### Chain of Custody

- |     |  |  |                   |
|-----|--|--|-------------------|
| 06. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | COC adequately filled out                |                   |
| 07. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | COC signed and relinquished to the lab   |                   |
| 08. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Sample tag on bottles match COC          | DUP-05 not listed |
| 09. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Subcontracting needed? Subcontracted to: |                   |

### Preservation

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

### Bottle Conditions

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

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

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

Plant 3



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

**REPORT TO**

**CHAIN OF CUSTODY RECORD**

**INVOICE TO**

CONTACT NAME Tiffany Linder, Kaitlyn Hunt  
 COMPANY Arcadis  
 ADDRESS 28550 Cabot Drive, STE 500  
 CITY Novi STATE MI ZIP CODE 48377  
 PHONE NO. 947-777-5215 FAX NO. \_\_\_\_\_ P.O. NO. U5346024033  
 E-MAIL ADDRESS kaitlyn.hunt@arcadis.com QUOTE NO. \_\_\_\_\_

CONTACT NAME  SAME  
 COMPANY \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_  
 PHONE NO. \_\_\_\_\_ E-MAIL ADDRESS tiffany.linder@arcadis.com

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

PROJECT NO./NAME 30267725.0470B / RACER Lansing GWS SAMPLER(S), PLEASE PRINT/SIGN NAME Austin Westhuis / [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=WIFE A=AIR W=WASTE

**# Containers & Preservatives**

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	MeOH	OTHER	1,4-Dioxane - 8260 SIMS	T. Phosphorus	TKN	Nitrate	Certifications		Project Locations		Special Instructions	
	DATE	TIME															<input type="checkbox"/> OHIO VAP	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> DoD	<input type="checkbox"/> NPDES		<input type="checkbox"/> Detroit
<u>01/02/03</u>	<u>5/9/25</u>	<u>1030</u>	<u>MW-12-21</u>	<u>GW</u>	<u>9</u>			<u>9</u>					<input checked="" type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>			
<u>74371.04</u>	<u>5/9/25</u>	<u>0930</u>	<u>MW-13-22</u>	<u>GW</u>	<u>3</u>			<u>3</u>					<input checked="" type="checkbox"/>									
<u>.05</u>	<u>5/9/25</u>	<u>1220</u>	<u>MW-13-34</u>	<u>GW</u>	<u>3</u>			<u>3</u>					<input checked="" type="checkbox"/>									
<u>06</u>	<u>5/9/25</u>	<u>1255</u>	<u>MW-13-48</u>	<u>GW</u>	<u>3</u>			<u>3</u>					<input checked="" type="checkbox"/>									
<u>07</u>	<u>5/9/25</u>	<u>1055</u>	<u>PW-14-03R</u>	<u>GW</u>	<u>3</u>			<u>3</u>					<input checked="" type="checkbox"/>									
<u>.08</u>	<u>5/9/25</u>	<u>0955</u>	<u>TW-15-11</u>	<u>GW</u>	<u>3</u>			<u>3</u>					<input checked="" type="checkbox"/>									

RELINQUISHED BY: SIGNATURE/ORGANIZATION [Signature] / Austin Westhuis / Arcadis DATE 5/9/25 TIME 1425  
 RECEIVED BY: SIGNATURE/ORGANIZATION [Signature] DATE 5-9-25 TIME 1425  
 RELINQUISHED BY: SIGNATURE/ORGANIZATION \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_  
 RECEIVED BY: SIGNATURE/ORGANIZATION \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_

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 4.1c

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



# Analytical Laboratory Report

Report ID: S74372.01(01)+QC01  
Generated on 05/13/2025

## Report to

---

Attention: Kaitlyn Hunt  
Arcadis  
28550 Cabot Drive  
Suite 500  
Novi, MI 48377

Phone: O:248-809-4013 C:947-777-5215 FAX:  
Email: Kaitlyn.Hunt@arcadis.com

Additional Contacts: Marina Samp, Tiffany Linder

## Report produced by

---

Merit Laboratories, Inc.  
2680 East Lansing Drive  
East Lansing, MI 48823

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

Contacts for report questions:  
John Lavery (johnlavery@meritlabs.com)  
Barbara Ball (bball@meritlabs.com)

## Report Summary

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Lab Sample ID(s): S74372.01-S74372.02  
Project: 30267725.00102  
Collected Date(s): 05/08/2025  
Submitted Date/Time: 05/09/2025 14:25  
Sampled by: Austin Westhuis  
P.O. #: 30267725.00102

## Table of Contents

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Maya Murshak  
Technical Director



# Analytical Laboratory Report

## General Report Notes

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

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

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

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

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

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

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

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There is no additional narrative for this analytical report



# Analytical Laboratory 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
o	Associated EIS outside of control limits
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
q	Qualifier ion ratio outside of control limits
x	Preserved from bulk sample

## Glossary of Abbreviations

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



# Analytical Laboratory Report

## Method Summary

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



# Analytical Laboratory Report

## Sample Summary (2 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S74372.01	MW-22-154_050825	Groundwater	05/08/25 11:25
S74372.02	Trip Blank	Water	05/08/25 00:01



# Analytical Laboratory Report

Lab Sample ID: S74372.01

Sample Tag: MW-22-154\_050825

Collected Date/Time: 05/08/2025 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	05/13/25 11:20	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 05/13/25 03:19, 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	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	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	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



# Analytical Laboratory Report

Lab Sample ID: S74372.01 (continued)

Sample Tag: MW-22-154\_050825

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 05/13/25 03:19, Analyst: NDK (continued)

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



# Analytical Laboratory Report

Lab Sample ID: S74372.02

Sample Tag: Trip Blank

Collected Date/Time: 05/08/2025 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: 05/13/25 09:45, Analyst: MMC

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



# Quality Control Report

Report ID: S74372.01(01)+QC01  
Generated on 05/13/2025

Report to  
Attention: Kaitlyn Hunt  
Arcadis  
28550 Cabot Drive  
Suite 500  
Novi, MI 48377

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

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

Phone: O:248-809-4013 C:947-777-5215 FAX:

## Report Summary

Lab Sample ID(s): S74372.01  
Project: 30267725.00102  
Submitted Date/Time: 05/09/2025 14:25  
Sampled by: Austin Westhuis  
P.O. #: 30267725.00102

## QC Report Sections

- Cover Page (Page 9)
- Analysis Summary (Page 10)
- Prep Batch Summary (Page 11)
- Surrogates per Lab Sample (Page 12)
- Surrogates per QC Sample (Page 13)
- Internal Standards per Lab Sample (Page 14)
- Internal Standards per QC Sample (Page 15)
- Batch QC Results (Pages 16-20)

## Report Flag Descriptions

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

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

Barbara Ball  
Quality Assurance Manager

# QC Report - Analysis Summary

Lab Sample ID: S74372.01

Sample Tag: MW-22-154\_050825

Collected Date/Time: 05/08/2025 11:25

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
Volatile Organics - DEQ List	SW5030C/8260C	05/13/25 03:19	250512B11	VF250512W4	Yes	BLK/LCS/LCSD

# QC Report - Prep Batch Summary

## Organics - Volatiles, Prep Batch ID: VF250512W4

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74372.01	Volatile Organics - DEQ List	SW5030C/8260C	05/13/25 03:19	250512B11

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74372.01

Sample Tag: MW-22-154\_050825

Collected Date/Time: 05/08/2025 11:25

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 250512B11, Run Date: 05/13/2025 03:19, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		96.9	80.0	124.0
1,2-Dichloroethane-D4		111.7	72.0	125.0
Toluene-D8		101.3	89.0	112.0

# QC Report - Surrogates per QC Sample

## Organics - Volatiles, Prep Batch ID: VF250512W4

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250512B11.BLKW12B

Run in Batch: 250512B11, Run Date: 05/13/2025 01:21, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		98.1	80.0	124.0
1,2-Dichloroethane-D4		108.5	72.0	125.0
Toluene-D8		101.1	89.0	112.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250512B11.LCSW12B

Run in Batch: 250512B11, Run Date: 05/12/2025 23:47, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		100.1	80.0	124.0
1,2-Dichloroethane-D4		104.2	72.0	125.0
Toluene-D8		101.8	89.0	112.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250512B11.LCSDW12B, Parent Sample ID: 250512B11.LCSW12B

Run in Batch: 250512B11, Run Date: 05/13/2025 00:10, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		100.1	80.0	124.0
1,2-Dichloroethane-D4		105.8	72.0	125.0
Toluene-D8		102.3	89.0	112.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74372.01

Sample Tag: MW-22-154\_050825

Collected Date/Time: 05/08/2025 11:25

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 250512B11, Run Date: 05/13/2025 03:19, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		96.6	50.0	200.0
1,4-Difluorobenzene		99.4	50.0	200.0
Chlorobenzene-D5		99.7	50.0	200.0
1,4-Dichlorobenzene-D4		97.7	50.0	200.0

# QC Report - Internal Standards per QC Sample

## Organics - Volatiles, Prep Batch ID: VF250512W4

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250512B11.BLKW12B

Run in Batch: 250512B11, Run Date: 05/13/2025 01:21, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		<b>98.9</b>	50.0	200.0
1,4-Difluorobenzene		<b>100.8</b>	50.0	200.0
Chlorobenzene-D5		<b>99.5</b>	50.0	200.0
1,4-Dichlorobenzene-D4		<b>95.1</b>	50.0	200.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250512B11.LCSW12B

Run in Batch: 250512B11, Run Date: 05/12/2025 23:47, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		<b>101.2</b>	50.0	200.0
1,4-Difluorobenzene		<b>101.1</b>	50.0	200.0
Chlorobenzene-D5		<b>101.9</b>	50.0	200.0
1,4-Dichlorobenzene-D4		<b>99.9</b>	50.0	200.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250512B11.LCSDW12B, Parent Sample ID: 250512B11.LCSW12B

Run in Batch: 250512B11, Run Date: 05/13/2025 00:10, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		<b>99.4</b>	50.0	200.0
1,4-Difluorobenzene		<b>101.1</b>	50.0	200.0
Chlorobenzene-D5		<b>101.7</b>	50.0	200.0
1,4-Dichlorobenzene-D4		<b>100.0</b>	50.0	200.0

# QC Report - Batch QC Results

**Organics - Volatiles, Prep Batch ID: VF250512W4**

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

**Blank (BLK)**

Lab Sample ID: 250512B11.BLKW12B

Run in Batch: 250512B11, Run Date: 05/13/2025 01:21, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Diethyl ether		ND	1.00	ug/l
Acetone		ND	10.00	ug/l
Methyl iodide		ND	1.00	ug/l
Carbon disulfide		ND	1.00	ug/l
tert-Methyl butyl ether (MTBE)		ND	1.00	ug/l
Acrylonitrile		ND	1.00	ug/l
2-Butanone (MEK)		ND	10.00	ug/l
Dichlorodifluoromethane		ND	1.00	ug/l
Chloromethane		ND	1.00	ug/l
Vinyl chloride		ND	1.00	ug/l
Bromomethane		ND	1.00	ug/l
Chloroethane		ND	1.00	ug/l
Trichlorofluoromethane		ND	1.00	ug/l
1,1-Dichloroethene		ND	1.00	ug/l
Methylene chloride		ND	1.00	ug/l
trans-1,2-Dichloroethene		ND	1.00	ug/l
1,1-Dichloroethane		ND	1.00	ug/l
cis-1,2-Dichloroethene		ND	1.00	ug/l
Tetrahydrofuran		ND	10.00	ug/l
Chloroform		ND	1.00	ug/l
Bromochloromethane		ND	1.00	ug/l
1,1,1-Trichloroethane		ND	1.00	ug/l
4-Methyl-2-pentanone (MIBK)		ND	10.00	ug/l
2-Hexanone		ND	10.00	ug/l
Carbon tetrachloride		ND	1.00	ug/l
Benzene		ND	1.00	ug/l
1,2-Dichloroethane		ND	1.00	ug/l
Trichloroethene		ND	1.00	ug/l
1,2-Dichloropropane		ND	1.00	ug/l
Bromodichloromethane		ND	1.00	ug/l
Dibromomethane		ND	1.00	ug/l
cis-1,3-Dichloropropene		ND	1.00	ug/l
Toluene		ND	1.00	ug/l
trans-1,3-Dichloropropene		ND	1.00	ug/l
1,1,2-Trichloroethane		ND	1.00	ug/l
Tetrachloroethene		ND	1.00	ug/l
trans-1,4-Dichloro-2-butene		ND	1.00	ug/l
Dibromochloromethane		ND	1.00	ug/l
1,2-Dibromoethane		ND	1.00	ug/l
Chlorobenzene		ND	1.00	ug/l
1,1,1,2-Tetrachloroethane		ND	1.00	ug/l
Ethylbenzene		ND	1.00	ug/l
p,m-Xylene		ND	2.00	ug/l
o-Xylene		ND	1.00	ug/l
Styrene		ND	1.00	ug/l
Isopropylbenzene		ND	1.00	ug/l

**QC Report - Batch QC Results**

**Organics - Volatiles, Prep Batch ID: VF250512W4 (continued)**

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

**Blank (BLK) (continued)**

Lab Sample ID: 250512B11.BLKW12B

Run in Batch: 250512B11, Run Date: 05/13/2025 01:21, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Bromoform		ND	1.00	ug/l
1,1,2,2-Tetrachloroethane		ND	1.00	ug/l
1,2,3-Trichloropropane		ND	1.00	ug/l
n-Propylbenzene		ND	1.00	ug/l
Bromobenzene		ND	1.00	ug/l
1,3,5-Trimethylbenzene		ND	1.00	ug/l
tert-Butylbenzene		ND	1.00	ug/l
1,2,4-Trimethylbenzene		ND	1.00	ug/l
sec-Butylbenzene		ND	1.00	ug/l
p-Isopropyltoluene		ND	1.00	ug/l
1,3-Dichlorobenzene		ND	1.00	ug/l
1,4-Dichlorobenzene		ND	1.00	ug/l
1,2-Dichlorobenzene		ND	1.00	ug/l
1,2,3-Trimethylbenzene		ND	1.00	ug/l
n-Butylbenzene		ND	1.00	ug/l
Hexachloroethane		ND	1.00	ug/l
1,2-Dibromo-3-chloropropane		ND	1.00	ug/l
1,2,4-Trichlorobenzene		ND	1.00	ug/l
1,2,3-Trichlorobenzene		ND	1.00	ug/l
Naphthalene		ND	1.00	ug/l
2-Methylnaphthalene		ND	1.00	ug/l

**Laboratory Control Sample (LCS)**

Lab Sample ID: 250512B11.LCSW12B

Run in Batch: 250512B11, Run Date: 05/12/2025 23:47, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Diethyl ether		112.3	67.4	121.2
Acetone		110.5	29.9	161.5
Methyl iodide		111.3	68.8	116.4
Carbon disulfide		105.0	63.8	137.4
tert-Methyl butyl ether (MTBE)		114.0	73.2	122.4
Acrylonitrile		110.6	69.9	128.9
2-Butanone (MEK)		115.3	44.0	134.4
Dichlorodifluoromethane		101.7	10.0	222.8
Chloromethane		108.2	23.8	166.5
Vinyl chloride		105.8	43.5	149.1
Bromomethane		109.5	56.8	151.3
Chloroethane		92.2	53.4	149.4
Trichlorofluoromethane		99.5	59.7	151.8
1,1-Dichloroethene		107.3	69.6	139.4
Methylene chloride		109.2	73.3	121.1
trans-1,2-Dichloroethene		108.2	73.6	129.3
1,1-Dichloroethane		110.9	71.5	126.2
cis-1,2-Dichloroethene		111.5	76.6	122.1
Tetrahydrofuran		106.6	59.0	117.9
Chloroform		111.0	78.4	124.0

## QC Report - Batch QC Results

### Organics - Volatiles, Prep Batch ID: VF250512W4 (continued)

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

### Laboratory Control Sample (LCS) (continued)

Lab Sample ID: 250512B11.LCSW12B

Run in Batch: 250512B11, Run Date: 05/12/2025 23:47, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Bromochloromethane		111.3	78.2	120.8
1,1,1-Trichloroethane		109.0	79.4	130.9
4-Methyl-2-pentanone (MIBK)		103.1	71.6	125.2
2-Hexanone		105.4	55.4	136.9
Carbon tetrachloride		105.9	72.6	133.0
Benzene		108.3	79.9	124.9
1,2-Dichloroethane		107.9	76.0	126.3
Trichloroethene		107.0	79.7	124.2
1,2-Dichloropropane		108.8	78.6	126.4
Bromodichloromethane		110.7	80.4	128.2
Dibromomethane		106.9	76.9	122.1
cis-1,3-Dichloropropene		109.3	79.8	129.9
Toluene		108.8	79.8	124.5
trans-1,3-Dichloropropene		108.4	74.0	131.3
1,1,2-Trichloroethane		107.8	78.7	123.1
Tetrachloroethene		105.0	74.5	124.5
trans-1,4-Dichloro-2-butene		102.0	68.6	135.4
Dibromochloromethane		106.1	74.6	127.2
1,2-Dibromoethane		107.0	70.3	133.7
Chlorobenzene		106.4	79.2	122.7
1,1,1,2-Tetrachloroethane		106.2	80.3	128.2
Ethylbenzene		108.0	79.5	129.1
p,m-Xylene		108.2	79.4	132.2
o-Xylene		109.5	80.2	131.0
Styrene		110.2	69.5	126.7
Isopropylbenzene		108.3	74.4	121.5
Bromoform		104.4	69.4	128.0
1,1,2,2-Tetrachloroethane		106.8	79.8	126.3
1,2,3-Trichloropropane		109.7	78.3	138.8
n-Propylbenzene		108.2	82.0	130.7
Bromobenzene		107.4	78.7	124.6
1,3,5-Trimethylbenzene		109.2	81.3	128.9
tert-Butylbenzene		111.0	80.7	128.9
1,2,4-Trimethylbenzene		112.6	81.4	130.8
sec-Butylbenzene		109.2	77.4	129.8
p-Isopropyltoluene		111.8	79.8	137.5
1,3-Dichlorobenzene		109.9	77.0	131.3
1,4-Dichlorobenzene		105.6	20.7	137.7
1,2-Dichlorobenzene		109.8	10.0	166.2
1,2,3-Trimethylbenzene		112.2	76.3	124.2
n-Butylbenzene		107.6	80.0	133.3
Hexachloroethane		109.4	23.8	138.1
1,2-Dibromo-3-chloropropane		108.2	21.2	189.4
1,2,4-Trichlorobenzene		108.3	27.4	143.4
1,2,3-Trichlorobenzene		108.6	75.4	131.4
Naphthalene		109.4	32.9	135.8

**QC Report - Batch QC Results**

**Organics - Volatiles, Prep Batch ID: VF250512W4 (continued)**

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

**Laboratory Control Sample (LCS) (continued)**

Lab Sample ID: 250512B11.LCSW12B

Run in Batch: 250512B11, Run Date: 05/12/2025 23:47, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
2-Methylnaphthalene		105.9	25.5	165.5

**Laboratory Control Sample Duplicate (LCSD)**

Lab Sample ID: 250512B11.LCSDW12B, Parent Sample ID: 250512B11.LCSW12B

Run in Batch: 250512B11, Run Date: 05/13/2025 00:10, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Diethyl ether		113.8	67.4	121.2	1.3	30.0
Acetone		115.7	29.9	161.5	4.6	30.0
Methyl iodide		112.7	68.8	116.4	1.3	30.0
Carbon disulfide		102.5	63.8	137.4	2.4	30.0
tert-Methyl butyl ether (MTBE)		115.1	73.2	122.4	0.9	30.0
Acrylonitrile		114.2	69.9	128.9	3.3	30.0
2-Butanone (MEK)		110.6	44.0	134.4	4.2	30.0
Dichlorodifluoromethane		99.5	10.0	222.8	2.2	30.0
Chloromethane		106.5	23.8	166.5	1.6	30.0
Vinyl chloride		104.6	43.5	149.1	1.2	30.0
Bromomethane		108.4	56.8	151.3	1.0	30.0
Chloroethane		93.2	53.4	149.4	1.1	30.0
Trichlorofluoromethane		96.4	59.7	151.8	3.2	30.0
1,1-Dichloroethene		103.8	69.6	139.4	3.3	30.0
Methylene chloride		110.3	73.3	121.1	1.1	30.0
trans-1,2-Dichloroethene		108.1	73.6	129.3	0.1	30.0
1,1-Dichloroethane		109.9	71.5	126.2	0.9	30.0
cis-1,2-Dichloroethene		110.9	76.6	122.1	0.5	30.0
Tetrahydrofuran		115.5	59.0	117.9	8.0	30.0
Chloroform		110.7	78.4	124.0	0.2	30.0
Bromochloromethane		113.0	78.2	120.8	1.6	30.0
1,1,1-Trichloroethane		107.9	79.4	130.9	1.0	30.0
4-Methyl-2-pentanone (MIBK)		105.8	71.6	125.2	2.6	30.0
2-Hexanone		106.7	55.4	136.9	1.2	30.0
Carbon tetrachloride		101.0	72.6	133.0	4.8	30.0
Benzene		104.9	79.9	124.9	3.1	30.0
1,2-Dichloroethane		106.5	76.0	126.3	1.3	30.0
Trichloroethene		106.0	79.7	124.2	0.9	30.0
1,2-Dichloropropane		106.3	78.6	126.4	2.3	30.0
Bromodichloromethane		107.5	80.4	128.2	3.0	30.0
Dibromomethane		105.8	76.9	122.1	1.0	30.0
cis-1,3-Dichloropropene		107.6	79.8	129.9	1.6	30.0
Toluene		105.3	79.8	124.5	3.3	30.0
trans-1,3-Dichloropropene		107.2	74.0	131.3	1.2	30.0
1,1,2-Trichloroethane		107.7	78.7	123.1	0.1	30.0
Tetrachloroethene		101.4	74.5	124.5	3.5	30.0
trans-1,4-Dichloro-2-butene		103.3	68.6	135.4	1.4	30.0
Dibromochloromethane		106.1	74.6	127.2	0.0	30.0
1,2-Dibromoethane		106.0	70.3	133.7	0.9	30.0
Chlorobenzene		103.2	79.2	122.7	3.1	30.0

## QC Report - Batch QC Results

### Organics - Volatiles, Prep Batch ID: VF250512W4 (continued)

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

### Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: 250512B11.LCSDW12B, Parent Sample ID: 250512B11.LCSW12B

Run in Batch: 250512B11, Run Date: 05/13/2025 00:10, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,1,1,2-Tetrachloroethane		106.3	80.3	128.2	0.1	30.0
Ethylbenzene		104.8	79.5	129.1	3.0	30.0
p,m-Xylene		104.7	79.4	132.2	3.3	30.0
o-Xylene		106.5	80.2	131.0	2.8	30.0
Styrene		109.0	69.5	126.7	1.1	30.0
Isopropylbenzene		105.4	74.4	121.5	2.7	30.0
Bromoform		104.6	69.4	128.0	0.1	30.0
1,1,2,2-Tetrachloroethane		103.5	79.8	126.3	3.1	30.0
1,2,3-Trichloropropane		107.1	78.3	138.8	2.4	30.0
n-Propylbenzene		104.1	82.0	130.7	3.8	30.0
Bromobenzene		105.9	78.7	124.6	1.4	30.0
1,3,5-Trimethylbenzene		105.7	81.3	128.9	3.3	30.0
tert-Butylbenzene		108.0	80.7	128.9	2.7	30.0
1,2,4-Trimethylbenzene		108.8	81.4	130.8	3.4	30.0
sec-Butylbenzene		106.1	77.4	129.8	2.9	30.0
p-Isopropyltoluene		107.2	79.8	137.5	4.2	30.0
1,3-Dichlorobenzene		106.8	77.0	131.3	2.8	30.0
1,4-Dichlorobenzene		105.5	20.7	137.7	0.1	30.0
1,2-Dichlorobenzene		107.4	10.0	166.2	2.2	30.0
1,2,3-Trimethylbenzene		108.9	76.3	124.2	3.0	30.0
n-Butylbenzene		102.1	80.0	133.3	5.3	30.0
Hexachloroethane		107.4	23.8	138.1	1.9	30.0
1,2-Dibromo-3-chloropropane		109.8	21.2	189.4	1.4	30.0
1,2,4-Trichlorobenzene		109.2	27.4	143.4	0.9	30.0
1,2,3-Trichlorobenzene		107.5	75.4	131.4	1.1	30.0
Naphthalene		110.5	32.9	135.8	1.0	30.0
2-Methylnaphthalene		107.7	25.5	165.5	1.6	30.0

# Merit Laboratories Login Checklist

Lab Set ID: S74372

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

Project: 30267725.00102

Submitted: 05/09/2025 14:25 Login User: MMC

Attention: Kaitlyn Hunt

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

Phone: O:248-809-4013 FAX:  
Email: Kaitlyn.Hunt@arcadis.com

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

**Sample Receiving**

- |     |  |  |        |
|-----|--|--|--------|
| 01. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Samples are received at 4C +/- 2C Thermometer #        | IR 4.1 |
| 02. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Received on ice/ cooling process begun                 |        |
| 03. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples shipped  |        |
| 04. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples left in 24 hr. drop box                        |        |
| 05. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Are there custody seals/tape or is the drop box locked |        |

**Chain of Custody**

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

**Preservation**

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

**Bottle Conditions**

- |     |  |   |                          |
|-----|--|---|--------------------------|
| 13. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | All bottles intact                                  | Trip Blank not in cooler |
| 14. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Appropriate analytical bottles are used             |                          |
| 15. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Merit bottles used                                  |                          |
| 16. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Sufficient sample volume received                   |                          |
| 17. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples require laboratory filtration               |                          |
| 18. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Samples submitted within holding time               |                          |
| 19. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Do water VOC, TOX, DO or Alkalinity bottles contain |                          |

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

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

Plant 6



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

C.O.C. PAGE # 1 OF 1

**REPORT TO**

**CHAIN OF CUSTODY RECORD**

**INVOICE TO**

CONTACT NAME Tiffany Linder, Kaitlyn Hunt  
 COMPANY Arcadis  
 ADDRESS 28550 Cabot Drive, STE 500  
 CITY Novi STATE MI ZIP CODE 48377  
 PHONE NO. 947-777-5215 FAX NO. \_\_\_\_\_ P.O. NO. \_\_\_\_\_  
 E-MAIL ADDRESS kaitlyn.hunt@arcadis.com QUOTE NO. \_\_\_\_\_

CONTACT NAME \_\_\_\_\_  SAME  
 COMPANY \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_  
 PHONE NO. \_\_\_\_\_ E-MAIL ADDRESS tiffany.linder@arcadis.com

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

PROJECT NO./NAME 30267725 <sup>00102</sup> 7 RACER Lansing GWS SAMPLER(S) - PLEASE PRINT/SIGN NAME Austin Westhuis  
 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=WIFE A=AIR W=WASTE

# Containers & Preservatives

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	MeOH	OTHER	1,4-Dioxane - 8260 SIMS	VOC - 8260 SIMS
	DATE	TIME												
<u>14372.01</u>	<u>5/3/25</u>	<u>1125</u>	<u>mw-22-154-050825</u>	<u>GW</u>	<u>3</u>		<u>3</u>						<u>X</u>	
<u>12</u>	<u>5/3/25</u>	<u>---</u>	<u>Trip Blank</u>	<u>GW</u>	<u>1</u>		<u>1</u>						<u>X</u>	

Certifications  
 OHIQ VAP  Drinking Water  
 DoD  NPDES  
 Project Locations  
 Detroit  New York  
 Other MI  
 Special Instructions

RELINQUISHED BY: Austin Westhuis / Arcadis <sup>U Sampler</sup> DATE 5/9/25 TIME 1425  
 RECEIVED BY: J. Del DATE 5-9-25 TIME 1425  
 RELINQUISHED BY: \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_  
 RECEIVED BY: \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_

RELINQUISHED BY: \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_  
 RECEIVED BY: \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_  
 SEAL NO. SEAL INTACT YES  NO  INITIALS \_\_\_\_\_  
 SEAL NO. SEAL INTACT YES  NO  INITIALS \_\_\_\_\_  
 NOTES: TEMP. ON ARRIVAL 4.1c

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



# Analytical Laboratory Report

Report ID: S74374.01(01)+QC01  
Generated on 05/13/2025

Report to

Attention: Kaitlyn Hunt  
Arcadis  
28550 Cabot Drive  
Suite 500  
Novi, MI 48377

Phone: O:248-809-4013 C:947-777-5215 FAX:  
Email: Kaitlyn.Hunt@arcadis.com

Additional Contacts: Marina Samp, Tiffany Linder

Report produced by

Merit Laboratories, Inc.  
2680 East Lansing Drive  
East Lansing, MI 48823

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

Contacts for report questions:  
John Lavery (johnlavery@meritlabs.com)  
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S74374.01-S74374.09  
Project: 30267725.0470A  
Collected Date(s): 05/07/2025 - 05/08/2025  
Submitted Date/Time: 05/09/2025 14:25  
Sampled by: Austin Westhuis  
P.O. #: PO

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Maya Murshak  
Technical Director



# Analytical Laboratory Report

## General Report Notes

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

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

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

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

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

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

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

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There is no additional narrative for this analytical report



# Analytical Laboratory 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
o	Associated EIS outside of control limits
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
q	Qualifier ion ratio outside of control limits
x	Preserved from bulk sample

## Glossary of Abbreviations

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



# Analytical Laboratory Report

## Method Summary

Method	Version
N/A	Not Applicable
SW5030C/8260C	SW 846 Method 8260C Revision 3 August 2006 / 5030C Revision 3 May 2003
SW8260B - SIM	SW 846 Method 8260B Revision 2 December 1996 SIMs



# Analytical Laboratory Report

## Sample Summary (9 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S74374.01	MW-22-157_050725	Groundwater	05/07/25 10:05
S74374.02	MW-22-153_050725	Groundwater	05/07/25 10:50
S74374.03	MW-23-163_050725	Groundwater	05/07/25 11:45
S74374.04	MW-23-163_050725 MS	Groundwater	05/07/25 11:45
S74374.05	MW-23-163_050725 MSD	Groundwater	05/07/25 11:45
S74374.06	MW-22-155_050725	Groundwater	05/07/25 12:50
S74374.07	MW-23-161_050725	Groundwater	05/07/25 13:45
S74374.08	MW-23-162_050825	Groundwater	05/08/25 10:15
S74374.09	Trip Blank	Water	05/07/25 00:01



# Analytical Laboratory Report

Lab Sample ID: S74374.01

Sample Tag: MW-22-157\_050725

Collected Date/Time: 05/07/2025 10:05

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	05/13/25 11:20	ACK	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 08:14, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	74	1		ug/L	1	123-91-1	

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 05/13/25 03:43, 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	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	



# Analytical Laboratory Report

Lab Sample ID: S74374.01 (continued)

Sample Tag: MW-22-157\_050725

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 05/13/25 03:43, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
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	
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: S74374.02

Sample Tag: MW-22-153\_050725

Collected Date/Time: 05/07/2025 10:50

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	05/13/25 11:20	ACK	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 08:40, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	38	1		ug/L	1	123-91-1	

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 05/13/25 04:06, 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	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	141	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	



# Analytical Laboratory Report

Lab Sample ID: S74374.02 (continued)

Sample Tag: MW-22-153\_050725

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 05/13/25 04:06, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
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	
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: S74374.03

Sample Tag: MW-23-163\_050725

Collected Date/Time: 05/07/2025 11:45

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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 06:59, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	8	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74374.04

Sample Tag: MW-23-163\_050725 MS

Collected Date/Time: 05/07/2025 11:45

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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 11:13, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	55	1		ug/L	1	123-91-1	1

1-Sample spiked at 50 mg/L



# Analytical Laboratory Report

Lab Sample ID: S74374.05

Sample Tag: MW-23-163\_050725 MSD

Collected Date/Time: 05/07/2025 11:45

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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 11:38, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	46	1		ug/L	1	123-91-1	1

1-Sample spiked at 50 mg/L



# Analytical Laboratory Report

Lab Sample ID: S74374.06

Sample Tag: MW-22-155\_050725

Collected Date/Time: 05/07/2025 12:50

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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 10:21, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	153	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74374.07

Sample Tag: MW-23-161\_050725

Collected Date/Time: 05/07/2025 13:45

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	05/13/25 11:20	ACK	

## Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 07:49, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	42	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74374.08

Sample Tag: MW-23-162\_050825

Collected Date/Time: 05/08/2025 10:15

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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 07:24, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	24	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74374.09

Sample Tag: Trip Blank

Collected Date/Time: 05/07/2025 00:01

Matrix: Water

COC Reference:

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	05/13/25 11:20	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 05/13/25 01:45, 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	3	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



# Analytical Laboratory Report

Lab Sample ID: S74374.09 (continued)

Sample Tag: Trip Blank

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 05/13/25 01:45, 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	



# Quality Control Report

Report ID: S74374.01(01)+QC01

Generated on 05/13/2025

Report to

Attention: Kaitlyn Hunt

Arcadis

28550 Cabot Drive

Suite 500

Novi, MI 48377

Phone: O:248-809-4013 C:947-777-5215 FAX:

Report Produced by

Merit Laboratories

2680 East Lansing Drive

East Lansing, MI 48823

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

Report Summary

Lab Sample ID(s): S74374.01-S74374.09

Project: 30267725.0470A

Submitted Date/Time: 05/09/2025 14:25

Sampled by: Austin Westhuis

P.O. #: PO

QC Report Sections

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Analysis Summary (Pages 19-27)

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Surrogates per QC Sample (Pages 32-33)

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Internal Standards per QC Sample (Pages 41-42)

Batch QC Results (Pages 43-48)

Report Flag Descriptions

\*: QC result is outside of indicated control limits

W: Surrogate result not applicable due to sample dilution

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

Barbara Ball

Quality Assurance Manager

# QC Report - Analysis Summary

Lab Sample ID: S74374.01

Sample Tag: MW-22-157\_050725

Collected Date/Time: 05/07/2025 10:05

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 08:14	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS
Volatile Organics - DEQ List	SW5030C/8260C	05/13/25 03:43	250512B11	VF250512W4	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74374.02

Sample Tag: MW-22-153\_050725

Collected Date/Time: 05/07/2025 10:50

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 08:40	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS
Volatile Organics - DEQ List	SW5030C/8260C	05/13/25 04:06	250512B11	VF250512W4	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74374.03

Sample Tag: MW-23-163\_050725

Collected Date/Time: 05/07/2025 11:45

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 06:59	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS

# QC Report - Analysis Summary

Lab Sample ID: S74374.04

Sample Tag: MW-23-163\_050725 MS

Collected Date/Time: 05/07/2025 11:45

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 11:13	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS

# QC Report - Analysis Summary

Lab Sample ID: S74374.05

Sample Tag: MW-23-163\_050725 MSD

Collected Date/Time: 05/07/2025 11:45

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 11:38	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS

# QC Report - Analysis Summary

Lab Sample ID: S74374.06

Sample Tag: MW-22-155\_050725

Collected Date/Time: 05/07/2025 12:50

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 10:21	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS

# QC Report - Analysis Summary

Lab Sample ID: S74374.07

Sample Tag: MW-23-161\_050725

Collected Date/Time: 05/07/2025 13:45

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 07:49	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS

# QC Report - Analysis Summary

Lab Sample ID: S74374.08

Sample Tag: MW-23-162\_050825

Collected Date/Time: 05/08/2025 10:15

Matrix: Groundwater

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 07:24	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS

# QC Report - Analysis Summary

Lab Sample ID: S74374.09

Sample Tag: Trip Blank

Collected Date/Time: 05/07/2025 00:01

Matrix: Water

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
Volatile Organics - DEQ List	SW5030C/8260C	05/13/25 01:45	250512B11	VF250512W4	Yes	BLK/LCS/LCSD

# QC Report - Prep Batch Summary

## Organics - Volatiles, Prep Batch ID: VF250512W4

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74374.01	Volatile Organics - DEQ List	SW5030C/8260C	05/13/25 03:43	250512B11
S74374.02	Volatile Organics - DEQ List	SW5030C/8260C	05/13/25 04:06	250512B11
S74374.09	Volatile Organics - DEQ List	SW5030C/8260C	05/13/25 01:45	250512B11

## Organics - Volatiles, Prep Batch ID: VS250512W2

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74374.01	1,4-Dioxane	SW8260B - SIM	05/13/25 08:14	250512B9
S74374.02	1,4-Dioxane	SW8260B - SIM	05/13/25 08:40	250512B9
S74374.03	1,4-Dioxane	SW8260B - SIM	05/13/25 06:59	250512B9
S74374.04	1,4-Dioxane	SW8260B - SIM	05/13/25 11:13	250512B9
S74374.05	1,4-Dioxane	SW8260B - SIM	05/13/25 11:38	250512B9
S74374.06	1,4-Dioxane	SW8260B - SIM	05/13/25 10:21	250512B9
S74374.07	1,4-Dioxane	SW8260B - SIM	05/13/25 07:49	250512B9
S74374.08	1,4-Dioxane	SW8260B - SIM	05/13/25 07:24	250512B9

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74374.01

Sample Tag: MW-22-157\_050725

Collected Date/Time: 05/07/2025 10:05

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 250512B11, Run Date: 05/13/2025 03:43, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		95.9	80.0	124.0
1,2-Dichloroethane-D4		107.5	72.0	125.0
Toluene-D8		101.0	89.0	112.0

