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Date: September 7, 2022
Our Ref: 30112892
Subject:
2022 Semi-Annual Groundwater Monitoring Report
RACER Lansing - Plants 2, 3 and 6
Lansing, Michigan

Dear Ms. Matlock,

Arcadis of Michigan, LLC (Arcadis) completed the first and second quarter 2022 gauging, groundwater monitoring, and sampling activities as part of the on-going Resource Conservation and Recovery Act (RCRA) Corrective Action on behalf of Revitalizing Auto Communities Environmental Response (RACER) Trust at Lansing Plants 2,3 and 6 (Site).

- The following sampling events were completed in accordance with the 2019 Revised Interim Groundwater Monitoring Work Plan (IGMP; Arcadis 2019a), approved by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) on July 25, 2019:
- *First quarter 2022.* A quarterly groundwater sampling and gauging event at select monitoring wells, completed from February 28 through March 4, 2022.
- *Second quarter 2022.* Routine gauging of light non-aqueous phase liquid (LNAPL) wells and a site-wide semi-annual groundwater sampling and gauging event at select monitoring wells, completed from May 31 through June 10, 2022.

Additionally, storm sewer sampling for per- and polyfluoroalkyl substances (PFAS) was completed in first and second quarter 2022 on March 1, 2022, and May 12, 2022, respectively. Storm sewer monitoring will be incorporated into a revised IGMP, currently in development.

All groundwater monitoring activities were completed in accordance with the Revised IGMP (Arcadis 2019a). The sampling frequencies and analytes for each well are included in **Table 1**. The locations of all monitoring wells are provided on **Figures 1A** and **1B**. The following monitoring wells were dry during the second quarter 2022 gauging event and could not be sampled per the IGMP:

- MW-18-96: Well MW-18-96 was installed in shallow fill material at Plant 3 and contained water during development and initial sampling; however, the well has been dry since June 2020.

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- MW-14-69 dry
- MW-19-110: Well MW-19-110 was installed at the request of the EGLE in an area at Plant 3 with limited perched groundwater with the intent of verifying whether saturated conditions existed and if the well would produce enough water for sampling.
- MW-19-113: Installed in a sand seam encountered from 16 to 23 feet below ground surface (ft bgs) at northern Plant 3 and contained approximately 7 feet of water during development and initial sampling during 2019. The water level decreased dramatically during 2020 (close to 6 ft) and continued to decrease until the well contained insufficient water to collect a sample.
- These wells will next be gauged and sampled, if possible, during fourth quarter 2022.

Site Activities

During the first quarter 2022 sampling event, groundwater elevations were collected from a total of 66 wells and groundwater samples were collected from a total of 27 wells as part of a quarterly event. During the second quarter 2022 sampling event, groundwater elevations were collected from a total of 194 wells, LNAPL gauging was completed at a total of 22 wells, and groundwater samples were collected from a total of 161 wells. A comprehensive report including groundwater elevation contour maps, groundwater elevation trend graphs, and groundwater analytical stability analysis will be provided as part of the 2022 Annual Groundwater Monitoring Report to be submitted in the first half of 2023.

Groundwater Sampling

Monitoring wells were sampled and analyzed for one or more of the following parameters:

- Target compound list (TCL) volatile organic compounds (VOCs) using United States Environmental Protection Agency (USEPA) Method SW8260B, Revision 2 or SW8260C, Revision 3.
- 1,4-Dioxane using USEPA Method SW8260B-SIM (Merit) or USEPA Method 522 (Eurofins).
- PFAS using USEPA Method 537 modified with isotope dilution (DoD QSM 5.3).

Groundwater samples were collected in a manner consistent with the low-flow sampling techniques outlined in the Field Sampling Plan (FSP) and the Arcadis standard operating procedure (SOP) for low-flow sample collection (Arcadis 2011), and generally consistent with EGLE's Remediation and Redevelopment Division (RRD) Op Memo 2, Attachment 5 (EGLE 2004). Samples collected for standard 1,4-dioxane and VOC analyses (Method 8260C) were submitted under chain of custody protocol Merit Laboratories (Merit) located in Lansing, Michigan. Samples collected for low-concentration 1,4-dioxane analysis (Method 522) were submitted to Eurofins Laboratory located in Barberton, Ohio. Samples collected for PFAS analyses were submitted to Pace Analytical Laboratory located in West Columbia, South Carolina using modified USEPA Method 537. Groundwater low-flow sampling logs are included as **Attachment 1**. Laboratory analytical reports and data validation reports will be included in the 2022 Annual Groundwater Monitoring Report.

Sewer Sampling

Sewer sampling is completed quarterly to confirm the effectiveness of storm sewer modifications and abandonments completed in Fall 2018, Winter 2019/2020, Fall 2020, and Spring 2021 (Arcadis 2021e). Sewer sampling was completed prior to sewer modifications and abandonments in 2017 at Plant 2 and in 2019 on Plants 2 and 6. Samples are collected according to the Arcadis technical guidance document (TGI) for PFAS sample collection and analyzed using USEPA Method 537 modified with isotope dilution (DoD QSM 5.3).

Results

A summary table of the groundwater analytical data collected during the reporting periods are presented in **Table 2**. Results of activities completed during the first and second quarter 2022 monitoring events are summarized in the following sections.

LNAPL Gauging

LNAPL thicknesses were generally consistent with previous observations and are provided in **Table 3**. LNAPL gauging will continue semi-annually through 2022.

Groundwater Analytical Results

Groundwater analytical results are summarized on **Table 2** with exceedances of Part 201 Residential Drinking Water (DW) criteria highlighted in gray and summarized on **Figures 2 through 7**. Results were compared to Residential DW criteria to provide a frame of reference. Results of the first and second quarter 2022 sampling event are summarized below.

- In accordance with the approved IGMP Table (**Table 1**), there were no samples collected for 1,4-dioxane analysis from the perched wells in the first or second quarter. Sampling of perched groundwater for 1,4-dioxane will be completed as part of annual groundwater sampling event scheduled for fourth quarter 2022.
- **Lower 1,4-Dioxane:** The lower 1,4-dioxane biosparge system has been operating at Plant 3 since 2019 and Plant 2 since 2020. Performance monitoring activities for the biosparge system completed in 2022 will be summarized in the 2022 *Lower 1,4-Dioxane Biosparge Update Report* in the first quarter 2023. The results at the perimeter of the lower 1,4-dioxane plume were reviewed for potential changes:
 - Southern Extent (the toe) – The lower 1,4-dioxane plume is defined to the south by MW-16-74, MW-16-75, MW-16-77, MW-16-78, MW-16-79, MW-21-140, and MW-21-141. These results suggest no significant expansion has occurred at the southern toe of the lower 1,4-dioxane plume since 2018. Future migration to the southeast is not expected due to the operation of the biosparge system and geologic conditions described as part of the *Lower 1,4-Dioxane Conceptual Site Model* (Arcadis 2021a).
 - Northeast Lobe (Plant 2) – Increasing and/or stable concentrations were observed within the northeast lobe of the lower 1,4-dioxane plume on Plant 2 during 2018-2021. Since then, stable to decreasing concentrations have been observed, likely attributable to the operation of the biosparge system.
 - Monitoring wells located near the western Plant 2 property boundary, including MW-15-73 and MW-16-80 in weathered bedrock, show concentrations of 1,4-dioxane exceeding the DW criterion of 7.2 µg/L in 2022. The detected concentrations are generally consistent with previous results observed at these locations. As previously reported, detections of 1,4-dioxane at these locations could be associated, wholly

or in part, with the former Adams Plating Company Site (APC Site). Possible commingling of impacts from the APC site confounds further delineation to the west.

- An updated plume stability analysis, including statistical evaluation of lower 1,4-dioxane concentrations will be completed as part of the development of the 2022 Annual Groundwater Monitoring Report.
- **VOCs (other than 1,4-dioxane):** Of the thirty-six wells that were sampled for VOCs, five monitoring wells had concentrations more than the DW and/or GSI criteria (**Figure 3**).
 - *Plant 6 entrance at the intersection of Stanley and Osborn Streets:* Vinyl chloride has been detected on-site at monitoring well MW-20-131 and off-site at MW-20-132 at concentrations above the Site-Specific Vapor Intrusion to Indoor Air Criteria (SSVIAC). A summary of the VI evaluation was provided to EGLE in June 2022 (Arcadis 2022d). Consistent with the follow-up discussion with EGLE, an additional monitoring well will be installed in September to the northeast of MW-20-132 to define the extent of SSVIAC exceedances. Soil vapor sampling at SVMP-20-01, located between the Plant 6 entrance and the residential properties located to the northeast, has been non-detect for vinyl chloride and shown no other exceedances of the SSVIAC.
 - *Weathered bedrock wells MW-14-61, MW-17-86, and MW-19-120:* located in the lower 1,4-dioxane plume on Plant 2, are monitored for VOCs semi-annually due to previously observed low detections of chlorinated VOCs (e.g., 1,2-DCE, chloroethane) potentially related to leakage from the perched zone. VOCs were not detected at MW-14-61, MW-17-86, and MW-19-120 in 2021, or during the semi-annual sampling completed in June 2022.
- **Metals:** Metals exceeding DW criteria in at least one monitoring well during 2022 include arsenic, chromium III, chromium IV, and nickel (**Figure 4**). The metals results are consistent with previous sampling events.
 - *CH- 14-RO:* Chromium III and chromium VI were detected in this shallow well at concentrations of 7.16 milligrams per liter (mg/L) and 7.4 mg/L, respectively, exceeding the DW criteria of 0.10 mg/L for both compounds. Chromium concentrations at CH-14-RO are related to the former plating line and have been steadily decreasing since monitoring began in 2012.
 - *MW- 13-32:* Nickel was detected in the shallow well MW-13-32, located near the eastern boundary of Plant 3, at a concentration of 0.363 mg/L, exceeding the DW criterion of 0.1 mg/L and GSI criterion of 0.12 mg/L.
 - *MW-02-04(3):* Arsenic was detected in the deep overburden well MW-02-04(3), located in central Plant 3, at a concentration of 0.051 mg/L, exceeding the DW criterion of 0.01 mg/L.
 - These results are consistent with previous analytical results. An evaluation of metals stability in groundwater (Arcadis 2014) and subsequent monitoring indicates that metals at the Site are related to local reducing conditions, stable and spatially limited.
- **PFAS:** Overall, PFAS results are consistent with those found in the 2019 PFAS addendum and the 2021 Annual Groundwater Monitoring Report (Arcadis 2019b; 2022c).
 - Perfluorooctane sulfonic acid (PFOS) concentrations exceeded the GSI criterion 12 nanograms per liter [ng/L]) and the DW criterion (16 ng/L) at 16 perched monitoring wells (**Figure 5**).
 - *MW-18-88, MW-18-95, and eastern off-site wells:* Perched monitoring wells located along the eastern boundary of Plant 3 contained PFOS concentrations of 120-200 ng/L at MW-18-88 and 27-28 ng/L at MW-18-95. PFOS exceeded the GSI criterion during only the first quarter at one (MW-18-105) of the six perched monitoring wells installed as sentinels in the City of Lansing's Dunnebacke and Westside Parks, located east of Plant 3.

- *MW-12-12 and MW-13-36R*: Located along the northern and eastern boundary of Plant 6, these wells contained concentrations of PFOS that exceeded the DW and GSI criteria. However, PFOS detections did not exceed DW criterion at the vertical aquifer profiling (VAP) or off-site monitoring well completed east of Plant 6 to delineate PFAS impacts. A summary of the off-site VAP investigation is included as part of the *Plant 6 PFAS Investigation Summary – Phase 2* (Arcadis 2019b) and the *Plant 6 PFAS Off-Site Investigation Summary* (Arcadis 2022a). Additional sentinel monitoring wells were installed east of Plant 6 in March 2022 (Arcadis 2022e).
- o Perfluorooctanoic acid (PFOA) concentrations exceeded the DW criterion of 8 ng/L at 25 perched monitoring wells (**Figure 6**).
 - *MW-18-88, MW-18-95, and eastern off-site wells*: Perched monitoring wells located along the eastern boundary of Plant 3, contained PFOA concentrations of 5.6-7.8 ng/L at MW-18-88 and 2.3 J-2.7 J ng/L at MW-18-95, all below the DW criterion of 8 ng/L. Additionally, PFOA has not exceeded the DW criterion at any of the six perched sentinel monitoring wells installed in the City of Lansing's Dunnebacke and Westside Parks.
 - *MW-04-05(6), MW-12-10R, MW-12-12, MW-13-36R, MW-14-67, MW-14-70, MW-20-131, and MW-20-132*: Perched monitoring wells located along the eastern boundary of Plant 6 or just off-site, contained concentrations of PFOA that exceed the DW criterion. Additional sentinel monitoring wells were installed east of Plant 6 in March 2022. The results of the monitoring well installation and sampling, including a discussion of the PFOA exceedances at MW-22-145 and MW-22-151, have been summarized and submitted under separate cover (Arcadis 2022e). Additional investigation will be completed in September 2022 east of MW-22-145 to complete delineation of PFOA.
 - *MW-12-09 and MW-14-58R*: Perched monitoring wells located near the western boundary of Plant 2 both contained detections of PFOA concentrations at 15 ng/L, exceeding the PFOA DW Criteria. The western property boundary in this area is located southeast of the former Adams Plating facility. There is the potential that PFAS concentrations near the Plant 2 boundary and within the Rosemary right-of-way could be attributable to APC or another potential nearby source.
- o Perfluorononanoic acid (PFNA) concentrations exceeded the DW criterion value of 6 ng/L at two perched monitoring wells on Plant 2 and two perched monitoring wells located on Plant 6 (**Figure 7**). The highest concentration of PFNA was 82 ng/L observed in Plant 6 source area well P6-SB-07. Other exceedances ranged from 6.5 ng/L to 15.0 ng/L.
- o The only detections of perfluorohexanesulfonic acid (PFHxS) that exceed the DW criterion value (51 ng/L) were concentrations of 180 ng/L in perched well MW-21-139 in the Plant 2 PFAS source area, 1,600 ng/L in Plant 3 source area monitoring well CH-14-RO, 62 ng/L in perched well MW-18-103 located along the northern boundary of Dunneback Park east of Plant 3. The PFHxS detected at MW-18-103 appears to be isolated and may be related to an off-site source to the north where large quantities of roofing shingles are processed and recycled.
- o Sporadic low detections of perfluorobutanesulfonic acid (PFBS) and perfluorohexanoic acid (PFHxA) observed in monitoring wells during the first and/or second quarter groundwater monitoring event are below the DW criteria values of 420 ng/L for PFBS and 400,000 ng/L for PFHxA.
- o In addition to PFOS, PFOA, PFNA, PFHxS, PFBS, and PFHxA, other PFAS compounds have been detected at the Site, however there are no established criteria for comparison. In general, these concentrations appear to correlate to PFOS and PFOA concentrations and decrease with distance from PFOS and PFOA source areas.

- Installation of fifteen additional monitoring wells (MW-21-133 through MW-21-138 and MW-22-143 to MW-22-152) was completed between March 2021 and March 2022 along the southeastern perimeter of Plant 6 and off-site to facilitate long-term monitoring for PFAS and to define the extent of PFOA to the east and northeast of Plant 6. Additional details can be found in the aforementioned submittals (Arcadis 2019b; 2022a; 2022e). The three southern boundary wells (MW-21-136, MW-21-137, and MW-21-138) had non-detect results for all PFAS contaminants in 2022 and based on the results from these investigation activities, PFAS south of Plant 6 has been delineated. Off-site PFAS concentrations will continue to be monitored to evaluate concentration trends and plume stability.

Groundwater Elevation Monitoring

Groundwater elevations collected from the first and second quarter gauging events are summarized on **Table 4**. Groundwater elevation contour maps, hydrographs, and plume stability evaluation will be completed as part of the 2022 Annual Groundwater Monitoring Report.