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74374.02

Sample Tag: MW-22-153\_050725

Collected Date/Time: 05/07/2025 10:50

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 250512B11, Run Date: 05/13/2025 04:06, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		97.4	80.0	124.0
1,2-Dichloroethane-D4		108.0	72.0	125.0
Toluene-D8		101.5	89.0	112.0

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74374.09

Sample Tag: Trip Blank

Collected Date/Time: 05/07/2025 00:01

Matrix: Water

COC Reference:

## Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 250512B11, Run Date: 05/13/2025 01:45, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		97.5	80.0	124.0
1,2-Dichloroethane-D4		107.4	72.0	125.0
Toluene-D8		100.7	89.0	112.0

# QC Report - Surrogates per QC Sample

## Organics - Volatiles, Prep Batch ID: VF250512W4

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250512B11.BLKW12B

Run in Batch: 250512B11, Run Date: 05/13/2025 01:21, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		98.1	80.0	124.0
1,2-Dichloroethane-D4		108.5	72.0	125.0
Toluene-D8		101.1	89.0	112.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250512B11.LCSW12B

Run in Batch: 250512B11, Run Date: 05/12/2025 23:47, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		100.1	80.0	124.0
1,2-Dichloroethane-D4		104.2	72.0	125.0
Toluene-D8		101.8	89.0	112.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250512B11.LCSDW12B, Parent Sample ID: 250512B11.LCSW12B

Run in Batch: 250512B11, Run Date: 05/13/2025 00:10, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		100.1	80.0	124.0
1,2-Dichloroethane-D4		105.8	72.0	125.0
Toluene-D8		102.3	89.0	112.0

# QC Report - Surrogates per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250512W2

QC Types: BLK/LCS/LCSD/MS/MSD

### Blank (BLK)

Lab Sample ID: 250512B9.BLKW12B

Run in Batch: 250512B9, Run Date: 05/13/2025 03:11, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
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No Surrogates

### Laboratory Control Sample (LCS)

Lab Sample ID: 250512B9.LCSW12B

Run in Batch: 250512B9, Run Date: 05/13/2025 01:29, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
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No Surrogates

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250512B9.LCSDW12B, Parent Sample ID: 250512B9.LCSW12B

Run in Batch: 250512B9, Run Date: 05/13/2025 01:55, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
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No Surrogates

### Matrix Spike (MS)

Lab Sample ID: 250512B9.7437404M, Parent Sample ID: S74374.03

Run in Batch: 250512B9, Run Date: 05/13/2025 11:13, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
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No Surrogates

### Matrix Spike Duplicate (MSD)

Lab Sample ID: 250512B9.7437405N, Parent Sample ID: 250512B9.7437404M

Run in Batch: 250512B9, Run Date: 05/13/2025 11:38, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
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No Surrogates

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74374.01

Sample Tag: MW-22-157\_050725

Collected Date/Time: 05/07/2025 10:05

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512B9, Run Date: 05/13/2025 08:14, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		89.3	50.0	200.0

## Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 250512B11, Run Date: 05/13/2025 03:43, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		94.2	50.0	200.0
1,4-Difluorobenzene		96.6	50.0	200.0
Chlorobenzene-D5		96.0	50.0	200.0
1,4-Dichlorobenzene-D4		91.4	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74374.02

Sample Tag: MW-22-153\_050725

Collected Date/Time: 05/07/2025 10:50

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512B9, Run Date: 05/13/2025 08:40, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		86.1	50.0	200.0

## Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 250512B11, Run Date: 05/13/2025 04:06, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		95.4	50.0	200.0
1,4-Difluorobenzene		97.5	50.0	200.0
Chlorobenzene-D5		96.8	50.0	200.0
1,4-Dichlorobenzene-D4		94.1	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74374.03

Sample Tag: MW-23-163\_050725

Collected Date/Time: 05/07/2025 11:45

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512B9, Run Date: 05/13/2025 06:59, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		109.2	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74374.06

Sample Tag: MW-22-155\_050725

Collected Date/Time: 05/07/2025 12:50

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512B9, Run Date: 05/13/2025 10:21, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		92.3	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74374.07

Sample Tag: MW-23-161\_050725

Collected Date/Time: 05/07/2025 13:45

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512B9, Run Date: 05/13/2025 07:49, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		95.6	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74374.08

Sample Tag: MW-23-162\_050825

Collected Date/Time: 05/08/2025 10:15

Matrix: Groundwater

COC Reference:

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512B9, Run Date: 05/13/2025 07:24, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		97.8	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74374.09

Sample Tag: Trip Blank

Collected Date/Time: 05/07/2025 00:01

Matrix: Water

COC Reference:

## Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 250512B11, Run Date: 05/13/2025 01:45, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		97.5	50.0	200.0
1,4-Difluorobenzene		99.1	50.0	200.0
Chlorobenzene-D5		97.1	50.0	200.0
1,4-Dichlorobenzene-D4		93.1	50.0	200.0

# QC Report - Internal Standards per QC Sample

## Organics - Volatiles, Prep Batch ID: VF250512W4

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250512B11.BLKW12B

Run in Batch: 250512B11, Run Date: 05/13/2025 01:21, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		<b>98.9</b>	50.0	200.0
1,4-Difluorobenzene		<b>100.8</b>	50.0	200.0
Chlorobenzene-D5		<b>99.5</b>	50.0	200.0
1,4-Dichlorobenzene-D4		<b>95.1</b>	50.0	200.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250512B11.LCSW12B

Run in Batch: 250512B11, Run Date: 05/12/2025 23:47, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		<b>101.2</b>	50.0	200.0
1,4-Difluorobenzene		<b>101.1</b>	50.0	200.0
Chlorobenzene-D5		<b>101.9</b>	50.0	200.0
1,4-Dichlorobenzene-D4		<b>99.9</b>	50.0	200.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250512B11.LCSDW12B, Parent Sample ID: 250512B11.LCSW12B

Run in Batch: 250512B11, Run Date: 05/13/2025 00:10, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
Pentafluorobenzene		<b>99.4</b>	50.0	200.0
1,4-Difluorobenzene		<b>101.1</b>	50.0	200.0
Chlorobenzene-D5		<b>101.7</b>	50.0	200.0
1,4-Dichlorobenzene-D4		<b>100.0</b>	50.0	200.0

# QC Report - Internal Standards per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250512W2

QC Types: BLK/LCS/LCSD/MS/MSD

### Blank (BLK)

Lab Sample ID: 250512B9.BLKW12B

Run in Batch: 250512B9, Run Date: 05/13/2025 03:11, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		102.6	50.0	200.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250512B9.LCSW12B

Run in Batch: 250512B9, Run Date: 05/13/2025 01:29, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		100.9	50.0	200.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250512B9.LCSDW12B, Parent Sample ID: 250512B9.LCSW12B

Run in Batch: 250512B9, Run Date: 05/13/2025 01:55, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		88.5	50.0	200.0

### Matrix Spike (MS)

Lab Sample ID: 250512B9.7437404M, Parent Sample ID: S74374.03

Run in Batch: 250512B9, Run Date: 05/13/2025 11:13, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		88.4	50.0	200.0

### Matrix Spike Duplicate (MSD)

Lab Sample ID: 250512B9.7437405N, Parent Sample ID: 250512B9.7437404M

Run in Batch: 250512B9, Run Date: 05/13/2025 11:38, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		100.0	50.0	200.0

# QC Report - Batch QC Results

**Organics - Volatiles, Prep Batch ID: VF250512W4**

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

**Blank (BLK)**

Lab Sample ID: 250512B11.BLKW12B

Run in Batch: 250512B11, Run Date: 05/13/2025 01:21, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Diethyl ether		ND	1.00	ug/l
Acetone		ND	10.00	ug/l
Methyl iodide		ND	1.00	ug/l
Carbon disulfide		ND	1.00	ug/l
tert-Methyl butyl ether (MTBE)		ND	1.00	ug/l
Acrylonitrile		ND	1.00	ug/l
2-Butanone (MEK)		ND	10.00	ug/l
Dichlorodifluoromethane		ND	1.00	ug/l
Chloromethane		ND	1.00	ug/l
Vinyl chloride		ND	1.00	ug/l
Bromomethane		ND	1.00	ug/l
Chloroethane		ND	1.00	ug/l
Trichlorofluoromethane		ND	1.00	ug/l
1,1-Dichloroethene		ND	1.00	ug/l
Methylene chloride		ND	1.00	ug/l
trans-1,2-Dichloroethene		ND	1.00	ug/l
1,1-Dichloroethane		ND	1.00	ug/l
cis-1,2-Dichloroethene		ND	1.00	ug/l
Tetrahydrofuran		ND	10.00	ug/l
Chloroform		ND	1.00	ug/l
Bromochloromethane		ND	1.00	ug/l
1,1,1-Trichloroethane		ND	1.00	ug/l
4-Methyl-2-pentanone (MIBK)		ND	10.00	ug/l
2-Hexanone		ND	10.00	ug/l
Carbon tetrachloride		ND	1.00	ug/l
Benzene		ND	1.00	ug/l
1,2-Dichloroethane		ND	1.00	ug/l
Trichloroethene		ND	1.00	ug/l
1,2-Dichloropropane		ND	1.00	ug/l
Bromodichloromethane		ND	1.00	ug/l
Dibromomethane		ND	1.00	ug/l
cis-1,3-Dichloropropene		ND	1.00	ug/l
Toluene		ND	1.00	ug/l
trans-1,3-Dichloropropene		ND	1.00	ug/l
1,1,2-Trichloroethane		ND	1.00	ug/l
Tetrachloroethene		ND	1.00	ug/l
trans-1,4-Dichloro-2-butene		ND	1.00	ug/l
Dibromochloromethane		ND	1.00	ug/l
1,2-Dibromoethane		ND	1.00	ug/l
Chlorobenzene		ND	1.00	ug/l
1,1,1,2-Tetrachloroethane		ND	1.00	ug/l
Ethylbenzene		ND	1.00	ug/l
p,m-Xylene		ND	2.00	ug/l
o-Xylene		ND	1.00	ug/l
Styrene		ND	1.00	ug/l
Isopropylbenzene		ND	1.00	ug/l

**QC Report - Batch QC Results**

**Organics - Volatiles, Prep Batch ID: VF250512W4 (continued)**

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

**Blank (BLK) (continued)**

Lab Sample ID: 250512B11.BLKW12B

Run in Batch: 250512B11, Run Date: 05/13/2025 01:21, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Bromoform		ND	1.00	ug/l
1,1,2,2-Tetrachloroethane		ND	1.00	ug/l
1,2,3-Trichloropropane		ND	1.00	ug/l
n-Propylbenzene		ND	1.00	ug/l
Bromobenzene		ND	1.00	ug/l
1,3,5-Trimethylbenzene		ND	1.00	ug/l
tert-Butylbenzene		ND	1.00	ug/l
1,2,4-Trimethylbenzene		ND	1.00	ug/l
sec-Butylbenzene		ND	1.00	ug/l
p-Isopropyltoluene		ND	1.00	ug/l
1,3-Dichlorobenzene		ND	1.00	ug/l
1,4-Dichlorobenzene		ND	1.00	ug/l
1,2-Dichlorobenzene		ND	1.00	ug/l
1,2,3-Trimethylbenzene		ND	1.00	ug/l
n-Butylbenzene		ND	1.00	ug/l
Hexachloroethane		ND	1.00	ug/l
1,2-Dibromo-3-chloropropane		ND	1.00	ug/l
1,2,4-Trichlorobenzene		ND	1.00	ug/l
1,2,3-Trichlorobenzene		ND	1.00	ug/l
Naphthalene		ND	1.00	ug/l
2-Methylnaphthalene		ND	1.00	ug/l

**Laboratory Control Sample (LCS)**

Lab Sample ID: 250512B11.LCSW12B

Run in Batch: 250512B11, Run Date: 05/12/2025 23:47, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Diethyl ether		112.3	67.4	121.2
Acetone		110.5	29.9	161.5
Methyl iodide		111.3	68.8	116.4
Carbon disulfide		105.0	63.8	137.4
tert-Methyl butyl ether (MTBE)		114.0	73.2	122.4
Acrylonitrile		110.6	69.9	128.9
2-Butanone (MEK)		115.3	44.0	134.4
Dichlorodifluoromethane		101.7	10.0	222.8
Chloromethane		108.2	23.8	166.5
Vinyl chloride		105.8	43.5	149.1
Bromomethane		109.5	56.8	151.3
Chloroethane		92.2	53.4	149.4
Trichlorofluoromethane		99.5	59.7	151.8
1,1-Dichloroethene		107.3	69.6	139.4
Methylene chloride		109.2	73.3	121.1
trans-1,2-Dichloroethene		108.2	73.6	129.3
1,1-Dichloroethane		110.9	71.5	126.2
cis-1,2-Dichloroethene		111.5	76.6	122.1
Tetrahydrofuran		106.6	59.0	117.9
Chloroform		111.0	78.4	124.0

## QC Report - Batch QC Results

### Organics - Volatiles, Prep Batch ID: VF250512W4 (continued)

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

### Laboratory Control Sample (LCS) (continued)

Lab Sample ID: 250512B11.LCSW12B

Run in Batch: 250512B11, Run Date: 05/12/2025 23:47, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Bromochloromethane		111.3	78.2	120.8
1,1,1-Trichloroethane		109.0	79.4	130.9
4-Methyl-2-pentanone (MIBK)		103.1	71.6	125.2
2-Hexanone		105.4	55.4	136.9
Carbon tetrachloride		105.9	72.6	133.0
Benzene		108.3	79.9	124.9
1,2-Dichloroethane		107.9	76.0	126.3
Trichloroethene		107.0	79.7	124.2
1,2-Dichloropropane		108.8	78.6	126.4
Bromodichloromethane		110.7	80.4	128.2
Dibromomethane		106.9	76.9	122.1
cis-1,3-Dichloropropene		109.3	79.8	129.9
Toluene		108.8	79.8	124.5
trans-1,3-Dichloropropene		108.4	74.0	131.3
1,1,2-Trichloroethane		107.8	78.7	123.1
Tetrachloroethene		105.0	74.5	124.5
trans-1,4-Dichloro-2-butene		102.0	68.6	135.4
Dibromochloromethane		106.1	74.6	127.2
1,2-Dibromoethane		107.0	70.3	133.7
Chlorobenzene		106.4	79.2	122.7
1,1,1,2-Tetrachloroethane		106.2	80.3	128.2
Ethylbenzene		108.0	79.5	129.1
p,m-Xylene		108.2	79.4	132.2
o-Xylene		109.5	80.2	131.0
Styrene		110.2	69.5	126.7
Isopropylbenzene		108.3	74.4	121.5
Bromoform		104.4	69.4	128.0
1,1,2,2-Tetrachloroethane		106.8	79.8	126.3
1,2,3-Trichloropropane		109.7	78.3	138.8
n-Propylbenzene		108.2	82.0	130.7
Bromobenzene		107.4	78.7	124.6
1,3,5-Trimethylbenzene		109.2	81.3	128.9
tert-Butylbenzene		111.0	80.7	128.9
1,2,4-Trimethylbenzene		112.6	81.4	130.8
sec-Butylbenzene		109.2	77.4	129.8
p-Isopropyltoluene		111.8	79.8	137.5
1,3-Dichlorobenzene		109.9	77.0	131.3
1,4-Dichlorobenzene		105.6	20.7	137.7
1,2-Dichlorobenzene		109.8	10.0	166.2
1,2,3-Trimethylbenzene		112.2	76.3	124.2
n-Butylbenzene		107.6	80.0	133.3
Hexachloroethane		109.4	23.8	138.1
1,2-Dibromo-3-chloropropane		108.2	21.2	189.4
1,2,4-Trichlorobenzene		108.3	27.4	143.4
1,2,3-Trichlorobenzene		108.6	75.4	131.4
Naphthalene		109.4	32.9	135.8

**QC Report - Batch QC Results**

**Organics - Volatiles, Prep Batch ID: VF250512W4 (continued)**

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

**Laboratory Control Sample (LCS) (continued)**

Lab Sample ID: 250512B11.LCSW12B

Run in Batch: 250512B11, Run Date: 05/12/2025 23:47, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
2-Methylnaphthalene		105.9	25.5	165.5

**Laboratory Control Sample Duplicate (LCSD)**

Lab Sample ID: 250512B11.LCSDW12B, Parent Sample ID: 250512B11.LCSW12B

Run in Batch: 250512B11, Run Date: 05/13/2025 00:10, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Diethyl ether		113.8	67.4	121.2	1.3	30.0
Acetone		115.7	29.9	161.5	4.6	30.0
Methyl iodide		112.7	68.8	116.4	1.3	30.0
Carbon disulfide		102.5	63.8	137.4	2.4	30.0
tert-Methyl butyl ether (MTBE)		115.1	73.2	122.4	0.9	30.0
Acrylonitrile		114.2	69.9	128.9	3.3	30.0
2-Butanone (MEK)		110.6	44.0	134.4	4.2	30.0
Dichlorodifluoromethane		99.5	10.0	222.8	2.2	30.0
Chloromethane		106.5	23.8	166.5	1.6	30.0
Vinyl chloride		104.6	43.5	149.1	1.2	30.0
Bromomethane		108.4	56.8	151.3	1.0	30.0
Chloroethane		93.2	53.4	149.4	1.1	30.0
Trichlorofluoromethane		96.4	59.7	151.8	3.2	30.0
1,1-Dichloroethene		103.8	69.6	139.4	3.3	30.0
Methylene chloride		110.3	73.3	121.1	1.1	30.0
trans-1,2-Dichloroethene		108.1	73.6	129.3	0.1	30.0
1,1-Dichloroethane		109.9	71.5	126.2	0.9	30.0
cis-1,2-Dichloroethene		110.9	76.6	122.1	0.5	30.0
Tetrahydrofuran		115.5	59.0	117.9	8.0	30.0
Chloroform		110.7	78.4	124.0	0.2	30.0
Bromochloromethane		113.0	78.2	120.8	1.6	30.0
1,1,1-Trichloroethane		107.9	79.4	130.9	1.0	30.0
4-Methyl-2-pentanone (MIBK)		105.8	71.6	125.2	2.6	30.0
2-Hexanone		106.7	55.4	136.9	1.2	30.0
Carbon tetrachloride		101.0	72.6	133.0	4.8	30.0
Benzene		104.9	79.9	124.9	3.1	30.0
1,2-Dichloroethane		106.5	76.0	126.3	1.3	30.0
Trichloroethene		106.0	79.7	124.2	0.9	30.0
1,2-Dichloropropane		106.3	78.6	126.4	2.3	30.0
Bromodichloromethane		107.5	80.4	128.2	3.0	30.0
Dibromomethane		105.8	76.9	122.1	1.0	30.0
cis-1,3-Dichloropropene		107.6	79.8	129.9	1.6	30.0
Toluene		105.3	79.8	124.5	3.3	30.0
trans-1,3-Dichloropropene		107.2	74.0	131.3	1.2	30.0
1,1,2-Trichloroethane		107.7	78.7	123.1	0.1	30.0
Tetrachloroethene		101.4	74.5	124.5	3.5	30.0
trans-1,4-Dichloro-2-butene		103.3	68.6	135.4	1.4	30.0
Dibromochloromethane		106.1	74.6	127.2	0.0	30.0
1,2-Dibromoethane		106.0	70.3	133.7	0.9	30.0
Chlorobenzene		103.2	79.2	122.7	3.1	30.0

## QC Report - Batch QC Results

### Organics - Volatiles, Prep Batch ID: VF250512W4 (continued)

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

### Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: 250512B11.LCSDW12B, Parent Sample ID: 250512B11.LCSW12B

Run in Batch: 250512B11, Run Date: 05/13/2025 00:10, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,1,1,2-Tetrachloroethane		106.3	80.3	128.2	0.1	30.0
Ethylbenzene		104.8	79.5	129.1	3.0	30.0
p,m-Xylene		104.7	79.4	132.2	3.3	30.0
o-Xylene		106.5	80.2	131.0	2.8	30.0
Styrene		109.0	69.5	126.7	1.1	30.0
Isopropylbenzene		105.4	74.4	121.5	2.7	30.0
Bromoform		104.6	69.4	128.0	0.1	30.0
1,1,2,2-Tetrachloroethane		103.5	79.8	126.3	3.1	30.0
1,2,3-Trichloropropane		107.1	78.3	138.8	2.4	30.0
n-Propylbenzene		104.1	82.0	130.7	3.8	30.0
Bromobenzene		105.9	78.7	124.6	1.4	30.0
1,3,5-Trimethylbenzene		105.7	81.3	128.9	3.3	30.0
tert-Butylbenzene		108.0	80.7	128.9	2.7	30.0
1,2,4-Trimethylbenzene		108.8	81.4	130.8	3.4	30.0
sec-Butylbenzene		106.1	77.4	129.8	2.9	30.0
p-Isopropyltoluene		107.2	79.8	137.5	4.2	30.0
1,3-Dichlorobenzene		106.8	77.0	131.3	2.8	30.0
1,4-Dichlorobenzene		105.5	20.7	137.7	0.1	30.0
1,2-Dichlorobenzene		107.4	10.0	166.2	2.2	30.0
1,2,3-Trimethylbenzene		108.9	76.3	124.2	3.0	30.0
n-Butylbenzene		102.1	80.0	133.3	5.3	30.0
Hexachloroethane		107.4	23.8	138.1	1.9	30.0
1,2-Dibromo-3-chloropropane		109.8	21.2	189.4	1.4	30.0
1,2,4-Trichlorobenzene		109.2	27.4	143.4	0.9	30.0
1,2,3-Trichlorobenzene		107.5	75.4	131.4	1.1	30.0
Naphthalene		110.5	32.9	135.8	1.0	30.0
2-Methylnaphthalene		107.7	25.5	165.5	1.6	30.0

# QC Report - Batch QC Results

## Organics - Volatiles, Prep Batch ID: VS250512W2

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

### Blank (BLK)

Lab Sample ID: 250512B9.BLKW12B

Run in Batch: 250512B9, Run Date: 05/13/2025 03:11, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
1,4-Dioxane		ND	1.00	ug/l

### Laboratory Control Sample (LCS)

Lab Sample ID: 250512B9.LCSW12B

Run in Batch: 250512B9, Run Date: 05/13/2025 01:29, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
1,4-Dioxane		100.1	70.0	130.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250512B9.LCSDW12B, Parent Sample ID: 250512B9.LCSW12B

Run in Batch: 250512B9, Run Date: 05/13/2025 01:55, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,4-Dioxane		89.0	70.0	130.0	11.7	30.0

### Matrix Spike (MS)

Lab Sample ID: 250512B9.7437404M, Parent Sample ID: S74374.03

Run in Batch: 250512B9, Run Date: 05/13/2025 11:13, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
1,4-Dioxane		93.7	70.0	130.0

### Matrix Spike Duplicate (MSD)

Lab Sample ID: 250512B9.7437405N, Parent Sample ID: 250512B9.7437404M

Run in Batch: 250512B9, Run Date: 05/13/2025 11:38, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,4-Dioxane		77.5	70.0	130.0	16.0	30.0

# Merit Laboratories Login Checklist

Lab Set ID:S74374

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

Project: 30267725.0470A

Submitted:05/09/2025 14:25 Login User: MMC

Attention: Kaitlyn Hunt

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

Phone: O:248-809-4013 FAX:

Email: Kaitlyn.Hunt@arcadis.com

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

**Sample Receiving**

- |     |  |  |        |
|-----|--|--|--------|
| 01. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Samples are received at 4C +/- 2C Thermometer #        | IR 4.1 |
| 02. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Received on ice/ cooling process begun                 |        |
| 03. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples shipped  |        |
| 04. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples left in 24 hr. drop box                        |        |
| 05. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Are there custody seals/tape or is the drop box locked |        |

**Chain of Custody**

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

**Preservation**

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

**Bottle Conditions**

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

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

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

Plant 2



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

**REPORT TO**

**CHAIN OF CUSTODY RECORD**

**INVOICE TO**

CONTACT NAME Tiffany Linder, Kaitlyn Hunt  
 COMPANY Arcadis  
 ADDRESS 28550 Cabot Drive, STE 500  
 CITY Novi STATE MI ZIP CODE 48377  
 PHONE NO. 947-777-5215 FAX NO. \_\_\_\_\_ P.O. NO. \_\_\_\_\_  
 E-MAIL ADDRESS kaitlyn.hunt@arcadis.com QUOTE NO. \_\_\_\_\_

CONTACT NAME \_\_\_\_\_  SAME  
 COMPANY \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_  
 PHONE NO. \_\_\_\_\_ E-MAIL ADDRESS tiffany.linder@arcadis.com

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

PROJECT NO./NAME 30267725.0470A / RACER Lansing GWS SAMPLER(S) - PLEASE PRINT/SIGN NAME Austin Westhuis / Am Linder  
 TURNAROUND TIME REQUIRED  1 DAY  2 DAYS  3 DAYS  STANDARD  OTHER \_\_\_\_\_  
 DELIVERABLES REQUIRED  STD  LEVEL II  LEVEL III  LEVEL IV  EDD  OTHER \_\_\_\_\_

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

# Containers & Preservatives

1,4-Dioxane - 8260 SIMS																					
VOC - 8260 SIMS																					

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

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	MeOH	OTHER	1,4-Dioxane - 8260 SIMS	VOC - 8260 SIMS																									
	DATE	TIME																																					
<u>74374.01</u>	<u>5/7/25</u>	<u>1005</u>	<u>MW-22-157-050725</u>	<u>GW</u>	<u>3</u>		<u>3</u>						<u>X</u>	<u>X</u>																									
<u>.02</u>	<u>5/7/25</u>	<u>1050</u>	<u>MW-22-153-050725</u>	<u>GW</u>	<u>3</u>		<u>3</u>						<u>X</u>	<u>X</u>																									
<u>03/04/05</u>	<u>5/7/25</u>	<u>1145</u>	<u>MW-23-163-050725</u>	<u>GW</u>	<u>9</u>		<u>9</u>						<u>X</u>																										
<u>.06</u>	<u>5/7/25</u>	<u>1250</u>	<u>MW-22-155-050725</u>	<u>GW</u>	<u>3</u>		<u>3</u>						<u>X</u>																										
<u>.07</u>	<u>5/7/25</u>	<u>1345</u>	<u>MW-23-161-050725</u>	<u>GW</u>	<u>3</u>		<u>3</u>						<u>X</u>																										
<u>.08</u>	<u>5/8/25</u>	<u>1015</u>	<u>MW-23-162-050825</u>	<u>GW</u>	<u>3</u>		<u>3</u>						<u>X</u>																										
<u>.09</u>	<u>5/7/25</u>	<u>---</u>	<u>Trip Blank</u>	<u>GW</u>	<u>1</u>		<u>1</u>							<u>X</u>																									

RELINQUISHED BY: Am Linder / Austin Westhuis / Arcadis DATE 5/9/25 TIME 1425  
 RECEIVED BY: J. Hel DATE 5-9-25 TIME 1425  
 RELINQUISHED BY: \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_  
 RECEIVED BY: \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_

RELINQUISHED BY: \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_  
 RECEIVED BY: \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_  
 SEAL NO. SEAL INTACT YES  NO  INITIALS \_\_\_\_\_ NOTES: TEMP. ON ARRIVAL \_\_\_\_\_  
 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: S74375.01(01)+QC01  
Generated on 05/15/2025

Report to

Attention: Kaitlyn Hunt  
Arcadis  
28550 Cabot Drive  
Suite 500  
Novi, MI 48377

Phone: O:248-809-4013 C:947-777-5215 FAX:  
Email: Kaitlyn.Hunt@arcadis.com

Additional Contacts: Marina Samp, Tiffany Linder

Report produced by

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Contacts for report questions:  
John Lavery (johnlavery@meritlabs.com)  
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S74375.01-S74375.29  
Project: 30267725.0470B / RACER Lansing GWS  
Collected Date(s): 05/07/2025 - 05/08/2025  
Submitted Date/Time: 05/09/2025 14:25  
Sampled by: D. Richmond, A. Westhuis  
P.O. #: US3460024033

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Maya Murshak  
Technical Director



# Analytical Laboratory Report

## General Report Notes

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

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

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

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

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

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

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

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There is no additional narrative for this analytical report



# Analytical Laboratory 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
o	Associated EIS outside of control limits
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
q	Qualifier ion ratio outside of control limits
x	Preserved from bulk sample

## Glossary of Abbreviations

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



# Analytical Laboratory Report

## Method Summary

Method	Version
N/A	Not Applicable
SW8260B - SIM	SW 846 Method 8260B Revision 2 December 1996 SIMs



# Analytical Laboratory Report

## Sample Summary (29 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S74375.01	MW-21-142_050725	Groundwater	05/07/25 09:50
S74375.02	MW-20-128_050725	Groundwater	05/07/25 11:20
S74375.03	PW-14-02_050725	Groundwater	05/07/25 12:35
S74375.04	PW-14-01_050725	Groundwater	05/07/25 13:55
S74375.05	MW-20-129_050725	Groundwater	05/07/25 15:10
S74375.06	MW-19-124_050725	Groundwater	05/07/25 16:30
S74375.07	MW-20-126_050825	Groundwater	05/08/25 09:35
S74375.08	MW-19-116_050825	Groundwater	05/08/25 10:40
S74375.09	MW-19-117_050825	Groundwater	05/08/25 12:00
S74375.10	MW-19-122_050825	Groundwater	05/08/25 13:25
S74375.11	MW-19-120_050825	Groundwater	05/08/25 14:55
S74375.12	DUP-03_050825	Groundwater	05/08/25 00:01
S74375.13	MW-13-43_050725	Groundwater	05/07/25 10:40
S74375.14	MW-13-45_050725	Groundwater	05/07/25 12:25
S74375.15	MW-14-61_050725	Groundwater	05/07/25 14:00
S74375.16	MW-16-74_050725	Groundwater	05/07/25 15:20
S74375.17	MW-15-72_050725	Groundwater	05/07/25 16:25
S74375.18	MW-16-75_050825	Groundwater	05/08/25 10:25
S74375.19	MW-16-77_050825	Groundwater	05/08/25 11:30
S74375.20	MW-16-82_050825	Groundwater	05/08/25 13:25
S74375.21	MW-16-81_050825	Groundwater	05/08/25 14:30
S74375.22	MW-16-78_050825	Groundwater	05/08/25 16:00
S74375.23	DUP-02_050725	Groundwater	05/07/25 00:01
S74375.24	MW-19-115_050825	Groundwater	05/08/25 13:45
S74375.25	MW-16-84_050825	Groundwater	05/08/25 15:10
S74375.26	MW-16-84_050825 MS	Groundwater	05/08/25 15:10
S74375.27	MW-16-84_050825 MSD	Groundwater	05/08/25 15:10
S74375.28	MW-16-85_050825	Groundwater	05/08/25 16:25
S74375.29	MW-17-86_050825	Groundwater	05/08/25 16:45



# Analytical Laboratory Report

Lab Sample ID: S74375.01

Sample Tag: MW-21-142\_050725

Collected Date/Time: 05/07/2025 09:50

Matrix: Groundwater

COC Reference: 1

### 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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 03:36, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	55	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.02

Sample Tag: MW-20-128\_050725

Collected Date/Time: 05/07/2025 11:20

Matrix: Groundwater

COC Reference: 1

### 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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 04:27, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	1	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.03

Sample Tag: PW-14-02\_050725

Collected Date/Time: 05/07/2025 12:35

Matrix: Groundwater

COC Reference: 1

### 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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 09:30, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	26	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.04

Sample Tag: PW-14-01\_050725

Collected Date/Time: 05/07/2025 13:55

Matrix: Groundwater

COC Reference: 1

### 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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 04:02, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	4	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.05

Sample Tag: MW-20-129\_050725

Collected Date/Time: 05/07/2025 15:10

Matrix: Groundwater

COC Reference: 1

### 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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 09:05, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	61	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.06

Sample Tag: MW-19-124\_050725

Collected Date/Time: 05/07/2025 16:30

Matrix: Groundwater

COC Reference: 1

### 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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 10:47, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	184	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.07

Sample Tag: MW-20-126\_050825

Collected Date/Time: 05/08/2025 09:35

Matrix: Groundwater

COC Reference: 1

### 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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 06:33, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	8	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.08

Sample Tag: MW-19-116\_050825

Collected Date/Time: 05/08/2025 10:40

Matrix: Groundwater

COC Reference: 1

### 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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 09:56, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	76	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.09

Sample Tag: MW-19-117\_050825

Collected Date/Time: 05/08/2025 12:00

Matrix: Groundwater

COC Reference: 1

### 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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 04:53, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.10

Sample Tag: MW-19-122\_050825

Collected Date/Time: 05/08/2025 13:25

Matrix: Groundwater

COC Reference: 1

### 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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 05:43, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.11

Sample Tag: MW-19-120\_050825

Collected Date/Time: 05/08/2025 14:55

Matrix: Groundwater

COC Reference: 1

### 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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 06:08, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	7	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.12

Sample Tag: DUP-03\_050825

Collected Date/Time: 05/08/2025 00:01

Matrix: Groundwater

COC Reference: 1

### 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	05/13/25 11:20	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 05:18, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	72	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.13

Sample Tag: MW-13-43\_050725

Collected Date/Time: 05/07/2025 10:40

Matrix: Groundwater

COC Reference: 2

### 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	05/14/25 10:59	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 21:18, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	5	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.14

Sample Tag: MW-13-45\_050725

Collected Date/Time: 05/07/2025 12:25

Matrix: Groundwater

COC Reference: 2

### 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	05/15/25 11:50	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/14/25 18:54, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	17	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.15

Sample Tag: MW-14-61\_050725

Collected Date/Time: 05/07/2025 14:00

Matrix: Groundwater

COC Reference: 2

### 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	05/14/25 10:59	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 21:44, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	6	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.16

Sample Tag: MW-16-74\_050725

Collected Date/Time: 05/07/2025 15:20

Matrix: Groundwater

COC Reference: 2

### 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	05/14/25 10:59	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 22:09, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	2	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.17

Sample Tag: MW-15-72\_050725

Collected Date/Time: 05/07/2025 16:25

Matrix: Groundwater

COC Reference: 2

### 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	05/15/25 11:50	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/14/25 20:10, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	14	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.18

Sample Tag: MW-16-75\_050825

Collected Date/Time: 05/08/2025 10:25

Matrix: Groundwater

COC Reference: 2

### 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	05/14/25 10:59	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 22:35, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	1	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.19

Sample Tag: MW-16-77\_050825

Collected Date/Time: 05/08/2025 11:30

Matrix: Groundwater

COC Reference: 2

### 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	05/14/25 10:59	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 23:00, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.20

Sample Tag: MW-16-82\_050825

Collected Date/Time: 05/08/2025 13:25

Matrix: Groundwater

COC Reference: 2

### 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	05/14/25 10:59	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 23:26, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	11	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.21

Sample Tag: MW-16-81\_050825

Collected Date/Time: 05/08/2025 14:30

Matrix: Groundwater

COC Reference: 2

### 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	05/15/25 11:50	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/14/25 19:45, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	37	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.22

Sample Tag: MW-16-78\_050825

Collected Date/Time: 05/08/2025 16:00

Matrix: Groundwater

COC Reference: 2

### 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	05/14/25 10:59	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/13/25 23:51, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.23

Sample Tag: DUP-02\_050725

Collected Date/Time: 05/07/2025 00:01

Matrix: Groundwater

COC Reference: 2

### 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	05/15/25 11:50	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/14/25 16:47, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	8	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.24

Sample Tag: MW-19-115\_050825

Collected Date/Time: 05/08/2025 13:45

Matrix: Groundwater

COC Reference: 3

### 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	05/15/25 11:50	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/14/25 17:13, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	6	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.25

Sample Tag: MW-16-84\_050825

Collected Date/Time: 05/08/2025 15:10

Matrix: Groundwater

COC Reference: 3

### 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	05/15/25 11:50	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/14/25 17:38, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	14	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.26

Sample Tag: MW-16-84\_050825 MS

Collected Date/Time: 05/08/2025 15:10

Matrix: Groundwater

COC Reference: 3

### 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	05/15/25 11:50	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/14/25 13:49, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	57	1		ug/L	1	123-91-1	1

1-Sample spiked at 50 mg/l



# Analytical Laboratory Report

Lab Sample ID: S74375.27

Sample Tag: MW-16-84\_050825 MSD

Collected Date/Time: 05/08/2025 15:10

Matrix: Groundwater

COC Reference: 3

### 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	05/15/25 11:50	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/14/25 14:15, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	68	1		ug/L	1	123-91-1	1

1-Sample spiked at 50 mg/l



# Analytical Laboratory Report

Lab Sample ID: S74375.28

Sample Tag: MW-16-85\_050825

Collected Date/Time: 05/08/2025 16:25

Matrix: Groundwater

COC Reference: 3

### 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	05/15/25 11:50	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/14/25 18:03, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	4	1		ug/L	1	123-91-1	



# Analytical Laboratory Report

Lab Sample ID: S74375.29

Sample Tag: MW-17-86\_050825

Collected Date/Time: 05/08/2025 16:45

Matrix: Groundwater

COC Reference: 3

### 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	05/15/25 11:50	ACK	

### Organics - Volatiles

Method: SW8260B - SIM, Run Date: 05/14/25 18:28, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,4-Dioxane*	10	1		ug/L	1	123-91-1	