Storm Sewer Analytical Results

Storm sewer PFAS analytical results from 2017 to present are summarized on **Tables 5 through 7** with exceedances of Rule 57 criteria highlighted in gray. First and second quarter data are also summarized on **Figures 8 through 10**. Results of the first and second quarter 2022 sampling events are summarized below.

- P2-MH-2 equaled the Rule 57 criteria for PFOS of 12.0 ng/L during first quarter 2022. No other exceedances occurred on Plant 2 in first and second quarter 2022.
- No exceedances occurred on Plant 3 in first and second quarter 2022.
- Rule 57 criteria for PFOS was exceeded on Plant 6 as listed below. No other exceedances occurred on Plant 6 in first and second quarter 2022.
 - Osborn-MH-1 exceeded in first and second quarter with detections of 24.0 and 25.0 ng/L, respectively.
 - Verlinden-MH-1 exceeded in the second quarter with a detection of 13.0 ng/L.
 - Verlinden-MH-2 exceeded in the first quarter with a detection of 21.0 ng/L.

Conclusions

The first quarter and second quarter 2022 monitoring results do not suggest significant changes to the Site groundwater conditions, except for decreasing concentrations observed within the lower 1,4-dioxane plume. The 1,4-dioxane concentrations in weathered bedrock are consistent with the results of the *Lower 1,4-Dioxane Biosparge Update Report* (Arcadis 2021c) that highlights stable to decreasing 1,4-dioxane trends within biosparge performance monitoring wells. The storm sewer sampling indicates the storm sewer modifications at Plant 2 and 3 have successfully reduced PFAS discharge to concentrations at or below the Rule 57 criteria. Plant 6 modifications have reduced PFAS concentrations to near Rule 57 Criteria and will continue to be monitored for changes.


Groundwater monitoring will continue during the third and fourth quarters of 2022 per the approved revised Interim Groundwater Monitoring Plan matrix (Arcadis 2019a) and storm sewer PFAS monitoring will continue quarterly. The 2022 Annual Monitoring Report will be prepared following the fourth quarter sampling event and will include a summary of all 2022 groundwater and storm sewer monitoring activities and analytical results, validated

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analytical reports, updated groundwater elevation contour figures, and an updated plume stability analysis. The IGMP is currently under review and proposed modifications will be submitted to the EGLE in the fourth quarter 2022.

If you should have any questions regarding the enclosed data, please do not hesitate to contact David Favero at dfavero@racertrust.com (734.879.9525) or Patrick Curry at patrick.curry@arcadis.com (810.225.1926)

Sincerely,
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Enclosures:

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- Figure 10 – Plant 6 PFAS Storm Sewer Sampling Analytical Results

Appendices

- Attachment 1 – Low-Flow Groundwater Sampling Logs – January to June 2022

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References

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Tables

Table 1
Revised Interim Groundwater Monitoring Summary
RACER Trust Lansing Plants 2, 3 and 6
Lansing, Michigan



Well	Gauging*	Analyte					Primary Function
		VOCs	1,4-Dioxane	Select Metals**	SVOCs	PFAS	
Plant 2							
Perched							
LMW-12-01	SA						LNAPL Monitoring
LMW-12-02	SA						LNAPL Monitoring
LMW-12-03D	SA						LNAPL Monitoring
LMW-12-03S	SA						LNAPL Monitoring
LMW-12-04	SA						LNAPL Monitoring
LMW-12-05	SA						LNAPL Monitoring
LMW-12-06	SA						LNAPL Monitoring
LMW-12-07	SA						LNAPL Monitoring
LMW-12-08	SA						LNAPL Monitoring
LMW-14-12D	SA						LNAPL Monitoring
LMW-14-13D	SA						LNAPL Monitoring
LMW-14-14D	SA						LNAPL Monitoring
LMW-14-15D	SA						LNAPL Monitoring
LMW-15-16D	SA						LNAPL Monitoring
LMW-15-17D	SA						LNAPL Monitoring
MW-01(2)	A	B					VOC sentinel
MW-12-07	A						Groundwater elevation monitoring
MW-12-08	A						Groundwater elevation monitoring
MW-12-09	A	B	A			SA	VOC Sentinel, Perched 1,4-dioxane sentinel, PFAS sentinel
MW-12-18	SA	B				SA	VOC sentinel, PFAS sentinel
MW-14-54	A	B					VOC monitoring, SVOC evaluation
MW-14-55	A	B					VOC monitoring
MW-14-57	A		A				Perched 1,4-dioxane monitoring
MW-14-58 (abandoned) / MW-14-58R	SA	B	A			SA	perched 1,4-dioxane monitoring, PFAS Monitoring
MW-14-59	SA	B	A		Qd	SA	Perched 1,4-dioxane monitoring, SVOC evaluation, PFAS monitoring
MW-14-60	SA	B	A		Qd	SA	Perched 1,4-dioxane monitoring, SVOC evaluation, PFAS monitoring
MW-14-62	SA	B	A		Qd	SA	Perched 1,4-dioxane monitoring, PFAS Monitoring
MW-21-139							
P2-MW-02	A						Groundwater elevation monitoring
P2-MW-03	A						Groundwater elevation monitoring
P2-MW-04	A		A		Qd		Perched 1,4-dioxane monitoring, SVOC evaluation
P2-SB-03	A						Groundwater elevation monitoring

Table 1
Revised Interim Groundwater Monitoring Summary
RACER Trust Lansing Plants 2, 3 and 6
Lansing, Michigan



Well	Gauging*	Analyte					Primary Function
		VOCs	1,4-Dioxane	Select Metals**	SVOCs	PFAS	
P2-SB-06	A						Groundwater elevation monitoring
P2-SB-20	A						Groundwater elevation monitoring
P2-SB-37	SA						LNAPL Monitoring
PMW-01	SA						LNAPL Monitoring
PMW-02	SA						LNAPL Monitoring
PMW-03	SA						LNAPL Monitoring
Deep Overburden and Weathered Bedrock							
MW-13-43	SA		SA				Lower 1,4-dioxane monitoring
MW-13-45	SA		SA				Lower 1,4-dioxane monitoring
MW-13-51	A		A				Lower 1,4-dioxane sentinel
MW-14-56	A		A			SA	Lower 1,4-dioxane sentinel
MW-14-61	SA	SA	SA		Qd	SA	Lower 1,4-dioxane sentinel, SVOC Monitoring, PFAS Monitoring
MW-14-63	A		A				Lower 1,4-dioxane sentinel
MW-15-72	SA	A	SA		Qd	SA	Lower 1,4-dioxane monitoring
MW-15-73	A		A				Lower 1,4-dioxane monitoring
MW-16-74	SA		SA				Lower 1,4-dioxane sentinel
MW-16-75	SA		SA				Lower 1,4-dioxane sentinel
MW-16-76	A		A				Lower 1,4-dioxane sentinel
MW-16-77	SA		SA				Lower 1,4-dioxane sentinel
MW-16-78	SA		SA				Lower 1,4-dioxane sentinel
MW-16-79	SA		SA				Lower 1,4-dioxane sentinel
MW-16-80	SA		SA				Lower 1,4-dioxane monitoring
MW-16-81	SA	A	SA			SA	Lower 1,4-dioxane monitoring
MW-16-82	SA		SA				Lower 1,4-dioxane monitoring
MW-16-83	A		A				Lower 1,4-dioxane sentinel
MW-16-84	SA	A	SA				Lower 1,4-dioxane monitoring
MW-16-85	SA	A	SA				Lower 1,4-dioxane monitoring
MW-17-86	SA	SA	SA				Lower 1,4-dioxane monitoring
MW-19-115	SA		SA				Lower 1,4-dioxane monitoring
MW-19-116	SA		SA				Lower 1,4-dioxane monitoring
MW-19-117	SA		SA				Lower 1,4-dioxane monitoring
MW-19-120	SA	SA	SA				Lower 1,4-dioxane monitoring
MW-20-130	SA		SA			SA	PFAS Sentinel
MW-21-140							

Table 1
Revised Interim Groundwater Monitoring Summary
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Lansing, Michigan

Well	Gauging*	Analyte					Primary Function
		VOCs	1,4-Dioxane	Select Metals**	SVOCs	PFAS	
MW-21-142							
PW-14-01	SA		SA				Lower 1,4-dioxane monitoring
PW-14-02	SA	B	SA				Lower 1,4-dioxane monitoring
TW-14-02	SA	B	SA				Lower 1,4-dioxane monitoring
Bedrock							
MW-12-01	A		A ⁽¹⁾				Bedrock sentinel
MW-12-02	A		A ⁽¹⁾				Bedrock sentinel
MW-12-05R	A		A ⁽¹⁾				Bedrock sentinel
MW-12-06	A		A ⁽¹⁾				Bedrock sentinel
MW-13-44	A		A ⁽¹⁾				Bedrock sentinel
MW-17-87	A		A ⁽¹⁾				Bedrock sentinel
MW-19-118S	A		A ⁽¹⁾				Bedrock sentinel
MW-19-118D	A		A ⁽¹⁾				Bedrock sentinel
MW-19-125	A		A ⁽¹⁾				Bedrock sentinel
Lansing Township Wells							
TWP-03	-		A ⁽¹⁾				Municipal Well
TWP-04	-		A ⁽¹⁾				Municipal Well
TWP-05	-		A ⁽¹⁾				Municipal Well

Notes:

* 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.

M = Monthly

Q = Quarterly

SA = Semi-annual

A = Annual (2Q of each year)

B = Biennial (starting 2nd quarter of 2020)

Qd = Quadrennial

Table 1
Revised Interim Groundwater Monitoring Summary
RACER Trust Lansing Plants 2, 3 and 6
Lansing, Michigan



Well	Gauging*	Analyte						Primary Function
		VOCs	1,4-Dioxane	Select Metals**	Hexavalent Chromium	SVOCs	PFAS	
Plant 3								
Perched								
CH-14-RO	SA			A	A		SA	Metals monitoring
LMW-12-09	SA							Reduce LNAPL gauging to SA
LMW-12-10	SA							Reduce LNAPL gauging to SA
LMW-12-11	SA							Reduce LNAPL gauging to SA
MW-05(3)	A	A						VOC sentinel
MW-13-31	A							Groundwater elevation monitoring
MW-13-32	A			B		Qd		Groundwater elevation monitoring/ SVOC & Metals monitoring
MW-14-65	A							Groundwater elevation monitoring
MW-18-100	SA						SA	PFAS sentinel
MW-18-102	SA						SA	PFAS sentinel
MW-18-103	Q						Q	PFAS monitoring
MW-18-104	SA						SA	PFAS sentinel
MW-18-105	Q						Q	PFAS monitoring
MW-18-106	SA						SA	PFAS sentinel
MW-18-88	Q	A		A	A		Q	PFAS monitoring/ sentinel VOC & Metals
MW-18-89	Q						Q	PFAS monitoring
MW-18-90	Q						Q	PFAS monitoring
MW-18-91	Q						Q	PFAS monitoring
MW-18-92	SA						SA	PFAS sentinel
MW-18-95	Q						Q	PFAS monitoring
MW-18-96	SA						SA	PFAS sentinel
MW-18-98	Q						Q	PFAS sentinel
MW-18-99	Q						Q	PFAS sentinel
MW-19-107	SA						SA	PFAS sentinel
MW-19-108	SA						SA	PFAS sentinel
MW-19-110	SA						SA	PFAS sentinel
MW-19-111	SA						SA	PFAS sentinel
MW-19-112	SA						SA	PFAS sentinel
MW-19-113	SA						SA	PFAS sentinel
MW-19-114	SA						SA	PFAS sentinel
P3-SB-07	SA							Groundwater elevation monitoring

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		VOCs	1,4-Dioxane	Select Metals**	Hexavalent Chromium	SVOCs	PFAS	
P3-SB-28	A					Qd		Groundwater elevation monitoring
UNK-10	A	A						VOC sentinel, SVOC evaluation
UNK-11	A	A				Qd		VOC monitoring/SVOCs
UNK-15	Q						Q	PFAS monitoring
Deep Overburden and Weathered Bedrock								
MW-02-01(3)	A							Groundwater elevation monitoring
MW-02-02(3)	A		A					Lower 1,4-dioxane sentinel
MW-02-03(3)	A							Groundwater elevation monitoring
MW-02-04(3)	SA		A	A			SA	Lower 1,4-dioxane, PFAS and metals sentinel
MW-04-03(3)	A							Groundwater elevation monitoring
MW-04-04(3)	A							Groundwater elevation monitoring
MW-12-20	A		B					Lower 1,4-dioxane sentinel
MW-12-21	SA	B	SA					Lower 1,4-dioxane monitoring
MW-13-22	A	B	A					Lower 1,4-dioxane monitoring
MW-13-23	A		A					Lower 1,4-dioxane sentinel
MW-13-24	A		A					Lower 1,4-dioxane sentinel
MW-13-25	SA		SA					Lower 1,4-dioxane monitoring
MW-13-26	A							Groundwater elevation monitoring
MW-13-27	A							Groundwater elevation monitoring
MW-13-29	A		A					Lower 1,4-dioxane monitoring
MW-13-30	A							Groundwater elevation monitoring
MW-13-34	SA	B	SA					Lower 1,4-dioxane monitoring
MW-13-40	A							Groundwater elevation monitoring
MW-13-41	A	B						Lower VOC sentinel
MW-13-46	SA		SA					Lower 1,4-dioxane monitoring
MW-13-48	SA	B	SA					Lower 1,4-dioxane monitoring
MW-13-49	A		A					Lower 1,4-dioxane
MW-14-64	A		A					Lower 1,4-dioxane sentinel
MW-15-71	A		B					Lower 1,4-dioxane sentinel
MW-18-101	SA						SA	Lower PFAS Sentinel
MW-18-93	SA						SA	Lower PFAS Sentinel
MW-18-94	SA		A				SA	Lower PFAS, 1,4-Dioxane Sentinel
MW-18-97	SA		A				SA	Lower PFAS Sentinel

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Well	Gauging*	Analyte						Primary Function
		VOCs	1,4-Dioxane	Select Metals**	Hexavalent Chromium	SVOCs	PFAS	
MW-19	A	B	A					Lower 1,4-dioxane sentinel
MW-22	A							Metals sentinel
MW-23	SA						SA	PFAS sentinel
MW-91-2 (abandoned) / MW-91-2R	SA		A	A	A		SA	Lower 1,4-dioxane, PFAS and metals sentinel
MW-93-1	A							Groundwater elevation monitoring
PW-14-03	SA		SA					Lower 1,4-dioxane monitoring
Bedrock								
MW-04-02(3)	A							Groundwater elevation monitoring
MW-12-04	A							Groundwater elevation monitoring
MW-13-28	SA		A ⁽¹⁾					Bedrock sentinel
MW-13-37	A		A ⁽¹⁾					1,4-D sentinel
MW-13-38	A		A ⁽¹⁾					Bedrock sentinel
MW-13-39B	A							Groundwater elevation monitoring
MW-13-47	SA		A ⁽¹⁾					Bedrock sentinel
MW-19-119D	A		A ⁽¹⁾					Bedrock sentinel
MW-19-119S	A		A ⁽¹⁾					Bedrock sentinel
MW-88-1	A							Groundwater elevation monitoring
MW-91-3	A							Bedrock sentinel
MW-91-4	A							Groundwater elevation monitoring
MW-91-5	SA		A ⁽¹⁾					Bedrock sentinel
MW-91-6	SA		A ⁽¹⁾					Bedrock sentinel

Notes:

* 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

Q = quarterly

SA = semi-annual

A = annual

B = biennial (starting 2nd quarter of 2020)

Qd = Quadrennial

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Revised Interim Groundwater Monitoring Summary
RACER Trust Lansing Plants 2, 3 and 6
Lansing, Michigan



Well	Gauging*	Analyte					Primary Function
		VOCs	1,4-Dioxane	Select Metals**	SVOCs	PFAS	
Plant 6							
<i>Perched</i>							
MW-02-03(6)	A	B	A		Qd		Perched 1,4-dioxane monitoring, SVOC evaluation
MW-03-02	A						Groundwater elevation monitoring
MW-03-04	A						Groundwater elevation monitoring
MW-03-05	A	B	A				Perched 1,4-dioxane sentinel
MW-03-06	A	B	A				Perched 1,4-dioxane sentinel
MW-03-08	A	B					Perched VOC monitoring
MW-04-05(6)	A					A	Perched PFAS sentinel
MW-12-10R	A						Groundwater elevation monitoring
MW-12-11	A					A	PFAS Sentinel
MW-12-12	Q					Q	PFAS monitoring
MW-12-13	Q			A		Q	PFAS monitoring
MW-12-14	A						Groundwater elevation monitoring
MW-12-15							
MW-12-16	A						Boundary monitoring
MW-13-35							
MW-13-36R	Q			A		Q	PFAS monitoring
MW-14-66	A			B			Metals/PFAS sentinel
MW-14-67	Q			B		Q	Metals sentinel
MW-14-69	A						PFAS Sentinel
MW-14-70	Q					Q	PFAS Sentinel
MW-20-131	Q	Q				Q	VOC monitoring
MW-20-132	Q	Q				Q	VOC monitoring
MW-21-133	Q					Q	PFAS Perimeter Monitoring
MW-21-134	Q					Q	PFAS Perimeter Monitoring
MW-21-135	Q					Q	PFAS Perimeter Monitoring
MW-21-136	Q					Q	PFAS Perimeter Monitoring
MW-21-137	Q					Q	PFAS Perimeter Monitoring
MW-21-138	Q					Q	PFAS Perimeter Monitoring
MWBP-10-UST5-6	A	B		B			VOCs/metal monitoring
MWBP-11-UST1-4	A	B		B			VOCs/metal monitoring
MWBP-12-UST1-4	A	B		B	Qd		VOCs/metal monitoring, SVOC evaluation

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RACER Trust Lansing Plants 2, 3 and 6
Lansing, Michigan

Well	Gauging*	Analyte					Primary Function
		VOCs	1,4-Dioxane	Select Metals**	SVOCs	PFAS	
P6-MW-01	A						Groundwater elevation monitoring
P6-SB-07	Q				Qd	Q	PFAS monitoring
P6-SB-18	A						Groundwater elevation monitoring
P6-SB-21	A						Groundwater elevation monitoring
P6-SB-35	A						Groundwater elevation monitoring
P6-SB-37	A						Groundwater elevation monitoring
<i>Deep Overburden and Weathered Bedrock</i>							
MW-13-52	A		A				Lower 1,4-dioxane sentinel
MW-13-53	A		A				Lower 1,4-dioxane sentinel
MW-21-141							
<i>Bedrock</i>							
MW-04-01(6)	A		B				Bedrock sentinel
MW-04-04R	A		B			A	Bedrock sentinel
MW-04-06R	A		B			A	Bedrock sentinel
MW-12-03	A						Groundwater elevation monitoring
MW-13-50	A		B				Bedrock sentinel

Notes:

* 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.

Q = quarterly

SA = semi-annual

A = annual

B = biennial (starting 2nd quarter of 2020)

Qd = Quadrennial

Table 2
 Summary of Groundwater Analytical Results - January to June 2022
 RACER Trust Plants 2, 3, and 6
 Lansing, Michigan



Location ID: Date Collected: Sample Name:	P201 Residential Drinking Water	P201 Groundwater Surface Water Interface	Units	CH-14-RO 06/09/22 CH-14-RO_060922	MW-01(2) 06/04/22 MW-01(2)_060422	MW-02-02(3) 06/10/22 MW-02-02(3)_061022	MW-02-02(6) 06/06/22 MW-02-02(6)_060622	MW-02-04(3) 06/08/22 MW-02-04(3)_060822	MW-03-05 06/06/22 MW-03-05_060622	MW-03-06 06/06/22 MW-03-06_060622	MW-04-01(6) 06/03/22 MW-04-01(6)_060322	MW-04-04R 06/03/22 MW-04-04R_060322	MW-04-05(6) 06/02/22 MW-04-05(6)_060222	MW-04-06R 06/03/22 MW-04-06R_060322	MW-05(3) 06/07/22 MW-05(3)_060722	MW-12-01 06/06/22 MW-12-01_060622	MW-12-02 06/07/22 MW-12-02_060722	
Field																		
pH	6.5 to 8.5	6.5 to 9.0	s.u.	7.46	6.72	6.64	7.00	6.72	7.54	6.79	6.91	6.88	7.26	7.76	8.27	7.05	6.98	
Conductivity	--	--	mS/cm	0.00	3.21	3.88	6.82	5.37	1.82	8.57	0.97	1.77	2.79	5.86	0.65	1.64	1.22	
Turbidity	--	--	NTU	14.00	1.09	9.87	12.50	87.60	1.21	1.41	43.50	4.28	1.43	11.60	6.00	9.84	21.20	
Dissolved oxygen (DO)	--	--	mg/L	4.48	0.90	1.31	2.31	0.20	0.70	0.30	0.16	0.26	1.51	0.13	1.61	9.56	1.22	
Temperature	--	--	Deg C	17.6	13.9	19.2	15.2	14.6	14.5	13.9	15.2	15.6	12.0	15.3	14.9	15.2	16.2	
Oxidation reduction potential (ORP)	--	--	millivolts	38.3	1.4	-40.6	-15.5	-43.5	-28.4	-44.0	-6.9	-13.4	12.2	-46.1	11.6	-89.0	-92.7	
Volatile Organics (via EPA Method SW5030C/8260C)																		
1,1-Dichloroethane	880	740	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
1,1,1-Dichloroethane	7.0	130	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
1,1,1,1-Tetrachloroethane	200	89	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
1,1,1,2-Tetrachloroethane	77	--	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
1,1,2-Trichloroethane	5.0	330	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
1,1,2,2-Tetrachloroethane	8.5	78	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
1,2-Dibromo-3-chloropropane (DBCP)	0.2	--	µg/L	NA	<5	NA	<5	NA	<5	<5	<5	<5	NA	<5	<5	NA	NA	
1,2-Dibromoethane (Ethylene dibromide)	0.05	5.7	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
1,2-Dichlorobenzene	600	13	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
1,2-Dichloroethane	5.0	360	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
1,2-Dichloropropane	5.0	230	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
1,2,3-Trichlorobenzene	--	--	µg/L	NA	<5	NA	<5	NA	<5	<5	<5	<5	NA	<5	<5	NA	NA	
1,2,3-Trichloropropane	42	--	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
1,2,3-Trimethylbenzene	--	--	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
1,2,4-Trichlorobenzene	70	99	µg/L	NA	<5	NA	<5	NA	<5	<5	<5	<5	NA	<5	<5	NA	NA	
1,2,4-Trimethylbenzene	63	17	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
1,3-Dichlorobenzene	6.6	28	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
1,3,5-Trimethylbenzene	72	45	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
1,4-Dichlorobenzene	75	17	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
1,4-Dioxane	7.2	280	µg/L	NA	NA	<1	11	4 [4]	<1	5 [5]	<1	<1	NA	<1	NA	NA	NA	
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	2,200	µg/L	NA	<25	NA	<25	NA	<25	<25	<25	<25	NA	<25	<25	NA	NA	
2-Hexanone	1,000	--	µg/L	NA	<50	NA	<50	NA	<50	<50	<50	<50	NA	<50	<50	NA	NA	
2-Methylnaphthalene	260	19	µg/L	NA	<5	NA	<5	NA	<5	<5	<5	<5	NA	<5	<5	NA	NA	
2-Phenylbutane (sec-Butylbenzene)	80	--	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	--	µg/L	NA	<50	NA	<50	NA	<50	<50	<50	<50	NA	<50	<50	NA	NA	
Acetone	730	1,700	µg/L	NA	<50	NA	<50	NA	<50	<50	<50	<50	NA	<50	<50	NA	NA	
Acrylonitrile	2.6	2	µg/L	NA	<2	NA	<2	NA	<2	<2	<2	<2	NA	<2	<2	NA	NA	
Benzene	5.0	200	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
Bromobenzene	18	--	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
Bromodichloromethane	80	--	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
Bromoform	80	--	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
Bromomethane (Methyl bromide)	10	5.0	µg/L	NA	<5	NA	<5	NA	<5	<5	<5	<5	NA	<5	<5	NA	NA	
Carbon disulfide	800	--	µg/L	NA	<5	NA	<5	NA	<5	<5	<5	<5	NA	<5	<5	NA	NA	
Carbon tetrachloride	5.0	38	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
Chlorobenzene	100	25	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
Chlorobromomethane	--	--	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
Chloroethane	430	1,100	µg/L	NA	<5	NA	<5	NA	<5	<5	<5	<5	NA	<5	<5	NA	NA	
Chloroform (Trichloromethane)	80	350	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
Chloromethane (Methyl chloride)	260	--	µg/L	NA	<5	NA	<5	NA	<5	<5	<5	<5	NA	<5	<5	NA	NA	
cis-1,2-Dichloroethene	70	620	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
cis-1,3-Dichloropropene	--	--	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
Cymene (p-Isopropyltoluene)	--	--	µg/L	NA	<5	NA	<5	NA	<5	<5	<5	<5	NA	<5	<5	NA	NA	
Dibromochloromethane	80	--	µg/L	NA	<5	NA	<5	NA	<5	<5	<5	<5	NA	<5	<5	NA	NA	
Dibromomethane	80	--	µg/L	NA	<5	NA	<5	NA	<5	<5	<5	<5	NA	<5	<5	NA	NA	
Dichlorodifluoromethane (CFC-12)	1,700	--	µg/L	NA	<5	NA	<5	NA	<5	<5	<5	<5	NA	<5	<5	NA	NA	
Ethyl ether	10	--	µg/L	NA	<10	NA	<10	NA	<10	<10	<10	<10	NA	<10	<10	NA	NA	
Ethylbenzene	74	18	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
Hexachloroethane	7.3	6.7	µg/L	NA	<5	NA	<5	NA	<5	<5	<5	<5	NA	<5	<5	NA	NA	
Iodomethane	--	--	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
Isopropyl benzene	800	28	µg/L	NA	<5	NA	<5	NA	<5	<5	<5	<5	NA	<5	<5	NA	NA	
Methyl tert butyl ether (MTBE)	40	7,100	µg/L	NA	8	NA	<5	NA	<5	<5	<5	<5	NA	<5	<5	NA	NA	
Methylene chloride	5.0	1,500	µg/L	NA	<5	NA	<5	NA	<5	<5	<5	<5	NA	<5	<5	NA	NA	
Naphthalene	520	11	µg/L	NA	<5	NA	<5	NA	<5	<5	<5	<5	NA	<5	<5	NA	NA	
N-Butylbenzene	80	--	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
N-Propylbenzene	80	--	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
Styrene	100	80	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
tert-Butylbenzene	80	--	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
Tetrachloroethene	5.0	60	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
Tetrahydrofuran	95	11,000	µg/L	NA	<90	NA	<90	NA	<90	<90	<90	<90	NA	<90	<90	NA	NA	
Toluene	790	270	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
trans-1,2-Dichloroethene	100	1,500	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
trans-1,3-Dichloropropene	--	--	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
trans-1,4-Dichloro-2-butene	--	--	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
Trichloroethene	5.0	200	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA	<1	<1	NA	NA	
Trichlorofluoromethane (CFC-11)	2,600	--	µg/L	NA	<1	NA	<1	NA	<1	<1	<1	<1	NA					

Table 2
Summary of Groundwater Analytical Results - January to June 2022
RACER Trust Plants 2, 3, and 6
Lansing, Michigan