# Quality Control Report

Report ID: S74375.01(01)+QC01  
Generated on 05/15/2025

Report to  
Attention: Kaitlyn Hunt  
Arcadis  
28550 Cabot Drive  
Suite 500  
Novi, MI 48377

Report Produced by  
Merit Laboratories  
2680 East Lansing Drive  
East Lansing, MI 48823  
  
Phone: (517) 332-0167 FAX: (517) 332-6333

Phone: O:248-809-4013 C:947-777-5215 FAX:

## Report Summary

Lab Sample ID(s): S74375.01-S74375.29  
Project: 30267725.0470B / RACER Lansing GWS  
Submitted Date/Time: 05/09/2025 14:25  
Sampled by: D. Richmond, A. Westhuis  
P.O. #: US3460024033

## QC Report Sections

- Cover Page (Page 35)
- Analysis Summary (Pages 36-64)
- Prep Batch Summary (Page 65)
- Surrogates per Lab Sample (Pages 66-72)
- Surrogates per QC Sample (Pages 73-75)
- Internal Standards per Lab Sample (Pages 76-102)
- Internal Standards per QC Sample (Pages 103-105)
- Batch QC Results (Pages 106-108)

## Report Flag Descriptions

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

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

Barbara Ball  
Quality Assurance Manager

# QC Report - Analysis Summary

Lab Sample ID: S74375.01

Sample Tag: MW-21-142\_050725

Collected Date/Time: 05/07/2025 09:50

Matrix: Groundwater

COC Reference: 1

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 03:36	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS

# QC Report - Analysis Summary

Lab Sample ID: S74375.02

Sample Tag: MW-20-128\_050725

Collected Date/Time: 05/07/2025 11:20

Matrix: Groundwater

COC Reference: 1

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 04:27	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS

# QC Report - Analysis Summary

Lab Sample ID: S74375.03

Sample Tag: PW-14-02\_050725

Collected Date/Time: 05/07/2025 12:35

Matrix: Groundwater

COC Reference: 1

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 09:30	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS

# QC Report - Analysis Summary

Lab Sample ID: S74375.04

Sample Tag: PW-14-01\_050725

Collected Date/Time: 05/07/2025 13:55

Matrix: Groundwater

COC Reference: 1

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 04:02	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS

# QC Report - Analysis Summary

Lab Sample ID: S74375.05

Sample Tag: MW-20-129\_050725

Collected Date/Time: 05/07/2025 15:10

Matrix: Groundwater

COC Reference: 1

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 09:05	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS

# QC Report - Analysis Summary

Lab Sample ID: S74375.06

Sample Tag: MW-19-124\_050725

Collected Date/Time: 05/07/2025 16:30

Matrix: Groundwater

COC Reference: 1

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 10:47	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS

# QC Report - Analysis Summary

Lab Sample ID: S74375.07

Sample Tag: MW-20-126\_050825

Collected Date/Time: 05/08/2025 09:35

Matrix: Groundwater

COC Reference: 1

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 06:33	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS

# QC Report - Analysis Summary

Lab Sample ID: S74375.08

Sample Tag: MW-19-116\_050825

Collected Date/Time: 05/08/2025 10:40

Matrix: Groundwater

COC Reference: 1

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 09:56	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS

# QC Report - Analysis Summary

Lab Sample ID: S74375.09

Sample Tag: MW-19-117\_050825

Collected Date/Time: 05/08/2025 12:00

Matrix: Groundwater

COC Reference: 1

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 04:53	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS

# QC Report - Analysis Summary

Lab Sample ID: S74375.10

Sample Tag: MW-19-122\_050825

Collected Date/Time: 05/08/2025 13:25

Matrix: Groundwater

COC Reference: 1

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 05:43	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS

# QC Report - Analysis Summary

Lab Sample ID: S74375.11

Sample Tag: MW-19-120\_050825

Collected Date/Time: 05/08/2025 14:55

Matrix: Groundwater

COC Reference: 1

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 06:08	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS

# QC Report - Analysis Summary

Lab Sample ID: S74375.12

Sample Tag: DUP-03\_050825

Collected Date/Time: 05/08/2025 00:01

Matrix: Groundwater

COC Reference: 1

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 05:18	250512B9	VS250512W2	Yes	BLK/LCS/LCSD/MS/MS

# QC Report - Analysis Summary

Lab Sample ID: S74375.13

Sample Tag: MW-13-43\_050725

Collected Date/Time: 05/07/2025 10:40

Matrix: Groundwater

COC Reference: 2

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 21:18	250513A9	VS250513W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74375.14

Sample Tag: MW-13-45\_050725

Collected Date/Time: 05/07/2025 12:25

Matrix: Groundwater

COC Reference: 2

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/14/25 18:54	250514A9	VS250514W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74375.15

Sample Tag: MW-14-61\_050725

Collected Date/Time: 05/07/2025 14:00

Matrix: Groundwater

COC Reference: 2

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 21:44	250513A9	VS250513W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74375.16

Sample Tag: MW-16-74\_050725

Collected Date/Time: 05/07/2025 15:20

Matrix: Groundwater

COC Reference: 2

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 22:09	250513A9	VS250513W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74375.17

Sample Tag: MW-15-72\_050725

Collected Date/Time: 05/07/2025 16:25

Matrix: Groundwater

COC Reference: 2

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/14/25 20:10	250514A9	VS250514W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74375.18

Sample Tag: MW-16-75\_050825

Collected Date/Time: 05/08/2025 10:25

Matrix: Groundwater

COC Reference: 2

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 22:35	250513A9	VS250513W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74375.19

Sample Tag: MW-16-77\_050825

Collected Date/Time: 05/08/2025 11:30

Matrix: Groundwater

COC Reference: 2

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 23:00	250513A9	VS250513W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74375.20

Sample Tag: MW-16-82\_050825

Collected Date/Time: 05/08/2025 13:25

Matrix: Groundwater

COC Reference: 2

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 23:26	250513A9	VS250513W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74375.21

Sample Tag: MW-16-81\_050825

Collected Date/Time: 05/08/2025 14:30

Matrix: Groundwater

COC Reference: 2

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/14/25 19:45	250514A9	VS250514W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74375.22

Sample Tag: MW-16-78\_050825

Collected Date/Time: 05/08/2025 16:00

Matrix: Groundwater

COC Reference: 2

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/13/25 23:51	250513A9	VS250513W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74375.23

Sample Tag: DUP-02\_050725

Collected Date/Time: 05/07/2025 00:01

Matrix: Groundwater

COC Reference: 2

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/14/25 16:47	250514A9	VS250514W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74375.24

Sample Tag: MW-19-115\_050825

Collected Date/Time: 05/08/2025 13:45

Matrix: Groundwater

COC Reference: 3

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/14/25 17:13	250514A9	VS250514W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74375.25

Sample Tag: MW-16-84\_050825

Collected Date/Time: 05/08/2025 15:10

Matrix: Groundwater

COC Reference: 3

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/14/25 17:38	250514A9	VS250514W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74375.26

Sample Tag: MW-16-84\_050825 MS

Collected Date/Time: 05/08/2025 15:10

Matrix: Groundwater

COC Reference: 3

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/14/25 13:49	250514A9	VS250514W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74375.27

Sample Tag: MW-16-84\_050825 MSD

Collected Date/Time: 05/08/2025 15:10

Matrix: Groundwater

COC Reference: 3

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/14/25 14:15	250514A9	VS250514W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74375.28

Sample Tag: MW-16-85\_050825

Collected Date/Time: 05/08/2025 16:25

Matrix: Groundwater

COC Reference: 3

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/14/25 18:03	250514A9	VS250514W1	Yes	BLK/LCS/LCSD

# QC Report - Analysis Summary

Lab Sample ID: S74375.29

Sample Tag: MW-17-86\_050825

Collected Date/Time: 05/08/2025 16:45

Matrix: Groundwater

COC Reference: 3

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<b>Organics - Volatiles</b>						
1,4-Dioxane	SW8260B - SIM	05/14/25 18:28	250514A9	VS250514W1	Yes	BLK/LCS/LCSD

## QC Report - Prep Batch Summary

### Organics - Volatiles, Prep Batch ID: VS250512W2

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74375.01	1,4-Dioxane	SW8260B - SIM	05/13/25 03:36	250512B9
S74375.02	1,4-Dioxane	SW8260B - SIM	05/13/25 04:27	250512B9
S74375.03	1,4-Dioxane	SW8260B - SIM	05/13/25 09:30	250512B9
S74375.04	1,4-Dioxane	SW8260B - SIM	05/13/25 04:02	250512B9
S74375.05	1,4-Dioxane	SW8260B - SIM	05/13/25 09:05	250512B9
S74375.06	1,4-Dioxane	SW8260B - SIM	05/13/25 10:47	250512B9
S74375.07	1,4-Dioxane	SW8260B - SIM	05/13/25 06:33	250512B9
S74375.08	1,4-Dioxane	SW8260B - SIM	05/13/25 09:56	250512B9
S74375.09	1,4-Dioxane	SW8260B - SIM	05/13/25 04:53	250512B9
S74375.10	1,4-Dioxane	SW8260B - SIM	05/13/25 05:43	250512B9
S74375.11	1,4-Dioxane	SW8260B - SIM	05/13/25 06:08	250512B9
S74375.12	1,4-Dioxane	SW8260B - SIM	05/13/25 05:18	250512B9

### Organics - Volatiles, Prep Batch ID: VS250513W1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74375.13	1,4-Dioxane	SW8260B - SIM	05/13/25 21:18	250513A9
S74375.15	1,4-Dioxane	SW8260B - SIM	05/13/25 21:44	250513A9
S74375.16	1,4-Dioxane	SW8260B - SIM	05/13/25 22:09	250513A9
S74375.18	1,4-Dioxane	SW8260B - SIM	05/13/25 22:35	250513A9
S74375.19	1,4-Dioxane	SW8260B - SIM	05/13/25 23:00	250513A9
S74375.20	1,4-Dioxane	SW8260B - SIM	05/13/25 23:26	250513A9
S74375.22	1,4-Dioxane	SW8260B - SIM	05/13/25 23:51	250513A9

### Organics - Volatiles, Prep Batch ID: VS250514W1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S74375.14	1,4-Dioxane	SW8260B - SIM	05/14/25 18:54	250514A9
S74375.17	1,4-Dioxane	SW8260B - SIM	05/14/25 20:10	250514A9
S74375.21	1,4-Dioxane	SW8260B - SIM	05/14/25 19:45	250514A9
S74375.23	1,4-Dioxane	SW8260B - SIM	05/14/25 16:47	250514A9
S74375.24	1,4-Dioxane	SW8260B - SIM	05/14/25 17:13	250514A9
S74375.25	1,4-Dioxane	SW8260B - SIM	05/14/25 17:38	250514A9
S74375.26	1,4-Dioxane	SW8260B - SIM	05/14/25 13:49	250514A9
S74375.27	1,4-Dioxane	SW8260B - SIM	05/14/25 14:15	250514A9
S74375.28	1,4-Dioxane	SW8260B - SIM	05/14/25 18:03	250514A9
S74375.29	1,4-Dioxane	SW8260B - SIM	05/14/25 18:28	250514A9

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74375.13

Sample Tag: MW-13-43\_050725

Collected Date/Time: 05/07/2025 10:40

Matrix: Groundwater

COC Reference: 2

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250513A9, Run Date: 05/13/2025 21:18, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		94.9	60.0	140.0

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74375.15

Sample Tag: MW-14-61\_050725

Collected Date/Time: 05/07/2025 14:00

Matrix: Groundwater

COC Reference: 2

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250513A9, Run Date: 05/13/2025 21:44, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		96.3	60.0	140.0

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74375.16

Sample Tag: MW-16-74\_050725

Collected Date/Time: 05/07/2025 15:20

Matrix: Groundwater

COC Reference: 2

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250513A9, Run Date: 05/13/2025 22:09, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		87.9	60.0	140.0

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74375.18

Sample Tag: MW-16-75\_050825

Collected Date/Time: 05/08/2025 10:25

Matrix: Groundwater

COC Reference: 2

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250513A9, Run Date: 05/13/2025 22:35, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		102.0	60.0	140.0

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74375.19

Sample Tag: MW-16-77\_050825

Collected Date/Time: 05/08/2025 11:30

Matrix: Groundwater

COC Reference: 2

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250513A9, Run Date: 05/13/2025 23:00, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		97.9	60.0	140.0

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74375.20

Sample Tag: MW-16-82\_050825

Collected Date/Time: 05/08/2025 13:25

Matrix: Groundwater

COC Reference: 2

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250513A9, Run Date: 05/13/2025 23:26, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		95.7	60.0	140.0

# QC Report - Surrogates per Lab Sample

Lab Sample ID: S74375.22

Sample Tag: MW-16-78\_050825

Collected Date/Time: 05/08/2025 16:00

Matrix: Groundwater

COC Reference: 2

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250513A9, Run Date: 05/13/2025 23:51, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		113.6	60.0	140.0

# QC Report - Surrogates per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250512W2

QC Types: BLK/LCS/LCSD/MS/MSD

### Blank (BLK)

Lab Sample ID: 250512B9.BLKW12B

Run in Batch: 250512B9, Run Date: 05/13/2025 03:11, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
No Surrogates				

### Laboratory Control Sample (LCS)

Lab Sample ID: 250512B9.LCSW12B

Run in Batch: 250512B9, Run Date: 05/13/2025 01:29, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
No Surrogates				

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250512B9.LCSDW12B, Parent Sample ID: 250512B9.LCSW12B

Run in Batch: 250512B9, Run Date: 05/13/2025 01:55, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
No Surrogates				

### Matrix Spike (MS)

Lab Sample ID: 250512B9.7437404M, Parent Sample ID: S74374.03

Run in Batch: 250512B9, Run Date: 05/13/2025 11:13, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
No Surrogates				

### Matrix Spike Duplicate (MSD)

Lab Sample ID: 250512B9.7437405N, Parent Sample ID: 250512B9.7437404M

Run in Batch: 250512B9, Run Date: 05/13/2025 11:38, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
No Surrogates				

# QC Report - Surrogates per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250513W1

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250513A9.BLKW13A

Run in Batch: 250513A9, Run Date: 05/13/2025 17:05, Prep Date: 05/13/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		109.2	60.0	140.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250513A9.LCSW13B

Run in Batch: 250513A9, Run Date: 05/13/2025 15:24, Prep Date: 05/13/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		93.5	60.0	140.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250513A9.LCSDW13B, Parent Sample ID: 250513A9.LCSW13B

Run in Batch: 250513A9, Run Date: 05/13/2025 15:49, Prep Date: 05/13/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
BROMOFORM-D		95.0	60.0	140.0

# QC Report - Surrogates per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250514W1

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250514A9.BLKW14A

Run in Batch: 250514A9, Run Date: 05/14/2025 16:22, Prep Date: 05/14/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
No Surrogates				

### Laboratory Control Sample (LCS)

Lab Sample ID: 250514A9.LCSW14A

Run in Batch: 250514A9, Run Date: 05/14/2025 12:59, Prep Date: 05/14/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
No Surrogates				

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250514A9.LCSDW14A, Parent Sample ID: 250514A9.LCSW14A

Run in Batch: 250514A9, Run Date: 05/14/2025 13:24, Prep Date: 05/14/2025, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
No Surrogates				

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.01

Sample Tag: MW-21-142\_050725

Collected Date/Time: 05/07/2025 09:50

Matrix: Groundwater

COC Reference: 1

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512B9, Run Date: 05/13/2025 03:36, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		105.3	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.02

Sample Tag: MW-20-128\_050725

Collected Date/Time: 05/07/2025 11:20

Matrix: Groundwater

COC Reference: 1

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512B9, Run Date: 05/13/2025 04:27, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		97.9	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.03

Sample Tag: PW-14-02\_050725

Collected Date/Time: 05/07/2025 12:35

Matrix: Groundwater

COC Reference: 1

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512B9, Run Date: 05/13/2025 09:30, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		74.4	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.04

Sample Tag: PW-14-01\_050725

Collected Date/Time: 05/07/2025 13:55

Matrix: Groundwater

COC Reference: 1

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512B9, Run Date: 05/13/2025 04:02, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		93.3	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.05

Sample Tag: MW-20-129\_050725

Collected Date/Time: 05/07/2025 15:10

Matrix: Groundwater

COC Reference: 1

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512B9, Run Date: 05/13/2025 09:05, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		85.6	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.06

Sample Tag: MW-19-124\_050725

Collected Date/Time: 05/07/2025 16:30

Matrix: Groundwater

COC Reference: 1

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512B9, Run Date: 05/13/2025 10:47, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		77.3	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.07

Sample Tag: MW-20-126\_050825

Collected Date/Time: 05/08/2025 09:35

Matrix: Groundwater

COC Reference: 1

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512B9, Run Date: 05/13/2025 06:33, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		99.0	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.08

Sample Tag: MW-19-116\_050825

Collected Date/Time: 05/08/2025 10:40

Matrix: Groundwater

COC Reference: 1

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512B9, Run Date: 05/13/2025 09:56, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		89.8	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.09

Sample Tag: MW-19-117\_050825

Collected Date/Time: 05/08/2025 12:00

Matrix: Groundwater

COC Reference: 1

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512B9, Run Date: 05/13/2025 04:53, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		92.1	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.10

Sample Tag: MW-19-122\_050825

Collected Date/Time: 05/08/2025 13:25

Matrix: Groundwater

COC Reference: 1

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512B9, Run Date: 05/13/2025 05:43, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		100.5	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.11

Sample Tag: MW-19-120\_050825

Collected Date/Time: 05/08/2025 14:55

Matrix: Groundwater

COC Reference: 1

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512B9, Run Date: 05/13/2025 06:08, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		92.1	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.12

Sample Tag: DUP-03\_050825

Collected Date/Time: 05/08/2025 00:01

Matrix: Groundwater

COC Reference: 1

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250512B9, Run Date: 05/13/2025 05:18, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		96.5	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.13

Sample Tag: MW-13-43\_050725

Collected Date/Time: 05/07/2025 10:40

Matrix: Groundwater

COC Reference: 2

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250513A9, Run Date: 05/13/2025 21:18, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		101.5	50.0	200.0
1,4-Dioxane-D8		100.5	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		102.8	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.14

Sample Tag: MW-13-45\_050725

Collected Date/Time: 05/07/2025 12:25

Matrix: Groundwater

COC Reference: 2

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250514A9, Run Date: 05/14/2025 18:54, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		138.7	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.15

Sample Tag: MW-14-61\_050725

Collected Date/Time: 05/07/2025 14:00

Matrix: Groundwater

COC Reference: 2

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250513A9, Run Date: 05/13/2025 21:44, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		97.1	50.0	200.0
1,4-Dioxane-D8		93.9	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		106.5	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.16

Sample Tag: MW-16-74\_050725

Collected Date/Time: 05/07/2025 15:20

Matrix: Groundwater

COC Reference: 2

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250513A9, Run Date: 05/13/2025 22:09, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		103.2	50.0	200.0
1,4-Dioxane-D8		94.4	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		103.6	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.17

Sample Tag: MW-15-72\_050725

Collected Date/Time: 05/07/2025 16:25

Matrix: Groundwater

COC Reference: 2

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250514A9, Run Date: 05/14/2025 20:10, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		119.5	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.18

Sample Tag: MW-16-75\_050825

Collected Date/Time: 05/08/2025 10:25

Matrix: Groundwater

COC Reference: 2

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250513A9, Run Date: 05/13/2025 22:35, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		96.0	50.0	200.0
1,4-Dioxane-D8		92.2	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		111.6	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.19

Sample Tag: MW-16-77\_050825

Collected Date/Time: 05/08/2025 11:30

Matrix: Groundwater

COC Reference: 2

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250513A9, Run Date: 05/13/2025 23:00, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		83.8	50.0	200.0
1,4-Dioxane-D8		84.8	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		100.1	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.20

Sample Tag: MW-16-82\_050825

Collected Date/Time: 05/08/2025 13:25

Matrix: Groundwater

COC Reference: 2

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250513A9, Run Date: 05/13/2025 23:26, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		104.2	50.0	200.0
1,4-Dioxane-D8		97.9	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		105.2	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.21

Sample Tag: MW-16-81\_050825

Collected Date/Time: 05/08/2025 14:30

Matrix: Groundwater

COC Reference: 2

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250514A9, Run Date: 05/14/2025 19:45, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		114.5	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.22

Sample Tag: MW-16-78\_050825

Collected Date/Time: 05/08/2025 16:00

Matrix: Groundwater

COC Reference: 2

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250513A9, Run Date: 05/13/2025 23:51, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		<b>88.6</b>	50.0	200.0
1,4-Dioxane-D8		<b>89.7</b>	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		<b>109.4</b>	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.23

Sample Tag: DUP-02\_050725

Collected Date/Time: 05/07/2025 00:01

Matrix: Groundwater

COC Reference: 2

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250514A9, Run Date: 05/14/2025 16:47, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		97.8	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.24

Sample Tag: MW-19-115\_050825

Collected Date/Time: 05/08/2025 13:45

Matrix: Groundwater

COC Reference: 3

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250514A9, Run Date: 05/14/2025 17:13, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		122.7	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.25

Sample Tag: MW-16-84\_050825

Collected Date/Time: 05/08/2025 15:10

Matrix: Groundwater

COC Reference: 3

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250514A9, Run Date: 05/14/2025 17:38, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		123.9	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.28

Sample Tag: MW-16-85\_050825

Collected Date/Time: 05/08/2025 16:25

Matrix: Groundwater

COC Reference: 3

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250514A9, Run Date: 05/14/2025 18:03, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		132.5	50.0	200.0

# QC Report - Internal Standards per Lab Sample

Lab Sample ID: S74375.29

Sample Tag: MW-17-86\_050825

Collected Date/Time: 05/08/2025 16:45

Matrix: Groundwater

COC Reference: 3

## Organics - Volatiles, Analysis: 1,4-Dioxane

Run in Batch: 250514A9, Run Date: 05/14/2025 18:28, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		131.3	50.0	200.0

# QC Report - Internal Standards per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250512W2

QC Types: BLK/LCS/LCSD/MS/MSD

### Blank (BLK)

Lab Sample ID: 250512B9.BLKW12B

Run in Batch: 250512B9, Run Date: 05/13/2025 03:11, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		102.6	50.0	200.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250512B9.LCSW12B

Run in Batch: 250512B9, Run Date: 05/13/2025 01:29, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		100.9	50.0	200.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250512B9.LCSDW12B, Parent Sample ID: 250512B9.LCSW12B

Run in Batch: 250512B9, Run Date: 05/13/2025 01:55, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		88.5	50.0	200.0

### Matrix Spike (MS)

Lab Sample ID: 250512B9.7437404M, Parent Sample ID: S74374.03

Run in Batch: 250512B9, Run Date: 05/13/2025 11:13, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		88.4	50.0	200.0

### Matrix Spike Duplicate (MSD)

Lab Sample ID: 250512B9.7437405N, Parent Sample ID: 250512B9.7437404M

Run in Batch: 250512B9, Run Date: 05/13/2025 11:38, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		100.0	50.0	200.0

# QC Report - Internal Standards per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250513W1

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250513A9.BLKW13A

Run in Batch: 250513A9, Run Date: 05/13/2025 17:05, Prep Date: 05/13/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		85.3	50.0	200.0
1,4-Dioxane-D8		86.3	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		100.2	50.0	200.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250513A9.LCSW13B

Run in Batch: 250513A9, Run Date: 05/13/2025 15:24, Prep Date: 05/13/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		98.8	50.0	200.0
1,4-Dioxane-D8		96.3	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		98.7	50.0	200.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250513A9.LCSDW13B, Parent Sample ID: 250513A9.LCSW13B

Run in Batch: 250513A9, Run Date: 05/13/2025 15:49, Prep Date: 05/13/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,2-DIBROMOETHANE-D4 (I)		93.8	50.0	200.0
1,4-Dioxane-D8		100.7	50.0	200.0
1,2-DIBROMO-3-CHLOROPROPANE-C3 (I)		98.7	50.0	200.0

# QC Report - Internal Standards per QC Sample

## Organics - Volatiles, Prep Batch ID: VS250514W1

QC Types: BLK/LCS/LCSD

### Blank (BLK)

Lab Sample ID: 250514A9.BLKW14A

Run in Batch: 250514A9, Run Date: 05/14/2025 16:22, Prep Date: 05/14/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		97.0	50.0	200.0

### Laboratory Control Sample (LCS)

Lab Sample ID: 250514A9.LCSW14A

Run in Batch: 250514A9, Run Date: 05/14/2025 12:59, Prep Date: 05/14/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		104.3	50.0	200.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250514A9.LCSDW14A, Parent Sample ID: 250514A9.LCSW14A

Run in Batch: 250514A9, Run Date: 05/14/2025 13:24, Prep Date: 05/14/2025, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
1,4-Dioxane-D8		120.7	50.0	200.0

## QC Report - Batch QC Results

**Organics - Volatiles, Prep Batch ID: VS250512W2**

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

**Blank (BLK)**

Lab Sample ID: 250512B9.BLKW12B

Run in Batch: 250512B9, Run Date: 05/13/2025 03:11, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
1,4-Dioxane		ND	1.00	ug/l

**Laboratory Control Sample (LCS)**

Lab Sample ID: 250512B9.LCSW12B

Run in Batch: 250512B9, Run Date: 05/13/2025 01:29, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
1,4-Dioxane		100.1	70.0	130.0

**Laboratory Control Sample Duplicate (LCSD)**

Lab Sample ID: 250512B9.LCSDW12B, Parent Sample ID: 250512B9.LCSW12B

Run in Batch: 250512B9, Run Date: 05/13/2025 01:55, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,4-Dioxane		89.0	70.0	130.0	11.7	30.0

**Matrix Spike (MS)**

Lab Sample ID: 250512B9.7437404M, Parent Sample ID: S74374.03

Run in Batch: 250512B9, Run Date: 05/13/2025 11:13, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
1,4-Dioxane		93.7	70.0	130.0

**Matrix Spike Duplicate (MSD)**

Lab Sample ID: 250512B9.7437405N, Parent Sample ID: 250512B9.7437404M

Run in Batch: 250512B9, Run Date: 05/13/2025 11:38, Prep Date: 05/12/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,4-Dioxane		77.5	70.0	130.0	16.0	30.0

# QC Report - Batch QC Results

## Organics - Volatiles, Prep Batch ID: VS250513W1

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

### Blank (BLK)

Lab Sample ID: 250513A9.BLKW13A

Run in Batch: 250513A9, Run Date: 05/13/2025 17:05, Prep Date: 05/13/2025, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
1,4-Dioxane		ND	1.00	ug/l

### Laboratory Control Sample (LCS)

Lab Sample ID: 250513A9.LCSW13B

Run in Batch: 250513A9, Run Date: 05/13/2025 15:24, Prep Date: 05/13/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
1,4-Dioxane		94.0	70.0	130.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250513A9.LCSDW13B, Parent Sample ID: 250513A9.LCSW13B

Run in Batch: 250513A9, Run Date: 05/13/2025 15:49, Prep Date: 05/13/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,4-Dioxane		83.1	70.0	130.0	12.4	30.0

# QC Report - Batch QC Results

## Organics - Volatiles, Prep Batch ID: VS250514W1

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

### Blank (BLK)

Lab Sample ID: 250514A9.BLKW14A

Run in Batch: 250514A9, Run Date: 05/14/2025 16:22, Prep Date: 05/14/2025, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
1,4-Dioxane		ND	1.00	ug/l

### Laboratory Control Sample (LCS)

Lab Sample ID: 250514A9.LCSW14A

Run in Batch: 250514A9, Run Date: 05/14/2025 12:59, Prep Date: 05/14/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
1,4-Dioxane		96.6	70.0	130.0

### Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 250514A9.LCSDW14A, Parent Sample ID: 250514A9.LCSW14A

Run in Batch: 250514A9, Run Date: 05/14/2025 13:24, Prep Date: 05/14/2025, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,4-Dioxane		94.8	70.0	130.0	1.9	30.0

# Merit Laboratories Login Checklist

Lab Set ID:S74375

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

Project: 30267725.0470B / RACER Lansing GWS

Submitted:05/09/2025 14:25 Login User: MMC

Attention: Kaitlyn Hunt

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

Phone: O:248-809-4013 FAX:

Email: Kaitlyn.Hunt@arcadis.com

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

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

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

Plant 2



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 3

**REPORT TO**

**CHAIN OF CUSTODY RECORD**

**INVOICE TO**

CONTACT NAME: Tiffany Linder, Kaitlyn Hunt  
 COMPANY: Arcadis  
 ADDRESS: 28550 Cabot Drive, STE 500  
 CITY: Novi STATE: MI ZIP CODE: 48377  
 PHONE NO.: 947-777-5215 FAX NO.: P.O. NO.: 53460024033  
 E-MAIL ADDRESS: kaitlyn.hunt@arcadis.com QUOTE NO.:

CONTACT NAME:  SAME  
 COMPANY:  
 ADDRESS:  
 CITY: STATE: ZIP CODE:  
 PHONE NO.: E-MAIL ADDRESS: tiffany.linder@arcadis.com

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

PROJECT NO./NAME: 30267725.0470 **B**/ RACER Lansing GWS 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: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID  
 CODE: SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

# Containers & Preservatives

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	MeOH	OTHER	1,4-Dioxane - 8260 SIMS	VOC - 8260 SIMS	Certifications			Project Locations		Special Instructions		
	DATE	TIME													<input type="checkbox"/> OHIO VAP	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> DoD	<input type="checkbox"/> NPDES	<input type="checkbox"/> Detroit		<input type="checkbox"/> New York	
74375.01	5/7/25	950	MW-21-142-050725	GW	3		3						X									
.02	5/7/25	1120	MW-20-128-050725	GW	3		3						X									
.03	5/7/25	1235	PW-14-02-050725	GW	3		3						X									
.04	5/7/25	1355	PW-14-01-050725	GW	3		3						X									
.05	5/7/25	1510	MW-20-129-050725	GW	3		3						X									
.06	5/7/25	1630	MW-19-124-050725	GW	3		3						X									
.07	5/8/25	935	MW-20-126-050825	GW	3		3						X									
.08	5/8/25	1040	MW-19-116-050825	GW	3		3						X									
.09	5/8/25	1200	MW-19-117-050825	GW	3		3						X									
.10	5/8/25	1325	MW-19-122-050825	GW	3		3						X									
.11	5/8/25	1455	MW-19-120-050825	GW	3		3						X									
.12	5/8/25	—	DUP-03-050825	GW	3		3						X									

RELINQUISHED BY: *Austin Westhuis* Arcadis DATE: 5/9/25 TIME: 1425  
 RECEIVED BY: *J. Helru* DATE: 5-9-25 TIME: 1425

RELINQUISHED BY: DATE: TIME:  
 RECEIVED BY: DATE: TIME:  
 SEAL NO. SEAL INTACT INITIALS NOTES: TEMP. ON ARRIVAL  
 YES  NO   
 SEAL NO. SEAL INTACT INITIALS  
 YES  NO  **4.1c**

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







right solutions.  
right partner.

May 15, 2025

Anyssa Mandich  
Arcadis US, Inc.  
28550 Cabot Drive  
Suite 500  
Novi, MI 48377

Work Order: **HN2506238**

Re: **RACER Lansing 2025**

Dear Anyssa,

Enclosed are the results of the sample(s) submitted to our laboratory.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

**Alex Csaszar**

**/S/ ALEX CSASZAR**

**Project Manager**



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025

**Work Order:** HN2506238  
**Date Received:** 10-May-2025

## CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

### Sample Receipt

9 wastewater samples were received for analysis at ALS Environmental on 10-May-2025. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

### Organics

#### EPA 537 Mod-W

##### Batch ID: 3136380

HN2506238-001: 13C2-FtS 4:2 - One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed.

HN2506238-001: 13C2-FtS 4:2 - The MS recovery was above the upper control limit. The corresponding result in the parent sample may be biased high for this analyte:

HN2506238-001: 13C2-FtS 4:2 - The MSD recovery was above the upper control limit. The corresponding result in the parent sample may be biased high for this analyte:

HN2506238-001: Perfluoropentanoic acid (PFPeA) - The MSD recovery was outside of the control limit. However, the MS recovery and the RPD between the MS and MSD was in control. No qualification is required for this analyte:

HN2506238-001: d3-N-MeFOSA - One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed.

HN2506238-001: Perfluorohexanoic acid (PFHxA) - The MSD recovery was outside of the control limit. However, the MS recovery and the RPD between the MS and MSD was in control. No qualification is required for this analyte:

HN2506238-001: 13C2-FtS 8:2 - The RPD between the MS and MSD was outside of the control limit. The corresponding result should be considered estimated for this compound:

HN2506238-001: 13C2-FtS 8:2 - The MS recovery was above the upper control limit. The corresponding result in the parent sample may be biased high for this analyte:

HN2506238-001: 13C2-FtS 6:2 - One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed.

HN2506238-001: 13C2-FtS 6:2 - The MS recovery was outside of the control limit. However, the MSD recovery and the RPD between the MS and MSD was in control. No qualification is required for this analyte:

##### Batch ID: 3136223

HN2506238-003: 13C2-FtS 6:2 - One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed.

HN2506238-003: 13C2-FtS 4:2 - One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed.

HN2506238-004: 13C2-FtS 4:2 - One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed.

HN2506238-004: 13C2-FtS 6:2 - One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed.

HN2506238-005: 13C2-FtS 4:2 - One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed.

HN2506238-009: 13C2-FtS 4:2 - One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed.

**Batch ID: 3136223**

HN2506238-009: 13C2-FtS 6:2 - One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed.

## SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting limits.

For a full listing of sample results, continue to the Sample Results section of this Report.



<b>CLIENT ID: MichAve-MH-3_050925</b>	<b>Lab ID: HN2506238-001</b>
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Analyte	Results	Flag	MDL	MRL	Units	Method
Perfluorobutane sulfonic acid (PFBS)	3.46	J	0.334	4.21	ng/L	EPA 537Mod
Perfluorobutanoic acid (PFBA)	18.0		2.48	4.76	ng/L	EPA 537Mod
Perfluoroheptanoic acid (PFHpA)	3.60	J	1.65	4.76	ng/L	EPA 537Mod
Perfluorohexane sulfonic acid (PFHxS)	2.77	J	0.860	4.33	ng/L	EPA 537Mod
Perfluorohexanoic acid (PFHxA)	71.4	S	1.14	4.76	ng/L	EPA 537Mod
Perfluorooctane sulfonic acid (PFOS)	4.56		0.849	1.77	ng/L	EPA 537Mod
Perfluorooctanoic acid (PFOA)	6.32		0.600	1.90	ng/L	EPA 537Mod
Perfluoropentanoic acid (PFPeA)	55.4	S	1.22	4.76	ng/L	EPA 537Mod

<b>CLIENT ID: Verlinden-MH-5_050925</b>	<b>Lab ID: HN2506238-002</b>
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Analyte	Results	Flag	MDL	MRL	Units	Method
Perfluorobutane sulfonic acid (PFBS)	2.32	J	0.352	4.43	ng/L	EPA 537Mod
Perfluorobutanoic acid (PFBA)	8.12		2.61	5.02	ng/L	EPA 537Mod
Perfluoroheptanoic acid (PFHpA)	7.36		1.74	5.02	ng/L	EPA 537Mod
Perfluorohexane sulfonic acid (PFHxS)	1.14	J	0.906	4.56	ng/L	EPA 537Mod
Perfluorohexanoic acid (PFHxA)	15.8		1.20	5.02	ng/L	EPA 537Mod
Perfluorononanoic acid (PFNA)	1.68	J	0.873	5.02	ng/L	EPA 537Mod
Perfluorooctane sulfonic acid (PFOS)	8.50		0.895	1.86	ng/L	EPA 537Mod
Perfluorooctanoic acid (PFOA)	14.8		0.632	2.01	ng/L	EPA 537Mod
Perfluoropentanoic acid (PFPeA)	15.4		1.28	5.02	ng/L	EPA 537Mod

<b>CLIENT ID: Osborn-MH-1_050925</b>	<b>Lab ID: HN2506238-003</b>
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Analyte	Results	Flag	MDL	MRL	Units	Method
Perfluorobutane sulfonic acid (PFBS)	0.985	J	0.362	4.56	ng/L	EPA 537Mod
Perfluorobutanoic acid (PFBA)	10.8		2.68	5.16	ng/L	EPA 537Mod
Perfluorodecanoic acid (PFDA)	3.20	J	1.28	5.16	ng/L	EPA 537Mod
Perfluoroheptanoic acid (PFHpA)	6.95		1.79	5.16	ng/L	EPA 537Mod
Perfluorohexane sulfonic acid (PFHxS)	1.52	J	0.933	4.70	ng/L	EPA 537Mod
Perfluorohexanoic acid (PFHxA)	9.13		1.24	5.16	ng/L	EPA 537Mod
Perfluorononanoic acid (PFNA)	3.43	J	0.899	5.16	ng/L	EPA 537Mod
Perfluorooctane sulfonic acid (PFOS)	18.4		0.921	1.92	ng/L	EPA 537Mod
Perfluorooctanoic acid (PFOA)	16.0		0.651	2.06	ng/L	EPA 537Mod
Perfluoropentanoic acid (PFPeA)	8.44		1.32	5.16	ng/L	EPA 537Mod

<b>CLIENT ID: P2-MH-2_050925</b>	<b>Lab ID: HN2506238-004</b>
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Analyte	Results	Flag	MDL	MRL	Units	Method
Perfluorobutane sulfonic acid (PFBS)	1.63	J	0.346	4.36	ng/L	EPA 537Mod
Perfluorobutanoic acid (PFBA)	7.46		2.56	4.93	ng/L	EPA 537Mod
Perfluoroheptanoic acid (PFHpA)	5.00		1.70	4.93	ng/L	EPA 537Mod
Perfluorohexane sulfonic acid (PFHxS)	3.36	J	0.890	4.48	ng/L	EPA 537Mod
Perfluorohexanoic acid (PFHxA)	6.25		1.18	4.93	ng/L	EPA 537Mod
Perfluorononanoic acid (PFNA)	1.82	J	0.857	4.93	ng/L	EPA 537Mod

## SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting limits.

For a full listing of sample results, continue to the Sample Results section of this Report.