Location ID: Date Collected: Sample Name:	P201 Residential Drinking Water	P201 Groundwater Surface Water Interface	Units	CH-14-RO 06/09/22 CH-14-RO_060922	MW-01(2) 06/04/22 MW-01(2)_060422	MW-02-02(3) 06/10/22 MW-02-02(3)_061022	MW-02-02(6) 06/06/22 MW-02-02(6)_060622	MW-02-04(3) 06/08/22 MW-02-04(3)_060822	MW-03-05 06/06/22 MW-03-05_060622	MW-03-06 06/06/22 MW-03-06_060622	MW-04-01(6) 06/03/22 MW-04-01(6)_060322	MW-04-04R 06/03/22 MW-04-04R_060322	MW-04-05(6) 06/02/22 MW-04-05(6)_060222	MW-04-06R 06/03/22 MW-04-06R_060322	MW-05(3) 06/07/22 MW-05(3)_060722	MW-12-01 06/06/22 MW-12-01_060622	MW-12-02 06/07/22 MW-12-02_060722	
Semi-Volatile Organics (via EPA Method 522)																		
1,4-Dioxane	7.2	280	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.20	0.86 [0.9]
Inorganics-Metals (via EPA Method 6020)																		
Arsenic	0.01	0.01	mg/L	<0.002 [<0.002]	NA	NA	NA	0.051 [0.054]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III (trivalent)	0.1	0.16	mg/L	7.16 [7.45]	NA	NA	NA	<0.005 [0.006]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI (hexavalent)	0.1	0.011	mg/L	7.4 [7.4]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1.0	0.02	mg/L	<0.005 [<0.005]	NA	NA	NA	<0.005 [<0.005]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.004	0.044	mg/L	<0.003 [<0.003]	NA	NA	NA	<0.003 [<0.003]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.12	mg/L	0.011 [0.011]	NA	NA	NA	0.022 [0.026]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.0045	0.027	mg/L	<0.005 [<0.005]	NA	NA	NA	<0.005 [0.008]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics-Metals, Filtered (via EPA Method 6020)																		
Arsenic (dissolved)	0.01	0.01	mg/L	<0.002 [<0.002]	NA	NA	NA	0.016 [0.017]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III (trivalent, dissolved)	0.1	0.16	mg/L	7.13 [7.31]	NA	NA	NA	<0.005 [<0.005]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (dissolved)	1.0	0.02	mg/L	<0.005 [<0.005]	NA	NA	NA	<0.005 [<0.005]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead (dissolved)	0.004	0.044	mg/L	<0.003 [<0.003]	NA	NA	NA	<0.003 [<0.003]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel (dissolved)	0.1	0.12	mg/L	0.011 [0.011]	NA	NA	NA	0.019 [0.019]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium (dissolved)	0.0045	0.027	mg/L	<0.005 [<0.005]	NA	NA	NA	<0.005 [<0.005]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry																		
Nitrate (as N)	10	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus	63	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total kjeldahl nitrogen (TKN)	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances (PFAS) (via EPA Method 537 Modified)																		
11CI-PF3OUdS (F-53B Minor)	--	--	ng/L	<7.2 [<6.7]	NA	NA	NA	<6.7 [<7.2]	NA	NA	NA	NA	<7.2	<6.7	<7.3 [<7.2]	NA	NA	NA
4:2 FTS	--	--	ng/L	<7.2 [<6.7]	NA	NA	NA	<6.7 [<7.2]	NA	NA	NA	NA	<7.2	<6.7	<7.3 [<7.2]	NA	NA	NA
6:2 FTS	--	--	ng/L	<7.2 [<6.7]	NA	NA	NA	<6.7 [<7.2]	NA	NA	NA	NA	<7.2	<6.7	<7.3 [<7.2]	NA	NA	NA
8:2 FTS	--	--	ng/L	<7.2 [<6.7]	NA	NA	NA	<6.7 [<7.2]	NA	NA	NA	NA	<7.2	<6.7	<7.3 [<7.2]	NA	NA	NA
9CI-PF3ONS (F-53B Major)	--	--	ng/L	<7.2 [<6.7]	NA	NA	NA	<6.7 [<7.2]	NA	NA	NA	NA	<7.2	<6.7	<7.3 [<7.2]	NA	NA	NA
ADONA	--	--	ng/L	<7.2 [<6.7]	NA	NA	NA	<6.7 [<7.2]	NA	NA	NA	NA	<7.2	<6.7	<7.3 [<7.2]	NA	NA	NA
Hexafluoropropylene oxide dimer acid (HFPO-DA) (GenX)	370	--	ng/L	<7.2 [<6.7]	NA	NA	NA	<6.7 [<7.2]	NA	NA	NA	NA	<7.2	<6.7	<7.3 [<7.2]	NA	NA	NA
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	--	--	ng/L	<7.2 [<6.7]	NA	NA	NA	<6.7 [<7.2]	NA	NA	NA	NA	<7.2	<6.7	<7.3 [<7.2]	NA	NA	NA
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	--	--	ng/L	<7.2 [<6.7]	NA	NA	NA	<6.7 [<7.2]	NA	NA	NA	NA	<7.2	<6.7	<7.3 [<7.2]	NA	NA	NA
Perfluorobutanesulfonic acid (PFBS)	420	--	ng/L	110 [110]	NA	NA	NA	0.78 J [0.98 J]	NA	NA	NA	NA	<3.6	3.2 J	<3.7 [<3.6]	NA	NA	NA
Perfluorobutanoic acid (PFBA)	--	--	ng/L	17 [17]	NA	NA	NA	8.1 [7.9]	NA	NA	NA	NA	0.72 J	18	4.8 [4.7]	NA	NA	NA
Perfluorodecanesulfonic acid (PFDS)	--	--	ng/L	<3.6 [<3.4]	NA	NA	NA	<3.4 [<3.6]	NA	NA	NA	NA	<3.6	<3.4	<3.7 [<3.6]	NA	NA	NA
Perfluorodecanoic acid (PFDA)	--	--	ng/L	<3.6 [<3.4]	NA	NA	NA	<3.4 [<3.6]	NA	NA	NA	NA	<3.6	<3.4	<3.7 [<3.6]	NA	NA	NA
Perfluorododecanoic acid (PFDoA)	--	--	ng/L	<3.6 [<3.4]	NA	NA	NA	<3.4 [<3.6]	NA	NA	NA	NA	<3.6	<3.4	<3.7 [<3.6]	NA	NA	NA
Perfluoroheptanesulfonic Acid (PFHpS)	--	--	ng/L	160 [150]	NA	NA	NA	<3.4 [<3.6]	NA	NA	NA	NA	<3.6	<3.4	<3.7 [<3.6]	NA	NA	NA
Perfluoroheptanoic acid (PFHpA)	--	--	ng/L	19 [18]	NA	NA	NA	<3.4 [<3.6]	NA	NA	NA	NA	<3.6	<3.4	<3.7 [<3.6]	NA	NA	NA
Perfluorohexanesulfonic acid (PFHxS)	51	--	ng/L	1,600 [1,800]	NA	NA	NA	<3.4 [<3.6]	NA	NA	NA	NA	<3.6	<3.4	<3.7 [<3.6]	NA	NA	NA
Perfluorohexanoic acid (PFHxA)	400,000	--	ng/L	39 [39]	NA	NA	NA	2.9 J [2.8 J]	NA	NA	NA	NA	<3.6	39	1.9 J [1.8 J]	NA	NA	NA
Perfluorononanesulfonic acid (PFNS)	--	--	ng/L	<3.6 [0.61 J]	NA	NA	NA	<3.4 [<3.6]	NA	NA	NA	NA	<3.6	<3.4	<3.7 [<3.6]	NA	NA	NA
Perfluorononanoic acid (PFNA)	6	--	ng/L	0.89 J [<3.4]	NA	NA	NA	<3.4 [<3.6]	NA	NA	NA	NA	<3.6	0.53 J	<3.7 [<3.6]	NA	NA	NA
Perfluorooctane Sulfonamide (PFOSA)	--	--	ng/L	<3.6 [<3.4]	NA	NA	NA	<3.4 [<3.6]	NA	NA	NA	NA	<3.6	<3.4	<3.7 [<3.6]	NA	NA	NA
Perfluorooctane sulfonic acid (PFOS)	16	--	ng/L	10,000 [9,700]	NA	NA	NA	<3.4 [<3.6]	NA	NA	NA	NA	<3.6	<3.4	<3.7 [<3.6]	NA	NA	NA
Perfluorooctanoic acid (PFOA)	8	12,000	ng/L	130 [120]	NA	NA	NA	<3.4 [<3.6]	NA	NA	NA	NA	<3.6	32	0.91 J [<3.6]	NA	NA	NA
Perfluoropentanesulfonic acid (PFPeS)	--	--	ng/L	330 [320]	NA	NA	NA	<3.4 [<3.6]	NA	NA	NA	NA	<3.6	<3.4	<3.7 [<3.6]	NA	NA	NA
Perfluoropentanoic acid (PFPeA)	--	--	ng/L	15 [13]	NA	NA	NA	5.3 [5.4]	NA	NA	NA	NA	0.55 J	33	2.3 J [2.3 J]	NA	NA	NA
Perfluorotetradecanoic acid (PFTeA)	--	--	ng/L	<3.6 [<3.4]	NA	NA	NA	<3.4 [<3.6]	NA	NA	NA	NA	<3.6	<3.4	<3.7 [<3.6]	NA	NA	NA
Perfluorotridecanoic Acid (PFTriA)	--	--	ng/L	<3.6 [<3.4]	NA	NA	NA	<3.4 [<3.6]	NA	NA	NA	NA	<3.6	<3.4	<3.7 [<3.6]	NA	NA	NA
Perfluoroundecanoic acid (PFUnA)	--	--	ng/L	<3.6 [<3.4]	NA	NA	NA	<3.4 [<3.6]	NA	NA	NA	NA	<3.6	<3.4	<3.7 [<3.6]	NA	NA	NA

See notes on last page.

Location ID:	P201	P201		MW-12-06	MW-12-09	MW-12-10R	MW-12-10R	MW-12-11	MW-12-12	MW-12-12	MW-12-13	MW-12-13	MW-12-18	MW-12-20	MW-12-21	MW-13-22	MW-13-22	MW-13-23
Date Collected:	Residential	Groundwater	Units	06/06/22	06/04/22	03/02/22	06/02/22	06/02/22	03/01/22	06/02/22	03/01/22	06/02/22	06/04/22	06/10/22	06/10/22	03/02/22	06/06/22	06/10/22
Sample Name:	Drinking Water	Surface Water		MW-12-06_060622	MW-12-09_060422	MW-12-10R_030222	MW-12-10R_060222	MW-12-11_060222	MW-12-12_030122	MW-12-12_060222	MW-12-13_030122	MW-12-13_060222	MW-12-18_060422	MW-12-20_061022	MW-12-21_061022	MW-13-22_030222	MW-13-22_060622	MW-13-23_061022
<i>See notes on last page.</i>																		
Semi-Volatile Organics (via EPA Method 522)																		
1,4-Dioxane	7.2	280	µg/L	0.19 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics-Metals (via EPA Method 6020)																		
Arsenic	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.002	NA	NA	NA	NA	NA
Chromium III (trivalent)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005	NA	NA	NA	NA	NA
Chromium VI (hexavalent)	0.1	0.011	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005	NA	NA	NA	NA	NA
Lead	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003	NA	NA	NA	NA	NA
Nickel	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.006	NA	NA	NA	NA	NA
Vanadium	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005	NA	NA	NA	NA	NA
Inorganics-Metals, Filtered (via EPA Method 6020)																		
Arsenic (dissolved)	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III (trivalent, dissolved)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (dissolved)	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead (dissolved)	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel (dissolved)	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium (dissolved)	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry																		
Nitrate (as N)	10	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus	63	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total kjeldahl nitrogen (TKN)	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances (PFAS) (via EPA Method 537 Modified)																		
11CI-PF3OUdS (F-53B Minor)	--	--	ng/L	NA	<6.9	<6.4	<6.9 [<6.6]	<7.2	<6.6	<8	<6.7	<6.8	<7.2 [<7.1]	NA	NA	NA	NA	NA
4:2 FTS	--	--	ng/L	NA	<6.9	<6.4	<6.9 [<6.6]	<7.2	<6.6	<8	<6.7	<6.8	<7.2 [<7.1]	NA	NA	NA	NA	NA
6:2 FTS	--	--	ng/L	NA	<6.9	<6.4	<6.9 [<6.6]	<7.2	<6.6	5.4 J	<6.7	<6.8	<7.2 [<7.1]	NA	NA	NA	NA	NA
8:2 FTS	--	--	ng/L	NA	<6.9	<6.4	<6.9 [<6.6]	<7.2	<6.6	<8	<6.7	<6.8	<7.2 [<7.1]	NA	NA	NA	NA	NA
9CI-PF3ONS (F-53B Major)	--	--	ng/L	NA	<6.9	<6.4	<6.9 [<6.6]	<7.2	<6.6	<8	<6.7	<6.8	<7.2 [<7.1]	NA	NA	NA	NA	NA
ADONA	--	--	ng/L	NA	<6.9	<6.4	<6.9 [<6.6]	<7.2	<6.6	<8	<6.7	<6.8	<7.2 [<7.1]	NA	NA	NA	NA	NA
Hexafluoropropylene oxide dimer acid (HFPO-DA) (GenX)	370	--	ng/L	NA	<6.9	<6.4	<6.9 [<6.6]	<7.2	<6.6	<8	<6.7	<6.8	<7.2 [<7.1]	NA	NA	NA	NA	NA
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	--	--	ng/L	NA	<6.9	<6.4	<6.9 [<6.6]	<7.2	<6.6	<8	<6.7	<6.8	<7.2 [<7.1]	NA	NA	NA	NA	NA
N-methyl perfluorooctane sulfonamidoacetic acid (NmFOSAA)	--	--	ng/L	NA	<6.9	<6.4	<6.9 [<6.6]	<7.2	<6.6	<8	<6.7	<6.8	<7.2 [<7.1]	NA	NA	NA	NA	NA
Perfluorobutanesulfonic acid (PFBS)	420	--	ng/L	NA	1.7 J	5	5.5 [7.9]	<3.6	2.1 J	2.9 J	2.4 J	2.7 J	0.75 J [0.78 J]	NA	NA	NA	NA	NA
Perfluorobutanoic acid (PFBA)	--	--	ng/L	NA	6.9	11	9.6 [9.4]	<3.6	5	25	49	26	3.9 [3.9]	NA	NA	NA	NA	NA
Perfluorodecanesulfonic acid (PFDS)	--	--	ng/L	NA	<3.5	<3.2	<3.5 [<3.3]	<3.6	<3.3	<4	<3.3	<3.4	<3.6 [<3.6]	NA	NA	NA	NA	NA
Perfluorodecanoic acid (PFDA)	--	--	ng/L	NA	<3.5	<3.2	<3.5 [<3.3]	<3.6	9.5	11	<3.3	<3.4	<3.6 [<3.6]	NA	NA	NA	NA	NA
Perfluorododecanoic acid (PFDoA)	--	--	ng/L	NA	<3.5	<3.2	<3.5 [<3.3]	<3.6	<3.3	<4	<3.3	<3.4	<3.6 [<3.6]	NA	NA	NA	NA	NA
Perfluoroheptanesulfonic acid (PFHpS)	--	--	ng/L	NA	<3.5	<3.2	<3.5 [<3.3]	<3.6	<3.3	<4	<3.3	<3.4	<3.6 [<3.6]	NA	NA	NA	NA	NA
Perfluoroheptanoic acid (PFHpA)	--	--	ng/L	NA	6.6	2.9 J	3.5 [3.9]	<3.6	26	52	12	15	<3.6 [<3.6]	NA	NA	NA	NA	NA
Perfluorohexanesulfonic acid (PFHxS)	51	--	ng/L	NA	3.5	1 J	<3.5 [1.4 J]	<3.6	1.3 J	2 J	<3.3	<3.4	<3.6 [<3.6]	NA	NA	NA	NA	NA
Perfluorohexanoic acid (PFHxA)	400,000	--	ng/L	NA	9.5	3.4	4.5 [4.7]	0.78 J	51	150	52	54	<3.6 [<3.6]	NA	NA	NA	NA	NA
Perfluorononanesulfonic acid (PFNS)	--	--	ng/L	NA	<3.5	<3.2	<3.5 [<3.3]	<3.6	<3.3	<4	<3.3	<3.4	<3.6 [<3.6]	NA	NA	NA	NA	NA
Perfluorononanoic acid (PFNA)	6	--	ng/L	NA	0.47 J	0.53 J	0.76 J [0.63 J]	<3.6	6	5.1	<3.3	<3.4	<3.6 [<3.6]	NA	NA	NA	NA	NA
Perfluorooctane Sulfonamide (PFOSA)	--	--	ng/L	NA	<3.5	<3.2	<3.5 [<3.3]	<3.6	<3.3	<4	<3.3	<3.4	<3.6 [<3.6]	NA	NA	NA	NA	NA
Perfluorooctane sulfonic acid (PFOS)	16	12	ng/L	NA	2.9 J	6.4	7.6 [7.7]	<3.6	35	33	<3.3	<3.4	<3.6 [<3.6]	NA	NA	NA	NA	NA
Perfluorooctanoic acid (PFOA)	8	12,000	ng/L	NA	15	6.7	8.9 [8.8]	<3.6	52	90	2.2 J	2.3 J	<3.6 [<3.6]	NA	NA	NA	NA	NA
Perfluoropentanesulfonic acid (PFPeS)	--	--	ng/L	NA	0.69 J	<3.2	<3.5 [<3.3]	<3.6	<3.3	<4	<3.3	<3.4	<3.6 [<3.6]	NA	NA	NA	NA	NA
Perfluoropentanoic acid (PFPeA)	--	--	ng/L	NA	7	4.1	5.3 [5.3]	1.6 J	44	96	38	38	0.77 J [0.83 J]	NA	NA	NA	NA	NA
Perfluorotetradecanoic acid (PFTeA)	--	--	ng/L	NA	<3.5	<3.2	<3.5 [<3.3]	<3.6	<3.3	<4	<3.3	<3.4	<3.6 [<3.6]	NA	NA	NA	NA	NA
Perfluorotridecanoic Acid (PFTriA)	--	--	ng/L	NA	<3.5	<3.2	<3.5 [<3.3]	<3.6	<3.3	<4	<3.3	<3.4	<3.6 [<3.6]	NA	NA	NA	NA	NA
Perfluoroundecanoic acid (PFUnA)	--	--	ng/L	NA	<3.5	<3.2	<3.5 [<3.3]	<3.6	<3.3	<4	<3.3	<3.4	<3.6 [<3.6]	NA	NA	NA	NA	NA

See notes on last page.

Table 2
 Summary of Groundwater Analytical Results - January to June 2022
 RACER Trust Plants 2, 3, and 6
 Lansing, Michigan

Location ID: Date Collected: Sample Name:	P201 Residential Drinking Water	P201 Groundwater Surface Water Interface	Units	MW-13-24 06/10/22 MW-13-24_061022	MW-13-25 06/10/22 MW-13-25_061022	MW-13-28 06/08/22 MW-13-28_060822	MW-13-29 06/06/22 MW-13-29_060622	MW-13-32 06/10/22 MW-13-32_061022	MW-13-34 03/02/22 MW-13-34_030222	MW-13-34 06/06/22 MW-13-34_060622	MW-13-36R 03/01/22 MW-13-36R_030122	MW-13-36R 06/02/22 MW-13-36R_060222	MW-13-36R 06/06/22 MW-13-36R_060622	MW-13-37 06/07/22 MW-13-37_060722	MW-13-38 06/07/22 MW-13-38_060722	MW-13-41 06/10/22 MW-13-41_061022	MW-13-43 06/07/22 MW-13-43_060722	MW-13-44 06/07/22 MW-13-44_060722
Field																		
pH	6.5 to 8.5	6.5 to 9.0	s.u.	6.96	6.32	9.78	6.39	7.10	7.05	7.04	11.90	11.67	12.22	7.22	10.29	7.25	7.14	7.04
Conductivity	--	--	mS/cm	0.97	1.58	0.18	3.07	0.81	2.24	1.94	1.61	1.18	1.14	1.09	2.78	4.23	2.37	1.74
Turbidity	--	--	NTU	9.00	1.40	17.20	142.00	10.00	70.30	94.70	20.00	1.21	1.29	15.20	27.10	6.52	857.00	29.70
Dissolved oxygen (DO)	--	--	mg/L	0.44	0.84	0.38	3.46	0.09	0.86	0.33	0.03	0.04	2.02	0.88	1.08	0.59	14.84	1.11
Temperature	--	--	Deg C	15.4	15.2	17.7	18.2	11.4	10.3	17.1	13.6	13.4	5.9	23.3	24.2	16.9	18.9	15.5
Oxidation reduction potential (ORP)	--	--	millivolts	61.3	-12.6	-106.8	53.6	36.2	-96.1	-90.5	17.7	-14.4	90.3	-123.6	-150.4	-146.2	53.8	-93.9
Volatile Organics (via EPA Method SW5030C/8260C)																		
1,1-Dichloroethane	880	740	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
1,1-Dichloroethene	7.0	130	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
1,1,1-Trichloroethane	200	89	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
1,1,1,2-Tetrachloroethane	77	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
1,1,2-Trichloroethane	5.0	330	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
1,1,2,2-Tetrachloroethane	8.5	78	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	0.2	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA
1,2-Dibromoethane (Ethylene dibromide)	0.05	5.7	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
1,2-Dichlorobenzene	600	13	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
1,2-Dichloroethane	5.0	360	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
1,2-Dichloropropane	5.0	230	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
1,2,3-Trichlorobenzene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA
1,2,3-Trichloropropane	42	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
1,2,3-Trimethylbenzene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
1,2,4-Trichlorobenzene	70	99	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA
1,2,4-Trimethylbenzene	63	17	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
1,3-Dichlorobenzene	6.6	28	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
1,3,5-Trimethylbenzene	72	45	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
1,4-Dichlorobenzene	75	17	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
1,4-Dioxane	7.2	280	µg/L	1	4	NA	8	NA	75	80	NA	NA	NA	NA	NA	NA	3	NA
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	2,200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<25	NA	NA
2-Hexanone	1,000	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<50	NA	NA
2-Methylnaphthalene	260	19	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA
2-Phenylbutane (sec-Butylbenzene)	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<50	NA	NA
Acetone	730	1,700	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<50	NA	NA
Acrylonitrile	2.6	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2	NA	NA
Benzene	5.0	200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
Bromobenzene	18	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
Bromodichloromethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
Bromoform	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
Bromomethane (Methyl bromide)	10	5.0	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA
Carbon disulfide	800	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA
Carbon tetrachloride	5.0	38	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
Chlorobenzene	100	25	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
Chlorobromomethane	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
Chloroethane	430	1,100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA
Chloroform (Trichloromethane)	80	350	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
Chloromethane (Methyl chloride)	260	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA
cis-1,2-Dichloroethene	70	620	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
cis-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
Cymene (p-Isopropyltoluene)	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA
Dibromochloromethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA
Dibromomethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA
Dichlorodifluoromethane (CFC-12)	1,700	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA
Ethyl ether	10	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	NA	NA
Ethylbenzene	74	18	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
Hexachloroethane	7.3	6.7	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA
Iodomethane	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
Isopropyl benzene	800	28	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA
Methyl tert butyl ether (MTBE)	40	7,100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA
Methylene chloride	5.0	1,500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA
Naphthalene	520	11	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA
N-Butylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
N-Propylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
Styrene	100	80	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
tert-Butylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
Tetrachloroethene	5.0	60	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
Tetrahydrofuran	95	11,000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<90	NA	NA
Toluene	790	270	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
trans-1,2-Dichloroethene	100	1,500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
trans-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
trans-1,4-Dichloro-2-butene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
Trichloroethene	5.0	200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
Trichlorofluoromethane (CFC-11)	2,600	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
Vinyl chloride	2.0	13	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
o-Xylene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
m&p-Xylene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2	NA	NA
Xylenes (total)	280	49	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2	NA	NA

Table 2
 Summary of Groundwater Analytical Results - January to June 2022
 RACER Trust Plants 2, 3, and 6
 Lansing, Michigan



Location ID: Date Collected: Sample Name:	P201 Residential Drinking Water	P201 Groundwater Surface Water Interface	Units	MW-13-24 06/10/22 MW-13-24_061022	MW-13-25 06/10/22 MW-13-25_061022	MW-13-28 06/08/22 MW-13-28_060822	MW-13-29 06/06/22 MW-13-29_060622	MW-13-32 06/10/22 MW-13-32_061022	MW-13-34 03/02/22 MW-13-34_030222	MW-13-34 06/06/22 MW-13-34_060622	MW-13-36R 03/01/22 MW-13-36R_030122	MW-13-36R 06/02/22 MW-13-36R_060222	MW-13-36R 06/06/22 MW-13-36R_060622	MW-13-37 06/07/22 MW-13-37_060722	MW-13-38 06/07/22 MW-13-38_060722	MW-13-41 06/10/22 MW-13-41_061022	MW-13-43 06/07/22 MW-13-43_060722	MW-13-44 06/07/22 MW-13-44_060722	
<i>See notes on last page.</i>																			
Semi-Volatile Organics (via EPA Method 522)																			
1,4-Dioxane	7.2	280	µg/L	NA	NA	0.53	NA	NA	NA	NA	NA	NA	NA	0.39 [0.4]	5.9	NA	NA	1.7	
Inorganics-Metals (via EPA Method 6020)																			
Arsenic	0.01	0.01	mg/L	NA	NA	NA	NA	<0.002	NA	NA	NA	NA	NA	<0.002	NA	NA	NA	NA	
Chromium III (trivalent)	0.1	0.16	mg/L	NA	NA	NA	NA	0.009	NA	NA	NA	NA	NA	<0.005	NA	NA	NA	NA	
Chromium VI (hexavalent)	0.1	0.011	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Copper	1.0	0.02	mg/L	NA	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	<0.005	NA	NA	NA	NA	
Lead	0.004	0.044	mg/L	NA	NA	NA	NA	<0.003	NA	NA	NA	NA	NA	<0.003	NA	NA	NA	NA	
Nickel	0.1	0.12	mg/L	NA	NA	NA	NA	0.363	NA	NA	NA	NA	NA	<0.005	NA	NA	NA	NA	
Vanadium	0.0045	0.027	mg/L	NA	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	<0.005	NA	NA	NA	NA	
Inorganics-Metals, Filtered (via EPA Method 6020)																			
Arsenic (dissolved)	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chromium III (trivalent, dissolved)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Copper (dissolved)	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Lead (dissolved)	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Nickel (dissolved)	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Vanadium (dissolved)	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
General Chemistry																			
Nitrate (as N)	10	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Phosphorus	63	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Total kjeldahl nitrogen (TKN)	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Per- and Polyfluoroalkyl Substances (PFAS) (via EPA Method 537 Modified)																			
11Cl-PF3OUdS (F-53B Minor)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<6.7	<7.5	NA	NA	NA	NA	NA	NA	
4:2 FTS	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<6.7	<7.5	NA	NA	NA	NA	NA	NA	
6:2 FTS	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<6.7	<7.5	NA	NA	NA	NA	NA	NA	
8:2 FTS	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<6.7	<7.5	NA	NA	NA	NA	NA	NA	
9Cl-PF3ONS (F-53B Major)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<6.7	<7.5	NA	NA	NA	NA	NA	NA	
ADONA	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<6.7	<7.5	NA	NA	NA	NA	NA	NA	
Hexafluoropropylene oxide dimer acid (HFPO-DA) (GenX)	370	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<6.7	<7.5	NA	NA	NA	NA	NA	NA	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	5.6 J	5.6 J	NA	NA	NA	NA	NA	NA	
N-methyl perfluorooctane sulfonamidoacetic acid (NMtFOSAA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	3.8 J	3.5 J	NA	NA	NA	NA	NA	NA	
Perfluorobutanesulfonic acid (PFBS)	420	--	ng/L	NA	NA	NA	NA	NA	NA	NA	3.4	2.7 J	NA	NA	NA	NA	NA	NA	
Perfluorobutanoic acid (PFBA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	20	20	NA	NA	NA	NA	NA	NA	
Perfluorodecanesulfonic acid (PFDS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<3.3	<3.8	NA	NA	NA	NA	NA	NA	
Perfluorodecanoic acid (PFDA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	23	24	NA	NA	NA	NA	NA	NA	
Perfluorododecanoic acid (PFDoA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	0.49 J	<3.8	NA	NA	NA	NA	NA	NA	
Perfluoroheptanesulfonic Acid (PFHpS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	0.55 J	0.54 J	NA	NA	NA	NA	NA	NA	
Perfluoroheptanoic acid (PFHpA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	38	38	NA	NA	NA	NA	NA	NA	
Perfluorohexanesulfonic acid (PFHxS)	51	--	ng/L	NA	NA	NA	NA	NA	NA	NA	1.6 J	1.6 J	NA	NA	NA	NA	NA	NA	
Perfluorohexanoic acid (PFHxA)	400,000	--	ng/L	NA	NA	NA	NA	NA	NA	NA	33	35	NA	NA	NA	NA	NA	NA	
Perfluorononanesulfonic acid (PFNS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<3.3	<3.8	NA	NA	NA	NA	NA	NA	
Perfluorononanoic acid (PFNA)	6	--	ng/L	NA	NA	NA	NA	NA	NA	NA	15	15	NA	NA	NA	NA	NA	NA	
Perfluorooctane Sulfonamide (PFOSA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	3.3	3.6 J	NA	NA	NA	NA	NA	NA	
Perfluorooctane sulfonic acid (PFOS)	16	12	ng/L	NA	NA	NA	NA	NA	NA	NA	41	44	NA	NA	NA	NA	NA	NA	
Perfluorooctanoic acid (PFOA)	8	12,000	ng/L	NA	NA	NA	NA	NA	NA	NA	81	74	NA	NA	NA	NA	NA	NA	
Perfluoropentanesulfonic acid (PFPeS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	0.66 J	<3.8	NA	NA	NA	NA	NA	NA	
Perfluoropentanoic acid (PFPeA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	31	31	NA	NA	NA	NA	NA	NA	
Perfluorotetradecanoic acid (PFTeA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<3.3	<3.8	NA	NA	NA	NA	NA	NA	
Perfluorotridecanoic Acid (PFTriA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<3.3	<3.8	NA	NA	NA	NA	NA	NA	
Perfluoroundecanoic acid (PFUnA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	0.68 J	0.71 J	NA	NA	NA	NA	NA	NA	

See notes on last page.

Table 2
Summary of Groundwater Analytical Results - January to June 2022
RACER Trust Plants 2, 3, and 6
Lansing, Michigan

Location ID:	P201 Residential	P201 Groundwater		MW-13-45	MW-13-46	MW-13-47	MW-13-48	MW-13-49	MW-13-50	MW-13-51	MW-13-52	MW-13-53	MW-14-54	MW-14-55	MW-14-57	MW-14-58R	MW-14-58R	MW-14-58R
Date Collected:	P201	Surface Water	Units	06/07/22	06/10/22	06/07/22	06/10/22	06/09/22	06/06/22	06/07/22	06/06/22	06/06/22	06/04/22	06/04/22	06/04/22	02/10/22	04/06/22	06/07/22
Sample Name:	Drinking Water	Interface		MW-13-45_060722	MW-13-46_061022	MW-13-47_060722	MW-13-48_061022	MW-13-49_060922	MW-13-50_060622	MW-13-51_060722	MW-13-52_060622	MW-13-53_060622	MW-14-54_060422	MW-14-55_060422	MW-14-57_060422	MW-14-58R_021022	MW-14-58R_040622	MW-14-58R_060722
Field																		
pH	6.5 to 8.5	6.5 to 9.0	s.u.	6.72	7.03	6.95	6.73	6.97	6.89	6.96	6.97	6.86	8.08	7.08	7.30	7.04	6.99	7.00
Conductivity	--	--	mS/cm	1.16	2.58	1.86	2.75	1.85	1.47	1.49	1.58	1.58	0.84	1.57	0.75	1.46	1.98	2.75
Turbidity	--	--	NTU	34	15.40	9.69	16.50	6.41	5.00	29.70	17.00	16.00	1.31	1.04	1	1.77	1.22	8.00
Dissolved oxygen (DO)	--	--	mg/L	0.39	5.34	0.97	0.65	0.82	0.93	0.74	0.17	0.76	0.04	0.10	0.14	0.19	0.69	0.04
Temperature	--	--	Deg C	17.1	21.4	21.8	21.7	21.3	19.2	18.8	14.8	18.3	12.6	12.1	12.3	7.10	9.80	14.8
Oxidation reduction potential (ORP)	--	--	millivolts	-51.0	63.7	-101.6	-106.6	-86.2	-17.6	-57.4	-11.9	-7.9	-143.9	-18.3	42.8	-55.80	-37.10	-20.0
Volatile Organics (via EPA Method SW5030C/8260C)																		
1,1-Dichloroethane	880	740	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
1,1-Dichloroethene	7.0	130	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
1,1,1-Trichloroethane	200	89	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
1,1,1,2-Tetrachloroethane	77	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
1,1,2-Trichloroethane	5.0	330	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
1,1,2,2-Tetrachloroethane	8.5	78	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
1,2-Dibromo-3-chloropropane (DBCP)	0.2	--	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	<50 Y	<5	NA	NA	<5	<5
1,2-Dibromoethane (Ethylene dibromide)	0.05	5.7	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
1,2-Dichlorobenzene	600	13	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
1,2-Dichloroethane	5.0	360	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
1,2-Dichloropropane	5.0	230	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
1,2,3-Trichlorobenzene	--	--	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	<50 Y	<5	NA	NA	<5	<5
1,2,3-Trichloropropane	42	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
1,2,3-Trimethylbenzene	--	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	160 Y	<1	NA	NA	<1	<1
1,2,4-Trichlorobenzene	70	99	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	<50 Y	<5	NA	NA	<5	<5
1,2,4-Trimethylbenzene	63	17	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	540 Y	<1	NA	NA	<1	<1
1,3-Dichlorobenzene	6.6	28	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
1,3,5-Trimethylbenzene	72	45	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	20 Y	<1	NA	NA	<1	<1
1,4-Dichlorobenzene	75	17	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
1,4-Dioxane	7.2	280	µg/L	32	<1	NA	37	<1	<1	<1	<1	<1	NA	NA	1	520 Y	410 Y	310 Y
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	2,200	µg/L	NA	NA	NA	<25	NA	NA	NA	NA	NA	<250 Y	<25	NA	NA	<25	<25
2-Hexanone	1,000	--	µg/L	NA	NA	NA	<50	NA	NA	NA	NA	NA	<50 Y	<50	NA	NA	<50	<50
2-Methylnaphthalene	260	19	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	<50 Y	<5	NA	NA	<5	<5
2-Phenylbutane (sec-Butylbenzene)	80	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	--	µg/L	NA	NA	NA	<50	NA	NA	NA	NA	NA	<500 Y	<50	NA	NA	<50	<50
Acetone	730	1,700	µg/L	NA	NA	NA	<50	NA	NA	NA	NA	NA	<500 Y	<50	NA	NA	<50	<50
Acrylonitrile	2.6	2	µg/L	NA	NA	NA	<2	NA	NA	NA	NA	NA	<20 Y	<2	NA	NA	<2	<2
Benzene	5.0	200	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	820 Y	<1	NA	NA	<1	<1
Bromobenzene	18	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
Bromodichloromethane	80	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
Bromoform	80	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
Bromomethane (Methyl bromide)	10	5.0	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	<50 Y	<5	NA	NA	<5	<5
Carbon disulfide	800	--	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	<50 Y	<5	NA	NA	<5	<5
Carbon tetrachloride	5.0	38	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
Chlorobenzene	100	25	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
Chlorobromomethane	--	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
Chloroethane	430	1,100	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	<50 Y	<5	NA	NA	<5	<5
Chloroform (Trichloromethane)	80	350	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
Chloromethane (Methyl chloride)	260	--	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	<50 Y	<5	NA	NA	<5	<5
cis-1,2-Dichloroethene	70	620	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
cis-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
Cymene (p-Isopropyltoluene)	--	--	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	<50 Y	<5	NA	NA	<5	<5
Dibromochloromethane	80	--	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	<50 Y	<5	NA	NA	<5	<5
Dibromomethane	80	--	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	<50 Y	<5	NA	NA	<5	<5
Dichlorodifluoromethane (CFC-12)	1,700	--	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	<50 Y	<5	NA	NA	<5	<5
Ethyl ether	10	--	µg/L	NA	NA	NA	<10	NA	NA	NA	NA	NA	<100 Y	<10	NA	NA	<10	<10
Ethylbenzene	74	18	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	1,110 Y	<1	NA	NA	<1	<1
Hexachloroethane	7.3	6.7	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	<50 Y	<5	NA	NA	<5	<5
Iodomethane	--	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
Isopropyl benzene	800	28	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	50 Y	<5	NA	NA	<5	<5
Methyl tert butyl ether (MTBE)	40	7,100	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	<50 Y	<5	NA	NA	<5	<5
Methylene chloride	5.0	1,500	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	<50 Y	<5	NA	NA	<5	<5
Naphthalene	520	11	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	150 Y	<5	NA	NA	<5	<5
N-Butylbenzene	80	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
N-Propylbenzene	80	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	150 Y	<1	NA	NA	<1	<1
Styrene	100	80	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
tert-Butylbenzene	80	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
Tetrachloroethene	5.0	60	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	1	NA	NA	<1	<1
Tetrahydrofuran	95	11,000	µg/L	NA	NA	NA	<90	NA	NA	NA	NA	NA	<900 Y	<90	NA	NA	<90	<90
Toluene	790	270	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	270 Y	<1	NA	NA	<1	<1
trans-1,2-Dichloroethene	100	1,500	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
trans-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
trans-1,4-Dichloro-2-butene	--	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
Trichloroethene	5.0	200	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
Trichlorofluoromethane (CFC-11)	2,600	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
Vinyl chloride	2.0	13	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	<10 Y	<1	NA	NA	<1	<1
o-Xylene	--	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	200 Y	<1	NA	NA	<1	<1
m&p-Xylene	--	--	µg/L	NA	NA	NA	<2	NA	NA	NA	NA	NA	1,610 Y	<2	NA	NA	<2	<2
Xylenes (total)	280	49	µg/L	NA	NA	NA	<2	NA	NA	NA	NA	NA	1,810 Y	<2	NA	NA	<2	<2