<b>CLIENT ID: P2-MH-2_050925</b>	<b>Lab ID: HN2506238-004</b>
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Analyte	Results	Flag	MDL	MRL	Units	Method
Perfluorooctane sulfonic acid (PFOS)	12.5		0.879	1.83	ng/L	EPA 537Mod
Perfluorooctanoic acid (PFOA)	15.2		0.621	1.97	ng/L	EPA 537Mod
Perfluoropentanoic acid (PFPeA)	5.15		1.26	4.93	ng/L	EPA 537Mod

<b>CLIENT ID: P3-MH-284_050925</b>	<b>Lab ID: HN2506238-005</b>
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Analyte	Results	Flag	MDL	MRL	Units	Method
Perfluorobutane sulfonic acid (PFBS)	1.22	J	0.342	4.30	ng/L	EPA 537Mod
Perfluorooctane sulfonic acid (PFOS)	3.49		0.869	1.81	ng/L	EPA 537Mod
Perfluoropentanoic acid (PFPeA)	1.29	J	1.25	4.87	ng/L	EPA 537Mod

<b>CLIENT ID: P2-MH-W-050925</b>	<b>Lab ID: HN2506238-006</b>
----------------------------------	------------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Perfluorobutane sulfonic acid (PFBS)	1.17	J	0.337	4.25	ng/L	EPA 537Mod
Perfluorobutanoic acid (PFBA)	3.58	J	2.50	4.80	ng/L	EPA 537Mod
Perfluorohexane sulfonic acid (PFHxS)	1.66	J	0.868	4.37	ng/L	EPA 537Mod
Perfluorooctane sulfonic acid (PFOS)	1.21	J	0.857	1.78	ng/L	EPA 537Mod
Perfluorooctanoic acid (PFOA)	1.89	J	0.605	1.92	ng/L	EPA 537Mod

<b>CLIENT ID: DUP-01_050925</b>	<b>Lab ID: HN2506238-009</b>
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Analyte	Results	Flag	MDL	MRL	Units	Method
Perfluorobutane sulfonic acid (PFBS)	0.884	J	0.353	4.44	ng/L	EPA 537Mod
Perfluorobutanoic acid (PFBA)	11.2		2.61	5.02	ng/L	EPA 537Mod
Perfluorodecanoic acid (PFDA)	3.10	J	1.25	5.02	ng/L	EPA 537Mod
Perfluoroheptanoic acid (PFHpA)	6.55		1.74	5.02	ng/L	EPA 537Mod
Perfluorohexane sulfonic acid (PFHxS)	1.47	J	0.907	4.57	ng/L	EPA 537Mod
Perfluorohexanoic acid (PFHxA)	9.85		1.20	5.02	ng/L	EPA 537Mod
Perfluorononanoic acid (PFNA)	3.58	J	0.874	5.02	ng/L	EPA 537Mod
Perfluorooctane sulfonic acid (PFOS)	19.2		0.896	1.86	ng/L	EPA 537Mod
Perfluorooctanoic acid (PFOA)	18.2		0.633	2.01	ng/L	EPA 537Mod
Perfluoropentanoic acid (PFPeA)	8.55		1.29	5.02	ng/L	EPA 537Mod

# SAMPLE SUMMARY



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Workorder:** HN2506238

<b>Laboratory Sample ID</b>	<b>Client Sample ID</b>	<b>Sample Matrix</b>	<b>Collection Date</b>	<b>Date Received</b>
HN2506238-001	MichAve-MH-3_050925	WASTEWATER	05/09/25 10:00	05/10/25 10:00
HN2506238-002	Verlinden-MH-5_050925	WASTEWATER	05/09/25 10:30	05/10/25 10:00
HN2506238-003	Osborn-MH-1_050925	WASTEWATER	05/09/25 11:00	05/10/25 10:00
HN2506238-004	P2-MH-2_050925	WASTEWATER	05/09/25 12:15	05/10/25 10:00
HN2506238-005	P3-MH-284_050925	WASTEWATER	05/09/25 13:40	05/10/25 10:00
HN2506238-006	P2-MH-W-050925	WASTEWATER	05/09/25 14:20	05/10/25 10:00
HN2506238-007	FB-01_050925	WASTEWATER	05/09/25 14:40	05/10/25 10:00
HN2506238-008	EB-01_050925	WASTEWATER	05/09/25 14:50	05/10/25 10:00
HN2506238-009	DUP-01_050925	WASTEWATER	05/09/25	05/10/25 10:00



# Chain of Custody Form

ALS Group USA, Corp

Environmental Division  
Holland  
Work Order Reference  
**HN2506238**



Telephone : + 1 616 399 6070

Company Name	Arcadis U.S., Inc.	Purchase Order	Arcadis U.S., Inc.	Parameter/Method Requ	A	537M, MI List of 28
Send Report To	Anyssa Mandick	Company Name	Anyssa Mandick		B	
Project Name	RACER Lansing 2025	Invoice Attn	30267725.0370B		C	
Address	28550 Cabot Drive Suite 500	Project #			D	
City State Zip	Novi, MI 48377	Address	28550 Cabot Drive Suite 500 Suite 500		E	
Phone	2489942240	City State Zip	Novi, MI 48377		F	
e-Mail Address	anyssa.mandick@arcadis.com	Phone	2489942240		G	
		e-Mail Address	anyssa.mandick@arcadis.com		H	
					I	
					J	

#	Sample Description	Date	Time	Matrix	Preservative	# Bottles	A	B	C	D	E	F	G	H	I	J	Sample Notes
1	MICHAVE-MH-3-050925	5/9/25	1000	WW	none	9											MS/MSD
2	Verlinden-MH-5-050925	5/9/25	1030	WW	none	3											
3	OSborn-MH-1-050925	5/9/25	1100	WW	none	3											
4	P2-MH-2-050925	5/9/25	1215	WW	none	3											Please provide results + QC
5	P3-MH-284-050925	5/9/25	1340	WW	none	3											along w/ EDF
6	P2-MH-W-050925	5/9/25	1420	WW	none	3											for all
7	FB-D1-050925	5/9/25	1440	WW	none	2											samples
8	EB-D1-050925	5/9/25	1450	WW	none	3											
9	DUP-D1-050925	5/9/25	—	WW	none	3											
10																	

Notes: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degree C 9-5035

Required Turnaround Time:  Std 10 Wk days  5 Wk days  2 Wk days  24 hr

Results Due:

Reinquired by	Date	Time	Received by	Date	Time
Rebecca Cozigan	5/9/25	1715	Fedex	5/9/25	1715

NOTES:

QC Reporting Level: (check box below)

Level II: Standard QC

Level III: Std QC + Raw data

Level IV: SW946 CLP-Like

Other:



# ALS Holland Sample Receiving Checklist

Received by:

ALS

Date/Time:

5-10-3-1000

Carrier Name:

FedEx

Shipping container/cooler in good condition?

Yes / No / Not Present

Custody seals intact on shipping container/cooler?

Yes / No /  Not Present

Custody seals intact on sample bottles?

Yes / No /  Not Present

Chain of Custody present?

Yes / No

COC signed when relinquished and received?

Yes / No

COC agrees with sample labels?

Yes / No

Samples in proper container/bottle?

Yes / No

Sample containers intact?

Yes / No

Sufficient sample volume for indicated test?

Yes / No

All samples received within holding time?

Yes / No

Container/Temp Blank temperature in compliance?

Yes / No

Temperature(s) (°C):

4.3/4.3

Thermometer(s):

746

Sample(s) received on ice?

Yes / No

Matrix/Matrices:

water

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

5-2-25

Water – VOA vials have zero headspace?

Yes / No /  No Vials

Water – pH acceptable upon receipt?

Yes / No /  N/A

pH strip lot #: \_\_\_\_\_ < 2 \_\_\_\_\_ > 12 \_\_\_\_\_ Other \_\_\_\_\_

pH adjusted (note adjustments below)?

Yes / No /  N/A

pH adjusted by:

Login Notes:

## REPORT QUALIFIERS AND DEFINITIONS

*	Value exceeds Regulatory Limit (if MCL displayed)
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
NC	Not Calculated
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
V	The Continuing Calibration Verification was outside of control criteria
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

### Holland Laboratory Certifications<sup>1</sup>

Agency	Type	ID	Issued	Expires
Alabama	Drinking Water (Secondary)	42500	12/17/2024	12/31/2025
Colorado	UST		06/21/2024	06/30/2025
Connecticut	Drinking Water (Secondary)	PH-0155	12/10/2024	12/31/2026
Florida	NELAP (Primary)	E871106	07/01/2024	06/30/2025
Illinois	NELAP (Secondary)	200076	11/14/2024	12/31/2025
Indiana	Drinking Water (Secondary)	C-MI-08	12/31/2024	09/04/2026
Iowa	State Specific	403	09/18/2023	09/01/2025
Kansas	NELAP (Secondary)	E-10411	07/09/2024	07/31/2025
Kentucky	Waste Water	KY98004	12/20/2024	12/31/2025
Kentucky	UST	120474	06/24/2024	06/30/2025
Michigan	Drinking Water (Primary)	0022	12/19/2023	09/04/2026
Minnesota	NELAP (Secondary)	026-999-449	12/17/2024	12/31/2025
Missouri	Drinking Water (Secondary)	01262	11/14/2024	12/30/2027
New Jersey	NELAP (Secondary)	MI015	07/01/2024	6/30/2025
New York	NELAP (Secondary)	12128	04/01/2024	04/01/2025
North Dakota	State Specific	R-192	11/18/2024	06/30/2025
Ohio	Drinking Water (Secondary)	87783	06/25/2024	6/30/2025
Pennsylvania	NELAP (Secondary)	68-03827	06/14/2024	07/31/2025
Texas	NELAP (Secondary)	T104704494	02/12/2025	01/31/2026
USDA	Domestic CA	Soil-MI-007	02/06/2025	08/07/2026
USDA	Soil Import	525-23-62-77572	03/03/2023	03/03/2026
West Virginia	State Specific	355	02/04/2025	08/31/2025
Wisconsin	State Specific	399084510	08/15/2024	08/31/2025

<sup>1</sup> - Scope available upon request

# ANALYST SUMMARY



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025

**Work Order:** HN2506238

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**Sample Name:** MichAve-MH-3\_050925  
**Laboratory Code:** HN2506238-001  
**Sample Matrix:** WASTEWATER

**Date Collected:** 05/09/25  
**Date Received:** 05/10/25

---

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 537Mod	1995359	Audrey Peerenboom	3136380	Morgan Morehouse

---

**Sample Name:** Verlinden-MH-5\_050925  
**Laboratory Code:** HN2506238-002  
**Sample Matrix:** WASTEWATER

**Date Collected:** 05/09/25  
**Date Received:** 05/10/25

---

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 537Mod	1995359	Audrey Peerenboom	3136223	Morgan Morehouse

---

**Sample Name:** Osborn-MH-1\_050925  
**Laboratory Code:** HN2506238-003  
**Sample Matrix:** WASTEWATER

**Date Collected:** 05/09/25  
**Date Received:** 05/10/25

---

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 537Mod	1995359	Audrey Peerenboom	3136223	Morgan Morehouse

---

**Sample Name:** P2-MH-2\_050925  
**Laboratory Code:** HN2506238-004  
**Sample Matrix:** WASTEWATER

**Date Collected:** 05/09/25  
**Date Received:** 05/10/25

---

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 537Mod	1995359	Audrey Peerenboom	3136223	Morgan Morehouse

---

# ANALYST SUMMARY



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025

**Work Order:** HN2506238

---

**Sample Name:** P3-MH-284\_050925  
**Laboratory Code:** HN2506238-005  
**Sample Matrix:** WASTEWATER

**Date Collected:** 05/09/25  
**Date Received:** 05/10/25

---

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 537Mod	1995359	Audrey Peerenboom	3136223	Morgan Morehouse

---

**Sample Name:** P2-MH-W-050925  
**Laboratory Code:** HN2506238-006  
**Sample Matrix:** WASTEWATER

**Date Collected:** 05/09/25  
**Date Received:** 05/10/25

---

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 537Mod	1995359	Audrey Peerenboom	3136223	Morgan Morehouse

---

**Sample Name:** FB-01\_050925  
**Laboratory Code:** HN2506238-007  
**Sample Matrix:** WASTEWATER

**Date Collected:** 05/09/25  
**Date Received:** 05/10/25

---

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 537Mod	1995359	Audrey Peerenboom	3136223	Morgan Morehouse

---

**Sample Name:** EB-01\_050925  
**Laboratory Code:** HN2506238-008  
**Sample Matrix:** WASTEWATER

**Date Collected:** 05/09/25  
**Date Received:** 05/10/25

---

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 537Mod	1995359	Audrey Peerenboom	3136223	Morgan Morehouse

---

# ANALYST SUMMARY



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025

**Work Order:** HN2506238

---

**Sample Name:** DUP-01\_050925  
**Laboratory Code:** HN2506238-009  
**Sample Matrix:** WASTEWATER

**Date Collected:** 05/09/25  
**Date Received:** 05/10/25

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<b>Analysis Method</b>	<b>Preparation Lot</b>	<b>Prepared By</b>	<b>Analysis Lot</b>	<b>Analyzed By</b>
EPA 537Mod	1995359	Audrey Peerenboom	3136223	Morgan Morehouse

---

# Analytical Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 10:00  
**Date Received:** 05/10/25 10:00

**CLIENT ID:** MichAve-MH-3\_050925 **Lab ID:** HN2506238-001

Analyte	Method	Results	Qual	Units	MDL	MRL	Dilution Factor	Date Analyzed	Date Extracted
<b>Per- and Polyfluorinated Alkyl Substances by LC-MS</b>									
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	EPA 537Mod	<0.445	U	ng/L	0.445	4.48	1	05/15/25 11:05	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	EPA 537Mod	<1.08	U	ng/L	1.08	4.56	1	05/15/25 11:05	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)	EPA 537Mod	<0.891	U	ng/L	0.891	4.45	1	05/15/25 11:05	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)	EPA 537Mod	<1.83	U	ng/L	1.83	4.42	1	05/15/25 11:05	05/14/25 16:09
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	EPA 537Mod	<0.535	U	ng/L	0.535	4.48	1	05/15/25 11:05	05/14/25 16:09
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	EPA 537Mod	<0.427	U	ng/L	0.427	4.44	1	05/15/25 11:05	05/14/25 16:09
Hexafluoropropyleneoxide dimer acid (HFPO-DA) (GenX)	EPA 537Mod	<1.11	U	ng/L	1.11	4.76	1	05/15/25 11:05	05/14/25 16:09
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	EPA 537Mod	<1.47	U	ng/L	1.47	4.76	1	05/15/25 11:05	05/14/25 16:09
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	EPA 537Mod	<0.613	U	ng/L	0.613	4.76	1	05/15/25 11:05	05/14/25 16:09
Perfluorobutane sulfonic acid (PFBS)	EPA 537Mod	<b>3.46</b>	J	ng/L	0.334	4.21	1	05/15/25 11:05	05/14/25 16:09
Perfluorobutanoic acid (PFBA)	EPA 537Mod	<b>18.0</b>		ng/L	2.48	4.76	1	05/15/25 11:05	05/14/25 16:09
Perfluorodecane sulfonic acid (PFDS)	EPA 537Mod	<1.30	U	ng/L	1.30	4.59	1	05/15/25 11:05	05/14/25 16:09
Perfluorodecanoic acid (PFDA)	EPA 537Mod	<1.18	U	ng/L	1.18	4.76	1	05/15/25 11:05	05/14/25 16:09
Perfluorododecanoic acid (PFDOA)	EPA 537Mod	<0.658	U	ng/L	0.658	4.76	1	05/15/25 11:05	05/14/25 16:09
Perfluoroheptane sulfonic acid (PFHpS)	EPA 537Mod	<0.539	U	ng/L	0.539	4.53	1	05/15/25 11:05	05/14/25 16:09
Perfluoroheptanoic acid (PFHpA)	EPA 537Mod	<b>3.60</b>	J	ng/L	1.65	4.76	1	05/15/25 11:05	05/14/25 16:09
Perfluorohexane sulfonic acid (PFHxS)	EPA 537Mod	<b>2.77</b>	J	ng/L	0.860	4.33	1	05/15/25 11:05	05/14/25 16:09
Perfluorohexanoic acid (PFHxA)	EPA 537Mod	<b>71.4</b>	S	ng/L	1.14	4.76	1	05/15/25 11:05	05/14/25 16:09
Perfluorononane sulfonic acid (PFNS)	EPA 537Mod	<0.472	U	ng/L	0.472	4.57	1	05/15/25 11:05	05/14/25 16:09

# Analytical Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 10:00  
**Date Received:** 05/10/25 10:00

**CLIENT ID:** MichAve-MH-3\_050925 **Lab ID:** HN2506238-001

Analyte	Method	Results	Qual	Units	MDL	MRL	Dilution Factor	Date Analyzed	Date Extracted
Perfluorononanoic acid (PFNA)	EPA 537Mod	<0.828	U	ng/L	0.828	4.76	1	05/15/25 11:05	05/14/25 16:09
Perfluorooctane sulfonamide (PFOSAm)	EPA 537Mod	<0.677	U	ng/L	0.677	4.76	1	05/15/25 11:05	05/14/25 16:09
Perfluorooctane sulfonic acid (PFOS)	EPA 537Mod	<b>4.56</b>		ng/L	0.849	1.77	1	05/15/25 11:05	05/14/25 16:09
Perfluorooctanoic acid (PFOA)	EPA 537Mod	<b>6.32</b>		ng/L	0.600	1.90	1	05/15/25 11:05	05/14/25 16:09
Perfluoropentane sulfonic acid (PFPeS)	EPA 537Mod	<0.529	U	ng/L	0.529	4.46	1	05/15/25 11:05	05/14/25 16:09
Perfluoropentanoic acid (PFPeA)	EPA 537Mod	<b>55.4</b>	S	ng/L	1.22	4.76	1	05/15/25 11:05	05/14/25 16:09
Perfluorotetradecanoic acid (PFTDA)	EPA 537Mod	<2.51	U	ng/L	2.51	4.76	1	05/15/25 11:05	05/14/25 16:09
Perfluorotridecanoic acid (PFTrDA)	EPA 537Mod	<1.84	U	ng/L	1.84	4.76	1	05/15/25 11:05	05/14/25 16:09
Perfluoroundecanoic acid (PFUnDA)	EPA 537Mod	<0.927	U	ng/L	0.927	4.76	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: 13C2-FtS 4:2</i>	<i>EPA 537Mod</i>	<b>194</b>	S	%REC		50-150	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: 13C2-FtS 6:2</i>	<i>EPA 537Mod</i>	<b>162</b>	S	%REC		50-150	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: 13C2-FtS 8:2</i>	<i>EPA 537Mod</i>	<b>134</b>		%REC		50-150	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: 13C2-PFDA</i>	<i>EPA 537Mod</i>	<b>97.6</b>		%REC		50-150	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: 13C2-PFDoA</i>	<i>EPA 537Mod</i>	<b>91.6</b>		%REC		50-150	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: 13C2-PFHxA</i>	<i>EPA 537Mod</i>	<b>104</b>		%REC		50-150	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: 13C2-PFTeA</i>	<i>EPA 537Mod</i>	<b>93.1</b>		%REC		27-134	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: 13C2-PFUnA</i>	<i>EPA 537Mod</i>	<b>97.9</b>		%REC		50-150	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: 13C3-HFPO-DA</i>	<i>EPA 537Mod</i>	<b>115</b>		%REC		41-142	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: 13C3-PFBS</i>	<i>EPA 537Mod</i>	<b>118</b>		%REC		50-150	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: 13C4-PFBA</i>	<i>EPA 537Mod</i>	<b>114</b>		%REC		50-150	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: 13C4-PFHpA</i>	<i>EPA 537Mod</i>	<b>113</b>		%REC		42-141	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: 13C4-PFOA</i>	<i>EPA 537Mod</i>	<b>106</b>		%REC		50-150	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: 13C4-PFOS</i>	<i>EPA 537Mod</i>	<b>96.0</b>		%REC		50-150	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: 13C5-PFNA</i>	<i>EPA 537Mod</i>	<b>104</b>		%REC		50-150	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: 13C5-PFPeA</i>	<i>EPA 537Mod</i>	<b>112</b>		%REC		43-138	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: 13C8-FOSA</i>	<i>EPA 537Mod</i>	<b>106</b>		%REC		30-122	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: 18O2-PFHxS</i>	<i>EPA 537Mod</i>	<b>102</b>		%REC		50-150	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: d3-N-MeFOSAA</i>	<i>EPA 537Mod</i>	<b>88.5</b>		%REC		35-136	1	05/15/25 11:05	05/14/25 16:09
<i>Surr: d5-N-EtFOSAA</i>	<i>EPA 537Mod</i>	<b>102</b>		%REC		34-142	1	05/15/25 11:05	05/14/25 16:09

# Analytical Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 10:30  
**Date Received:** 05/10/25 10:00

**CLIENT ID:** Verlinden-MH-5\_050925 **Lab ID:** HN2506238-002

Analyte	Method	Results	Qual	Units	MDL	MRL	Dilution Factor	Date Analyzed	Date Extracted
<b>Per- and Polyfluorinated Alkyl Substances by LC-MS</b>									
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	EPA 537Mod	<0.468	U	ng/L	0.468	4.72	1	05/15/25 02:31	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	EPA 537Mod	<1.13	U	ng/L	1.13	4.80	1	05/15/25 02:31	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)	EPA 537Mod	<0.939	U	ng/L	0.939	4.68	1	05/15/25 02:31	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)	EPA 537Mod	<1.92	U	ng/L	1.92	4.65	1	05/15/25 02:31	05/14/25 16:09
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	EPA 537Mod	<0.564	U	ng/L	0.564	4.72	1	05/15/25 02:31	05/14/25 16:09
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	EPA 537Mod	<0.449	U	ng/L	0.449	4.67	1	05/15/25 02:31	05/14/25 16:09
Hexafluoropropyleneoxide dimer acid (HFPO-DA) (GenX)	EPA 537Mod	<1.17	U	ng/L	1.17	5.02	1	05/15/25 02:31	05/14/25 16:09
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	EPA 537Mod	<1.55	U	ng/L	1.55	5.02	1	05/15/25 02:31	05/14/25 16:09
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	EPA 537Mod	<0.646	U	ng/L	0.646	5.02	1	05/15/25 02:31	05/14/25 16:09
Perfluorobutane sulfonic acid (PFBS)	EPA 537Mod	<b>2.32</b>	J	ng/L	0.352	4.43	1	05/15/25 02:31	05/14/25 16:09
Perfluorobutanoic acid (PFBA)	EPA 537Mod	<b>8.12</b>		ng/L	2.61	5.02	1	05/15/25 02:31	05/14/25 16:09
Perfluorodecane sulfonic acid (PFDS)	EPA 537Mod	<1.37	U	ng/L	1.37	4.83	1	05/15/25 02:31	05/14/25 16:09
Perfluorodecanoic acid (PFDA)	EPA 537Mod	<1.24	U	ng/L	1.24	5.02	1	05/15/25 02:31	05/14/25 16:09
Perfluorododecanoic acid (PFDOA)	EPA 537Mod	<0.693	U	ng/L	0.693	5.02	1	05/15/25 02:31	05/14/25 16:09
Perfluoroheptane sulfonic acid (PFHpS)	EPA 537Mod	<0.568	U	ng/L	0.568	4.77	1	05/15/25 02:31	05/14/25 16:09
Perfluoroheptanoic acid (PFHpA)	EPA 537Mod	<b>7.36</b>		ng/L	1.74	5.02	1	05/15/25 02:31	05/14/25 16:09
Perfluorohexane sulfonic acid (PFHxS)	EPA 537Mod	<b>1.14</b>	J	ng/L	0.906	4.56	1	05/15/25 02:31	05/14/25 16:09
Perfluorohexanoic acid (PFHxA)	EPA 537Mod	<b>15.8</b>		ng/L	1.20	5.02	1	05/15/25 02:31	05/14/25 16:09
Perfluorononane sulfonic acid (PFNS)	EPA 537Mod	<0.498	U	ng/L	0.498	4.81	1	05/15/25 02:31	05/14/25 16:09

# Analytical Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 10:30  
**Date Received:** 05/10/25 10:00

**CLIENT ID:** Verlinden-MH-5\_050925 **Lab ID:** HN2506238-002

Analyte	Method	Results	Qual	Units	MDL	MRL	Dilution Factor	Date Analyzed	Date Extracted
Perfluorononanoic acid (PFNA)	EPA 537Mod	<b>1.68</b>	J	ng/L	0.873	5.02	1	05/15/25 02:31	05/14/25 16:09
Perfluorooctane sulfonamide (PFOSAm)	EPA 537Mod	<0.713	U	ng/L	0.713	5.02	1	05/15/25 02:31	05/14/25 16:09
Perfluorooctane sulfonic acid (PFOS)	EPA 537Mod	<b>8.50</b>		ng/L	0.895	1.86	1	05/15/25 02:31	05/14/25 16:09
Perfluorooctanoic acid (PFOA)	EPA 537Mod	<b>14.8</b>		ng/L	0.632	2.01	1	05/15/25 02:31	05/14/25 16:09
Perfluoropentane sulfonic acid (PFPeS)	EPA 537Mod	<0.558	U	ng/L	0.558	4.70	1	05/15/25 02:31	05/14/25 16:09
Perfluoropentanoic acid (PFPeA)	EPA 537Mod	<b>15.4</b>		ng/L	1.28	5.02	1	05/15/25 02:31	05/14/25 16:09
Perfluorotetradecanoic acid (PFTDA)	EPA 537Mod	<2.65	U	ng/L	2.65	5.02	1	05/15/25 02:31	05/14/25 16:09
Perfluorotridecanoic acid (PFTrDA)	EPA 537Mod	<1.94	U	ng/L	1.94	5.02	1	05/15/25 02:31	05/14/25 16:09
Perfluoroundecanoic acid (PFUnDA)	EPA 537Mod	<0.977	U	ng/L	0.977	5.02	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: 13C2-FtS 4:2</i>	<i>EPA 537Mod</i>	<b>150</b>		%REC		50-150	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: 13C2-FtS 6:2</i>	<i>EPA 537Mod</i>	<b>127</b>		%REC		50-150	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: 13C2-FtS 8:2</i>	<i>EPA 537Mod</i>	<b>119</b>		%REC		50-150	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: 13C2-PFDA</i>	<i>EPA 537Mod</i>	<b>106</b>		%REC		50-150	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: 13C2-PFDoA</i>	<i>EPA 537Mod</i>	<b>97.7</b>		%REC		50-150	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: 13C2-PFHxA</i>	<i>EPA 537Mod</i>	<b>109</b>		%REC		50-150	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: 13C2-PFTeA</i>	<i>EPA 537Mod</i>	<b>81.8</b>		%REC		27-134	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: 13C2-PFUnA</i>	<i>EPA 537Mod</i>	<b>97.1</b>		%REC		50-150	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: 13C3-HFPO-DA</i>	<i>EPA 537Mod</i>	<b>106</b>		%REC		41-142	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: 13C3-PFBS</i>	<i>EPA 537Mod</i>	<b>115</b>		%REC		50-150	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: 13C4-PFBA</i>	<i>EPA 537Mod</i>	<b>124</b>		%REC		50-150	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: 13C4-PFHpA</i>	<i>EPA 537Mod</i>	<b>114</b>		%REC		42-141	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: 13C4-PFOA</i>	<i>EPA 537Mod</i>	<b>112</b>		%REC		50-150	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: 13C4-PFOS</i>	<i>EPA 537Mod</i>	<b>99.8</b>		%REC		50-150	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: 13C5-PFNA</i>	<i>EPA 537Mod</i>	<b>99.7</b>		%REC		50-150	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: 13C5-PFPeA</i>	<i>EPA 537Mod</i>	<b>107</b>		%REC		43-138	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: 13C8-FOSA</i>	<i>EPA 537Mod</i>	<b>97.1</b>		%REC		30-122	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: 18O2-PFHxS</i>	<i>EPA 537Mod</i>	<b>114</b>		%REC		50-150	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: d3-N-MeFOSAA</i>	<i>EPA 537Mod</i>	<b>88.4</b>		%REC		35-136	1	05/15/25 02:31	05/14/25 16:09
<i>Surr: d5-N-EtFOSAA</i>	<i>EPA 537Mod</i>	<b>88.7</b>		%REC		34-142	1	05/15/25 02:31	05/14/25 16:09

# Analytical Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 11:00  
**Date Received:** 05/10/25 10:00

**CLIENT ID:** Osborn-MH-1\_050925 **Lab ID:** HN2506238-003

Analyte	Method	Results	Qual	Units	MDL	MRL	Dilution Factor	Date Analyzed	Date Extracted
<b>Per- and Polyfluorinated Alkyl Substances by LC-MS</b>									
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	EPA 537Mod	<0.482	U	ng/L	0.482	4.86	1	05/15/25 02:46	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	EPA 537Mod	<1.17	U	ng/L	1.17	4.95	1	05/15/25 02:46	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)	EPA 537Mod	<0.967	U	ng/L	0.967	4.82	1	05/15/25 02:46	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)	EPA 537Mod	<1.98	U	ng/L	1.98	4.79	1	05/15/25 02:46	05/14/25 16:09
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	EPA 537Mod	<0.580	U	ng/L	0.580	4.86	1	05/15/25 02:46	05/14/25 16:09
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	EPA 537Mod	<0.463	U	ng/L	0.463	4.81	1	05/15/25 02:46	05/14/25 16:09
Hexafluoropropyleneoxide dimer acid (HFPO-DA) (GenX)	EPA 537Mod	<1.21	U	ng/L	1.21	5.16	1	05/15/25 02:46	05/14/25 16:09
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	EPA 537Mod	<1.60	U	ng/L	1.60	5.16	1	05/15/25 02:46	05/14/25 16:09
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	EPA 537Mod	<0.665	U	ng/L	0.665	5.16	1	05/15/25 02:46	05/14/25 16:09
Perfluorobutane sulfonic acid (PFBS)	EPA 537Mod	<b>0.985</b>	J	ng/L	0.362	4.56	1	05/15/25 02:46	05/14/25 16:09
Perfluorobutanoic acid (PFBA)	EPA 537Mod	<b>10.8</b>		ng/L	2.68	5.16	1	05/15/25 02:46	05/14/25 16:09
Perfluorodecane sulfonic acid (PFDS)	EPA 537Mod	<1.42	U	ng/L	1.42	4.98	1	05/15/25 02:46	05/14/25 16:09
Perfluorodecanoic acid (PFDA)	EPA 537Mod	<b>3.20</b>	J	ng/L	1.28	5.16	1	05/15/25 02:46	05/14/25 16:09
Perfluorododecanoic acid (PFDOA)	EPA 537Mod	<0.714	U	ng/L	0.714	5.16	1	05/15/25 02:46	05/14/25 16:09
Perfluoroheptane sulfonic acid (PFHpS)	EPA 537Mod	<0.585	U	ng/L	0.585	4.92	1	05/15/25 02:46	05/14/25 16:09
Perfluoroheptanoic acid (PFHpA)	EPA 537Mod	<b>6.95</b>		ng/L	1.79	5.16	1	05/15/25 02:46	05/14/25 16:09
Perfluorohexane sulfonic acid (PFHxS)	EPA 537Mod	<b>1.52</b>	J	ng/L	0.933	4.70	1	05/15/25 02:46	05/14/25 16:09
Perfluorohexanoic acid (PFHxA)	EPA 537Mod	<b>9.13</b>		ng/L	1.24	5.16	1	05/15/25 02:46	05/14/25 16:09
Perfluorononane sulfonic acid (PFNS)	EPA 537Mod	<0.512	U	ng/L	0.512	4.96	1	05/15/25 02:46	05/14/25 16:09

# Analytical Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 11:00  
**Date Received:** 05/10/25 10:00

**CLIENT ID: Osborn-MH-1\_050925** **Lab ID: HN2506238-003**

Analyte	Method	Results	Qual	Units	MDL	MRL	Dilution Factor	Date Analyzed	Date Extracted
Perfluorononanoic acid (PFNA)	EPA 537Mod	<b>3.43</b>	J	ng/L	0.899	5.16	1	05/15/25 02:46	05/14/25 16:09
Perfluorooctane sulfonamide (PFOSAm)	EPA 537Mod	<0.734	U	ng/L	0.734	5.16	1	05/15/25 02:46	05/14/25 16:09
Perfluorooctane sulfonic acid (PFOS)	EPA 537Mod	<b>18.4</b>		ng/L	0.921	1.92	1	05/15/25 02:46	05/14/25 16:09
Perfluorooctanoic acid (PFOA)	EPA 537Mod	<b>16.0</b>		ng/L	0.651	2.06	1	05/15/25 02:46	05/14/25 16:09
Perfluoropentane sulfonic acid (PFPeS)	EPA 537Mod	<0.574	U	ng/L	0.574	4.84	1	05/15/25 02:46	05/14/25 16:09
Perfluoropentanoic acid (PFPeA)	EPA 537Mod	<b>8.44</b>		ng/L	1.32	5.16	1	05/15/25 02:46	05/14/25 16:09
Perfluorotetradecanoic acid (PFTDA)	EPA 537Mod	<2.73	U	ng/L	2.73	5.16	1	05/15/25 02:46	05/14/25 16:09
Perfluorotridecanoic acid (PFTrDA)	EPA 537Mod	<1.99	U	ng/L	1.99	5.16	1	05/15/25 02:46	05/14/25 16:09
Perfluoroundecanoic acid (PFUnDA)	EPA 537Mod	<1.01	U	ng/L	1.01	5.16	1	05/15/25 02:46	05/14/25 16:09
<i>Surr: 13C2-FtS 4:2</i>	<i>EPA 537Mod</i>	<b>155</b>	<i>S</i>	<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-FtS 6:2</i>	<i>EPA 537Mod</i>	<b>164</b>	<i>S</i>	<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-FtS 8:2</i>	<i>EPA 537Mod</i>	<b>139</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-PFDA</i>	<i>EPA 537Mod</i>	<b>93.2</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-PFDoA</i>	<i>EPA 537Mod</i>	<b>85.5</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-PFHxA</i>	<i>EPA 537Mod</i>	<b>96.0</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-PFTeA</i>	<i>EPA 537Mod</i>	<b>61.6</b>		<i>%REC</i>		<i>27-134</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-PFUnA</i>	<i>EPA 537Mod</i>	<b>88.9</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C3-HFPO-DA</i>	<i>EPA 537Mod</i>	<b>99.2</b>		<i>%REC</i>		<i>41-142</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C3-PFBS</i>	<i>EPA 537Mod</i>	<b>103</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C4-PFBA</i>	<i>EPA 537Mod</i>	<b>104</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C4-PFHpA</i>	<i>EPA 537Mod</i>	<b>108</b>		<i>%REC</i>		<i>42-141</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C4-PFOA</i>	<i>EPA 537Mod</i>	<b>102</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C4-PFOS</i>	<i>EPA 537Mod</i>	<b>90.6</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C5-PFNA</i>	<i>EPA 537Mod</i>	<b>92.9</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C5-PFPeA</i>	<i>EPA 537Mod</i>	<b>99.7</b>		<i>%REC</i>		<i>43-138</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C8-FOSA</i>	<i>EPA 537Mod</i>	<b>95.8</b>		<i>%REC</i>		<i>30-122</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: 18O2-PFHxS</i>	<i>EPA 537Mod</i>	<b>95.4</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: d3-N-MeFOSAA</i>	<i>EPA 537Mod</i>	<b>90.9</b>		<i>%REC</i>		<i>35-136</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>
<i>Surr: d5-N-EtFOSAA</i>	<i>EPA 537Mod</i>	<b>91.8</b>		<i>%REC</i>		<i>34-142</i>	<i>1</i>	<i>05/15/25 02:46</i>	<i>05/14/25 16:09</i>

# Analytical Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 12:15  
**Date Received:** 05/10/25 10:00

**CLIENT ID: P2-MH-2\_050925** **Lab ID: HN2506238-004**

Analyte	Method	Results	Qual	Units	MDL	MRL	Dilution Factor	Date Analyzed	Date Extracted
<b>Per- and Polyfluorinated Alkyl Substances by LC-MS</b>									
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	EPA 537Mod	<0.460	U	ng/L	0.460	4.64	1	05/15/25 03:01	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	EPA 537Mod	<1.11	U	ng/L	1.11	4.72	1	05/15/25 03:01	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)	EPA 537Mod	<0.922	U	ng/L	0.922	4.60	1	05/15/25 03:01	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)	EPA 537Mod	<1.89	U	ng/L	1.89	4.57	1	05/15/25 03:01	05/14/25 16:09
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	EPA 537Mod	<0.554	U	ng/L	0.554	4.64	1	05/15/25 03:01	05/14/25 16:09
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	EPA 537Mod	<0.442	U	ng/L	0.442	4.59	1	05/15/25 03:01	05/14/25 16:09
Hexafluoropropyleneoxide dimer acid (HFPO-DA) (GenX)	EPA 537Mod	<1.15	U	ng/L	1.15	4.93	1	05/15/25 03:01	05/14/25 16:09
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	EPA 537Mod	<1.52	U	ng/L	1.52	4.93	1	05/15/25 03:01	05/14/25 16:09
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	EPA 537Mod	<0.635	U	ng/L	0.635	4.93	1	05/15/25 03:01	05/14/25 16:09
Perfluorobutane sulfonic acid (PFBS)	EPA 537Mod	<b>1.63</b>	J	ng/L	0.346	4.36	1	05/15/25 03:01	05/14/25 16:09
Perfluorobutanoic acid (PFBA)	EPA 537Mod	<b>7.46</b>		ng/L	2.56	4.93	1	05/15/25 03:01	05/14/25 16:09
Perfluorodecane sulfonic acid (PFDS)	EPA 537Mod	<1.35	U	ng/L	1.35	4.75	1	05/15/25 03:01	05/14/25 16:09
Perfluorodecanoic acid (PFDA)	EPA 537Mod	<1.22	U	ng/L	1.22	4.93	1	05/15/25 03:01	05/14/25 16:09
Perfluorododecanoic acid (PFDOA)	EPA 537Mod	<0.681	U	ng/L	0.681	4.93	1	05/15/25 03:01	05/14/25 16:09
Perfluoroheptane sulfonic acid (PFHpS)	EPA 537Mod	<0.558	U	ng/L	0.558	4.69	1	05/15/25 03:01	05/14/25 16:09
Perfluoroheptanoic acid (PFHpA)	EPA 537Mod	<b>5.00</b>		ng/L	1.70	4.93	1	05/15/25 03:01	05/14/25 16:09
Perfluorohexane sulfonic acid (PFHxS)	EPA 537Mod	<b>3.36</b>	J	ng/L	0.890	4.48	1	05/15/25 03:01	05/14/25 16:09
Perfluorohexanoic acid (PFHxA)	EPA 537Mod	<b>6.25</b>		ng/L	1.18	4.93	1	05/15/25 03:01	05/14/25 16:09
Perfluorononane sulfonic acid (PFNS)	EPA 537Mod	<0.489	U	ng/L	0.489	4.73	1	05/15/25 03:01	05/14/25 16:09

# Analytical Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 12:15  
**Date Received:** 05/10/25 10:00

**CLIENT ID: P2-MH-2\_050925** **Lab ID: HN2506238-004**

Analyte	Method	Results	Qual	Units	MDL	MRL	Dilution Factor	Date Analyzed	Date Extracted
Perfluorononanoic acid (PFNA)	EPA 537Mod	1.82	J	ng/L	0.857	4.93	1	05/15/25 03:01	05/14/25 16:09
Perfluorooctane sulfonamide (PFOSAm)	EPA 537Mod	<0.701	U	ng/L	0.701	4.93	1	05/15/25 03:01	05/14/25 16:09
Perfluorooctane sulfonic acid (PFOS)	EPA 537Mod	12.5		ng/L	0.879	1.83	1	05/15/25 03:01	05/14/25 16:09
Perfluorooctanoic acid (PFOA)	EPA 537Mod	15.2		ng/L	0.621	1.97	1	05/15/25 03:01	05/14/25 16:09
Perfluoropentane sulfonic acid (PFPeS)	EPA 537Mod	<0.548	U	ng/L	0.548	4.62	1	05/15/25 03:01	05/14/25 16:09
Perfluoropentanoic acid (PFPeA)	EPA 537Mod	5.15		ng/L	1.26	4.93	1	05/15/25 03:01	05/14/25 16:09
Perfluorotetradecanoic acid (PFTDA)	EPA 537Mod	<2.60	U	ng/L	2.60	4.93	1	05/15/25 03:01	05/14/25 16:09
Perfluorotridecanoic acid (PFTrDA)	EPA 537Mod	<1.90	U	ng/L	1.90	4.93	1	05/15/25 03:01	05/14/25 16:09
Perfluoroundecanoic acid (PFUnDA)	EPA 537Mod	<0.960	U	ng/L	0.960	4.93	1	05/15/25 03:01	05/14/25 16:09
Surr: 13C2-FtS 4:2	EPA 537Mod	165	S	%REC		50-150	1	05/15/25 03:01	05/14/25 16:09
Surr: 13C2-FtS 6:2	EPA 537Mod	158	S	%REC		50-150	1	05/15/25 03:01	05/14/25 16:09
Surr: 13C2-FtS 8:2	EPA 537Mod	132		%REC		50-150	1	05/15/25 03:01	05/14/25 16:09
Surr: 13C2-PFDA	EPA 537Mod	86.0		%REC		50-150	1	05/15/25 03:01	05/14/25 16:09
Surr: 13C2-PFDoA	EPA 537Mod	78.6		%REC		50-150	1	05/15/25 03:01	05/14/25 16:09
Surr: 13C2-PFHxA	EPA 537Mod	87.9		%REC		50-150	1	05/15/25 03:01	05/14/25 16:09
Surr: 13C2-PFTeA	EPA 537Mod	69.9		%REC		27-134	1	05/15/25 03:01	05/14/25 16:09
Surr: 13C2-PFUnA	EPA 537Mod	81.3		%REC		50-150	1	05/15/25 03:01	05/14/25 16:09
Surr: 13C3-HFPO-DA	EPA 537Mod	100		%REC		41-142	1	05/15/25 03:01	05/14/25 16:09
Surr: 13C3-PFBS	EPA 537Mod	95.4		%REC		50-150	1	05/15/25 03:01	05/14/25 16:09
Surr: 13C4-PFBA	EPA 537Mod	94.8		%REC		50-150	1	05/15/25 03:01	05/14/25 16:09
Surr: 13C4-PFHpA	EPA 537Mod	93.9		%REC		42-141	1	05/15/25 03:01	05/14/25 16:09
Surr: 13C4-PFOA	EPA 537Mod	85.7		%REC		50-150	1	05/15/25 03:01	05/14/25 16:09
Surr: 13C4-PFOS	EPA 537Mod	79.2		%REC		50-150	1	05/15/25 03:01	05/14/25 16:09
Surr: 13C5-PFNA	EPA 537Mod	90.5		%REC		50-150	1	05/15/25 03:01	05/14/25 16:09
Surr: 13C5-PFPeA	EPA 537Mod	91.1		%REC		43-138	1	05/15/25 03:01	05/14/25 16:09
Surr: 13C8-FOSA	EPA 537Mod	87.0		%REC		30-122	1	05/15/25 03:01	05/14/25 16:09
Surr: 18O2-PFHxS	EPA 537Mod	84.2		%REC		50-150	1	05/15/25 03:01	05/14/25 16:09
Surr: d3-N-MeFOSAA	EPA 537Mod	81.5		%REC		35-136	1	05/15/25 03:01	05/14/25 16:09
Surr: d5-N-EtFOSAA	EPA 537Mod	86.8		%REC		34-142	1	05/15/25 03:01	05/14/25 16:09
Surr: d7-N-MeFOSE	EPA 537Mod	89.0		%REC		38-127	1	05/15/25 03:01	05/14/25 16:09

# Analytical Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 13:40  
**Date Received:** 05/10/25 10:00

**CLIENT ID: P3-MH-284\_050925** **Lab ID: HN2506238-005**

Analyte	Method	Results	Qual	Units	MDL	MRL	Dilution Factor	Date Analyzed	Date Extracted
<b>Per- and Polyfluorinated Alkyl Substances by LC-MS</b>									
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	EPA 537Mod	<0.455	U	ng/L	0.455	4.59	1	05/15/25 03:15	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	EPA 537Mod	<1.10	U	ng/L	1.10	4.67	1	05/15/25 03:15	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)	EPA 537Mod	<0.912	U	ng/L	0.912	4.55	1	05/15/25 03:15	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)	EPA 537Mod	<1.87	U	ng/L	1.87	4.52	1	05/15/25 03:15	05/14/25 16:09
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	EPA 537Mod	<0.547	U	ng/L	0.547	4.59	1	05/15/25 03:15	05/14/25 16:09
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	EPA 537Mod	<0.436	U	ng/L	0.436	4.54	1	05/15/25 03:15	05/14/25 16:09
Hexafluoropropyleneoxide dimer acid (HFPO-DA) (GenX)	EPA 537Mod	<1.14	U	ng/L	1.14	4.87	1	05/15/25 03:15	05/14/25 16:09
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	EPA 537Mod	<1.50	U	ng/L	1.50	4.87	1	05/15/25 03:15	05/14/25 16:09
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	EPA 537Mod	<0.627	U	ng/L	0.627	4.87	1	05/15/25 03:15	05/14/25 16:09
Perfluorobutane sulfonic acid (PFBS)	EPA 537Mod	<b>1.22</b>	J	ng/L	0.342	4.30	1	05/15/25 03:15	05/14/25 16:09
Perfluorobutanoic acid (PFBA)	EPA 537Mod	<2.53	U	ng/L	2.53	4.87	1	05/15/25 03:15	05/14/25 16:09
Perfluorodecane sulfonic acid (PFDS)	EPA 537Mod	<1.33	U	ng/L	1.33	4.70	1	05/15/25 03:15	05/14/25 16:09
Perfluorodecanoic acid (PFDA)	EPA 537Mod	<1.21	U	ng/L	1.21	4.87	1	05/15/25 03:15	05/14/25 16:09
Perfluorododecanoic acid (PFDOA)	EPA 537Mod	<0.673	U	ng/L	0.673	4.87	1	05/15/25 03:15	05/14/25 16:09
Perfluoroheptane sulfonic acid (PFHpS)	EPA 537Mod	<0.551	U	ng/L	0.551	4.64	1	05/15/25 03:15	05/14/25 16:09
Perfluoroheptanoic acid (PFHpA)	EPA 537Mod	<1.68	U	ng/L	1.68	4.87	1	05/15/25 03:15	05/14/25 16:09
Perfluorohexane sulfonic acid (PFHxS)	EPA 537Mod	<0.880	U	ng/L	0.880	4.43	1	05/15/25 03:15	05/14/25 16:09
Perfluorohexanoic acid (PFHxA)	EPA 537Mod	<1.17	U	ng/L	1.17	4.87	1	05/15/25 03:15	05/14/25 16:09
Perfluorononane sulfonic acid (PFNS)	EPA 537Mod	<0.483	U	ng/L	0.483	4.68	1	05/15/25 03:15	05/14/25 16:09

# Analytical Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 13:40  
**Date Received:** 05/10/25 10:00

**CLIENT ID: P3-MH-284\_050925** **Lab ID: HN2506238-005**

Analyte	Method	Results	Qual	Units	MDL	MRL	Dilution Factor	Date Analyzed	Date Extracted
Perfluorononanoic acid (PFNA)	EPA 537Mod	<0.848	U	ng/L	0.848	4.87	1	05/15/25 03:15	05/14/25 16:09
Perfluorooctane sulfonamide (PFOSAm)	EPA 537Mod	<0.693	U	ng/L	0.693	4.87	1	05/15/25 03:15	05/14/25 16:09
Perfluorooctane sulfonic acid (PFOS)	EPA 537Mod	<b>3.49</b>		ng/L	0.869	1.81	1	05/15/25 03:15	05/14/25 16:09
Perfluorooctanoic acid (PFOA)	EPA 537Mod	<0.614	U	ng/L	0.614	1.95	1	05/15/25 03:15	05/14/25 16:09
Perfluoropentane sulfonic acid (PFPeS)	EPA 537Mod	<0.542	U	ng/L	0.542	4.57	1	05/15/25 03:15	05/14/25 16:09
Perfluoropentanoic acid (PFPeA)	EPA 537Mod	<b>1.29</b>	J	ng/L	1.25	4.87	1	05/15/25 03:15	05/14/25 16:09
Perfluorotetradecanoic acid (PFTDA)	EPA 537Mod	<2.57	U	ng/L	2.57	4.87	1	05/15/25 03:15	05/14/25 16:09
Perfluorotridecanoic acid (PFTrDA)	EPA 537Mod	<1.88	U	ng/L	1.88	4.87	1	05/15/25 03:15	05/14/25 16:09
Perfluoroundecanoic acid (PFUnDA)	EPA 537Mod	<0.949	U	ng/L	0.949	4.87	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: 13C2-FtS 4:2</i>	<i>EPA 537Mod</i>	<b>163</b>	S	%REC		50-150	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: 13C2-FtS 6:2</i>	<i>EPA 537Mod</i>	<b>144</b>		%REC		50-150	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: 13C2-FtS 8:2</i>	<i>EPA 537Mod</i>	<b>134</b>		%REC		50-150	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: 13C2-PFDA</i>	<i>EPA 537Mod</i>	<b>102</b>		%REC		50-150	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: 13C2-PFDoA</i>	<i>EPA 537Mod</i>	<b>97.2</b>		%REC		50-150	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: 13C2-PFHxA</i>	<i>EPA 537Mod</i>	<b>114</b>		%REC		50-150	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: 13C2-PFTeA</i>	<i>EPA 537Mod</i>	<b>94.6</b>		%REC		27-134	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: 13C2-PFUnA</i>	<i>EPA 537Mod</i>	<b>98.9</b>		%REC		50-150	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: 13C3-HFPO-DA</i>	<i>EPA 537Mod</i>	<b>124</b>		%REC		41-142	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: 13C3-PFBS</i>	<i>EPA 537Mod</i>	<b>117</b>		%REC		50-150	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: 13C4-PFBA</i>	<i>EPA 537Mod</i>	<b>125</b>		%REC		50-150	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: 13C4-PFHpA</i>	<i>EPA 537Mod</i>	<b>123</b>		%REC		42-141	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: 13C4-PFOA</i>	<i>EPA 537Mod</i>	<b>108</b>		%REC		50-150	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: 13C4-PFOS</i>	<i>EPA 537Mod</i>	<b>109</b>		%REC		50-150	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: 13C5-PFNA</i>	<i>EPA 537Mod</i>	<b>103</b>		%REC		50-150	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: 13C5-PFPeA</i>	<i>EPA 537Mod</i>	<b>117</b>		%REC		43-138	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: 13C8-FOSA</i>	<i>EPA 537Mod</i>	<b>105</b>		%REC		30-122	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: 18O2-PFHxS</i>	<i>EPA 537Mod</i>	<b>115</b>		%REC		50-150	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: d3-N-MeFOSAA</i>	<i>EPA 537Mod</i>	<b>92.9</b>		%REC		35-136	1	05/15/25 03:15	05/14/25 16:09
<i>Surr: d5-N-EtFOSAA</i>	<i>EPA 537Mod</i>	<b>94.0</b>		%REC		34-142	1	05/15/25 03:15	05/14/25 16:09

# Analytical Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 14:20  
**Date Received:** 05/10/25 10:00

**CLIENT ID: P2-MH-W-050925** **Lab ID: HN2506238-006**

Analyte	Method	Results	Qual	Units	MDL	MRL	Dilution Factor	Date Analyzed	Date Extracted
<b>Per- and Polyfluorinated Alkyl Substances by LC-MS</b>									
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	EPA 537Mod	<0.449	U	ng/L	0.449	4.53	1	05/15/25 03:30	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	EPA 537Mod	<1.09	U	ng/L	1.09	4.60	1	05/15/25 03:30	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)	EPA 537Mod	<0.900	U	ng/L	0.900	4.49	1	05/15/25 03:30	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)	EPA 537Mod	<1.84	U	ng/L	1.84	4.46	1	05/15/25 03:30	05/14/25 16:09
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	EPA 537Mod	<0.540	U	ng/L	0.540	4.53	1	05/15/25 03:30	05/14/25 16:09
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	EPA 537Mod	<0.430	U	ng/L	0.430	4.48	1	05/15/25 03:30	05/14/25 16:09
Hexafluoropropyleneoxide dimer acid (HFPO-DA) (GenX)	EPA 537Mod	<1.12	U	ng/L	1.12	4.80	1	05/15/25 03:30	05/14/25 16:09
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	EPA 537Mod	<1.48	U	ng/L	1.48	4.80	1	05/15/25 03:30	05/14/25 16:09
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	EPA 537Mod	<0.619	U	ng/L	0.619	4.80	1	05/15/25 03:30	05/14/25 16:09
Perfluorobutane sulfonic acid (PFBS)	EPA 537Mod	<b>1.17</b>	J	ng/L	0.337	4.25	1	05/15/25 03:30	05/14/25 16:09
Perfluorobutanoic acid (PFBA)	EPA 537Mod	<b>3.58</b>	J	ng/L	2.50	4.80	1	05/15/25 03:30	05/14/25 16:09
Perfluorodecane sulfonic acid (PFDS)	EPA 537Mod	<1.32	U	ng/L	1.32	4.63	1	05/15/25 03:30	05/14/25 16:09
Perfluorodecanoic acid (PFDA)	EPA 537Mod	<1.19	U	ng/L	1.19	4.80	1	05/15/25 03:30	05/14/25 16:09
Perfluorododecanoic acid (PFDOA)	EPA 537Mod	<0.664	U	ng/L	0.664	4.80	1	05/15/25 03:30	05/14/25 16:09
Perfluoroheptane sulfonic acid (PFHpS)	EPA 537Mod	<0.544	U	ng/L	0.544	4.57	1	05/15/25 03:30	05/14/25 16:09
Perfluoroheptanoic acid (PFHpA)	EPA 537Mod	<1.66	U	ng/L	1.66	4.80	1	05/15/25 03:30	05/14/25 16:09
Perfluorohexane sulfonic acid (PFHxS)	EPA 537Mod	<b>1.66</b>	J	ng/L	0.868	4.37	1	05/15/25 03:30	05/14/25 16:09
Perfluorohexanoic acid (PFHxA)	EPA 537Mod	<1.15	U	ng/L	1.15	4.80	1	05/15/25 03:30	05/14/25 16:09
Perfluorononane sulfonic acid (PFNS)	EPA 537Mod	<0.477	U	ng/L	0.477	4.61	1	05/15/25 03:30	05/14/25 16:09

# Analytical Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 14:20  
**Date Received:** 05/10/25 10:00

**CLIENT ID: P2-MH-W-050925** **Lab ID: HN2506238-006**

Analyte	Method	Results	Qual	Units	MDL	MRL	Dilution Factor	Date Analyzed	Date Extracted
Perfluorononanoic acid (PFNA)	EPA 537Mod	<0.836	U	ng/L	0.836	4.80	1	05/15/25 03:30	05/14/25 16:09
Perfluorooctane sulfonamide (PFOSAm)	EPA 537Mod	<0.683	U	ng/L	0.683	4.80	1	05/15/25 03:30	05/14/25 16:09
Perfluorooctane sulfonic acid (PFOS)	EPA 537Mod	<b>1.21</b>	J	ng/L	0.857	1.78	1	05/15/25 03:30	05/14/25 16:09
Perfluorooctanoic acid (PFOA)	EPA 537Mod	<b>1.89</b>	J	ng/L	0.605	1.92	1	05/15/25 03:30	05/14/25 16:09
Perfluoropentane sulfonic acid (PFPeS)	EPA 537Mod	<0.534	U	ng/L	0.534	4.51	1	05/15/25 03:30	05/14/25 16:09
Perfluoropentanoic acid (PFPeA)	EPA 537Mod	<1.23	U	ng/L	1.23	4.80	1	05/15/25 03:30	05/14/25 16:09
Perfluorotetradecanoic acid (PFTDA)	EPA 537Mod	<2.54	U	ng/L	2.54	4.80	1	05/15/25 03:30	05/14/25 16:09
Perfluorotridecanoic acid (PFTrDA)	EPA 537Mod	<1.86	U	ng/L	1.86	4.80	1	05/15/25 03:30	05/14/25 16:09
Perfluoroundecanoic acid (PFUnDA)	EPA 537Mod	<0.936	U	ng/L	0.936	4.80	1	05/15/25 03:30	05/14/25 16:09
<i>Surr: 13C2-FtS 4:2</i>	<i>EPA 537Mod</i>	<b>129</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-FtS 6:2</i>	<i>EPA 537Mod</i>	<b>95.2</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-FtS 8:2</i>	<i>EPA 537Mod</i>	<b>87.5</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-PFDA</i>	<i>EPA 537Mod</i>	<b>78.7</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-PFDoA</i>	<i>EPA 537Mod</i>	<b>74.1</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-PFHxA</i>	<i>EPA 537Mod</i>	<b>95.4</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-PFTeA</i>	<i>EPA 537Mod</i>	<b>64.7</b>		<i>%REC</i>		<i>27-134</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-PFUnA</i>	<i>EPA 537Mod</i>	<b>73.0</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C3-HFPO-DA</i>	<i>EPA 537Mod</i>	<b>109</b>		<i>%REC</i>		<i>41-142</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C3-PFBS</i>	<i>EPA 537Mod</i>	<b>107</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C4-PFBA</i>	<i>EPA 537Mod</i>	<b>107</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C4-PFHpA</i>	<i>EPA 537Mod</i>	<b>98.3</b>		<i>%REC</i>		<i>42-141</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C4-PFOA</i>	<i>EPA 537Mod</i>	<b>91.7</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C4-PFOS</i>	<i>EPA 537Mod</i>	<b>77.5</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C5-PFNA</i>	<i>EPA 537Mod</i>	<b>85.0</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C5-PFPeA</i>	<i>EPA 537Mod</i>	<b>102</b>		<i>%REC</i>		<i>43-138</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C8-FOSA</i>	<i>EPA 537Mod</i>	<b>86.5</b>		<i>%REC</i>		<i>30-122</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: 18O2-PFHxS</i>	<i>EPA 537Mod</i>	<b>92.7</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: d3-N-MeFOSAA</i>	<i>EPA 537Mod</i>	<b>72.9</b>		<i>%REC</i>		<i>35-136</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>
<i>Surr: d5-N-EtFOSAA</i>	<i>EPA 537Mod</i>	<b>79.4</b>		<i>%REC</i>		<i>34-142</i>	<i>1</i>	<i>05/15/25 03:30</i>	<i>05/14/25 16:09</i>

# Analytical Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 14:40  
**Date Received:** 05/10/25 10:00

**CLIENT ID: FB-01\_050925** **Lab ID: HN2506238-007**

Analyte	Method	Results	Qual	Units	MDL	MRL	Dilution Factor	Date Analyzed	Date Extracted
<b>Per- and Polyfluorinated Alkyl Substances by LC-MS</b>									
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	EPA 537Mod	<0.452	U	ng/L	0.452	4.56	1	05/15/25 03:44	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	EPA 537Mod	<1.09	U	ng/L	1.09	4.63	1	05/15/25 03:44	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)	EPA 537Mod	<0.905	U	ng/L	0.905	4.52	1	05/15/25 03:44	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)	EPA 537Mod	<1.86	U	ng/L	1.86	4.49	1	05/15/25 03:44	05/14/25 16:09
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	EPA 537Mod	<0.544	U	ng/L	0.544	4.56	1	05/15/25 03:44	05/14/25 16:09
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	EPA 537Mod	<0.433	U	ng/L	0.433	4.51	1	05/15/25 03:44	05/14/25 16:09
Hexafluoropropyleneoxide dimer acid (HFPO-DA) (GenX)	EPA 537Mod	<1.13	U	ng/L	1.13	4.84	1	05/15/25 03:44	05/14/25 16:09
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	EPA 537Mod	<1.49	U	ng/L	1.49	4.84	1	05/15/25 03:44	05/14/25 16:09
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	EPA 537Mod	<0.623	U	ng/L	0.623	4.84	1	05/15/25 03:44	05/14/25 16:09
Perfluorobutane sulfonic acid (PFBS)	EPA 537Mod	<0.340	U	ng/L	0.340	4.28	1	05/15/25 03:44	05/14/25 16:09
Perfluorobutanoic acid (PFBA)	EPA 537Mod	<2.52	U	ng/L	2.52	4.84	1	05/15/25 03:44	05/14/25 16:09
Perfluorodecane sulfonic acid (PFDS)	EPA 537Mod	<1.32	U	ng/L	1.32	4.66	1	05/15/25 03:44	05/14/25 16:09
Perfluorodecanoic acid (PFDA)	EPA 537Mod	<1.20	U	ng/L	1.20	4.84	1	05/15/25 03:44	05/14/25 16:09
Perfluorododecanoic acid (PFDOA)	EPA 537Mod	<0.668	U	ng/L	0.668	4.84	1	05/15/25 03:44	05/14/25 16:09
Perfluoroheptane sulfonic acid (PFHpS)	EPA 537Mod	<0.548	U	ng/L	0.548	4.60	1	05/15/25 03:44	05/14/25 16:09
Perfluoroheptanoic acid (PFHpA)	EPA 537Mod	<1.67	U	ng/L	1.67	4.84	1	05/15/25 03:44	05/14/25 16:09
Perfluorohexane sulfonic acid (PFHxS)	EPA 537Mod	<0.874	U	ng/L	0.874	4.40	1	05/15/25 03:44	05/14/25 16:09
Perfluorohexanoic acid (PFHxA)	EPA 537Mod	<1.16	U	ng/L	1.16	4.84	1	05/15/25 03:44	05/14/25 16:09
Perfluorononane sulfonic acid (PFNS)	EPA 537Mod	<0.480	U	ng/L	0.480	4.64	1	05/15/25 03:44	05/14/25 16:09

# Analytical Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 14:40  
**Date Received:** 05/10/25 10:00

**CLIENT ID: FB-01\_050925** **Lab ID: HN2506238-007**

Analyte	Method	Results	Qual	Units	MDL	MRL	Dilution Factor	Date Analyzed	Date Extracted
Perfluorononanoic acid (PFNA)	EPA 537Mod	<0.842	U	ng/L	0.842	4.84	1	05/15/25 03:44	05/14/25 16:09
Perfluorooctane sulfonamide (PFOSAm)	EPA 537Mod	<0.688	U	ng/L	0.688	4.84	1	05/15/25 03:44	05/14/25 16:09
Perfluorooctane sulfonic acid (PFOS)	EPA 537Mod	<0.863	U	ng/L	0.863	1.80	1	05/15/25 03:44	05/14/25 16:09
Perfluorooctanoic acid (PFOA)	EPA 537Mod	<0.609	U	ng/L	0.609	1.93	1	05/15/25 03:44	05/14/25 16:09
Perfluoropentane sulfonic acid (PFPeS)	EPA 537Mod	<0.538	U	ng/L	0.538	4.54	1	05/15/25 03:44	05/14/25 16:09
Perfluoropentanoic acid (PFPeA)	EPA 537Mod	<1.24	U	ng/L	1.24	4.84	1	05/15/25 03:44	05/14/25 16:09
Perfluorotetradecanoic acid (PFTDA)	EPA 537Mod	<2.55	U	ng/L	2.55	4.84	1	05/15/25 03:44	05/14/25 16:09
Perfluorotridecanoic acid (PFTrDA)	EPA 537Mod	<1.87	U	ng/L	1.87	4.84	1	05/15/25 03:44	05/14/25 16:09
Perfluoroundecanoic acid (PFUnDA)	EPA 537Mod	<0.942	U	ng/L	0.942	4.84	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: 13C2-FtS 4:2</i>	<i>EPA 537Mod</i>	<b>116</b>		%REC		50-150	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: 13C2-FtS 6:2</i>	<i>EPA 537Mod</i>	<b>100</b>		%REC		50-150	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: 13C2-FtS 8:2</i>	<i>EPA 537Mod</i>	<b>115</b>		%REC		50-150	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: 13C2-PFDA</i>	<i>EPA 537Mod</i>	<b>97.7</b>		%REC		50-150	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: 13C2-PFDoA</i>	<i>EPA 537Mod</i>	<b>92.5</b>		%REC		50-150	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: 13C2-PFHxA</i>	<i>EPA 537Mod</i>	<b>107</b>		%REC		50-150	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: 13C2-PFTeA</i>	<i>EPA 537Mod</i>	<b>88.6</b>		%REC		27-134	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: 13C2-PFUnA</i>	<i>EPA 537Mod</i>	<b>85.9</b>		%REC		50-150	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: 13C3-HFPO-DA</i>	<i>EPA 537Mod</i>	<b>130</b>		%REC		41-142	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: 13C3-PFBS</i>	<i>EPA 537Mod</i>	<b>126</b>		%REC		50-150	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: 13C4-PFBA</i>	<i>EPA 537Mod</i>	<b>125</b>		%REC		50-150	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: 13C4-PFHpA</i>	<i>EPA 537Mod</i>	<b>125</b>		%REC		42-141	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: 13C4-PFOA</i>	<i>EPA 537Mod</i>	<b>98.7</b>		%REC		50-150	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: 13C4-PFOS</i>	<i>EPA 537Mod</i>	<b>100</b>		%REC		50-150	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: 13C5-PFNA</i>	<i>EPA 537Mod</i>	<b>93.3</b>		%REC		50-150	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: 13C5-PFPeA</i>	<i>EPA 537Mod</i>	<b>119</b>		%REC		43-138	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: 13C8-FOSA</i>	<i>EPA 537Mod</i>	<b>106</b>		%REC		30-122	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: 18O2-PFHxS</i>	<i>EPA 537Mod</i>	<b>105</b>		%REC		50-150	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: d3-N-MeFOSAA</i>	<i>EPA 537Mod</i>	<b>92.4</b>		%REC		35-136	1	05/15/25 03:44	05/14/25 16:09
<i>Surr: d5-N-EtFOSAA</i>	<i>EPA 537Mod</i>	<b>93.0</b>		%REC		34-142	1	05/15/25 03:44	05/14/25 16:09

# Analytical Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 14:50  
**Date Received:** 05/10/25 10:00

**CLIENT ID: EB-01\_050925** **Lab ID: HN2506238-008**

Analyte	Method	Results	Qual	Units	MDL	MRL	Dilution Factor	Date Analyzed	Date Extracted
<b>Per- and Polyfluorinated Alkyl Substances by LC-MS</b>									
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	EPA 537Mod	<0.458	U	ng/L	0.458	4.62	1	05/15/25 03:59	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	EPA 537Mod	<1.11	U	ng/L	1.11	4.70	1	05/15/25 03:59	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)	EPA 537Mod	<0.918	U	ng/L	0.918	4.58	1	05/15/25 03:59	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)	EPA 537Mod	<1.88	U	ng/L	1.88	4.55	1	05/15/25 03:59	05/14/25 16:09
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	EPA 537Mod	<0.551	U	ng/L	0.551	4.62	1	05/15/25 03:59	05/14/25 16:09
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	EPA 537Mod	<0.440	U	ng/L	0.440	4.57	1	05/15/25 03:59	05/14/25 16:09
Hexafluoropropyleneoxide dimer acid (HFPO-DA) (GenX)	EPA 537Mod	<1.15	U	ng/L	1.15	4.90	1	05/15/25 03:59	05/14/25 16:09
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	EPA 537Mod	<1.52	U	ng/L	1.52	4.90	1	05/15/25 03:59	05/14/25 16:09
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	EPA 537Mod	<0.632	U	ng/L	0.632	4.90	1	05/15/25 03:59	05/14/25 16:09
Perfluorobutane sulfonic acid (PFBS)	EPA 537Mod	<0.344	U	ng/L	0.344	4.34	1	05/15/25 03:59	05/14/25 16:09
Perfluorobutanoic acid (PFBA)	EPA 537Mod	<2.55	U	ng/L	2.55	4.90	1	05/15/25 03:59	05/14/25 16:09
Perfluorodecane sulfonic acid (PFDS)	EPA 537Mod	<1.34	U	ng/L	1.34	4.73	1	05/15/25 03:59	05/14/25 16:09
Perfluorodecanoic acid (PFDA)	EPA 537Mod	<1.22	U	ng/L	1.22	4.90	1	05/15/25 03:59	05/14/25 16:09
Perfluorododecanoic acid (PFDOA)	EPA 537Mod	<0.678	U	ng/L	0.678	4.90	1	05/15/25 03:59	05/14/25 16:09
Perfluoroheptane sulfonic acid (PFHpS)	EPA 537Mod	<0.555	U	ng/L	0.555	4.67	1	05/15/25 03:59	05/14/25 16:09
Perfluoroheptanoic acid (PFHpA)	EPA 537Mod	<1.70	U	ng/L	1.70	4.90	1	05/15/25 03:59	05/14/25 16:09
Perfluorohexane sulfonic acid (PFHxS)	EPA 537Mod	<0.886	U	ng/L	0.886	4.46	1	05/15/25 03:59	05/14/25 16:09
Perfluorohexanoic acid (PFHxA)	EPA 537Mod	<1.18	U	ng/L	1.18	4.90	1	05/15/25 03:59	05/14/25 16:09
Perfluorononane sulfonic acid (PFNS)	EPA 537Mod	<0.486	U	ng/L	0.486	4.71	1	05/15/25 03:59	05/14/25 16:09

# Analytical Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 14:50  
**Date Received:** 05/10/25 10:00

**CLIENT ID: EB-01\_050925** **Lab ID: HN2506238-008**

Analyte	Method	Results	Qual	Units	MDL	MRL	Dilution Factor	Date Analyzed	Date Extracted
Perfluorononanoic acid (PFNA)	EPA 537Mod	<0.854	U	ng/L	0.854	4.90	1	05/15/25 03:59	05/14/25 16:09
Perfluorooctane sulfonamide (PFOSAm)	EPA 537Mod	<0.698	U	ng/L	0.698	4.90	1	05/15/25 03:59	05/14/25 16:09
Perfluorooctane sulfonic acid (PFOS)	EPA 537Mod	<0.875	U	ng/L	0.875	1.82	1	05/15/25 03:59	05/14/25 16:09
Perfluorooctanoic acid (PFOA)	EPA 537Mod	<0.618	U	ng/L	0.618	1.96	1	05/15/25 03:59	05/14/25 16:09
Perfluoropentane sulfonic acid (PFPeS)	EPA 537Mod	<0.545	U	ng/L	0.545	4.60	1	05/15/25 03:59	05/14/25 16:09
Perfluoropentanoic acid (PFPeA)	EPA 537Mod	<1.26	U	ng/L	1.26	4.90	1	05/15/25 03:59	05/14/25 16:09
Perfluorotetradecanoic acid (PFTDA)	EPA 537Mod	<2.59	U	ng/L	2.59	4.90	1	05/15/25 03:59	05/14/25 16:09
Perfluorotridecanoic acid (PFTrDA)	EPA 537Mod	<1.89	U	ng/L	1.89	4.90	1	05/15/25 03:59	05/14/25 16:09
Perfluoroundecanoic acid (PFUnDA)	EPA 537Mod	<0.956	U	ng/L	0.956	4.90	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: 13C2-FtS 4:2</i>	<i>EPA 537Mod</i>	<b>106</b>		%REC		50-150	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: 13C2-FtS 6:2</i>	<i>EPA 537Mod</i>	<b>87.0</b>		%REC		50-150	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: 13C2-FtS 8:2</i>	<i>EPA 537Mod</i>	<b>98.2</b>		%REC		50-150	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: 13C2-PFDA</i>	<i>EPA 537Mod</i>	<b>90.4</b>		%REC		50-150	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: 13C2-PFDoA</i>	<i>EPA 537Mod</i>	<b>89.9</b>		%REC		50-150	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: 13C2-PFHxA</i>	<i>EPA 537Mod</i>	<b>105</b>		%REC		50-150	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: 13C2-PFTeA</i>	<i>EPA 537Mod</i>	<b>75.2</b>		%REC		27-134	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: 13C2-PFUnA</i>	<i>EPA 537Mod</i>	<b>88.5</b>		%REC		50-150	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: 13C3-HFPO-DA</i>	<i>EPA 537Mod</i>	<b>117</b>		%REC		41-142	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: 13C3-PFBS</i>	<i>EPA 537Mod</i>	<b>117</b>		%REC		50-150	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: 13C4-PFBA</i>	<i>EPA 537Mod</i>	<b>124</b>		%REC		50-150	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: 13C4-PFHpA</i>	<i>EPA 537Mod</i>	<b>109</b>		%REC		42-141	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: 13C4-PFOA</i>	<i>EPA 537Mod</i>	<b>96.4</b>		%REC		50-150	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: 13C4-PFOS</i>	<i>EPA 537Mod</i>	<b>97.5</b>		%REC		50-150	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: 13C5-PFNA</i>	<i>EPA 537Mod</i>	<b>94.7</b>		%REC		50-150	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: 13C5-PFPeA</i>	<i>EPA 537Mod</i>	<b>110</b>		%REC		43-138	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: 13C8-FOSA</i>	<i>EPA 537Mod</i>	<b>98.7</b>		%REC		30-122	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: 18O2-PFHxS</i>	<i>EPA 537Mod</i>	<b>97.5</b>		%REC		50-150	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: d3-N-MeFOSAA</i>	<i>EPA 537Mod</i>	<b>81.0</b>		%REC		35-136	1	05/15/25 03:59	05/14/25 16:09
<i>Surr: d5-N-EtFOSAA</i>	<i>EPA 537Mod</i>	<b>89.5</b>		%REC		34-142	1	05/15/25 03:59	05/14/25 16:09