Table 2
 Summary of Groundwater Analytical Results - January to June 2022
 RACER Trust Plants 2, 3, and 6
 Lansing, Michigan



Location ID:	P201 Residential	P201 Groundwater Surface Water	Units	MW-13-45	MW-13-46	MW-13-47	MW-13-48	MW-13-49	MW-13-50	MW-13-51	MW-13-52	MW-13-53	MW-14-54	MW-14-55	MW-14-57	MW-14-58R	MW-14-58R	MW-14-58R
Date Collected:	Drinking Water	Interface		06/07/22	06/10/22	06/07/22	06/10/22	06/09/22	06/06/22	06/07/22	06/06/22	06/06/22	06/04/22	06/04/22	06/04/22	02/10/22	04/06/22	06/07/22
Sample Name:				MW-13-45_060722	MW-13-46_061022	MW-13-47_060722	MW-13-48_061022	MW-13-49_060922	MW-13-50_060622	MW-13-51_060722	MW-13-52_060622	MW-13-53_060622	MW-14-54_060422	MW-14-55_060422	MW-14-57_060422	MW-14-58R_021022	MW-14-58R_040622	MW-14-58R_060722
<i>See notes on last page.</i>																		
Semi-Volatile Organics (via EPA Method 522)																		
1,4-Dioxane	7.2	280	µg/L	NA	NA	1.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics-Metals (via EPA Method 6020)																		
Arsenic	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III (trivalent)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI (hexavalent)	0.1	0.011	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics-Metals, Filtered (via EPA Method 6020)																		
Arsenic (dissolved)	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III (trivalent, dissolved)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (dissolved)	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead (dissolved)	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel (dissolved)	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium (dissolved)	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry																		
Nitrate (as N)	10	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus	63	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total kjeldahl nitrogen (TKN)	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances (PFAS) (via EPA Method 537 Modified)																		
11CI-PF3OUdS (F-53B Minor)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4:2 FTS	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6:2 FTS	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8:2 FTS	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9CI-PF3ONS (F-53B Major)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ADONA	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexafluoropropylene oxide dimer acid (HFPO-DA) (GenX)	370	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-methyl perfluorooctane sulfonamidoacetic acid (NMtFOSAA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorobutanesulfonic acid (PFBS)	420	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorobutanoic acid (PFBA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorodecanesulfonic acid (PFDS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorodecanoic acid (PFDA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorododecanoic acid (PFDoA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanesulfonic Acid (PFHpS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic acid (PFHpA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic acid (PFHxS)	51	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanoic acid (PFHxA)	400,000	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanesulfonic acid (PFNS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic acid (PFNA)	6	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctane Sulfonamide (PFOSA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctane sulfonic acid (PFOS)	16	12	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic acid (PFOA)	8	12,000	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoropentanesulfonic acid (PFPeS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoropentanoic acid (PFPeA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorotetradecanoic acid (PFTeA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorotridecanoic Acid (PFTriA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroundecanoic acid (PFUnA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

See notes on last page.

Table 2
Summary of Groundwater Analytical Results - January to June 2022
RACER Trust Plants 2, 3, and 6
Lansing, Michigan

Location ID:	P201 Residential	P201 Groundwater Surface Water		MW-14-59	MW-14-60	MW-14-61	MW-14-62	MW-14-63	MW-14-64	MW-14-66	MW-14-67	MW-14-67	MW-14-70	MW-14-70	MW-15-71	MW-15-72	MW-15-73	MW-16-74	
Date Collected:	Drinking Water	Interface	Units	06/07/22	06/07/22	06/01/22	06/07/22	06/08/22	06/09/22	06/03/22	03/01/22	06/03/22	03/01/22	06/02/22	06/09/22	06/01/22	06/07/22	06/01/22	
Sample Name:				MW-14-59_060722	MW-14-60_060722	MW-14-61_060122	MW-14-62_060722	MW-14-63_060822	MW-14-64_060922	MW-14-66_060322	MW-14-67_030122	MW-14-67_060322	MW-14-70_030122	MW-14-70_060222	MW-15-71_060922	MW-15-72_060122	MW-15-73_060722	MW-16-74_060122	
Field																			
pH	6.5 to 8.5	6.5 to 9.0	s.u.	7.31	7.37	6.92	11.13	6.99	7.01	7.41	7.38	7.20	7.43	7.28	6.94	6.95	6.63	6.97	
Conductivity	--	--	mS/cm	0.71	1.16	2.05	0.65	1.06	1.64	0.58	0.96	1.12	0.96	0.98	1.46	1.10	3.04	1.97	
Turbidity	--	--	NTU	15.00	15.00	1.35	5.00	57.70	8.79	1.22	1.28	1.20	2.66	1.05	12.60	0.02	777.00	384.00	
Dissolved oxygen (DO)	--	--	mg/L	0.06	0.02	2.10	0.03	0.15	2.31	0.12	0.22	0.15	0.44	0.10	1.00	0.11	0.62	0.17	
Temperature	--	--	Deg C	13.5	12.9	17.5	16.5	15.5	17.5	13.9	8.2	12.8	9.6	10.8	14.8	17.2	16.2	17.2	
Oxidation reduction potential (ORP)	--	--	millivolts	-3.1	-13.6	63.3	1.7	-76.7	70.6	50.1	185.2	120.3	177.9	-388.4	61.7	-92.6	-50.7	-66.2	
Volatile Organics (via EPA Method SW5030C/8260C)																			
1,1-Dichloroethane	880	740	µg/L	2	<1	<1	71	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
1,1-Dichloroethene	7.0	130	µg/L	20	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
1,1,1-Trichloroethane	200	89	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
1,1,1,2-Tetrachloroethane	77	--	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
1,1,2-Trichloroethane	5.0	330	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
1,1,2,2-Tetrachloroethane	8.5	78	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
1,2-Dibromo-3-chloropropane (DBCP)	0.2	--	µg/L	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	
1,2-Dibromoethane (Ethylene dibromide)	0.05	5.7	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
1,2-Dichlorobenzene	600	13	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
1,2-Dichloroethane	5.0	360	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
1,2-Dichloropropane	5.0	230	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
1,2,3-Trichlorobenzene	--	--	µg/L	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	
1,2,3-Trichloropropane	42	--	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
1,2,3-Trimethylbenzene	--	--	µg/L	<1	<1	<1	2	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
1,2,4-Trichlorobenzene	70	99	µg/L	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	
1,2,4-Trimethylbenzene	63	17	µg/L	<1	<1	<1	2	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
1,3-Dichlorobenzene	6.6	28	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
1,3,5-Trimethylbenzene	72	45	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
1,4-Dichlorobenzene	75	17	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
1,4-Dioxane	7.2	280	µg/L	20	10	16	63	<1	<1	<1	NA	NA	NA	NA	<1	144	9	2	
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	2,200	µg/L	<25	<25	<25	<25	NA	NA	NA	NA	NA	NA	NA	NA	<25	NA	NA	
2-Hexanone	1,000	--	µg/L	<50	<50	<50	<50	NA	NA	NA	NA	NA	NA	NA	NA	<50	NA	NA	
2-Methylnaphthalene	260	19	µg/L	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	
2-Phenylbutane (sec-Butylbenzene)	80	--	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	--	µg/L	<50	<50	<50	<50	NA	NA	NA	NA	NA	NA	NA	NA	<50	NA	NA	
Acetone	730	1,700	µg/L	<50	<50	<50	<50	NA	NA	NA	NA	NA	NA	NA	NA	<50	NA	NA	
Acrylonitrile	2.6	2	µg/L	<2	<2	<2	<2	NA	NA	NA	NA	NA	NA	NA	NA	<2	NA	NA	
Benzene	5.0	200	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
Bromobenzene	18	--	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
Bromodichloromethane	80	--	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
Bromoform	80	--	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
Bromomethane (Methyl bromide)	10	5.0	µg/L	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	
Carbon disulfide	800	--	µg/L	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	
Carbon tetrachloride	5.0	38	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
Chlorobenzene	100	25	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
Chlorobromomethane	--	--	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
Chloroethane	430	1,100	µg/L	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	
Chloroform (Trichloromethane)	80	350	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
Chloromethane (Methyl chloride)	260	--	µg/L	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	
cis-1,2-Dichloroethene	70	620	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
cis-1,3-Dichloropropene	--	--	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
Cymene (p-Isopropyltoluene)	--	--	µg/L	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	
Dibromochloromethane	80	--	µg/L	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	
Dibromomethane	80	--	µg/L	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	
Dichlorodifluoromethane (CFC-12)	1,700	--	µg/L	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	
Ethyl ether	10	--	µg/L	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	<10	NA	NA	
Ethylbenzene	74	18	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
Hexachloroethane	7.3	6.7	µg/L	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	
Iodomethane	--	--	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
Isopropyl benzene	800	28	µg/L	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	
Methyl tert butyl ether (MTBE)	40	7,100	µg/L	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	
Methylene chloride	5.0	1,500	µg/L	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	
Naphthalene	520	11	µg/L	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	
N-Butylbenzene	80	--	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
N-Propylbenzene	80	--	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
Styrene	100	80	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
tert-Butylbenzene	80	--	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
Tetrachloroethene	5.0	60	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
Tetrahydrofuran	95	11,000	µg/L	<90	<90	<90	<90	NA	NA	NA	NA	NA	NA	NA	NA	<90	NA	NA	
Toluene	790	270	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
trans-1,2-Dichloroethene	100	1,500	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
trans-1,3-Dichloropropene	--	--	µg/L	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	
trans-1,4-Dichloro-2-butene	--	--	µg/L	<1	<1	<1													

Table 2
 Summary of Groundwater Analytical Results - January to June 2022
 RACER Trust Plants 2, 3, and 6
 Lansing, Michigan