# Analytical Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER

**Work Order:** HN2506238  
**Date Collected:** 05/09/25  
**Date Received:** 05/10/25 10:00

**CLIENT ID: DUP-01\_050925** **Lab ID: HN2506238-009**

Analyte	Method	Results	Qual	Units	MDL	MRL	Dilution Factor	Date Analyzed	Date Extracted
<b>Per- and Polyfluorinated Alkyl Substances by LC-MS</b>									
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	EPA 537Mod	<0.469	U	ng/L	0.469	4.73	1	05/15/25 04:13	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	EPA 537Mod	<1.14	U	ng/L	1.14	4.81	1	05/15/25 04:13	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)	EPA 537Mod	<0.940	U	ng/L	0.940	4.69	1	05/15/25 04:13	05/14/25 16:09
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)	EPA 537Mod	<1.93	U	ng/L	1.93	4.66	1	05/15/25 04:13	05/14/25 16:09
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	EPA 537Mod	<0.565	U	ng/L	0.565	4.73	1	05/15/25 04:13	05/14/25 16:09
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	EPA 537Mod	<0.450	U	ng/L	0.450	4.68	1	05/15/25 04:13	05/14/25 16:09
Hexafluoropropyleneoxide dimer acid (HFPO-DA) (GenX)	EPA 537Mod	<1.18	U	ng/L	1.18	5.02	1	05/15/25 04:13	05/14/25 16:09
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	EPA 537Mod	<1.55	U	ng/L	1.55	5.02	1	05/15/25 04:13	05/14/25 16:09
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	EPA 537Mod	<0.647	U	ng/L	0.647	5.02	1	05/15/25 04:13	05/14/25 16:09
Perfluorobutane sulfonic acid (PFBS)	EPA 537Mod	<b>0.884</b>	J	ng/L	0.353	4.44	1	05/15/25 04:13	05/14/25 16:09
Perfluorobutanoic acid (PFBA)	EPA 537Mod	<b>11.2</b>		ng/L	2.61	5.02	1	05/15/25 04:13	05/14/25 16:09
Perfluorodecane sulfonic acid (PFDS)	EPA 537Mod	<1.38	U	ng/L	1.38	4.84	1	05/15/25 04:13	05/14/25 16:09
Perfluorodecanoic acid (PFDA)	EPA 537Mod	<b>3.10</b>	J	ng/L	1.25	5.02	1	05/15/25 04:13	05/14/25 16:09
Perfluorododecanoic acid (PFDOA)	EPA 537Mod	<0.694	U	ng/L	0.694	5.02	1	05/15/25 04:13	05/14/25 16:09
Perfluoroheptane sulfonic acid (PFHpS)	EPA 537Mod	<0.569	U	ng/L	0.569	4.78	1	05/15/25 04:13	05/14/25 16:09
Perfluoroheptanoic acid (PFHpA)	EPA 537Mod	<b>6.55</b>		ng/L	1.74	5.02	1	05/15/25 04:13	05/14/25 16:09
Perfluorohexane sulfonic acid (PFHxS)	EPA 537Mod	<b>1.47</b>	J	ng/L	0.907	4.57	1	05/15/25 04:13	05/14/25 16:09
Perfluorohexanoic acid (PFHxA)	EPA 537Mod	<b>9.85</b>		ng/L	1.20	5.02	1	05/15/25 04:13	05/14/25 16:09
Perfluorononane sulfonic acid (PFNS)	EPA 537Mod	<0.498	U	ng/L	0.498	4.82	1	05/15/25 04:13	05/14/25 16:09

# Analytical Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER

**Work Order:** HN2506238  
**Date Collected:** 05/09/25  
**Date Received:** 05/10/25 10:00

**CLIENT ID: DUP-01\_050925** **Lab ID: HN2506238-009**

Analyte	Method	Results	Qual	Units	MDL	MRL	Dilution Factor	Date Analyzed	Date Extracted
Perfluorononanoic acid (PFNA)	EPA 537Mod	<b>3.58</b>	J	ng/L	0.874	5.02	1	05/15/25 04:13	05/14/25 16:09
Perfluorooctane sulfonamide (PFOSAm)	EPA 537Mod	<0.714	U	ng/L	0.714	5.02	1	05/15/25 04:13	05/14/25 16:09
Perfluorooctane sulfonic acid (PFOS)	EPA 537Mod	<b>19.2</b>		ng/L	0.896	1.86	1	05/15/25 04:13	05/14/25 16:09
Perfluorooctanoic acid (PFOA)	EPA 537Mod	<b>18.2</b>		ng/L	0.633	2.01	1	05/15/25 04:13	05/14/25 16:09
Perfluoropentane sulfonic acid (PFPeS)	EPA 537Mod	<0.559	U	ng/L	0.559	4.71	1	05/15/25 04:13	05/14/25 16:09
Perfluoropentanoic acid (PFPeA)	EPA 537Mod	<b>8.55</b>		ng/L	1.29	5.02	1	05/15/25 04:13	05/14/25 16:09
Perfluorotetradecanoic acid (PFTDA)	EPA 537Mod	<2.65	U	ng/L	2.65	5.02	1	05/15/25 04:13	05/14/25 16:09
Perfluorotridecanoic acid (PFTrDA)	EPA 537Mod	<1.94	U	ng/L	1.94	5.02	1	05/15/25 04:13	05/14/25 16:09
Perfluoroundecanoic acid (PFUnDA)	EPA 537Mod	<0.979	U	ng/L	0.979	5.02	1	05/15/25 04:13	05/14/25 16:09
<i>Surr: 13C2-FtS 4:2</i>	<i>EPA 537Mod</i>	<b>171</b>	<i>S</i>	<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-FtS 6:2</i>	<i>EPA 537Mod</i>	<b>173</b>	<i>S</i>	<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-FtS 8:2</i>	<i>EPA 537Mod</i>	<b>137</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-PFDA</i>	<i>EPA 537Mod</i>	<b>96.2</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-PFDoA</i>	<i>EPA 537Mod</i>	<b>81.8</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-PFHxA</i>	<i>EPA 537Mod</i>	<b>97.6</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-PFTeA</i>	<i>EPA 537Mod</i>	<b>61.7</b>		<i>%REC</i>		<i>27-134</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C2-PFUnA</i>	<i>EPA 537Mod</i>	<b>88.0</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C3-HFPO-DA</i>	<i>EPA 537Mod</i>	<b>115</b>		<i>%REC</i>		<i>41-142</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C3-PFBS</i>	<i>EPA 537Mod</i>	<b>111</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C4-PFBA</i>	<i>EPA 537Mod</i>	<b>104</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C4-PFHpA</i>	<i>EPA 537Mod</i>	<b>119</b>		<i>%REC</i>		<i>42-141</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C4-PFOA</i>	<i>EPA 537Mod</i>	<b>102</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C4-PFOS</i>	<i>EPA 537Mod</i>	<b>91.0</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C5-PFNA</i>	<i>EPA 537Mod</i>	<b>92.1</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C5-PFPeA</i>	<i>EPA 537Mod</i>	<b>110</b>		<i>%REC</i>		<i>43-138</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: 13C8-FOSA</i>	<i>EPA 537Mod</i>	<b>98.7</b>		<i>%REC</i>		<i>30-122</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: 18O2-PFHxS</i>	<i>EPA 537Mod</i>	<b>97.5</b>		<i>%REC</i>		<i>50-150</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: d3-N-MeFOSAA</i>	<i>EPA 537Mod</i>	<b>95.5</b>		<i>%REC</i>		<i>35-136</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>
<i>Surr: d5-N-EtFOSAA</i>	<i>EPA 537Mod</i>	<b>94.3</b>		<i>%REC</i>		<i>34-142</i>	<i>1</i>	<i>05/15/25 04:13</i>	<i>05/14/25 16:09</i>



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WATER  
**Batch:** 1995359

**Work Order:** HN2506238  
**Date Collected:** NA  
**Date Received:** NA

Per- and Polyfluorinated Alkyl Substances by LC-MS

**MB** CLIENT ID: Method Blank Lab ID: QC-1995359-001

**Method:** EPA 537Mod **Dilution:** 1 **Analysis Date:** 05/14/25 20:54  
**Prep Date:** 05/14/25 16:10

Analyte	Result	Units	MDL	MRL	Spike Amount	Spike Ref. Amount	% Rec % Rec	% Rec Limits	RPD RPD	Limit	Qual
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	<0.467	ng/L	0.467	4.71							U
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	<1.13	ng/L	1.13	4.79							U
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)	<0.936	ng/L	0.936	4.67							U
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)	<1.92	ng/L	1.92	4.74							U
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	<0.562	ng/L	0.562	4.71							U
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	<0.448	ng/L	0.448	4.66							U
Hexafluoropropyleneoxide dimer acid (HFPO-DA) (GenX)	<1.17	ng/L	1.17	5.00							U
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	<1.54	ng/L	1.54	5.00							U
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	<0.644	ng/L	0.644	5.00							U
Perfluorobutane sulfonic acid (PFBS)	<0.351	ng/L	0.351	4.42							U
Perfluorobutanoic acid (PFBA)	<2.60	ng/L	2.60	5.00							U
Perfluorodecane sulfonic acid (PFDS)	<1.37	ng/L	1.37	4.82							U
Perfluorodecanoic acid (PFDA)	<1.24	ng/L	1.24	5.00							U
Perfluorododecanoic acid (PFDOA)	<0.691	ng/L	0.691	5.00							U
Perfluoroheptane sulfonic acid (PFHpS)	<0.566	ng/L	0.566	4.76							U
Perfluoroheptanoic acid (PFHpA)	<1.73	ng/L	1.73	5.00							U
Perfluorohexane sulfonic acid (PFHxS)	<0.903	ng/L	0.903	4.55							U
Perfluorohexanoic acid (PFHxA)	<1.20	ng/L	1.20	5.00							U
Perfluorononane sulfonic acid (PFNS)	<0.496	ng/L	0.496	4.80							U
Perfluorononanoic acid (PFNA)	<0.870	ng/L	0.870	5.00							U
Perfluorooctane sulfonamide (PFOSAm)	<0.711	ng/L	0.711	5.00							U
Perfluorooctane sulfonic acid (PFOS)	<0.892	ng/L	0.892	1.86							U
Perfluorooctanoic acid (PFOA)	<0.630	ng/L	0.630	2.00							U
Perfluoropentane sulfonic acid (PFPeS)	<0.556	ng/L	0.556	4.69							U
Perfluoropentanoic acid (PFPeA)	<1.28	ng/L	1.28	5.00							U
Perfluorotetradecanoic acid (PFTDA)	<2.64	ng/L	2.64	5.00							U
Perfluorotridecanoic acid (PFTTrDA)	<1.93	ng/L	1.93	5.00							U
Perfluoroundecanoic acid (PFUnDA)	<0.974	ng/L	0.974	5.00							U
Surr: 13C2-FtS 4:2	167	ng/L			149.44		112	50-150			
Surr: 13C2-FtS 6:2	148	ng/L			152		97.5	50-150			



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WATER  
**Batch:** 1995359

**Work Order:** HN2506238  
**Date Collected:** NA  
**Date Received:** NA

**MB** CLIENT ID: Method Blank Lab ID: QC-1995359-001

**Method:** EPA 537Mod **Dilution:** 1 **Analysis Date:** 05/14/25 20:54  
**Prep Date:** 05/14/25 16:10

Analyte	Result	Units	MDL	MRL	Spike Amount	Spike Ref. Amount	% Rec	% Rec Limits	RPD	RPD Limit	Qual
Surr: 13C2-FtS 8:2	161	ng/L			153.28		105	50-150			
Surr: 13C2-PFDA	160	ng/L			160		99.7	50-150			
Surr: 13C2-PFDoA	152	ng/L			160		94.9	50-150			
Surr: 13C2-PFHxA	183	ng/L			160		114	50-150			
Surr: 13C2-PFTeA	127	ng/L			160		79.3	27-134			
Surr: 13C2-PFUnA	160	ng/L			160		99.9	50-150			
Surr: 13C3-HFPO-DA	184	ng/L			160		115	41-142			
Surr: 13C3-PFBS	176	ng/L			148.8		118	50-150			
Surr: 13C4-PFBA	200	ng/L			160		125	50-150			
Surr: 13C4-PFHpA	188	ng/L			160		117	42-141			
Surr: 13C4-PFOA	172	ng/L			160		107	50-150			
Surr: 13C4-PFOS	153	ng/L			152.8		100	50-150			
Surr: 13C5-PFNA	170	ng/L			160		106	50-150			
Surr: 13C5-PFPeA	186	ng/L			160		116	43-138			
Surr: 13C8-FOSA	166	ng/L			160		104	30-122			
Surr: 18O2-PFHxS	152	ng/L			151.2		100	50-150			
Surr: d3-N-MeFOSAA	144	ng/L			160		89.7	35-136			
Surr: d5-N-EtFOSAA	153	ng/L			160		95.9	34-142			
Surr: d7-N-MeFOSE	163	ng/L			160		102	38-127			

**LCS** CLIENT ID: Laboratory Control Sample Lab ID: QC-1995359-002

**Method:** EPA 537Mod **Dilution:** 1 **Analysis Date:** 05/14/25 21:09  
**Prep Date:** 05/14/25 16:10

Analyte	Result	Units	MDL	MRL	Spike Amount	Spike Ref. Amount	% Rec	% Rec Limits	RPD	RPD Limit	Qual
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	25.6	ng/L	0.467	4.71	30.1		85.0	61-128			
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	29.2	ng/L	1.13	4.79	30.7		95.1	61-148			
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)	28.0	ng/L	0.936	4.67	29.9		93.6	67-143			
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)	30.7	ng/L	1.92	4.74	30.3		101	66-151			
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	33.2	ng/L	0.562	4.71	30.1		110	74-135			
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	27.2	ng/L	0.448	4.66	29.8		91.2	69-133			
Hexafluoropropyleneoxide dimer acid (HFPO-DA) (GenX)	28.0	ng/L	1.17	5.00	32		87.4	65-139			
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	28.6	ng/L	1.54	5.00	32		89.5	67-140			
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	27.6	ng/L	0.644	5.00	32		86.1	67-133			
Perfluorobutane sulfonic acid (PFBS)	27.4	ng/L	0.351	4.42	28.3		96.9	69-131			



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WATER  
**Batch:** 1995359

**Work Order:** HN2506238  
**Date Collected:** NA  
**Date Received:** NA

**LCS** CLIENT ID: Laboratory Control Sample Lab ID: QC-1995359-002

**Method:** EPA 537Mod **Dilution:** 1 **Analysis Date:** 05/14/25 21:09  
**Prep Date:** 05/14/25 16:10

Analyte	Result	Units	MDL	MRL	Spike Amount	Spike Ref. Amount	% Rec	% Rec Limits	RPD	RPD Limit	Qual
Perfluorobutanoic acid (PFBA)	31.0	ng/L	2.60	5.00	32		97.0	73-139			
Perfluorodecane sulfonic acid (PFDS)	29.1	ng/L	1.37	4.82	30.8		94.4	64-128			
Perfluorodecanoic acid (PFDA)	30.6	ng/L	1.24	5.00	32		95.8	77-135			
Perfluorododecanoic acid (PFDOA)	33.2	ng/L	0.691	5.00	32		104	77-137			
Perfluoroheptane sulfonic acid (PFHpS)	31.1	ng/L	0.566	4.76	30.5		102	70-137			
Perfluoroheptanoic acid (PFHpA)	30.2	ng/L	1.73	5.00	32		94.3	67-130			
Perfluorohexane sulfonic acid (PFHxS)	28.3	ng/L	0.903	4.55	29.1		97.3	68-131			
Perfluorohexanoic acid (PFHxA)	30.2	ng/L	1.20	5.00	32		94.3	72-129			
Perfluorononane sulfonic acid (PFNS)	27.0	ng/L	0.496	4.80	30.7		88.0	70-132			
Perfluorononanoic acid (PFNA)	33.1	ng/L	0.870	5.00	32		103	75-131			
Perfluorooctane sulfonamide (PFOSAm)	26.7	ng/L	0.711	5.00	32		83.4	66-140			
Perfluorooctane sulfonic acid (PFOS)	30.0	ng/L	0.892	1.86	29.7		101	72-133			
Perfluorooctanoic acid (PFOA)	30.5	ng/L	0.630	2.00	32		95.2	71-133			
Perfluoropentane sulfonic acid (PFPeS)	30.4	ng/L	0.556	4.69	30		101	73-137			
Perfluoropentanoic acid (PFPeA)	31.3	ng/L	1.28	5.00	32		97.7	72-129			
Perfluorotetradecanoic acid (PFTDA)	29.5	ng/L	2.64	5.00	32		92.3	62-139			
Perfluorotridecanoic acid (PFTriDA)	33.2	ng/L	1.93	5.00	32		104	47-147			
Perfluoroundecanoic acid (PFUnDA)	30.5	ng/L	0.974	5.00	32		95.3	80-135			
Surr: 13C2-FtS 4:2	141	ng/L			149.44		94.7	50-150			
Surr: 13C2-FtS 6:2	128	ng/L			152		84.5	50-150			
Surr: 13C2-FtS 8:2	154	ng/L			153.28		100	50-150			
Surr: 13C2-PFDA	146	ng/L			160		91.1	50-150			
Surr: 13C2-PFDoA	129	ng/L			160		80.9	50-150			
Surr: 13C2-PFHxA	153	ng/L			160		95.5	50-150			
Surr: 13C2-PFTeA	128	ng/L			160		80.2	27-134			
Surr: 13C2-PFUnA	133	ng/L			160		83.1	50-150			
Surr: 13C3-HFPO-DA	169	ng/L			160		105	41-142			
Surr: 13C3-PFBS	155	ng/L			148.8		104	50-150			
Surr: 13C4-PFBA	167	ng/L			160		104	50-150			
Surr: 13C4-PFHpA	166	ng/L			160		104	42-141			
Surr: 13C4-PFOA	142	ng/L			160		89.0	50-150			
Surr: 13C4-PFOS	144	ng/L			152.8		94.1	50-150			
Surr: 13C5-PFNA	132	ng/L			160		82.3	50-150			
Surr: 13C5-PFPeA	160	ng/L			160		100	43-138			
Surr: 13C8-FOSA	152	ng/L			160		95.1	30-122			
Surr: 18O2-PFHxS	146	ng/L			151.2		96.7	50-150			
Surr: d3-N-MeFOSAA	136	ng/L			160		84.8	35-136			
Surr: d5-N-EtFOSAA	141	ng/L			160		88.0	34-142			
Surr: d7-N-MeFOSE	144	ng/L			160		89.8	38-127			

The following samples were analyzed in this batch: HN2506238-001, HN2506238-002, HN2506238-003, HN2506238-004, HN2506238-005, HN2506238-006, HN2506238-007, HN2506238-008, HN2506238-009



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER  
**Batch:** 1995359

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 10:00  
**Date Received:** 05/10/25 10:00

Per- and Polyfluorinated Alkyl Substances by LC-MS

**MS** CLIENT ID: MichAve-MH-3\_050925 Lab ID: QC-1995359-005

**Method:** EPA 537Mod **Dilution:** 1 **Analysis Date:** 05/15/25 10:36  
**Prep Date:** 05/14/25 16:10

Analyte	Result	Units	MDL	MRL	Spike Amount	Spike Ref. Amount	% Rec	% Rec Limits	RPD	RPD Limit	Qual
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	24.9	ng/L	0.453	4.57	29.201	<0.453	85.3	61-128			
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	27.4	ng/L	1.10	4.65	29.783	<1.10	92.2	61-148			
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)	28.4	ng/L	0.908	4.53	29.007	<0.908	97.6	67-143			
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)	27.6	ng/L	1.86	4.50	29.395	<1.86	93.8	66-151			
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	28.7	ng/L	0.545	4.57	29.201	<0.545	97.5	74-135			
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	26.9	ng/L	0.435	4.52	28.91	<0.435	93.0	69-133			
Hexafluoropropyleneoxide dimer acid (HFPO-DA) (GenX)	30.0	ng/L	1.14	4.85	31.044	<1.14	96.3	65-139			
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	30.8	ng/L	1.50	4.85	31.044	<1.50	98.6	67-140			
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	28.7	ng/L	0.625	4.85	31.044	<0.625	92.4	67-133			
Perfluorobutane sulfonic acid (PFBS)	28.7	ng/L	0.340	4.29	27.454	3.46	91.8	69-141			
Perfluorobutanoic acid (PFBA)	47.2	ng/L	2.52	4.85	31.044	18.0	94.3	73-139			
Perfluorodecane sulfonic acid (PFDS)	26.8	ng/L	1.33	4.68	29.88	<1.33	89.5	64-128			
Perfluorodecanoic acid (PFDA)	32.8	ng/L	1.20	4.85	31.044	<1.20	105	77-135			
Perfluorododecanoic acid (PFDOA)	32.0	ng/L	0.670	4.85	31.044	<0.670	103	77-137			
Perfluoroheptane sulfonic acid (PFHpS)	27.9	ng/L	0.549	4.62	29.589	<0.549	93.5	70-137			
Perfluoroheptanoic acid (PFHpA)	30.8	ng/L	1.68	4.85	31.044	3.60	87.5	67-130			
Perfluoroheptane sulfonic acid (PFHxS)	28.3	ng/L	0.876	4.41	28.23	2.77	90.4	68-131			
Perfluoroheptanoic acid (PFHxA)	97.1	ng/L	1.16	4.85	31.044	71.4	82.9	72-129			
Perfluorononane sulfonic acid (PFNS)	24.2	ng/L	0.481	4.66	29.783	<0.481	81.2	70-132			
Perfluorononanoic acid (PFNA)	32.2	ng/L	0.844	4.85	31.044	<0.844	103	75-131			
Perfluorooctane sulfonamide (PFOSAm)	27.7	ng/L	0.690	4.85	31.044	<0.690	88.7	66-140			
Perfluorooctane sulfonic acid (PFOS)	31.7	ng/L	0.865	1.80	28.813	4.56	94.2	72-133			
Perfluorooctanoic acid (PFOA)	37.6	ng/L	0.611	1.94	31.044	6.32	101	71-133			
Perfluoropentane sulfonic acid (PFPeS)	28.9	ng/L	0.539	4.55	29.104	<0.539	98.1	73-137			
Perfluoropentanoic acid (PFPeA)	79.6	ng/L	1.24	4.85	31.044	55.4	77.8	72-129			
Perfluorotetradecanoic acid (PFTDA)	29.2	ng/L	2.56	4.85	31.044	<2.56	93.7	62-139			
Perfluorotridecanoic acid (PFTTrDA)	30.3	ng/L	1.87	4.85	31.044	<1.87	97.4	47-147			
Perfluoroundecanoic acid (PFUnDA)	30.7	ng/L	0.945	4.85	31.044	<0.945	98.7	80-135			
Surr: 13C2-FtS 4:2	222	ng/L			144.97		153	50-150			S
Surr: 13C2-FtS 6:2	232	ng/L			147.46		158	50-150			S

QA/QC Report



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER  
**Batch:** 1995359

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 10:00  
**Date Received:** 05/10/25 10:00

**MS** CLIENT ID: MichAve-MH-3\_050925 Lab ID: QC-1995359-005

**Method:** EPA 537Mod **Dilution:** 1 **Analysis Date:** 05/15/25 10:36  
**Prep Date:** 05/14/25 16:10

Analyte	Result	Units	MDL	MRL	Spike Amount	Spike Ref. Amount	% Rec	% Rec Limits	RPD	RPD Limit	Qual
Surr: 13C2-FtS 8:2	299	ng/L			148.7		201	50-150			S
Surr: 13C2-PFDA	130	ng/L			155.22		83.5	50-150			
Surr: 13C2-PFDoA	126	ng/L			155.22		81.0	50-150			
Surr: 13C2-PFHxA	107	ng/L			155.22		69.1	50-150			
Surr: 13C2-PFTeA	115	ng/L			155.22		74.2	27-134			
Surr: 13C2-PFUnA	132	ng/L			155.22		84.9	50-150			
Surr: 13C3-HFPO-DA	129	ng/L			155.22		83.0	41-142			
Surr: 13C3-PFBS	119	ng/L			155.22		76.8	50-150			
Surr: 13C4-PFBA	125	ng/L			155.22		80.3	50-150			
Surr: 13C4-PFHpA	134	ng/L			155.22		86.5	42-141			
Surr: 13C4-PFOA	118	ng/L			155.22		75.8	50-150			
Surr: 13C4-PFOS	103	ng/L			148.23		69.2	50-150			
Surr: 13C5-PFNA	122	ng/L			155.22		78.4	50-150			
Surr: 13C5-PFPeA	130	ng/L			155.22		83.7	43-138			
Surr: 13C8-FOSA	129	ng/L			155.22		83.0	30-122			
Surr: 18O2-PFHxS	108	ng/L			146.68		73.4	50-150			
Surr: d3-N-MeFOSAA	153	ng/L			155.22		98.7	35-136			
Surr: d5-N-EtFOSAA	176	ng/L			155.22		114	34-142			
Surr: d7-N-MeFOSE	134	ng/L			155.22		86.4	38-127			

**MSD** CLIENT ID: MichAve-MH-3\_050925 Lab ID: QC-1995359-006

**Method:** EPA 537Mod **Dilution:** 1 **Analysis Date:** 05/15/25 10:51  
**Prep Date:** 05/14/25 16:10

Analyte	Result	Units	MDL	MRL	Spike Amount	Spike Ref. Amount	% Rec	% Rec Limits	RPD	RPD Limit	Qual
11-Chloroeicosfluoro-3-oxaundecane -1-sulfonic acid (11-Cl-PF3OUdS)	23.2	ng/L	0.467	4.71	28.489	<0.467	81.6	61-128	6.98	30	
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	28.0	ng/L	1.13	4.79	29.057	<1.13	96.3	61-148	1.86	30	
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)	27.2	ng/L	0.936	4.67	28.299	<0.936	96.1	67-143	4.00	30	
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)	24.8	ng/L	1.92	4.74	28.678	<1.92	86.3	66-151	10.8	30	
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	27.4	ng/L	0.562	4.71	28.489	<0.562	95.2	74-135	4.82	30	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	24.5	ng/L	0.448	4.66	28.205	<0.448	86.9	69-133	9.28	30	
Hexafluoropropyleneoxide dimer acid (HFPO-DA) (GenX)	23.6	ng/L	1.17	5.00	30.287	<1.17	77.7	65-139	23.7	30	
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	27.3	ng/L	1.54	5.00	30.287	<1.54	89.6	67-140	12.0	30	
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	27.0	ng/L	0.644	5.00	30.287	<0.644	89.1	67-133	6.06	30	
Perfluorobutane sulfonic acid (PFBS)	25.6	ng/L	0.351	4.42	26.785	3.46	82.6	69-141	11.4	30	



**Client:** Arcadis US, Inc.  
**Project:** RACER Lansing 2025  
**Matrix:** WASTEWATER  
**Batch:** 1995359

**Work Order:** HN2506238  
**Date Collected:** 05/09/25 10:00  
**Date Received:** 05/10/25 10:00

**MSD** CLIENT ID: MichAve-MH-3\_050925 Lab ID: QC-1995359-006

**Method:** EPA 537Mod **Dilution:** 1 **Analysis Date:** 05/15/25 10:51  
**Prep Date:** 05/14/25 16:10

Analyte	Result	Units	MDL	MRL	Spike Amount	Spike Ref. Amount	% Rec	% Rec Limits	RPD	RPD Limit	Qual
Perfluorobutanoic acid (PFBA)	42.2	ng/L	2.60	5.00	30.287	18.0	80.1	73-139	11.2	30	
Perfluorodecane sulfonic acid (PFDS)	24.6	ng/L	1.37	4.82	29.151	<1.37	84.4	64-128	8.38	30	
Perfluorodecanoic acid (PFDA)	27.0	ng/L	1.24	5.00	30.287	<1.24	88.8	77-135	19.1	30	
Perfluorododecanoic acid (PFDOA)	27.7	ng/L	0.691	5.00	30.287	<0.691	91.0	77-137	14.5	30	
Perfluoroheptane sulfonic acid (PFHpS)	27.3	ng/L	0.566	4.76	28.867	<0.566	93.6	70-137	2.34	30	
Perfluoroheptanoic acid (PFHpA)	32.1	ng/L	1.73	5.00	30.287	3.60	94.0	67-130	4.12	30	
Perfluorohexane sulfonic acid (PFHxS)	24.0	ng/L	0.903	4.55	27.542	2.77	77.3	68-131	16.2	30	
Perfluorohexanoic acid (PFHxA)	80.7	ng/L	1.20	5.00	30.287	71.4	30.8	72-129	18.5	30	S
Perfluorononane sulfonic acid (PFNS)	23.8	ng/L	0.496	4.80	29.057	<0.496	81.8	70-132	1.74	30	
Perfluorononanoic acid (PFNA)	28.4	ng/L	0.870	5.00	30.287	<0.870	92.9	75-131	12.8	30	
Perfluorooctane sulfonamide (PFOSAm)	27.2	ng/L	0.711	5.00	30.287	<0.711	89.5	66-140	1.62	30	
Perfluorooctane sulfonic acid (PFOS)	28.9	ng/L	0.892	1.86	28.11	4.56	86.7	72-133	9.11	30	
Perfluorooctanoic acid (PFOA)	33.8	ng/L	0.630	2.00	30.287	6.32	90.7	71-133	10.6	30	
Perfluoropentane sulfonic acid (PFPeS)	26.5	ng/L	0.556	4.69	28.394	<0.556	92.0	73-137	8.81	30	
Perfluoropentanoic acid (PFPeA)	71.2	ng/L	1.28	5.00	30.287	55.4	52.1	72-129	11.1	30	S
Perfluorotetradecanoic acid (PFTDA)	27.8	ng/L	2.64	5.00	30.287	<2.64	91.4	62-139	4.91	30	
Perfluorotridecanoic acid (PFTriDA)	28.0	ng/L	1.93	5.00	30.287	<1.93	92.3	47-147	7.90	30	
Perfluoroundecanoic acid (PFUnDA)	26.9	ng/L	0.974	5.00	30.287	<0.974	88.6	80-135	13.3	30	
<i>Surr: 13C2-FtS 4:2</i>	<b>233</b>	ng/L			141.44		165	50-150	5.06	30	S
<i>Surr: 13C2-FtS 6:2</i>	<b>214</b>	ng/L			143.86		148	50-150	8.42	30	
<i>Surr: 13C2-FtS 8:2</i>	<b>208</b>	ng/L			145.07		144	50-150	35.7	30	R
<i>Surr: 13C2-PFDA</i>	<b>147</b>	ng/L			151.43		97.3	50-150	12.7	30	
<i>Surr: 13C2-PFDoA</i>	<b>145</b>	ng/L			151.43		95.8	50-150	14.2	30	
<i>Surr: 13C2-PFHxA</i>	<b>139</b>	ng/L			151.43		91.8	50-150	25.8	30	
<i>Surr: 13C2-PFTeA</i>	<b>129</b>	ng/L			151.43		85.4	27-134	11.6	30	
<i>Surr: 13C2-PFUnA</i>	<b>138</b>	ng/L			151.43		91.5	50-150	4.98	30	
<i>Surr: 13C3-HFPO-DA</i>	<b>156</b>	ng/L			151.43		103	41-142	19.3	30	
<i>Surr: 13C3-PFBS</i>	<b>149</b>	ng/L			151.43		98.2	50-150	21.9	30	
<i>Surr: 13C4-PFBA</i>	<b>160</b>	ng/L			151.43		106	50-150	25.0	30	
<i>Surr: 13C4-PFHpA</i>	<b>139</b>	ng/L			151.43		91.6	42-141	3.27	30	
<i>Surr: 13C4-PFOA</i>	<b>144</b>	ng/L			151.43		95.5	50-150	20.5	30	
<i>Surr: 13C4-PFOS</i>	<b>130</b>	ng/L			144.62		89.9	50-150	23.6	30	
<i>Surr: 13C5-PFNA</i>	<b>137</b>	ng/L			151.43		90.6	50-150	11.9	30	
<i>Surr: 13C5-PFPeA</i>	<b>151</b>	ng/L			151.43		99.8	43-138	15.1	30	
<i>Surr: 13C8-FOSA</i>	<b>138</b>	ng/L			151.43		91.4	30-122	7.09	30	
<i>Surr: 18O2-PFHxS</i>	<b>139</b>	ng/L			143.11		97.2	50-150	25.5	30	
<i>Surr: d3-N-MeFOSAA</i>	<b>147</b>	ng/L			151.43		97.3	35-136	3.94	30	
<i>Surr: d5-N-EtFOSAA</i>	<b>146</b>	ng/L			151.43		96.8	34-142	18.5	30	
<i>Surr: d7-N-MeFOSE</i>	<b>159</b>	ng/L			151.43		105	38-127	17.2	30	

The following samples were analyzed in this batch: HN2506238-001, HN2506238-002, HN2506238-003, HN2506238-004, HN2506238-005, HN2506238-006, HN2506238-007, HN2506238-008, HN2506238-009

# **Attachment 2**

## **Low-Flow Groundwater Sampling Logs**

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-12-21	<b>Date</b>	5/9/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	45.0 degrees F and Clear. The wind is blowing N at 3.4 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	66.58	<b>Total Depth (ft-bmp)</b>	78.1	<b>Water Column (ft)</b>	11.52
				<b>Gallons in Well</b>	1.87
<b>Purge Start</b>	09:55	<b>Pump Intake (ft-bmp)</b>	75.5	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	10:30	<b>Volumes Purged</b>	0.49	<b>Sample ID</b>	MW-12-21_050925
				<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	10:30	<b>Gallons Purged</b>	0.92	<b>Replicate/ Code No.</b>	MW-12-21_050925
				<b>Sample Type</b>	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
10:00	0	0	100	66.90	0.13	6.88	1.82	44	1.59	13.8	-76.3	Clear	None
10:05	5	5	100	66.90	0.26	6.88	1.82	33.2	0.85	13.8	-79.9	Clear	None
10:10	5	10	100	66.90	0.40	6.88	1.82	27.7	0.65	14	-80.8	Clear	None
10:15	5	15	100	66.90	0.53	6.88	1.82	17.6	0.63	14	-81.4	Clear	None
10:20	5	20	100	66.90	0.66	6.88	1.81	17.7	0.54	14.4	-81.9	Clear	None
10:25	5	25	100	66.90	0.79	6.88	1.81	17.4	0.57	14.5	-83.7	Clear	None
10:30	5	30	100	66.90	0.92	6.89	1.8	17.9	0.56	14.6	-85.5	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	40 mL Glass	9	HCL

**Comments:** Used historical total depth.

**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: Plant 3	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-13-22	<b>Date</b>	5/9/2025		
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	37.9 degrees F and Clear. The wind is blowing undefined at 0.0 mph.			
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>	<b>Casing Diameter (in)</b>	2	<b>Well Casing Material</b>	PVC	
<b>Static Water Level (ft-bmp)</b>	70.35	<b>Total Depth (ft-bmp)</b>	96.15	<b>Water Column (ft)</b>	25.80	<b>Gallons in Well</b>	4.19
<b>Purge Start</b>	08:45	<b>Pump Intake (ft-bmp)</b>	93.5	<b>Purge Method</b>	Low-Flow	<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	09:30	<b>Volumes Purged</b>	0.28	<b>Sample ID</b>	MW-13-22_050925	<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	09:30	<b>Gallons Purged</b>	1.19	<b>Replicate/ Code No.</b>	NA	<b>Sample Type</b>	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
08:50	0	0	100	70.66	0.13	6.94	1.93	38.7	4.83	12.4	194.8	Clear	None
08:55	5	5	100	70.66	0.26	6.94	1.94	49.4	3.94	12.1	190.8	Clear	None
09:00	5	10	100	70.66	0.40	6.94	1.95	33.6	3.07	11.9	174.8	Clear	None
09:05	5	15	100	70.66	0.53	6.94	1.94	27.8	3.94	12	162.3	Clear	None
09:10	5	20	100	70.66	0.66	6.93	1.94	27.6	2.91	12.4	148.2	Clear	None
09:15	5	25	100	70.66	0.79	6.93	1.93	20.8	1.94	12.7	141.1	Clear	None
09:20	5	30	100	70.66	0.92	6.93	1.94	16.9	3.08	12.8	137	Clear	None
09:25	5	35	100	70.66	1.06	6.92	1.94	16.5	3.14	12.8	133.2	Clear	None
09:30	5	40	100	70.66	1.19	6.92	1.94	16.7	3.01	12.9	131.2	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	40 mL Glass	3	HCL

**Comments:** Used historical total depth.

**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: <u>Plant 3</u>	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-13-29	<b>Date</b>	5/6/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	52.0 degrees F and Light Rain and Fog/Mist. The wind is blowing NW at 6.9 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	64.75	<b>Total Depth (ft-bmp)</b>	76.3	<b>Water Column (ft)</b>	11.55
				<b>Gallons in Well</b>	1.88
<b>Purge Start</b>	10:00	<b>Pump Intake (ft-bmp)</b>	74	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	10:55	<b>Volumes Purged</b>	0.77	<b>Sample ID</b>	MW-13-29_050625
				<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	10:55	<b>Gallons Purged</b>	1.45	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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	
10:00	0	0	0	64.75	0.00	0	0	0	0	0	0	0	Clear	None
10:05	5	5	100	64.95	0.13	6.78	3.15	23.2	3.45	13.1	48.6	48.6	Clear	None
10:10	5	10	100	64.95	0.26	6.62	3.16	16.8	8.11	13	47.3	47.3	Clear	None
10:15	5	15	100	64.95	0.40	6.53	3.15	14.9	0.81	13	46.6	46.6	Clear	None
10:20	5	20	100	64.95	0.53	6.43	3.16	12.8	3.22	12.9	45.3	45.3	Clear	None
10:25	5	25	100	64.95	0.66	6.34	3.15	10.8	0.13	12.9	44.7	44.7	Clear	None
10:30	5	30	100	64.95	0.79	6.34	3.15	9.62	0.17	12.9	44.2	44.2	Clear	None
10:35	5	35	100	64.95	0.92	6.35	3.14	9.06	1.02	12.9	41.7	41.7	Clear	None
10:40	5	40	100	64.95	1.06	6.36	3.15	8.78	1.01	12.9	40.4	40.4	Clear	None
10:45	5	45	100	64.95	1.19	6.37	3.15	8.56	0.91	13	41.2	41.2	Clear	None
10:50	5	50	100	64.95	1.32	6.37	3.14	8.31	0.94	12.9	41.6	41.6	Clear	None
10:55	5	55	100	64.95	1.45	6.37	3.14	7.98	0.89	13	41.6	41.6	Clear	None

Constituent Sampled	Container	Number	Preservative
TKN/T. Phosphorus	125 mL Plastic	1	H2SO4
Nitrate	250 mL Plastic	1	None
1,4-Dioxane 8270D SIM	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: Plant 3	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-13-34	<b>Date</b>	5/9/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	53.1 degrees F and Clear. The wind is blowing NE at 6.9 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	66.38	<b>Total Depth (ft-bmp)</b>	79.9	<b>Water Column (ft)</b>	13.52
				<b>Gallons in Well</b>	2.20
<b>Purge Start</b>	11:20	<b>Pump Intake (ft-bmp)</b>	77.5	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	12:20	<b>Volumes Purged</b>	0.72	<b>Sample ID</b>	MW-13-34_050925
				<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	12:20	<b>Gallons Purged</b>	1.59	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
11:25	0	0	100	66.68	0.13	7.02	2.55	19.9	2.26	16.3	-89.2	Clear	None
11:30	5	5	100	66.68	0.26	7.02	2.56	17.6	0.88	16.3	-89.3	Clear	None
11:35	5	10	100	66.68	0.40	7.02	2.56	17.7	2.98	16.5	-89.4	Clear	None
11:40	5	15	100	66.68	0.53	7.02	2.56	12.2	2	16.6	-90	Clear	None
11:45	5	20	100	66.68	0.66	7.02	2.56	13.6	1.09	16.7	-90	Clear	None
11:50	5	25	100	66.68	0.79	7.02	2.55	10.3	0.77	16.7	-90.2	Clear	None
11:55	5	30	100	66.68	0.92	7.02	2.56	9.6	0.97	16.7	-90.2	Clear	None
12:00	5	35	100	66.68	1.06	7.02	2.56	9.34	0.98	16.8	-90.5	Clear	None
12:05	5	40	100	66.68	1.19	7.02	2.56	8.78	1.21	16.8	-90.5	Clear	None
12:10	5	45	100	66.68	1.32	7.02	2.56	8.67	0.9	17.1	-91.3	Clear	None
12:15	5	50	100	66.68	1.45	7.01	2.58	8.34	0.87	17.1	-91.9	Clear	None
12:20	5	55	100	66.68	1.59	7.03	2.59	8.12	0.86	17.1	-92.7	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	40 mL Glass	3	HCL

**Comments:** Used historical total depth.

**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: Plant 3	Well Locked at Arrival: yes
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-13-43	<b>Date</b>	5/7/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>		
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	68.20	<b>Total Depth (ft-bmp)</b>	76.72	<b>Water Column (ft)</b>	8.52
				<b>Gallons in Well</b>	1.38
<b>Purge Start</b>	09:50	<b>Pump Intake (ft-bmp)</b>	74.22	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	10:50	<b>Volumes Purged</b>	1.72	<b>Sample ID</b>	MW-13-43_050725
				<b>Sampled by</b>	Donald Richmond
<b>Sample Time</b>	10:40	<b>Gallons Purged</b>	2.38	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
10:05	0	0	200	68.20	0.79	6.87	2.3	76.3	4.54	17.2	172.4	Clear	None
10:10	5	5	200	68.20	1.06	6.89	2.39	194	3.05	17.2	176.9	Clear	None
10:15	5	10	200	68.20	1.32	6.87	2.41	247	2.96	17.4	180.3	Clear	None
10:20	5	15	200	68.20	1.59	6.85	2.43	261	2.91	17.7	184.9	Clear	None
10:25	5	20	200	68.20	1.85	6.83	2.44	279	2.87	17.9	187.8	Clear	None
10:30	5	25	200	68.20	2.11	6.82	2.44	267	2.58	17.8	190.8	Clear	None
10:35	5	30	200	68.20	2.38	6.81	2.45	258	2.69	18	192.9	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	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: Plant 2	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-13-45	<b>Date</b>	5/7/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>		
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	67.05	<b>Total Depth (ft-bmp)</b>	78.32	<b>Water Column (ft)</b>	11.27
				<b>Gallons in Well</b>	1.83
<b>Purge Start</b>	11:25	<b>Pump Intake (ft-bmp)</b>	75.82	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Peristaltic
<b>Purge End</b>	12:35	<b>Volumes Purged</b>	1.59	<b>Sample ID</b>	MW-13-45_050725
				<b>Sampled by</b>	Donald Richmond
<b>Sample Time</b>	12:25	<b>Gallons Purged</b>	2.91	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
11:35	0	0	200	67.05	0.53	6.82	1	14.1	2.36	18	215.3	Clear	None
11:40	5	5	200	67.05	0.79	6.74	1.06	2	0.95	17.8	208	Clear	None
11:45	5	10	200	67.05	1.06	6.7	1.09	1.18	0.72	17	192.4	Clear	None
11:50	5	15	200	67.05	1.32	6.63	1.18	34.8	0.51	17.3	78.8	Clear	None
11:55	5	20	200	67.05	1.59	6.61	1.26	32.4	0.48	17.5	55.2	Clear	None
12:00	5	25	200	67.05	1.85	6.58	1.31	22.6	0.46	17.8	22.5	Clear	None
12:05	5	30	200	67.05	2.11	6.57	1.31	19.6	0.45	17.8	17.3	Clear	None
12:10	5	35	200	67.05	2.38	6.57	1.31	16.5	0.44	17.6	10.5	Clear	None
12:15	5	40	200	67.05	2.64	6.57	1.31	12.6	0.42	17.5	5.1	Clear	None
12:20	5	45	200	67.05	2.91	6.57	1.32	9.99	0.4	17.8	0.1	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	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: <u>Plant 2</u>	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-13-48	<b>Date</b>	5/9/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>		
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	56.82	<b>Total Depth (ft-bmp)</b>	73.02	<b>Water Column (ft)</b>	16.20
				<b>Gallons in Well</b>	2.63
<b>Purge Start</b>	11:55	<b>Pump Intake (ft-bmp)</b>	70.52	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	13:00	<b>Volumes Purged</b>	1.11	<b>Sample ID</b>	MW-13-48_050925
				<b>Sampled by</b>	Donald Richmond
<b>Sample Time</b>	12:55	<b>Gallons Purged</b>	2.91	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
12:05	0	0	200	56.82	0.53	6.6	2.38	40.4	0.28	15.6	478	Clear	None
12:10	5	5	200	56.82	0.79	6.58	2.41	50.9	0.23	15.7	448	Clear	None
12:15	5	10	200	56.82	1.06	6.54	2.51	20.9	0.25	15.8	156.9	Clear	None
12:20	5	15	200	56.82	1.32	6.54	2.52	15.4	0.24	15.8	86	Clear	None
12:25	5	20	200	56.82	1.59	6.53	2.57	17.9	0.23	15.8	54	Clear	None
12:30	5	25	200	56.82	1.85	6.52	2.66	13.7	0.21	15.9	36.3	Clear	None
12:35	5	30	200	56.82	2.11	6.52	2.74	14.4	0.22	16.1	21.6	Clear	None
12:40	5	35	200	56.82	2.38	6.51	2.79	11.1	0.21	16.1	10.7	Clear	None
12:45	5	40	200	56.82	2.64	6.51	2.82	9.11	0.22	16.1	3.6	Clear	None
12:50	5	45	200	56.82	2.91	6.51	2.84	6.13	0.23	16.2	-2.3	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	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: <u>Plant 3</u>	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-14-61	<b>Date</b>	5/7/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>		
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	67.71	<b>Total Depth (ft-bmp)</b>	77.25	<b>Water Column (ft)</b>	9.54
				<b>Gallons in Well</b>	1.55
<b>Purge Start</b>	13:10	<b>Pump Intake (ft-bmp)</b>	74.75	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	14:10	<b>Volumes Purged</b>	1.54	<b>Sample ID</b>	MW-14-61_050725
				<b>Sampled by</b>	Donald Richmond
<b>Sample Time</b>	14:00	<b>Gallons Purged</b>	2.38	<b>Replicate/ Code No.</b>	DUP-02_050725
				<b>Sample Type</b>	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
13:25	0	0	200	67.05	0.79	6.9	3.08	55.3	1.35	20.7	86.4	Clear	None
13:30	5	5	200	67.05	1.06	6.89	3.13	54.2	0.67	21.1	88.3	Clear	None
13:35	5	10	200	67.05	1.32	6.88	3.06	41.7	0.54	19.9	90.3	Clear	None
13:40	5	15	200	67.05	1.59	6.88	3.09	36	0.5	20.9	92	Clear	None
13:45	5	20	200	67.05	1.85	6.85	3.15	28.7	0.39	21.3	97	Clear	None
13:50	5	25	200	67.05	2.11	6.85	3.16	27.1	0.38	21.5	98.7	Clear	None
13:55	5	30	200	67.05	2.38	6.85	3.18	28.5	0.34	21	101.6	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	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: Plant 2	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-15-72	<b>Date</b>	5/7/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>		
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	57.36	<b>Total Depth (ft-bmp)</b>	70.25	<b>Water Column (ft)</b>	12.89
				<b>Gallons in Well</b>	2.09
<b>Purge Start</b>	15:50	<b>Pump Intake (ft-bmp)</b>	68.25	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	16:30	<b>Volumes Purged</b>	0.76	<b>Sample ID</b>	MW-15-72_050725
				<b>Sampled by</b>	Donald Richmond
<b>Sample Time</b>	16:25	<b>Gallons Purged</b>	1.59	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
16:00	0	0	200	57.36	0.53	6.74	1.07	29.9	1.1	18.5	6.7	Clear	None
16:05	5	5	200	57.36	0.79	6.76	1.08	33.3	0.64	18.7	-23.5	Clear	None
16:10	5	10	200	57.36	1.06	6.75	1.09	28.5	0.47	18.5	-28.5	Clear	None
16:15	5	15	200	57.36	1.32	6.75	1.08	27.6	0.43	17.9	-31.3	Clear	None
16:20	5	20	200	57.36	1.59	6.75	1.09	24.6	0.4	18.7	-34.6	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	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: Plant 2	Well Locked at Arrival: yes
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-16-74	<b>Date</b>	5/7/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>		
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	66.20	<b>Total Depth (ft-bmp)</b>	73.67	<b>Water Column (ft)</b>	7.47
				<b>Gallons in Well</b>	1.21
<b>Purge Start</b>	14:40	<b>Pump Intake (ft-bmp)</b>	71.17	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	15:30	<b>Volumes Purged</b>	1.53	<b>Sample ID</b>	MW-16-74_050725
				<b>Sampled by</b>	Donald Richmond
<b>Sample Time</b>	15:20	<b>Gallons Purged</b>	1.85	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
14:50	0	0	200	66.20	0.53	6.62	2.48	79.5	1.13	21.8	92.7	Clear	None
14:55	5	5	200	66.20	0.79	6.62	2.47	39.6	0.71	21.1	42.4	Clear	None
15:00	5	10	200	66.20	1.06	6.61	2.5	37.9	0.59	21.2	25.4	Clear	None
15:05	5	15	200	66.20	1.32	6.62	2.5	33.8	0.52	21.3	11.9	Clear	None
15:10	5	20	200	66.20	1.59	6.61	2.5	32.9	0.51	21.5	7.9	Clear	None
15:15	5	25	200	66.20	1.85	6.62	2.4	30.6	0.46	19.3	3	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	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: Plant 2	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-16-75	<b>Date</b>	5/8/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>		
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	62.67	<b>Total Depth (ft-bmp)</b>	74.09	<b>Water Column (ft)</b>	11.42
				<b>Gallons in Well</b>	1.86
<b>Purge Start</b>	09:15	<b>Pump Intake (ft-bmp)</b>	71.59	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	10:35	<b>Volumes Purged</b>	1.84	<b>Sample ID</b>	MW-16-75_050825
				<b>Sampled by</b>	Donald Richmond
<b>Sample Time</b>	10:25	<b>Gallons Purged</b>	3.43	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
09:30	0	0	200	62.67	0.79	7.05	1.36		2.27	12.1	63.5	Clear	None
09:35	5	5	200	62.67	1.06	6.99	1.38	106	1.27	12.5	36.2	Clear	None
09:40	5	10	200	62.67	1.32	6.99	1.36	108	1.35	11.9	26.3	Clear	None
09:45	5	15	200	62.67	1.59	6.96	1.37	108	0.69	11.9	12.4	Clear	None
09:50	5	20	200	62.67	1.85	6.96	1.38	78.3	0.71	12.3	-4.2	Clear	None
09:55	5	25	200	62.67	2.11	6.95	1.39	65.4	0.63	12.4	-9.3	Clear	None
10:00	5	30	200	62.67	2.38	6.95	1.39	60.7	0.63	12.5	-12.5	Clear	None
10:05	5	35	200	62.67	2.64	6.95	1.39	51.4	0.61	12.5	-18.8	Clear	None
10:10	5	40	200	62.67	2.91	6.94	1.4	36.3	0.55	12.7	-24.9	Clear	None
10:15	5	45	200	62.67	3.17	6.94	1.4	31.2	0.49	12.8	-27.1	Clear	None
10:20	5	50	200	62.67	3.43	6.94	1.41	24.7	0.55	13	-29.6	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	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: <u>Plant 2</u>	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-16-77	<b>Date</b>	5/8/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>		
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	61.73	<b>Total Depth (ft-bmp)</b>	73.96	<b>Water Column (ft)</b>	12.23
				<b>Gallons in Well</b>	1.99
<b>Purge Start</b>	11:05	<b>Pump Intake (ft-bmp)</b>	71.46	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	11:40	<b>Volumes Purged</b>	0.40	<b>Sample ID</b>	MW-16-77_050825
				<b>Sampled by</b>	Donald Richmond
<b>Sample Time</b>	11:30	<b>Gallons Purged</b>	0.79	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
11:10	0	0	200	61.73	0.26	6.93	2.39	10.5	2.49	13	59.34	Clear	None
11:15	5	5	200	61.73	0.53	6.98	2.39	9.1	3.09	13.1	57	Clear	None
11:20	5	10	200	61.73	0.79	6.98	2.4	7.12	2.8	13.3	56.5	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	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: Plant 2	Well Locked at Arrival: yes
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-16-78	<b>Date</b>	5/8/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>		
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	65.41	<b>Total Depth (ft-bmp)</b>	76.19	<b>Water Column (ft)</b>	10.78
				<b>Gallons in Well</b>	1.75
<b>Purge Start</b>	14:55	<b>Pump Intake (ft-bmp)</b>	73.69	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	16:05	<b>Volumes Purged</b>	1.81	<b>Sample ID</b>	MW-16-78_050825
				<b>Sampled by</b>	Donald Richmond
<b>Sample Time</b>	16:00	<b>Gallons Purged</b>	3.17	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
15:00	0	0	200	65.41	0.26	7.05	1.27	3.98	1.87	14.8	70.1	Clear	None
15:05	5	5	200	65.41	0.53	7.04	1.23	5.63	1.03	14.7	166.8	Clear	None
15:10	5	10	200	65.41	0.79	6.99	1.34	17.5	0.26	14.5	12.3	Clear	None
15:15	5	15	200	65.41	1.06	6.99	1.35	17.1	0.23	14.5	97.5	Clear	None
15:20	5	20	200	65.41	1.32	6.99	1.36	18.5	0.21	14.6	78.4	Clear	None
15:25	5	25	200	65.41	1.59	6.99	1.37	16.9	0.22	15.1	58.2	Clear	None
15:30	5	30	200	65.41	1.85	6.98	1.35	18.2	0.21	14.4	40.6	Clear	None
15:35	5	35	200	65.41	2.11	6.99	1.35	18.5	0.19	14.4	24.4	Clear	None
15:40	5	40	200	65.41	2.38	6.99	1.36	13	0.2	14.7	-1.5	Clear	None
15:45	5	45	200	65.41	2.64	6.99	1.35	11.5	0.17	14.6	-7.3	Clear	None
15:50	5	50	200	65.41	2.91	6.99	1.35	4.2	0.19	14.6	-22.9	Clear	None
15:55	5	55	200	65.41	3.17	6.99	1.36	3.22	0.19	14.6	-29.2	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	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: Plant 2	Well Locked at Arrival: yes
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-16-81	<b>Date</b>	5/8/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>		
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	63.51	<b>Total Depth (ft-bmp)</b>	77.21	<b>Water Column (ft)</b>	13.70
				<b>Gallons in Well</b>	2.23
<b>Purge Start</b>	14:00	<b>Pump Intake (ft-bmp)</b>	74.71	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	14:35	<b>Volumes Purged</b>	0.59	<b>Sample ID</b>	MW-16-81_050825
				<b>Sampled by</b>	Donald Richmond
<b>Sample Time</b>	14:30	<b>Gallons Purged</b>	1.32	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
14:05	0	0	200	63.51	0.26	6.96	2.52	4.21	3.97	16.7	85.1	Clear	None
14:10	5	5	200	63.51	0.53	6.86	2.55	5.08	2.65	16.6	91.4	Clear	None
14:15	5	10	200	63.51	0.79	6.85	2.53	4.71	1.64	16.9	91.2	Clear	None
14:20	5	15	200	63.51	1.06	6.87	2.49	9.53	1	16.8	94.5	Clear	None
14:25	5	20	200	63.51	1.32	6.87	2.49	10	0.85	16.7	96.2	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	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: Plant 2	Well Locked at Arrival: yes
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-16-82	<b>Date</b>	5/8/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>		
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	68.21	<b>Total Depth (ft-bmp)</b>	77.12	<b>Water Column (ft)</b>	8.91
				<b>Gallons in Well</b>	1.45
<b>Purge Start</b>	12:40	<b>Pump Intake (ft-bmp)</b>	74.62	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	13:30	<b>Volumes Purged</b>	1.64	<b>Sample ID</b>	MW-16-82_050825
				<b>Sampled by</b>	Donald Richmond
<b>Sample Time</b>	13:25	<b>Gallons Purged</b>	2.38	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
12:45	0	0	200	68.21	0.26	6.92	1.22	1.51	1.69	16.1	79	Clear	None
12:50	5	5	200	68.21	0.53	6.91	1.34	0.02	1.04	16.1	31.8	Clear	None
12:55	5	10	200	68.21	0.79	6.9	1.41	0.02	0.89	16.2	7.6	Clear	None
13:00	5	15	200	68.21	1.06	6.87	1.47	0.02	0.6	16.3	-8	Clear	None
13:05	5	20	200	68.21	1.32	6.86	1.51	0.02	0.39	16.2	-20.7	Clear	None
13:10	5	25	200	68.21	1.59	6.86	1.53	0.02	0.37	16.6	-27.7	Clear	None
13:15	5	30	200	68.21	1.85	6.86	1.54	0.02	0.33	17	-33.9	Clear	None
13:20	5	35	200	68.21	2.11	6.85	1.54	0.02	0.31	16.5	-39.6	Clear	None
13:25	5	40	200	68.21	2.38	6.86	1.55	0.02	0.26	17.3	-40.7	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	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: <u>Plant 2</u>	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-16-84	<b>Date</b>	5/8/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	52.0 degrees F and Mostly Clear. The wind is blowing N/NE at 15.0 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	69.66	<b>Total Depth (ft-bmp)</b>	81.1	<b>Water Column (ft)</b>	11.44
				<b>Gallons in Well</b>	1.86
<b>Purge Start</b>	14:35	<b>Pump Intake (ft-bmp)</b>	78.6	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	15:20	<b>Volumes Purged</b>	1.13	<b>Sample ID</b>	MW-16-84_050825
				<b>Sampled by</b>	Austin Westhuis
<b>Sample Time</b>	15:10	<b>Gallons Purged</b>	2.11	<b>Replicate/ Code No.</b>	MW-16-84_050825
				<b>Sample Type</b>	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
14:40	0	0	200	72.28	0.26	6.86	2.16	51.2	5.74	13.6	122.5	Clear	None
14:45	5	5	200	72.28	0.53	6.87	2.16	48.6	5.21	13.8	130.7	Clear	None
14:50	5	10	200	72.28	0.79	6.88	2.15	44.2	4.95	13.7	133.6	Clear	None
14:55	5	15	200	72.28	1.06	6.88	2.15	39.7	4.38	13.6	136.3	Clear	None
15:00	5	20	200	72.28	1.32	6.89	2.14	33.9	4.02	13.6	138.8	Clear	None
15:05	5	25	200	72.28	1.59	6.89	2.13	33.1	3.95	13.6	139.9	Clear	None
15:10	5	30	200	72.28	1.85	6.89	2.13	33.1	3.95	13.6	139.9	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	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: Plant 2	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 6000B

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-16-85	<b>Date</b>	5/8/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	52.0 degrees F and Mostly Clear. The wind is blowing N/NE at 15.0 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	71.40	<b>Total Depth (ft-bmp)</b>	81.75	<b>Water Column (ft)</b>	10.35
				<b>Gallons in Well</b>	1.68
<b>Purge Start</b>	15:25	<b>Pump Intake (ft-bmp)</b>	79	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	16:25	<b>Volumes Purged</b>	0.95	<b>Sample ID</b>	MW-16-85_050725
				<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	16:25	<b>Gallons Purged</b>	1.59	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
15:25	0	0	100	71.40	0.00	0	0	0	0	1	0	Clear	None
15:30	5	5	100	71.85	0.13	7.36	1.21	25.6	3.46	14.4	-80.2	Clear	None
15:35	5	10	100	72.08	0.26	7.32	1.24	18.7	3.24	14.6	-87.7	Clear	None
15:40	5	15	100	72.29	0.40	7.32	1.22	14.7	3.01	14.5	-92.1	Clear	None
15:45	5	20	100	72.43	0.53	7.32	1.2	12.8	3.03	14.3	-95.7	Clear	None
15:50	5	25	100	72.56	0.66	7.33	1.19	10.4	2.84	14	-97.5	Clear	None
15:55	5	30	100	72.69	0.79	7.33	1.18	9.72	2.79	14.2	-99	Clear	None
16:00	5	35	100	72.82	0.92	7.33	1.17	9.21	2.74	14.1	-99.7	Clear	None
16:05	5	40	100	72.95	1.06	7.33	1.16	9.07	2.47	13.8	-100	Clear	None
16:10	5	45	100	73.09	1.19	7.34	1.15	8.78	2.35	13.1	-101.5	Clear	None
16:15	5	50	100	73.21	1.32	7.33	1.16	8.88	2.61	13.5	-104.3	Clear	None
16:20	5	55	100	73.31	1.45	7.33	1.17	8.65	2.54	13.4	-104.4	Clear	None
16:25	5	60	100	73.41	1.59	7.33	1.17	8.31	2.48	13.4	-104.5	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	40 mL Glass	3	HCL

**Comments:** Used historical total depth. Didn't meet drawdown requirements.

**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: Plant 2	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-17-86	<b>Date</b>	5/8/2025		
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	52.0 degrees F and Mostly Clear. The wind is blowing N/NE at 15.0 mph.			
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>	<b>Casing Diameter (in)</b>	2	<b>Well Casing Material</b>	PVC	
<b>Static Water Level (ft-bmp)</b>	67.00	<b>Total Depth (ft-bmp)</b>	81.43	<b>Water Column (ft)</b>	14.43	<b>Gallons in Well</b>	2.34
<b>Purge Start</b>	16:15	<b>Pump Intake (ft-bmp)</b>	78.93	<b>Purge Method</b>	Low-Flow	<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	16:50	<b>Volumes Purged</b>	0.79	<b>Sample ID</b>	MW-17-86_050825	<b>Sampled by</b>	Austin Westhuis
<b>Sample Time</b>	16:45	<b>Gallons Purged</b>	1.85	<b>Replicate/ Code No.</b>	NA	<b>Sample Type</b>	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
16:20	0	0	200	67.08	0.26	7.4	2.4	176	9.64	14.5	-35.8	Clear	None
16:25	5	5	200	67.08	0.53	7.4	2.35	111	8.87	13.9	-32.4	Clear	None
16:30	5	10	200	67.08	0.79	7.28	2.36	82.2	8.45	13.8	-28.5	Clear	None
16:35	5	15	200	67.08	1.06	7.24	2.38	78.8	8.41	13.9	-31.4	Clear	None
16:40	5	20	200	67.08	1.32	7.21	2.39	76.5	8.35	13.9	-35.6	Clear	None
16:45	5	25	200	67.08	1.59	7.2	2.33	72.9	8.31	13.9	-38.4	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	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: Plant 2	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 6000B

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-19-115	<b>Date</b>	5/8/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	50.0 degrees F and Clear. The wind is blowing NE at 17.2 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	58.29	<b>Total Depth (ft-bmp)</b>	81.5	<b>Water Column (ft)</b>	23.21
				<b>Gallons in Well</b>	3.77
<b>Purge Start</b>	13:00	<b>Pump Intake (ft-bmp)</b>	79	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	13:50	<b>Volumes Purged</b>	0.70	<b>Sample ID</b>	MW-19-115_050825
				<b>Sampled by</b>	Austin Westhuis
<b>Sample Time</b>	13:45	<b>Gallons Purged</b>	2.64	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
13:05	0	0	200	61.00	0.26	6.87	1.59	133	6.21	13.9	24.6	Clear	None
13:10	5	5	200	61.95	0.53	6.86	0.242	45.7	6.16	13.9	17.8	Clear	None
13:15	5	10	200	62.97	0.79	6.87	0.8	28.2	5.54	13.8	4.7	Clear	None
13:20	5	15	200	63.42	1.06	6.88	0.67	21.2	5.17	13.8	1.1	Clear	None
13:25	5	20	200	63.42	1.32	6.88	0.69	17.7	5.12	13.8	-3.7	Clear	None
13:30	5	25	200	63.74	1.59	6.89	0.67	15.9	4.54	13.8	-6.8	Clear	None
13:35	5	30	200	63.82	1.85	6.89	0.67	19.8	4.24	13.9	-7.9	Clear	None
13:40	5	35	200	63.87	2.11	6.89	0.66	19.2	4.21	13.9	-9	Clear	None
13:45	5	40	200	63.89	2.38	6.89	0.66	18.6	4.11	13.9	-9.3	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	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: <u>Plant 2</u>	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>6000B</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-19-116	<b>Date</b>	5/8/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	45.0 degrees F and Partly Cloudy. The wind is blowing NE at 16.1 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	56.98	<b>Total Depth (ft-bmp)</b>	73.2	<b>Water Column (ft)</b>	16.22
				<b>Gallons in Well</b>	2.64
<b>Purge Start</b>	10:00	<b>Pump Intake (ft-bmp)</b>	71	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	10:40	<b>Volumes Purged</b>	0.40	<b>Sample ID</b>	MW-19-116_050825
				<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	10:40	<b>Gallons Purged</b>	1.06	<b>Replicate/ Code No.</b>	DUP-03_050825
				<b>Sample Type</b>	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
10:00	0	0	100	56.98	0.00	0	0	0	0	0	0	Clear	None
10:05	5	5	100	57.21	0.13	6.95	1.53	22.2	6.25	12.2	-66.7	Clear	None
10:10	5	10	100	57.29	0.26	6.95	1.54	26.9	5.8	12.2	-69.8	Clear	None
10:15	5	15	100	57.30	0.40	6.95	1.6	24.1	5.08	12.1	-76.7	Clear	None
10:20	5	20	100	57.30	0.53	6.93	1.62	15.9	4.27	11.9	-78.9	Clear	None
10:25	5	25	100	57.30	0.66	6.91	1.61	12.2	4.1	11.8	-77.8	Clear	None
10:30	5	30	100	57.30	0.79	6.91	1.6	9.83	3.25	11.6	-77	Clear	None
10:35	5	35	100	57.30	0.92	6.92	1.6	9.27	3.28	11.5	-77.2	Clear	None
10:40	5	40	100	57.30	1.06	6.92	1.6	9.17	3.33	11.5	-77.6	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	40 mL Glass	6	HCL

**Comments:** Used historical total depth

**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: <u>Plant 2</u>	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-19-117	<b>Date</b>	5/8/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	46.0 degrees F and Clear. The wind is blowing NE at 13.9 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	59.99	<b>Total Depth (ft-bmp)</b>	62.8	<b>Water Column (ft)</b>	2.81
				<b>Gallons in Well</b>	0.46
<b>Purge Start</b>	11:05	<b>Pump Intake (ft-bmp)</b>	62.5	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	12:00	<b>Volumes Purged</b>	3.15	<b>Sample ID</b>	MW-19-117_050825
				<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	12:00	<b>Gallons Purged</b>	1.45	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
11:05	0	0	100	59.99	0.00	0	0	0	0	0	0	Clear	None
11:10	5	5	100	60.22	0.13	6.91	1.17	173	1.31	14.4	-77.3	Clear	None
11:15	5	10	100	60.22	0.26	6.9	1.17	126	2.17	14.4	-76	Clear	None
11:20	5	15	100	60.22	0.40	6.9	1.17	96.2	1.83	14.5	-75.5	Clear	None
11:25	5	20	100	60.22	0.53	6.9	1.17	76.4	1.12	14.8	-75.4	Clear	None
11:30	5	25	100	60.22	0.66	6.89	1.17	42.2	0.94	15	-75.7	Clear	None
11:35	5	30	100	60.22	0.79	6.89	1.17	24.9	0.86	15.1	-76.6	Clear	None
11:40	5	35	100	60.22	0.92	6.89	1.17	21.2	0.95	15.3	-77	Clear	None
11:45	5	40	100	60.22	1.06	6.89	1.17	25.7	0.78	15.3	-77.7	Clear	None
11:50	5	45	100	60.22	1.19	6.9	1.17	19.7	0.63	15.4	-78.9	Clear	None
11:55	5	50	100	60.22	1.32	6.9	1.17	18.7	0.65	15.7	-79.8	Clear	None
12:00	5	55	100	60.22	1.45	6.9	1.17	19.1	0.66	15.8	-79.9	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	40 mL Glass	3	HCL

**Comments:** Used historical total depth

**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: Plant 2	Well Locked at Arrival: yes
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-19-120	<b>Date</b>	5/8/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	53.1 degrees F and Partly Cloudy. The wind is blowing N at 13.9 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	66.75	<b>Total Depth (ft-bmp)</b>	74	<b>Water Column (ft)</b>	7.25
				<b>Gallons in Well</b>	1.18
<b>Purge Start</b>	13:55	<b>Pump Intake (ft-bmp)</b>	71.5	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	14:55	<b>Volumes Purged</b>	1.35	<b>Sample ID</b>	MW-19-120_050725
				<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	14:55	<b>Gallons Purged</b>	1.59	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
13:55	0	0	100	66.75	0.00	0	0	0	0	1	0	Clear	None
14:00	5	5	100	67.04	0.13	7.29	1.69	879	7.56	17.8	158	Clear	None
14:05	5	10	100	67.02	0.26	7.15	2.06	794	0.34	17.7	154.1	Clear	None
14:10	5	15	100	67.02	0.40	7.1	2.23	698	0.39	18.1	90	Clear	None
14:15	5	20	100	67.02	0.53	7.13	2.01	632	0.35	18.9	85.4	Clear	None
14:20	5	25	100	67.02	0.66	7.15	1.89	558	0.33	17.7	89.7	Clear	None
14:25	5	30	100	67.02	0.79	7.15	1.9	520	0.31	17.4	93.1	Clear	None
14:30	5	35	100	67.02	0.92	7.16	1.84	447	0.36	17.5	94.3	Clear	None
14:35	5	40	100	67.02	1.06	7.17	1.83	404	0.38	17.3	93	Clear	None
14:40	5	45	100	67.02	1.19	7.17	1.82	123	0.36	17.8	89.2	Clear	None
14:45	5	50	100	67.02	1.32	7.17	1.82	195	0.34	17.7	80.1	Clear	None
14:50	5	55	100	67.02	1.45	7.16	1.85	198	0.35	18.1	76.8	Clear	None
14:55	5	60	100	67.02	1.59	7.16	1.87	69.7	0.33	17.9	74.2	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	40 mL Glass	3	HCL

**Comments:** Used historical total depth. Turbidity didn't stabilize within 60 minutes.

**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: Plant 2	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-19-121	<b>Date</b>	5/6/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>		
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	66.10	<b>Total Depth (ft-bmp)</b>	73.61	<b>Water Column (ft)</b>	7.51
				<b>Gallons in Well</b>	1.22
<b>Purge Start</b>	13:00	<b>Pump Intake (ft-bmp)</b>	71.11	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Peristaltic
<b>Purge End</b>	13:50	<b>Volumes Purged</b>	1.52	<b>Sample ID</b>	MW-19-121_050625
				<b>Sampled by</b>	Donald Richmond
<b>Sample Time</b>	13:40	<b>Gallons Purged</b>	1.85	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
13:10	0	0	200	66.10	0.53	6.52	2.56	19.8	0.83	16.4	180.2	Clear	None
13:15	5	5	200	66.10	0.79	6.61	2.61	12.1	0.56	16.4	184.3	Clear	None
13:20	5	10	200	66.10	1.06	6.63	2.62	6.66	0.41	16.4	187.6	Clear	None
13:25	5	15	200	66.10	1.32	6.63	2.62	6.31	0.4	16.5	190.2	Clear	None
13:30	5	20	200	66.10	1.59	6.64	2.62	6.45	0.35	16.5	196	Clear	None
13:35	5	25	200	66.10	1.85	6.64	2.62	4.93	0.35	16.6	199.7	Clear	None

Constituent Sampled	Container	Number	Preservative
TKN/T. Phosphorus	125 mL Plastic	1	H2SO4
Nitrate	250 mL Plastic	1	None
1,4-Dioxane 8270D SIM	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: Plant 2	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-19-122	<b>Date</b>	5/8/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	50.0 degrees F and Clear. The wind is blowing NE at 17.2 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	64.45	<b>Total Depth (ft-bmp)</b>	66.85	<b>Water Column (ft)</b>	2.40
				<b>Gallons in Well</b>	0.39
<b>Purge Start</b>	12:25	<b>Pump Intake (ft-bmp)</b>	66.5	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	13:25	<b>Volumes Purged</b>	4.08	<b>Sample ID</b>	MW-19-122_050725
				<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	13:25	<b>Gallons Purged</b>	1.59	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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	
12:25	0	0	100	64.45	0.00	0	0	0	0	0	0	0	Clear	None
12:30	5	5	100	64.55	0.13	6.72	4.77	169	0.21	14.6	127.1	127.1	Clear	None
12:35	5	10	100	64.75	0.26	6.69	4.78	100	0.43	13.8	131	131	Clear	None
12:40	5	15	100	64.75	0.40	6.7	4.8	81.1	0.43	13.6	134.5	134.5	Clear	None
12:45	5	20	100	64.75	0.53	6.7	4.81	55.6	0.61	13.6	135	135	Clear	None
12:50	5	25	100	64.75	0.66	6.7	4.81	47.7	0.31	13.6	135	135	Clear	None
12:55	5	30	100	64.75	0.79	6.7	4.76	36.9	0.21	13.7	133.2	133.2	Clear	None
13:00	5	35	100	64.75	0.92	6.72	4.71	32.3	0.15	13.8	136.5	136.5	Clear	None
13:05	5	40	100	64.75	1.06	6.75	4.74	38.5	0.29	13.9	133.2	133.2	Clear	None
13:10	5	45	100	64.75	1.19	6.77	4.72	39.7	0.45	14	136.7	136.7	Clear	None
13:15	5	50	100	64.75	1.32	6.79	4.71	36.2	0.22	14.1	139.4	139.4	Clear	None
13:20	5	55	100	64.75	1.45	6.8	4.73	36.9	0.16	14.2	141.1	141.1	Clear	None
13:25	5	60	100	64.75	1.59	6.82	4.75	37.3	0.11	14.2	142.8	142.8	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	40 mL Glass	3	HCL

**Comments:** Used historical total depth. DO did not stabilize with 60 minutes.

**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: Plant 2	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-19-123	<b>Date</b>	5/6/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>		
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	67.42	<b>Total Depth (ft-bmp)</b>	73.78	<b>Water Column (ft)</b>	6.36
				<b>Gallons in Well</b>	1.03
<b>Purge Start</b>	10:45	<b>Pump Intake (ft-bmp)</b>	71.28	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	11:30	<b>Volumes Purged</b>	1.54	<b>Sample ID</b>	MW-19-123_050625
				<b>Sampled by</b>	Donald Richmond
<b>Sample Time</b>	11:20	<b>Gallons Purged</b>	1.59	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
11:05	0	0	200	67.42	1.06	6.71	1.65	8.67	4.02	13.7	174	Clear	None
11:10	5	5	200	67.42	1.32	6.72	1.68	5.02	4.24	13.7	169.5	Clear	None
11:15	5	10	200	67.42	1.59	6.73	1.71	3.99	4.14	13.7	163.8	Clear	None