Location ID: Date Collected: Sample Name:	P201 Residential Drinking Water	P201 Groundwater Surface Water Interface	Units	MW-14-59 06/07/22 MW-14-59_060722	MW-14-60 06/07/22 MW-14-60_060722	MW-14-61 06/01/22 MW-14-61_060122	MW-14-62 06/07/22 MW-14-62_060722	MW-14-63 06/08/22 MW-14-63_060822	MW-14-64 06/09/22 MW-14-64_060922	MW-14-66 06/03/22 MW-14-66_060322	MW-14-67 03/01/22 MW-14-67_030122	MW-14-67 06/03/22 MW-14-67_060322	MW-14-70 03/01/22 MW-14-70_030122	MW-14-70 06/02/22 MW-14-70_060222	MW-15-71 06/09/22 MW-15-71_060922	MW-15-72 06/01/22 MW-15-72_060122	MW-15-73 06/07/22 MW-15-73_060722	MW-16-74 06/01/22 MW-16-74_060122
See notes on last page.																		
Semi-Volatile Organics (via EPA Method 522)																		
1,4-Dioxane	7.2	280	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics-Metals (via EPA Method 6020)																		
Arsenic	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	0.003	NA	<0.002	NA	NA	NA	NA	NA	NA
Chromium III (trivalent)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	<0.005	NA	<0.005	NA	NA	NA	NA	NA	NA
Chromium VI (hexavalent)	0.1	0.011	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	<0.005	NA	<0.005	NA	NA	NA	NA	NA	NA
Lead	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	<0.003	NA	<0.003	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	<0.005	NA	<0.005	NA	NA	NA	NA	NA	NA
Vanadium	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	<0.005	NA	<0.005	NA	NA	NA	NA	NA	NA
Inorganics-Metals, Filtered (via EPA Method 6020)																		
Arsenic (dissolved)	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III (trivalent, dissolved)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (dissolved)	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead (dissolved)	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel (dissolved)	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium (dissolved)	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry																		
Nitrate (as N)	10	--	mg/L	NA	NA	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus	63	--	mg/L	NA	NA	0.11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total kjeldahl nitrogen (TKN)	--	--	mg/L	NA	NA	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances (PFAS) (via EPA Method 537 Modified)																		
11CI-PF3OUdS (F-53B Minor)	--	--	ng/L	<8.4	<6.8	<7.1	<6.9	NA	NA	NA	<6.5	<7	<6.4	<6.8	NA	<6.8	NA	NA
4:2 FTS	--	--	ng/L	<8.4	<6.8	<7.1	<6.9	NA	NA	NA	<6.5	<7	<6.4	<6.8	NA	<6.8	NA	NA
6:2 FTS	--	--	ng/L	<8.4	<6.8	<7.1	18	NA	NA	NA	<6.5	<7	<6.4	<6.8	NA	<6.8	NA	NA
8:2 FTS	--	--	ng/L	<8.4	<6.8	<7.1	3.9 J	NA	NA	NA	<6.5	<7	<6.4	<6.8	NA	<6.8	NA	NA
9CI-PF3ONS (F-53B Major)	--	--	ng/L	<8.4	<6.8	<7.1	<6.9	NA	NA	NA	<6.5	<7	<6.4	<6.8	NA	<6.8	NA	NA
ADONA	--	--	ng/L	<8.4	<6.8	<7.1	<6.9	NA	NA	NA	<6.5	<7	<6.4	<6.8	NA	<6.8	NA	NA
Hexafluoropropylene oxide dimer acid (HFPO-DA) (GenX)	370	--	ng/L	<8.4	<6.8	<7.1	<6.9	NA	NA	NA	<6.5	<7	<6.4	<6.8	NA	<6.8	NA	NA
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	--	--	ng/L	<8.4	<6.8	<7.1	1.5 J	NA	NA	NA	<6.5	<7	<6.4	<6.8	NA	<6.8	NA	NA
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	--	--	ng/L	<8.4	<6.8	<7.1	0.82 J	NA	NA	NA	<6.5	<7	<6.4	<6.8	NA	<6.8	NA	NA
Perfluorobutanesulfonic acid (PFBS)	420	--	ng/L	1.7 J	2.5 J	<3.5	1.6 J	NA	NA	NA	10	9.8	7.2	7.9	NA	<3.4	NA	NA
Perfluorobutanoic acid (PFBA)	--	--	ng/L	8.6	26	2.4 J	15	NA	NA	NA	36	45	42	44	NA	4.1	NA	NA
Perfluorodecanesulfonic acid (PFDS)	--	--	ng/L	<4.2	<3.4	<3.5	<3.5	NA	NA	NA	<3.2	<3.5	<3.2	<3.4	NA	<3.4	NA	NA
Perfluorodecanoic acid (PFDA)	--	--	ng/L	<4.2	1.7 J	<3.5	2.4 J	NA	NA	NA	1.6 J	1.7 J	<3.2	<3.4	NA	<3.4	NA	NA
Perfluorododecanoic acid (PFDoA)	--	--	ng/L	<4.2	<3.4	<3.5	<3.5	NA	NA	NA	<3.2	<3.5	<3.2	<3.4	NA	<3.4	NA	NA
Perfluoroheptanesulfonic Acid (PFHpS)	--	--	ng/L	<4.2	0.87 J	<3.5	1.2 J	NA	NA	NA	<3.2	<3.5	<3.2	<3.4	NA	<3.4	NA	NA
Perfluoroheptanoic acid (PFHpA)	--	--	ng/L	2.5 J	18	<3.5	19	NA	NA	NA	27	30	55	46	NA	<3.4	NA	NA
Perfluorohexanesulfonic acid (PFHxS)	51	--	ng/L	1.1 J	6.3	<3.5	6.6	NA	NA	NA	<3.2	<3.5	2.7 J	3 J	NA	<3.4	NA	NA
Perfluorohexanoic acid (PFHxA)	400,000	--	ng/L	4.8	29	<3.5	21	NA	NA	NA	74	87	84	80	NA	1.7 J	NA	NA
Perfluorononanesulfonic acid (PFNS)	--	--	ng/L	<4.2	<3.4	<3.5	<3.5	NA	NA	NA	<3.2	<3.5	<3.2	<3.4	NA	<3.4	NA	NA
Perfluorononanoic acid (PFNA)	6	--	ng/L	<4.2	3.6	<3.5	7.7	NA	NA	NA	0.88 J	0.77 J	0.45 J	0.44 J	NA	<3.4	NA	NA
Perfluorooctane Sulfonamide (PFOSA)	--	--	ng/L	<4.2	1.3 J	<3.5	3.1 J	NA	NA	NA	<3.2	<3.5	<3.2	<3.4	NA	<3.4	NA	NA
Perfluorooctane sulfonic acid (PFOS)	16	12	ng/L	<4.2	33	<3.5	52	NA	NA	NA	3.1 J	2.6 J	<3.2	<3.4	NA	<3.4	NA	NA
Perfluorooctanoic acid (PFOA)	8	12,000	ng/L	9	39	<3.5	52	NA	NA	NA	13	16	36	34	NA	<3.4	NA	NA
Perfluoropentanesulfonic acid (PFPeS)	--	--	ng/L	<4.2	<3.4	<3.5	1 J	NA	NA	NA	<3.2	<3.5	1.2 J	<3.4	NA	<3.4	NA	NA
Perfluoropentanoic acid (PFPeA)	--	--	ng/L	3.5 J	20	<3.5	17	NA	NA	NA	58	68	120	100	NA	3.4	NA	NA
Perfluorotetradecanoic acid (PFTeA)	--	--	ng/L	<4.2	<3.4	<3.5	<3.5	NA	NA	NA	<3.2	<3.5	<3.2	<3.4	NA	<3.4	NA	NA
Perfluorotridecanoic Acid (PFTriA)	--	--	ng/L	<4.2	<3.4	<3.5	<3.5	NA	NA	NA	<3.2	<3.5	<3.2	<3.4	NA	<3.4	NA	NA
Perfluoroundecanoic acid (PFUnA)	--	--	ng/L	<4.2	<3.4	<3.5	<3.5	NA	NA	NA	<3.2	<3.5	<3.2	<3.4	NA	<3.4	NA	NA

See notes on last page.

Table 2
 Summary of Groundwater Analytical Results - January to June 2022
 RACER Trust Plants 2, 3, and 6
 Lansing, Michigan

Location ID: Date Collected: Sample Name:	P201 Residential Drinking Water	P201 Groundwater Surface Water Interface	Units	MW-16-75 06/08/22 MW-16-75_060822	MW-16-76 06/08/22 MW-16-76_060822	MW-16-77 06/08/22 MW-16-77_060822	MW-16-78 06/02/22 MW-16-78_060222	MW-16-79 06/02/22 MW-16-79_060222	MW-16-80 06/08/22 MW-16-80_060822	MW-16-81 06/02/22 MW-16-81_060222	MW-16-82 06/02/22 MW-16-82_060222	MW-16-83 06/06/22 MW-16-83_060622	MW-16-84 06/02/22 MW-16-84_060222	MW-16-85 06/06/22 MW-16-85_060622	MW-17-86 06/02/22 MW-17-86_060222	MW-17-87 06/06/22 MW-17-87_060622	MW-18-88 03/02/22 MW-18-88_030222	MW-18-88 06/09/22 MW-18-88_060922
Field																		
pH	6.5 to 8.5	6.5 to 9.0	s.u.	7.11	7.13	7.03	6.97	7.14	6.63	6.74	7.00	6.72	7.14	7.16	6.99	7.11	7.48	6.97
Conductivity	--	--	mS/cm	1.85	2.04	2.77	1.33	0.97	2.75	3.12	1.20	3.43	1.55	0.65	2.05	3.27	0.83	1.69
Turbidity	--	--	NTU	317.00	10.10	57.20	3.49	84.50	5	21.60	0.02	1.51	46.90	1.03	9.23	27.80	10.00	6.12
Dissolved oxygen (DO)	--	--	mg/L	0.11	0.33	0.61	0.12	0.71	0.10	6.55	0.09	0.71	0.14	0.03	0.42	0.49	2.43	1.60
Temperature	--	--	Deg C	16.5	14.8	17.6	16.2	15.7	13.3	19.8	21.0	15.7	16.6	15.6	22.5	18.7	14.3	25.1
Oxidation reduction potential (ORP)	--	--	millivolts	-88.7	-63.9	-62.9	-84.4	-73.4	-57.4	24.7	-122.7	-68.0	-96.5	-46.2	-91.4	-128.3	-4.2	-295.1
Volatile Organics (via EPA Method SW5030C/8260C)																		
1,1-Dichloroethane	880	740	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
1,1-Dichloroethene	7.0	130	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
1,1,1-Trichloroethane	200	89	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
1,1,1,2-Tetrachloroethane	77	--	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
1,1,2-Trichloroethane	5.0	330	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
1,1,2,2-Tetrachloroethane	8.5	78	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
1,2-Dibromo-3-chloropropane (DBCP)	0.2	--	µg/L	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5 [<5]	<5	<5	NA	NA	<5
1,2-Dibromoethane (Ethylene dibromide)	0.05	5.7	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
1,2-Dichlorobenzene	600	13	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
1,2-Dichloroethane	5.0	360	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
1,2-Dichloropropane	5.0	230	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
1,2,3-Trichlorobenzene	--	--	µg/L	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5 [<5]	<5	<5	NA	NA	<5
1,2,3-Trichloropropane	42	--	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
1,2,3-Trimethylbenzene	--	--	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
1,2,4-Trichlorobenzene	70	99	µg/L	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5 [<5]	<5	<5	NA	NA	<5
1,2,4-Trimethylbenzene	63	17	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
1,3-Dichlorobenzene	6.6	28	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
1,3,5-Trimethylbenzene	72	45	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
1,4-Dichlorobenzene	75	17	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
1,4-Dioxane	7.2	280	µg/L	2	3	1	<1	<1	22	143	1	<1	44 [44]	8	27	NA	NA	NA
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	2,200	µg/L	NA	NA	NA	NA	NA	NA	<25	NA	NA	<25 [<25]	<25	<25	NA	NA	<25
2-Hexanone	1,000	--	µg/L	NA	NA	NA	NA	NA	NA	<50	NA	NA	<50 [<50]	<50	<50	NA	NA	<50
2-Methylnaphthalene	260	19	µg/L	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5 [<5]	<5	<5	NA	NA	<5
2-Phenylbutane (sec-Butylbenzene)	80	--	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	--	µg/L	NA	NA	NA	NA	NA	NA	<50	NA	NA	<50 [<50]	<50	<50	NA	NA	<50
Acetone	730	1,700	µg/L	NA	NA	NA	NA	NA	NA	<50	NA	NA	<50 [<50]	<50	<50	NA	NA	<50
Acrylonitrile	2.6	2	µg/L	NA	NA	NA	NA	NA	NA	<2	NA	NA	<2 [<2]	<2	<2	NA	NA	<2
Benzene	5.0	200	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
Bromobenzene	18	--	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
Bromodichloromethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
Bromoform	80	--	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
Bromomethane (Methyl bromide)	10	5.0	µg/L	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5 [<5]	<5	<5	NA	NA	<5
Carbon disulfide	800	--	µg/L	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5 [<5]	<5	<5	NA	NA	<5
Carbon tetrachloride	5.0	38	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
Chlorobenzene	100	25	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
Chlorobromomethane	--	--	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
Chloroethane	430	1,100	µg/L	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5 [<5]	<5	<5	NA	NA	<5
Chloroform (Trichloromethane)	80	350	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
Chloromethane (Methyl chloride)	260	--	µg/L	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5 [<5]	<5	<5	NA	NA	<5
cis-1,2-Dichloroethene	70	620	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
cis-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
Cymene (p-Isopropyltoluene)	--	--	µg/L	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5 [<5]	<5	<5	NA	NA	<5
Dibromochloromethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5 [<5]	<5	<5	NA	NA	<5
Dibromomethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5 [<5]	<5	<5	NA	NA	<5
Dichlorodifluoromethane (CFC-12)	1,700	--	µg/L	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5 [<5]	<5	<5	NA	NA	<5
Ethyl ether	10	--	µg/L	NA	NA	NA	NA	NA	NA	<10	NA	NA	<10 [<10]	<10	<10	NA	NA	<10
Ethylbenzene	74	18	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
Hexachloroethane	7.3	6.7	µg/L	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5 [<5]	<5	<5	NA	NA	<5
Iodomethane	--	--	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
Isopropyl benzene	800	28	µg/L	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5 [<5]	<5	<5	NA	NA	<5
Methyl tert butyl ether (MTBE)	40	7,100	µg/L	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5 [<5]	<5	<5	NA	NA	<5
Methylene chloride	5.0	1,500	µg/L	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5 [<5]	<5	<5	NA	NA	<5
Naphthalene	520	11	µg/L	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5 [<5]	<5	<5	NA	NA	<5
N-Butylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
N-Propylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
Styrene	100	80	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
tert-Butylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
Tetrachloroethene	5.0	60	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
Tetrahydrofuran	95	11,000	µg/L	NA	NA	NA	NA	NA	NA	<90	NA	NA	<90 [<90]	<90	<90	NA	NA	<90
Toluene	790	270	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
trans-1,2-Dichloroethene	100	1,500	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
trans-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	NA	<1 [<1]	<1	<1	NA	NA	<1
trans-1,4-Dich																		

Table 2
 Summary of Groundwater Analytical Results - January to June 2022
 RACER Trust Plants 2, 3, and 6
 Lansing, Michigan

Location ID:	P201	P201		MW-16-75	MW-16-76	MW-16-77	MW-16-78	MW-16-79	MW-16-80	MW-16-81	MW-16-82	MW-16-83	MW-16-84	MW-16-85	MW-17-86	MW-17-87	MW-18-88	MW-18-88	
Date Collected:	Residential	Groundwater	Units	06/08/22	06/08/22	06/08/22	06/02/22	06/02/22	06/08/22	06/02/22	06/02/22	06/06/22	06/02/22	06/06/22	06/02/22	06/06/22	03/02/22	06/09/22	
Sample Name:	Drinking Water	Surface Water Interface		MW-16-75_060822	MW-16-76_060822	MW-16-77_060822	MW-16-78_060222	MW-16-79_060222	MW-16-80_060822	MW-16-81_060222	MW-16-82_060222	MW-16-83_060622	MW-16-84_060222	MW-16-85_060622	MW-17-86_060222	MW-17-87_060622	MW-18-88_030222	MW-18-88_060922	
See notes on last page.																			
Semi-Volatile Organics (via EPA Method 522)																			
1,4-Dioxane	7.2	280	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.5	NA	NA	
Inorganics-Metals (via EPA Method 6020)																			
Arsenic	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.002
Chromium III (trivalent)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005
Chromium VI (hexavalent)	0.1	0.011	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01
Copper	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005
Lead	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003
Nickel	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005
Vanadium	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005
Inorganics-Metals, Filtered (via EPA Method 6020)																			
Arsenic (dissolved)	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.002
Chromium III (trivalent, dissolved)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005
Copper (dissolved)	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005
Lead (dissolved)	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003
Nickel (dissolved)	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005
Vanadium (dissolved)	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005
General Chemistry																			
Nitrate (as N)	10	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus	63	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total kjeldahl nitrogen (TKN)	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances (PFAS) (via EPA Method 537 Modified)																			
11Cl-PF3OUdS (F-53B Minor)	--	--	ng/L	NA	NA	NA	NA	NA	NA	<6.8	NA	NA	NA	NA	NA	NA	NA	NA	<7.1
4:2 FTS	--	--	ng/L	NA	NA	NA	NA	NA	NA	<6.8	NA	NA	NA	NA	NA	NA	NA	NA	<7.1
6:2 FTS	--	--	ng/L	NA	NA	NA	NA	NA	NA	<6.8	NA	NA	NA	NA	NA	NA	NA	NA	<7.1
8:2 FTS	--	--	ng/L	NA	NA	NA	NA	NA	NA	<6.8	NA	NA	NA	NA	NA	NA	NA	NA	<7.1
9Cl-PF3ONS (F-53B Major)	--	--	ng/L	NA	NA	NA	NA	NA	NA	<6.8	NA	NA	NA	NA	NA	NA	NA	NA	<7.1
ADONA	--	--	ng/L	NA	NA	NA	NA	NA	NA	<6.8	NA	NA	NA	NA	NA	NA	NA	NA	<7.1
Hexafluoropropylene oxide dimer acid (HFPO-DA) (GenX)	370	--	ng/L	NA	NA	NA	NA	NA	NA	<6.8	NA	NA	NA	NA	NA	NA	NA	NA	<7.1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEFOSAA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	<6.8	NA	NA	NA	NA	NA	NA	NA	NA	<7.1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	<6.8	NA	NA	NA	NA	NA	NA	NA	NA	<7.1
Perfluorobutanesulfonic acid (PFBS)	420	--	ng/L	NA	NA	NA	NA	NA	NA	<3.4	NA	NA	NA	NA	NA	NA	NA	NA	2 J
Perfluorobutanoic acid (PFBA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	9.1	NA	NA	NA	NA	NA	NA	NA	NA	9.5
Perfluorodecanesulfonic acid (PFDS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	<3.4	NA	NA	NA	NA	NA	NA	NA	NA	<3.6
Perfluorodecanoic acid (PFDA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	<3.4	NA	NA	NA	NA	NA	NA	NA	NA	<3.6
Perfluorododecanoic acid (PFDoA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	<3.4	NA	NA	NA	NA	NA	NA	NA	NA	<3.6
Perfluoroheptanesulfonic Acid (PFHpS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	<3.4	NA	NA	NA	NA	NA	NA	NA	NA	1.1 J
Perfluoroheptanoic acid (PFHpA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	1.2 J	NA	NA	NA	NA	NA	NA	NA	NA	0.4 J
Perfluorohexanesulfonic acid (PFHxS)	51	--	ng/L	NA	NA	NA	NA	NA	NA	<3.4	NA	NA	NA	NA	NA	NA	NA	NA	2.6 J
Perfluorohexanoic acid (PFHxA)	400,000	--	ng/L	NA	NA	NA	NA	NA	NA	3.5	NA	NA	NA	NA	NA	NA	NA	NA	0.66 J
Perfluorononanesulfonic acid (PFNS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	<3.4	NA	NA	NA	NA	NA	NA	NA	NA	<3.6
Perfluorononanoic acid (PFNA)	6	--	ng/L	NA	NA	NA	NA	NA	NA	<3.4	NA	NA	NA	NA	NA	NA	NA	NA	<3.6
Perfluorooctane Sulfonamide (PFOSA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	<3.4	NA	NA	NA	NA	NA	NA	NA	NA	<3.6
Perfluorooctane sulfonic acid (PFOS)	16	12	ng/L	NA	NA	NA	NA	NA	NA	<3.4	NA	NA	NA	NA	NA	NA	NA	NA	120
Perfluorooctanoic acid (PFOA)	8	12,000	ng/L	NA	NA	NA	NA	NA	NA	<3.4	NA	NA	NA	NA	NA	NA	NA	NA	5.6
Perfluoropentanesulfonic acid (PFPeS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	<3.4	NA	NA	NA	NA	NA	NA	NA	NA	0.6 J
Perfluoropentanoic acid (PFPeA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	4.8	NA	NA	NA	NA	NA	NA	NA	NA	0.81 J
Perfluorotetradecanoic acid (PFTeA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	<3.4	NA	NA	NA	NA	NA	NA	NA	NA	<3.6
Perfluorotridecanoic Acid (PFTriA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	<3.4	NA	NA	NA	NA	NA	NA	NA	NA	<3.6
Perfluoroundecanoic acid (PFUnA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	<3.4	NA	NA	NA	NA	NA	NA	NA	NA	<3.6

See notes on last page.