Constituent Sampled	Container	Number	Preservative
TKN/ T. Phosphorus	125 mL Plastic	1	H2SO4
Nitrate	250 mL Plastic	1	None
1,4-Dioxane 8270D SIM	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: Plant 2	Well Locked at Arrival: yes
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-19-124	<b>Date</b>	5/7/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	73.9 degrees F and Clear. The wind is blowing undefined at 0.0 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	66.28	<b>Total Depth (ft-bmp)</b>	72.25	<b>Water Column (ft)</b>	5.97
				<b>Gallons in Well</b>	0.97
<b>Purge Start</b>	15:40	<b>Pump Intake (ft-bmp)</b>	70	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	16:30	<b>Volumes Purged</b>	1.36	<b>Sample ID</b>	MW-19-124_050725
				<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	16:30	<b>Gallons Purged</b>	1.32	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
15:40	0	0	100	66.28	0.00	0	0	0	0	0	0	Clear	None
15:45	5	5	100	66.35	0.13	6.64	3.32	10.1	0.89	18	-69.9	Clear	None
15:50	5	10	100	66.35	0.26	6.65	3.23	9.67	0.59	20.4	-73.4	Clear	None
15:55	5	15	100	66.35	0.40	6.65	3.35	8.83	0.55	19.2	-73.4	Clear	None
16:00	5	20	100	66.35	0.53	6.65	3.32	8.18	0.51	19.2	-73.5	Clear	None
16:05	5	25	100	66.35	0.66	6.65	3.3	8.72	0.31	20.3	-74.1	Clear	None
16:10	5	30	100	66.35	0.79	6.65	3.31	8.14	0.29	21	-74.4	Clear	None
16:15	5	35	100	66.35	0.92	6.65	3.3	7.92	0.41	21.6	-74.5	Clear	None
16:20	5	40	100	66.35	1.06	6.65	3.31	7.69	0.42	18.2	-67.5	Clear	None
16:25	5	45	100	66.35	1.19	6.65	3.31	7.48	0.41	18.1	-69.6	Clear	None
16:30	5	50	100	66.35	1.32	6.65	3.31	7.28	0.4	18	-69.9	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	40 mL Glass	3	HCL

**Comments:** Used historical total depth

**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: <u>Plant 2</u>	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-20-126	<b>Date</b>	5/8/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	44.1 degrees F and Mostly Cloudy. The wind is blowing N/NE at 13.9 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	72.54	<b>Total Depth (ft-bmp)</b>	75.5	<b>Water Column (ft)</b>	2.96
				<b>Gallons in Well</b>	0.48
<b>Purge Start</b>	08:45	<b>Pump Intake (ft-bmp)</b>	75	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	09:35	<b>Volumes Purged</b>	2.75	<b>Sample ID</b>	MW-20-126_050825
				<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	09:35	<b>Gallons Purged</b>	1.32	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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	
08:45	0	0	100	72.54	0.00	0	0	0	0	0	0	0	Clear	None
08:50	5	5	100	72.55	0.13	7.05	1.89	42.1	5.06	12.2	226.7	226.7	Clear	None
08:55	5	10	100	72.55	0.26	7.05	1.87	34.8	7.14	11.9	225.1	225.1	Clear	None
09:00	5	15	100	72.55	0.40	7.05	1.88	23.8	4.32	11.8	224.2	224.2	Clear	None
09:05	5	20	100	72.55	0.53	7.07	1.84	19.7	3.23	10.9	218.4	218.4	Clear	None
09:10	5	25	100	72.55	0.66	7.06	1.77	19.9	2.89	10.2	212.9	212.9	Clear	None
09:15	5	30	100	72.55	0.79	7.06	1.73	18.7	2.05	10	207.2	207.2	Clear	None
09:20	5	35	100	72.55	0.92	7.06	1.7	18.6	2.12	10.1	202.4	202.4	Clear	None
09:25	5	40	100	72.55	1.06	7.06	1.67	18.2	2.42	10.2	197.2	197.2	Clear	None
09:30	5	45	100	72.55	1.19	7.06	1.66	18.1	2.35	10.3	196.7	196.7	Clear	None
09:35	5	50	100	72.55	1.32	7.06	1.66	17.9	2.53	10.3	196.3	196.3	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	40 mL Glass	3	HCL

**Comments:** Used historical total depth

**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: Plant 2	Well Locked at Arrival: yes
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-20-127	<b>Date</b>	5/6/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	54.0 degrees F and Light Rain and Fog/Mist. The wind is blowing N/NW at 5.8 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	67.88	<b>Total Depth (ft-bmp)</b>	78.7	<b>Water Column (ft)</b>	10.82
				<b>Gallons in Well</b>	1.76
<b>Purge Start</b>	11:40	<b>Pump Intake (ft-bmp)</b>	76	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	12:35	<b>Volumes Purged</b>	0.83	<b>Sample ID</b>	MW-20-127_050625
				<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	12:35	<b>Gallons Purged</b>	1.452946	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
11:40	0	0	0	67.88	0.00	0	0	0	0	0	0	Clear	None
11:45	5	5	100	68.15	0.13	6.6	3.18	19.8	1.13	15	-24.7	Clear	None
11:50	5	10	100	68.25	0.26	6.59	3.18	14.3	2.09	15.1	-26	Clear	None
11:55	5	15	100	68.35	0.40	6.59	3.18	10.1	2.42	15	-26.4	Clear	None
12:00	5	20	100	68.42	0.53	6.59	3.18	7.92	0.45	15	-26.8	Clear	None
12:05	5	25	100	68.47	0.66	6.59	3.18	6.93	1.04	15	-27.1	Clear	None
12:10	5	30	100	68.52	0.79	6.6	3.19	8.82	0.58	14.8	-28.5	Clear	None
12:15	5	35	100	68.55	0.92	6.6	3.18	5.96	0.78	14.6	-29.5	Clear	None
12:20	5	40	100	68.57	1.06	6.6	3.18	6.04	0.66	14.6	-30.7	Clear	None
12:25	5	45	100	68.57	1.19	6.6	3.18	6.37	0.56	14.7	-31.6	Clear	None
12:30	5	50	100	68.57	1.32	6.6	3.18	6.12	0.56	14.7	-32.6	Clear	None
12:35	5	55	100	68.57	1.45	6.6	3.18	6.29	0.55	14.7	-32.8	Clear	None

Constituent Sampled	Container	Number	Preservative
TKN/ T. Phosphorus	125 mL Plastic	1	H2SO4
Nitrate	250 mL Plastic	1	None
1,4-Dioxane 8270D SIM	40 mL Glass	3	HCL

**Comments:** Didn't meet maximum drawdown requirements

**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: Plant 2	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-20-128	<b>Date</b>	5/7/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	57.0 degrees F and Clear. The wind is blowing W/SW at 3.4 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	65.93	<b>Total Depth (ft-bmp)</b>	69.7	<b>Water Column (ft)</b>	3.77
				<b>Gallons in Well</b>	0.61
<b>Purge Start</b>	10:25	<b>Pump Intake (ft-bmp)</b>	67.5	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	11:20	<b>Volumes Purged</b>	2.38	<b>Sample ID</b>	MW-20-128_050725
				<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	11:20	<b>Gallons Purged</b>	1.45	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
10:25	0	0	100	65.93	0.00	0	0	0	0	0	0	Clear	None
10:30	5	5	100	66.24	0.13	6.96	3.06	95.6	4.7	16.7	189.2	Clear	None
10:35	5	10	100	66.25	0.26	6.97	3.05	48.7	5.87	16.9	183.7	Clear	None
10:40	5	15	100	66.25	0.40	6.97	3.06	34.2	1.28	16.8	178	Clear	None
10:45	5	20	100	66.25	0.53	6.98	3.07	18.9	1.11	16.7	168.2	Clear	None
10:50	5	25	100	66.25	0.66	6.99	3.08	13.9	1.06	16.7	160.8	Clear	None
10:55	5	30	100	66.25	0.79	7	3.09	15.9	1.02	16.9	147	Clear	None
11:00	5	35	100	66.25	0.92	7	3.09	11.4	0.98	17.1	141	Clear	None
11:05	5	40	100	66.25	1.06	6.99	3.09	12.1	1.04	17.3	136.4	Clear	None
11:10	5	45	100	66.25	1.19	6.99	3.1	10.5	0.99	17.2	135.5	Clear	None
11:15	5	50	100	66.25	1.32	6.99	3.1	10.3	0.97	17.2	134.9	Clear	None
11:20	5	55	100	66.25	1.45	6.99	3.11	10.3	0.96	17.2	134.2	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	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: Plant 2	Well Locked at Arrival: yes
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-20-129	<b>Date</b>	5/7/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	70.0 degrees F and Clear. The wind is blowing SW at 5.8 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	62.73	<b>Total Depth (ft-bmp)</b>	70.95	<b>Water Column (ft)</b>	8.22
				<b>Gallons in Well</b>	1.34
<b>Purge Start</b>	14:25	<b>Pump Intake (ft-bmp)</b>	68.5	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	15:10	<b>Volumes Purged</b>	0.89	<b>Sample ID</b>	MW-20-129_050725
				<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	15:10	<b>Gallons Purged</b>	1.19	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
14:25	0	0	100	62.73	0.00	0	0	0	0	0	0	Clear	None
14:30	5	5	100	63.00	0.13	7.01	1.57	15.1	0.64	17.9	-79	Clear	None
14:35	5	10	100	63.01	0.26	7	1.56	12.2	3.42	17.8	-77.7	Clear	None
14:40	5	15	100	63.01	0.40	7	1.53	9.81	2.51	18.4	-78.3	Clear	None
14:45	5	20	100	63.01	0.53	6.99	1.52	9.34	1.07	18.4	-78.8	Clear	None
14:50	5	25	100	63.01	0.66	6.99	1.51	8.78	1.12	17.9	-78.9	Clear	None
14:55	5	30	100	63.01	0.79	6.99	1.49	7.81	0.98	18.4	-79.6	Clear	None
15:00	5	35	100	63.01	0.92	6.99	1.49	7.31	0.33	18.5	-79.6	Clear	None
15:05	5	40	100	63.01	1.06	6.98	1.5	7.11	0.35	18.8	-79.8	Clear	None
15:10	5	45	100	63.01	1.19	6.98	1.5	6.98	0.32	18.8	-79.8	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	40 mL Glass	3	HCL

**Comments:** Used historical total depth

**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: <u>Plant 2</u>	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-21-142	<b>Date</b>	5/7/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	53.1 degrees F and Fog/Mist. The wind is blowing undefined at 0.0 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	67.17	<b>Total Depth (ft-bmp)</b>	78.95	<b>Water Column (ft)</b>	11.78
				<b>Gallons in Well</b>	1.91
<b>Purge Start</b>	08:50	<b>Pump Intake (ft-bmp)</b>	76.5	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	09:50	<b>Volumes Purged</b>	0.83	<b>Sample ID</b>	MW-21-142_050725
				<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	09:50	<b>Gallons Purged</b>	1.59	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
08:50	0	0	100	67.17	0.00	0	0	0	0	0	0	Orange	None
08:55	5	5	100	67.47	0.13	6.78	2.84	975.3	0.11	10.8	-39.6	Orange	None
09:00	5	10	100	67.50	0.26	6.78	2.85	893	0.1	13.9	-40.3	Orange	None
09:05	5	15	100	67.50	0.40	6.78	2.85	804	0.09	13.9	-41.5	Orange	None
09:10	5	20	100	67.50	0.53	6.78	2.85	732	0.18	13.9	-42.2	Orange	None
09:15	5	25	100	67.50	0.66	6.78	2.85	695	0.51	13.9	-43.3	Orange	None
09:20	5	30	100	67.50	0.79	6.78	2.87	554	0.41	14	-62	Orange	None
09:25	5	35	100	67.50	0.92	6.79	2.86	521	0.45	14	-75.2	Orange	None
09:30	5	40	100	67.50	1.06	6.79	2.86	421	0.36	14	74.7	Orange	None
09:35	5	45	100	67.50	1.19	6.79	2.86	339	0.26	14.1	-73.9	Orange	None
09:40	5	50	100	67.50	1.32	6.79	2.86	221	0.21	14.1	-73.3	Orange	None
09:45	5	55	100	67.50	1.45	6.79	2.86	298	0.12	14.1	-72.1	Orange	None
09:50	5	60	100	67.50	1.59	6.79	2.86	381	3.41	14.1	-71.2	Orange	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	40 mL Glass	3	HCL

**Comments:** Think iron in well. Hard to pump water. DO and turbidity did not stabilize in 60 minutes.

**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: Plant 2	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-22-153	<b>Date</b>	5/7/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	66.0 degrees F and Clear. The wind is blowing S/SE at 10.3 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	9.39	<b>Total Depth (ft-bmp)</b>	31.18	<b>Water Column (ft)</b>	21.79
				<b>Gallons in Well</b>	3.54
<b>Purge Start</b>	10:20	<b>Pump Intake (ft-bmp)</b>	28.68	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Peristaltic
<b>Purge End</b>	10:55	<b>Volumes Purged</b>	0.52	<b>Sample ID</b>	MW-22-153_050725
				<b>Sampled by</b>	Austin Westhuis
<b>Sample Time</b>	10:50	<b>Gallons Purged</b>	1.85	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
10:25	0	0	200	9.39	0.26	7.07	1.49	17.8	0.47	13.6	-64.5	Clear	None
10:30	5	5	200	9.39	0.53	7.02	1.51	12.6	0.29	13.8	-65	Clear	None
10:35	5	10	200	9.39	0.79	6.97	1.53	9.77	0.23	13.8	-65.2	Clear	None
10:40	5	15	200	9.39	1.06	6.96	1.53	9.51	0.23	13.7	-67	Clear	None
10:45	5	20	200	9.39	1.32	6.97	1.53	9.12	0.21	13.9	-70	Clear	None
10:50	5	25	200	9.39	1.59	6.98	1.53	8.87	0.21	13.8	-71.2	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM,VOCs SW-846	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: See figure.	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>6000B</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-22-154	<b>Date</b>	5/8/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	46.0 degrees F and Clear. The wind is blowing NE at 13.9 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	3.45	<b>Total Depth (ft-bmp)</b>	10.58	<b>Water Column (ft)</b>	7.13
				<b>Gallons in Well</b>	1.16
<b>Purge Start</b>	10:55	<b>Pump Intake (ft-bmp)</b>	8.08	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Peristaltic
<b>Purge End</b>	11:30	<b>Volumes Purged</b>	1.59	<b>Sample ID</b>	MW-22-154_050825
				<b>Sampled by</b>	Austin Westhuis
<b>Sample Time</b>	11:25	<b>Gallons Purged</b>	1.85	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
11:00	0	0	200	3.45	0.26	7.12	2.94	34.9	0.47	9.7	12.7	Clear	None
11:05	5	5	200	3.45	0.53	7.1	2.96	22.7	0.41	10.1	39.8	Clear	None
11:10	5	10	200	3.45	0.79	7.09	2.97	18.7	0.36	10.1	48.7	Clear	None
11:15	5	15	200	3.45	1.06	7.09	2.99	16.8	0.33	10.2	59.7	Clear	None
11:20	5	20	200	3.45	1.32	7.1	2.99	16.1	0.33	10.2	59.9	Clear	None
11:25	5	25	200	3.45	1.59	7.1	2.99	15.3	0.31	10.2	60.3	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
VOCs SW-846 8260C	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: Plant 6	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: 2035

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-22-155	<b>Date</b>	5/7/2025		
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	66.0 degrees F and Clear. The wind is blowing SW at 4.7 mph.			
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>	<b>Casing Diameter (in)</b>	2	<b>Well Casing Material</b>	PVC	
<b>Static Water Level (ft-bmp)</b>	10.58	<b>Total Depth (ft-bmp)</b>	31.51	<b>Water Column (ft)</b>	20.93	<b>Gallons in Well</b>	3.40
<b>Purge Start</b>	12:20	<b>Pump Intake (ft-bmp)</b>	30.01	<b>Purge Method</b>	Low-Flow	<b>Purge Equipment</b>	Peristaltic
<b>Purge End</b>	12:55	<b>Volumes Purged</b>	0.54	<b>Sample ID</b>	MW-22-155_050725	<b>Sampled by</b>	Austin Westhuis
<b>Sample Time</b>	12:50	<b>Gallons Purged</b>	1.85	<b>Replicate/ Code No.</b>	NA	<b>Sample Type</b>	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
12:25	0	0	200	10.58	0.26	6.9	1.91	314	0.46	13.6	-23.9	Clear	None
12:30	5	5	200	10.58	0.53	6.85	1.92	252	0.31	13.7	-29.3	Clear	None
12:35	5	10	200	10.58	0.79	6.83	1.92	241	0.25	13.8	-32	Clear	None
12:40	5	15	200	10.58	1.06	6.83	1.81	209	0.24	13.6	-33.3	Clear	None
12:45	5	20	200	10.58	1.32	6.85	1.84	195	0.24	13.7	-36.2	Clear	None
12:50	5	25	200	10.58	1.59	6.85	1.85	208	0.22	13.7	-37.7	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	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: See figure.	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 6000B

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-22-156	<b>Date</b>	5/6/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	54.0 degrees F and Light Rain and Fog/Mist. The wind is blowing N/NW at 5.8 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	12.10	<b>Total Depth (ft-bmp)</b>	31.04	<b>Water Column (ft)</b>	18.94
				<b>Gallons in Well</b>	3.08
<b>Purge Start</b>	11:30	<b>Pump Intake (ft-bmp)</b>	27.51	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Peristaltic
<b>Purge End</b>	12:10	<b>Volumes Purged</b>	0.69	<b>Sample ID</b>	MW-22-156_050625
				<b>Sampled by</b>	Austin Westhuis
<b>Sample Time</b>	12:05	<b>Gallons Purged</b>	2.11	<b>Replicate/ Code No.</b>	DUP-01_050625
				<b>Sample Type</b>	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
11:35	0	0	200	12.16	0.26	6.97	1.26	40	0.28	12.8	-75.8	Clear	None
11:40	5	5	200	12.16	0.53	7	1.23	30.2	0.29	12.8	-78.7	Clear	None
11:45	5	10	200	12.16	0.79	7.02	1.22	29.3	0.29	12.9	-79.9	Clear	None
11:50	5	15	200	12.16	1.06	7.03	1.22	24.3	0.28	12.9	-83.3	Clear	None
11:55	5	20	200	12.16	1.32	7.04	1.21	22.6	0.27	13	-87.1	Clear	None
12:00	5	25	200	12.16	1.59	7.05	1.22	21.2	0.27	13.1	-87.8	Clear	None
12:05	5	30	200	12.16	1.85	7.05	1.21	20.9	0.27	13.1	-91.3	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM,VOCs SW-846	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: See figure.	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>2035</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-22-157	<b>Date</b>	5/7/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	71.1 degrees F and Clear. The wind is blowing W/SW at 15.0 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	1.38	<b>Total Depth (ft-bmp)</b>	27.61	<b>Water Column (ft)</b>	26.23
				<b>Gallons in Well</b>	4.26
<b>Purge Start</b>	09:35	<b>Pump Intake (ft-bmp)</b>	25.11	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Peristaltic
<b>Purge End</b>	10:10	<b>Volumes Purged</b>	0.43	<b>Sample ID</b>	MW-22-157_050725
				<b>Sampled by</b>	Austin Westhuis
<b>Sample Time</b>	10:05	<b>Gallons Purged</b>	1.85	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
09:40	0	0	200	1.38	0.26	6.89	0.52	21.7	0.51	14.5	-44.7	Clear	None
09:45	5	5	200	1.38	0.53	6.85	0.57	13.5	0.37	14.5	-46	Clear	None
09:50	5	10	200	1.38	0.79	6.85	0.61	9.55	0.24	14.7	-49.5	Clear	None
09:55	5	15	200	1.38	1.06	6.85	0.61	8.77	0.24	14.7	-49.9	Clear	None
10:00	5	20	200	1.38	1.32	6.87	0.62	8.14	0.22	14.7	-51.3	Clear	None
10:05	5	25	200	1.38	1.59	6.88	0.62	7.88	0.22	14.7	-53.7	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM,VOCs SW-846	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: See figure.	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: 6000B

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-23-161	<b>Date</b>	5/7/2025		
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	69.1 degrees F and . The wind is blowing at 3.4 mph.			
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>	<b>Casing Diameter (in)</b>	2	<b>Well Casing Material</b>	PVC	
<b>Static Water Level (ft-bmp)</b>	9.35	<b>Total Depth (ft-bmp)</b>	27.58	<b>Water Column (ft)</b>	18.23	<b>Gallons in Well</b>	2.96
<b>Purge Start</b>	13:10	<b>Pump Intake (ft-bmp)</b>	22.08	<b>Purge Method</b>	Low-Flow	<b>Purge Equipment</b>	Peristaltic
<b>Purge End</b>	13:50	<b>Volumes Purged</b>	0.71	<b>Sample ID</b>	MW-23-161_050725	<b>Sampled by</b>	Austin Westhuis
<b>Sample Time</b>	13:45	<b>Gallons Purged</b>	2.11	<b>Replicate/ Code No.</b>	NA	<b>Sample Type</b>	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
13:15	0	0	200	9.35	0.26	7.08	1.16	119	0.32	12.8	-7.2	Clear	None
13:20	5	5	200	9.35	0.53	7.03	1.18	72.4	0.15	12.6	-20.6	Clear	None
13:25	5	10	200	9.35	0.79	7.01	1.22	67.8	0.17	12.7	-44.8	Clear	None
13:30	5	15	200	9.35	1.06	6.99	1.27	54.3	0.17	12.7	-53.8	Clear	None
13:35	5	20	200	9.35	1.32	6.98	1.26	51.2	0.18	12.7	-56.9	Clear	None
13:40	5	25	200	9.35	1.59	6.99	1.25	48.6	0.18	12.7	-57.4	Clear	None
13:45	5	30	200	9.35	1.85	6.99	1.26	48.2	0.18	12.7	-57.9	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	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: See figure.	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>6000B</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-23-162	<b>Date</b>	5/8/2025		
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	44.1 degrees F and Mostly Cloudy. The wind is blowing N/NE at 13.9 mph.			
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>	<b>Casing Diameter (in)</b>	2	<b>Well Casing Material</b>	PVC	
<b>Static Water Level (ft-bmp)</b>	12.60	<b>Total Depth (ft-bmp)</b>	36.63	<b>Water Column (ft)</b>	24.03	<b>Gallons in Well</b>	3.90
<b>Purge Start</b>	09:35	<b>Pump Intake (ft-bmp)</b>	34.13	<b>Purge Method</b>	Low-Flow	<b>Purge Equipment</b>	Peristaltic
<b>Purge End</b>	10:20	<b>Volumes Purged</b>	0.61	<b>Sample ID</b>	MW-23-162_050825	<b>Sampled by</b>	Austin Westhuis
<b>Sample Time</b>	10:15	<b>Gallons Purged</b>	2.38	<b>Replicate/ Code No.</b>	NA	<b>Sample Type</b>	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
09:40	0	0	200	14.48	0.26	6.92	2.33	88.5	0.97	11.4	86.2	Clear	None
09:45	5	5	200	14.89	0.53	6.88	2.35	42.1	0.64	11.6	7.8	Clear	None
09:50	5	10	200	15.33	0.79	6.88	2.36	35.3	0.69	11.8	-1.9	Clear	None
09:55	5	15	200	15.44	1.06	6.88	2.37	26.8	0.77	11.9	-16.6	Clear	None
10:00	5	20	200	15.49	1.32	6.85	2.38	24.3	0.73	11.9	-24.2	Clear	None
10:05	5	25	200	15.51	1.59	6.85	2.38	21.1	0.71	11.9	-29.4	Clear	None
10:10	5	30	200	15.51	1.85	6.84	2.38	20.6	0.7	11.9	-31.3	Clear	None
10:15	5	35	200	15.51	2.11	6.84	2.38	20.2	0.7	11.9	-38.6	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	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: See figure.	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 6000B

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	MW-23-163	<b>Date</b>	5/7/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	63.0 degrees F and . The wind is blowing W at 3.4 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	12.08	<b>Total Depth (ft-bmp)</b>	27.22	<b>Water Column (ft)</b>	15.14
				<b>Gallons in Well</b>	2.46
<b>Purge Start</b>	11:15	<b>Pump Intake (ft-bmp)</b>	25.72	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Peristaltic
<b>Purge End</b>	11:50	<b>Volumes Purged</b>	0.75	<b>Sample ID</b>	MW-23-163_050725
				<b>Sampled by</b>	Austin Westhuis
<b>Sample Time</b>	11:45	<b>Gallons Purged</b>	1.85	<b>Replicate/ Code No.</b>	MW-23-163_050725
				<b>Sample Type</b>	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
11:20	0	0	200	12.08	0.26	6.99	0.79	70.1	0.39	12.4	-67	Clear	None
11:25	5	5	200	12.08	0.53	6.95	0.15	35.6	0.28	12.3	-66.4	Clear	None
11:30	5	10	200	12.08	0.79	6.92	0.059	32.1	0.23	12.3	-66.2	Clear	None
11:35	5	15	200	12.08	1.06	6.93	0.059	28.9	0.21	12.3	-67.1	Clear	None
11:40	5	20	200	12.08	1.32	6.94	0.059	28.1	0.2	12.3	-68.7	Clear	None
11:45	5	25	200	12.08	1.59	6.95	0.06	27.5	0.2	12.3	-70	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	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: See figure.	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 6000B

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	PW-14-01	<b>Date</b>	5/7/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	69.1 degrees F and . The wind is blowing at 3.4 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	6
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	69.20	<b>Total Depth (ft-bmp)</b>	81.9	<b>Water Column (ft)</b>	12.70
				<b>Gallons in Well</b>	18.57
<b>Purge Start</b>	13:05	<b>Pump Intake (ft-bmp)</b>	79.5	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	13:55	<b>Volumes Purged</b>	0.07	<b>Sample ID</b>	PW-14-01_050725
				<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	13:55	<b>Gallons Purged</b>	1.32	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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	
13:05	0	0	100	69.20	0.00	0	0	0	0	0	0	0	Clear	None
13:10	5	5	100	69.35	0.13	6.59	3.82	21.7	2.46	19.7	69.4	69.4	Clear	None
13:15	5	10	100	69.39	0.26	6.59	3.83	26.7	1.89	20	51.4	51.4	Clear	None
13:20	5	15	100	69.39	0.40	6.59	3.85	21.4	1.65	20.3	57.1	57.1	Clear	None
13:25	5	20	100	69.39	0.53	6.6	3.86	19.8	1.71	20.1	67.1	67.1	Clear	None
13:30	5	25	100	69.39	0.66	6.61	3.85	19.4	1.62	20.3	78.2	78.2	Clear	None
13:35	5	30	100	69.39	0.79	6.63	3.84	15.8	1.69	20.4	88.7	88.7	Clear	None
13:40	5	35	100	69.39	0.92	6.64	3.84	15.9	1.69	20.1	94.3	94.3	Clear	None
13:45	5	40	100	69.39	1.06	6.65	3.82	15.4	1.29	20.3	101.8	101.8	Clear	None
13:50	5	45	100	69.39	1.19	6.67	3.81	15.7	1.24	20.5	105	105	Clear	None
13:55	5	50	100	69.39	1.32	6.67	3.8	15	1.21	20.5	107.8	107.8	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	40 mL Glass	3	HCL

**Comments:** Used historical total depth

**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: <u>Plant 2</u>	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	PW-14-02	<b>Date</b>	5/7/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	66.0 degrees F and Clear. The wind is blowing SW at 4.7 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	6
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	67.54	<b>Total Depth (ft-bmp)</b>	85.2	<b>Water Column (ft)</b>	17.66
				<b>Gallons in Well</b>	25.83
<b>Purge Start</b>	11:45	<b>Pump Intake (ft-bmp)</b>	82.5	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	12:35	<b>Volumes Purged</b>	0.05	<b>Sample ID</b>	PW-14-02_050725
				<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	12:35	<b>Gallons Purged</b>	1.32	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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	100	67.54	0.00	0	0	0	0	0	0	Clear	None
11:50	5	5	100	67.65	0.13	7.07	2.08	18.9	0.75	18.1	195.9	Clear	None
11:55	5	10	100	67.67	0.26	7	2.07	18.4	0.69	17.9	195	Clear	None
12:00	5	15	100	67.69	0.40	7	2.08	18.1	1.5	17.6	187.5	Clear	None
12:05	5	20	100	67.69	0.53	7.01	2.08	15.4	1.17	17.6	181.2	Clear	None
12:10	5	25	100	67.69	0.66	7.01	2.08	15.9	0.91	17.5	173.9	Clear	None
12:15	5	30	100	67.69	0.79	7	2.08	17.4	0.78	17.3	168.2	Clear	None
12:20	5	35	100	67.69	0.92	6.99	2.07	17.5	0.71	17.6	163	Clear	None
12:25	5	40	100	67.69	1.06	6.98	2.07	17.2	0.72	17.9	155.3	Clear	None
12:30	5	45	100	67.69	1.19	6.97	2.06	17	0.68	18.1	152.7	Clear	None
12:35	5	50	100	67.69	1.32	6.97	2.07	16.9	0.71	18.2	152	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	40 mL Glass	3	HCL

**Comments:** Used historical total depth

**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: <u>Plant 2</u>	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	PW-14-03R	<b>Date</b>	5/9/2025		
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>				
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>	<b>Casing Diameter (in)</b>	6	<b>Well Casing Material</b>	PVC	
<b>Static Water Level (ft-bmp)</b>	74.31	<b>Total Depth (ft-bmp)</b>	92.95	<b>Water Column (ft)</b>	18.64	<b>Gallons in Well</b>	27.26
<b>Purge Start</b>	10:25	<b>Pump Intake (ft-bmp)</b>	90.45	<b>Purge Method</b>	Low-Flow	<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	11:05	<b>Volumes Purged</b>	0.05	<b>Sample ID</b>	PW-14-03R_050925	<b>Sampled by</b>	Donald Richmond
<b>Sample Time</b>	10:55	<b>Gallons Purged</b>	1.32	<b>Replicate/ Code No.</b>	DUP-05_050925	<b>Sample Type</b>	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
10:35	0	0	200	74.31	0.53	2.46	4.56	4.43	0.7	16.9	484	Clear	None
10:40	5	5	200	74.31	0.79	2.46	4.58	4.1	0.48	17.3	505.2	Clear	None
10:45	5	10	200	74.31	1.06	2.45	4.6	2.01	0.45	17.3	508.4	Clear	None
10:50	5	15	200	74.31	1.32	2.45	4.61	1.71	0.41	17.3	509.1	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	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: Plant 3	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	TW-14-02	<b>Date</b>	5/6/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	55.9 degrees F and Rain. The wind is blowing NW at 5.8 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	63.39	<b>Total Depth (ft-bmp)</b>	71.95	<b>Water Column (ft)</b>	8.56
				<b>Gallons in Well</b>	1.39
<b>Purge Start</b>	14:25	<b>Pump Intake (ft-bmp)</b>	70	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	15:10	<b>Volumes Purged</b>	0.86	<b>Sample ID</b>	TW-14-02_050625
				<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	15:10	<b>Gallons Purged</b>	1.19	<b>Replicate/ Code No.</b>	DUP-04_050625
				<b>Sample Type</b>	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
14:25	0	0	100	63.39	0.00	0	0	0	0	0	0	Clear	None
14:30	5	5	100	63.89	0.13	7.45	4.24	12.8	7.24	15.9	173.9	Clear	None
14:35	5	10	100	64.26	0.26	7.38	4.25	10.2	7.63	16.2	172	Clear	None
14:40	5	15	100	64.67	0.40	7.33	4.26	9.89	1.1	16.4	171	Clear	None
14:45	5	20	100	64.82	0.53	7.27	4.27	8.91	0.76	16.4	176.8	Clear	None
14:50	5	25	100	65.07	0.66	7.24	4.27	9.09	0.81	16.4	180.5	Clear	None
14:55	5	30	100	65.19	0.79	7.25	4.27	6.89	0.69	16.4	181.4	Clear	None
15:00	5	35	100	65.22	0.92	7.25	4.26	5.85	0.63	16.4	183	Clear	None
15:05	5	40	100	65.25	1.06	7.26	4.26	5.79	0.63	16.5	183.1	Clear	None
15:10	5	45	100	65.27	1.19	7.25	4.25	5.54	0.62	16.5	183.7	Clear	None

<b>Constituent Sampled</b>	<b>Container</b>	<b>Number</b>	<b>Preservative</b>
1,4-Dioxane 8270D SIM	40 mL Glass	6	HCL

**Comments:** Didn't meet maximum drawdown requirements, drawdown didn't stabilize

**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: <u>Plant 2</u>	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	TW-15-11		<b>Date</b>	5/9/2025	
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>				
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	2	<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	74.13	<b>Total Depth (ft-bmp)</b>	87.03	<b>Water Column (ft)</b>	12.90	<b>Gallons in Well</b>	2.10
<b>Purge Start</b>	09:20	<b>Pump Intake (ft-bmp)</b>	84.53	<b>Purge Method</b>	Low-Flow	<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	10:00	<b>Volumes Purged</b>	0.76	<b>Sample ID</b>	TW-15-11_050925	<b>Sampled by</b>	Donald Richmond
<b>Sample Time</b>	09:55	<b>Gallons Purged</b>	1.59	<b>Replicate/ Code No.</b>	NA	<b>Sample Type</b>	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
09:30	0	0	200	74.13	0.53	7.07	2.92	26.5	4.37	13.8	74.1	Clear	None
09:35	5	5	200	74.13	0.79	7.06	2.92	19.6	4.44	13.8	75.1	Clear	None
09:40	5	10	200	74.13	1.06	7.02	2.96	13.1	3.98	14.2	77.2	Clear	None
09:45	5	15	200	74.13	1.32	7.01	2.98	13	3.95	14.5	77.9	Clear	None
09:50	5	20	200	74.13	1.59	6.99	2.99	12.4	3.74	14.6	81.1	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	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: Plant 3	Well Locked at Arrival: yes
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

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 = milliv

# Groundwater Sampling Form



<b>Project Number</b>	30267725	<b>Well ID</b>	TW-15-12	<b>Date</b>	5/6/2025
<b>Project Name/Location</b>	RACER Lansing 2025 GWS		<b>Weather(°F)</b>	55.0 degrees F and Fog/Mist. The wind is blowing N/NW at 6.9 mph.	
<b>Measuring Pt. Description</b>	Top of Inner Casing	<b>MP Elevation</b>		<b>Casing Diameter (in)</b>	4
				<b>Well Casing Material</b>	PVC
<b>Static Water Level (ft-bmp)</b>	65.53	<b>Total Depth (ft-bmp)</b>	77.1	<b>Water Column (ft)</b>	11.57
				<b>Gallons in Well</b>	7.52
<b>Purge Start</b>	13:05	<b>Pump Intake (ft-bmp)</b>	74.5	<b>Purge Method</b>	Low-Flow
				<b>Purge Equipment</b>	Bladder
<b>Purge End</b>	13:50	<b>Volumes Purged</b>	0.16	<b>Sample ID</b>	TW-15-12_050625
				<b>Sampled by</b>	Billy Cobern
<b>Sample Time</b>	13:50	<b>Gallons Purged</b>	1.19	<b>Replicate/ Code No.</b>	NA
				<b>Sample Type</b>	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
13:05	0	0	100	65.53	0.00	0	0	0	0	0	0	Clear	None
13:10	5	5	100	65.63	0.13	7.01	2.94	29.8	5.34	14	128.6	Clear	None
13:15	5	10	100	65.66	0.26	7	2.94	15.4	2.77	13.9	132.8	Clear	None
13:20	5	15	100	65.66	0.40	6.99	2.94	18.8	1.72	13.9	135.7	Clear	None
13:25	5	20	100	65.66	0.53	6.98	2.94	13.2	1.67	13.9	138.3	Clear	None
13:30	5	25	100	65.66	0.66	6.98	2.94	11.3	0.55	13.9	142.2	Clear	None
13:35	5	30	100	65.66	0.79	6.98	2.94	10.2	0.57	13.8	142.8	Clear	None
13:40	5	35	100	65.66	0.92	6.98	2.93	9.9	0.78	13.9	145.9	Clear	None
13:45	5	40	100	65.66	1.06	6.98	2.93	9.52	0.76	13.9	146.4	Clear	None
13:50	5	45	100	65.66	1.19	6.98	2.93	9.14	0.74	13.9	146.3	Clear	None

Constituent Sampled	Container	Number	Preservative
TKN/T. Phosphorus	125 mL Plastic	1	H2SO4
Nitrate	250 mL Plastic	1	None
1,4-Dioxane 8270D SIM	40 mL Glass	3	HCL

**Comments:** Soft bottom

**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: Plant 2	Well Locked at Arrival: no
Condition of Well: <u>Good condition</u>	Well Locked at Departure: no
Well Completion: <u>Flush mount</u>	Key Number To Well: <u>NA</u>

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 = milliv