Table 2
 Summary of Groundwater Analytical Results - January to June 2022
 RACER Trust Plants 2, 3, and 6
 Lansing, Michigan



Field	Location ID:	P201	P201	MW-18-89		MW-18-89		MW-18-90		MW-18-90		MW-18-91		MW-18-91		MW-18-92		MW-18-93		MW-18-94		MW-18-95		MW-18-95		MW-18-97		MW-18-98		MW-18-98		MW-18-99	
	Date Collected:	Residential	Groundwater	Units	03/02/22	06/08/22	03/02/22	06/08/22	03/01/22	06/08/22	06/09/22	06/09/22	06/09/22	06/09/22	03/01/22	06/08/22	03/02/22	06/09/22	06/08/22	06/09/22	06/08/22	06/08/22	03/01/22	06/09/22	06/08/22	03/01/22	06/09/22	06/08/22	03/01/22	06/09/22	03/01/22		
	Sample Name:	Drinking Water	Surface Water		MW-18-89_030222	MW-18-89_060822	MW-18-90_030222	MW-18-90_060822	MW-18-91_030122	MW-18-91_060822	MW-18-92_060922	MW-18-93_060922	MW-18-94_060822	MW-18-95_030222	MW-18-95_060922	MW-18-97_060822	MW-18-98_030122	MW-18-98_060922	MW-18-99_030122														
pH	6.5 to 8.5	6.5 to 9.0	s.u.	7.25	7.02	7.08	7.14	6.95	7.13	7.11	7.18	6.87	7.71	8.15	12.31	11.33	7.80	7.65															
Conductivity	--	--	mS/cm	0.53	0.81	0.61	0.55	0.78	0.54	0.61	0.64	0.67	0.91	0.75	2.16	0.00	0.71	0.69															
Turbidity	--	--	NTU	2.22	9.15	2.07	1.75	8.57	2.10	2.55	7.49	11.00	6	8.00	0.02	8.00	6.41	8.00															
Dissolved oxygen (DO)	--	--	mg/L	1.30	0.93	0.22	0.22	1.01	0.25	0.30	0.63	0.42	0.51	8.51	1.17	4.85	0.63	0.03															
Temperature	--	--	Deg C	13.1	6.2	14.1	14.3	5.0	13.1	15.0	4.0	15.9	5.8	18.1	9.8	15.5	7.7	14.2															
Oxidation reduction potential (ORP)	--	--	millivolts	33.0	43.4	19.6	24.0	-4.5	10.2	-53.8	95.0	8.9	121.4	-2.8	-150.7	17.6	1.3	-19.9															
Volatile Organics (via EPA Method SW5030C/8260C)																																	
1,1-Dichloroethane	880	740	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,1-Dichloroethene	7.0	130	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,1,1-Trichloroethane	200	89	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,1,1,2-Tetrachloroethane	77	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,1,2-Trichloroethane	5.0	330	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,1,2,2-Tetrachloroethane	8.5	78	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,2-Dibromo-3-chloropropane (DBCP)	0.2	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,2-Dibromoethane (Ethylene dibromide)	0.05	5.7	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,2-Dichlorobenzene	600	13	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,2-Dichloroethane	5.0	360	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,2-Dichloropropane	5.0	230	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,2,3-Trichlorobenzene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,2,3-Trichloropropane	42	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,2,3-Trimethylbenzene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,2,4-Trichlorobenzene	70	99	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,2,4-Trimethylbenzene	63	17	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,3-Dichlorobenzene	6.6	28	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,3,5-Trimethylbenzene	72	45	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,4-Dichlorobenzene	75	17	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
1,4-Dioxane	7.2	280	µg/L	NA	NA	NA	NA	NA	NA	NA	5	NA	NA	<1	NA	NA	NA	NA															
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	2,200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
2-Hexanone	1,000	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
2-Methylnaphthalene	260	19	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
2-Phenylbutane (sec-Butylbenzene)	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Acetone	730	1,700	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Acrylonitrile	2.6	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Benzene	5.0	200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Bromobenzene	18	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Bromodichloromethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Bromoform	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Bromomethane (Methyl bromide)	10	5.0	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Carbon disulfide	800	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Carbon tetrachloride	5.0	38	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Chlorobenzene	100	25	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Chlorobromomethane	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Chloroethane	430	1,100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Chloroform (Trichloromethane)	80	350	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Chloromethane (Methyl chloride)	260	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
cis-1,2-Dichloroethene	70	620	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
cis-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Cymene (p-Isopropyltoluene)	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Dibromochloromethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Dibromomethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Dichlorodifluoromethane (CFC-12)	1,700	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Ethyl ether	10	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Ethylbenzene	74	18	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Hexachloroethane	7.3	6.7	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Iodomethane	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Isopropyl benzene	800	28	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Methyl tert butyl ether (MTBE)	40	7,100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Methylene chloride	5.0	1,500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Naphthalene	520	11	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
N-Butylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
N-Propylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Styrene	100	80	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
tert-Butylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Tetrachloroethene	5.0	60	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Tetrahydrofuran	95	11,000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Toluene	790	270	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
trans-1,2-Dichloroethene	100	1,500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
trans-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
trans-1,4-Dichloro-2-butene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Trichloroethene	5.0	200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Trichlorofluoromethane (CFC-11)	2,600	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
Vinyl chloride	2.0	13	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA															
o-Xylene	--	--																															

Table 2
 Summary of Groundwater Analytical Results - January to June 2022
 RACER Trust Plants 2, 3, and 6
 Lansing, Michigan

Location ID: Date Collected: Sample Name:	P201 Residential Drinking Water	P201 Groundwater Surface Water Interface	Units	MW-18-89 03/02/22 MW-18-89_030222	MW-18-89 06/08/22 MW-18-89_060822	MW-18-90 03/02/22 MW-18-90_030222	MW-18-90 06/08/22 MW-18-90_060822	MW-18-91 03/01/22 MW-18-91_030122	MW-18-91 06/08/22 MW-18-91_060822	MW-18-92 06/09/22 MW-18-92_060922	MW-18-93 06/09/22 MW-18-93_060922	MW-18-94 06/08/22 MW-18-94_060822	MW-18-95 03/02/22 MW-18-95_030222	MW-18-95 06/09/22 MW-18-95_060922	MW-18-97 06/08/22 MW-18-97_060822	MW-18-98 03/01/22 MW-18-98_030122	MW-18-98 06/09/22 MW-18-98_060922	MW-18-99 03/01/22 MW-18-99_030122			
See notes on last page.																					
Semi-Volatile Organics (via EPA Method 522)																					
1,4-Dioxane				7.2	280	μg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Inorganics-Metals (via EPA Method 6020)																					
Arsenic				0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Chromium III (trivalent)				0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Chromium VI (hexavalent)				0.1	0.011	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Copper				1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Lead				0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Nickel				0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Vanadium				0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Inorganics-Metals, Filtered (via EPA Method 6020)																					
Arsenic (dissolved)				0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Chromium III (trivalent, dissolved)				0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Copper (dissolved)				1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Lead (dissolved)				0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Nickel (dissolved)				0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Vanadium (dissolved)				0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
General Chemistry																					
Nitrate (as N)				10	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Phosphorus				63	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Total kjeldahl nitrogen (TKN)				--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Per- and Polyfluoroalkyl Substances (PFAS) (via EPA Method 537 Modified)																					
11Cl-PF3OUdS (F-53B Minor)				--	--	ng/L	<7.1	<7	<7.3	<6.8 [6.8]	<6.9	<7.2	<6.9	<6.8	<7.3	<7 [7]	<7.5	<6.8	<7.1	<6.9	<7
4:2 FTS				--	--	ng/L	<7.1	<7	<7.3	<6.8 [6.8]	<6.9	<7.2	<6.9	<6.8	<7.3	<7 [7]	<7.5	<6.8	<7.1	<6.9	<7
6:2 FTS				--	--	ng/L	<7.1	<7	<7.3	<6.8 [6.8]	2.3 J	<7.2	<6.9	<6.8	<7.3	<7 [7]	<7.5	<6.8	<7.1	<6.9	<6.9
8:2 FTS				--	--	ng/L	<7.1	<7	<7.3	<6.8 [6.8]	<6.9	<7.2	<6.9	<6.8	<7.3	<7 [7]	<7.5	<6.8	<7.1	<6.9	<7
9Cl-PF3ONS (F-53B Major)				--	--	ng/L	<7.1	<7	<7.3	<6.8 [6.8]	<6.9	<7.2	<6.9	<6.8	<7.3	<7 [7]	<7.5	<6.8	<7.1	<6.9	<7
ADONA				--	--	ng/L	<7.1	<7	<7.3	<6.8 [6.8]	<6.9	<7.2	<6.9	<6.8	<7.3	<7 [7]	<7.5	<6.8	<7.1	<6.9	<7
Hexafluoropropylene oxide dimer acid (HFPO-DA) (GenX)				370	--	ng/L	<7.1	<7	<7.3	<6.8 [6.8]	<6.9	<7.2	<6.9	<6.8	<7.3	<7 [7]	<7.5	<6.8	<7.1	<6.9	<7
N-ethyl perfluorooctane sulfonamidoacetic acid (NEFOSAA)				--	--	ng/L	<7.1	<7	<7.3	<6.8 [6.8]	<6.9	<7.2	<6.9	<6.8	<7.3	<7 [7]	<7.5	<6.8	<7.1	<6.9	<7
N-methyl perfluorooctane sulfonamidoacetic acid (NmFOSAA)				--	--	ng/L	<7.1	<7	<7.3	<6.8 [6.8]	<6.9	<7.2	<6.9	<6.8	<7.3	<7 [7]	<7.5	<6.8	<7.1	<6.9	<7
Perfluorobutanesulfonic acid (PFBS)				420	--	ng/L	1.3 J	1 J	1.8 J	1.5 J [1.5 J]	1.6 J	2.9 J	0.72 J	<3.4	<3.7	2.8 J [2.6 J]	1.5 J	<3.4	2 J	0.6 J	0.7 J
Perfluorobutanoic acid (PFBA)				--	--	ng/L	8.6	8.5	9.6	9.3 [7.8]	8	8.2	1 J	<3.4	<3.7	9.5 [9.8]	6	0.99 J	18	7.1	11
Perfluorodecanesulfonic acid (PFDS)				--	--	ng/L	<3.5	<3.5	<3.6	<3.4 [3.4]	0.68 J	2 J	<3.4	<3.7	<3.5 [3.5]	<3.8	<3.4	<3.5	<3.4	<3.4	1.1 J
Perfluorodecanoic acid (PFDA)				--	--	ng/L	1 J	0.61 J	1.8 J	1.8 J [1.8 J]	0.91 J	0.97 J	<3.4	<3.7	<3.5 [3.5]	<3.8	<3.4	<3.5	<3.4	<3.4	1.4 J
Perfluorododecanoic acid (PFDoA)				--	--	ng/L	<3.5	<3.5	<3.6	<3.4 [3.4]	<3.4	<3.6	<3.4	<3.7	<3.5 [3.5]	<3.8	<3.4	<3.5	<3.4	<3.4	<3.5
Perfluoroheptanesulfonic acid (PFHpS)				--	--	ng/L	1.9 J	1.6 J	21	22 [22]	0.75 J	0.69 J	<3.4	<3.7	<3.5 [3.5]	<3.8	<3.4	<3.5	0.61 J	1.6 J	1 J
Perfluoroheptanoic acid (PFHpA)				--	--	ng/L	3.4 J	3.2 J	3.9	4.1 [4]	2.4 J	2.4 J	<3.4	<3.7	0.84 J [0.81 J]	<3.8	<3.4	<3.4	3.8	4.2	3.4 J
Perfluorohexanesulfonic acid (PFHxS)				51	--	ng/L	3.9	3.8	19	18 [18]	2.1 J	2.1 J	<3.4	<3.7	1 J [0.86 J]	1 J	0.47 J	0.52 J	0.6 J	2.1 J	2.1 J
Perfluorohexanoic acid (PFHxA)				400,000	--	ng/L	5.3	5.3	5	5.1 [5.4]	3 J	2.7 J	<3.4	<3.7	0.81 J [0.72 J]	<3.8	<3.4	<3.4	7.4	4.9	5.4
Perfluorononanesulfonic acid (PFNS)				--	--	ng/L	<3.5	<3.5	<3.6	<3.4 [3.4]	<3.4	<3.6	<3.4	<3.7	<3.5 [3.5]	<3.8	<3.4	<3.5	<3.4	<3.4	<3.5
Perfluorononanoic acid (PFNA)				6	--	ng/L	1.2 J	0.78 J	1.6 J	1.5 J [1.5 J]	1.2 J	1.2 J	<3.4	<3.7	0.45 J [0.78 J]	0.64 J	<3.4	<3.4	1.4 J	3.1 J	1.7 J
Perfluorooctane Sulfonamide (PFOSA)				--	--	ng/L	<3.5	<3.5	0.95 J	0.77 J [0.72 J]	1.5 J	<3.6	0.53 J	<3.4	<3.7	<3.5 [3.5]	<3.8	<3.4	4.9	<3.4	<3.5
Perfluorooctane sulfonic acid (PFOS)				16	12	ng/L	110	74	1,000	960 [1,000]	44	41	<3.4	<3.7	27 [25]	28	<3.4	<3.4	33	97	93
Perfluorooctanoic acid (PFOA)				8	12,000	ng/L	12	10	17	17 [16]	7.7	7.1	1.1 J	<3.4	<3.7	2.3 J [2.6 J]	2.7 J	<3.4	9.5	24	7.3
Perfluoropentanesulfonic acid (PFPeS)				--	--	ng/L	0.78 J	<3.5	2.5 J	2.5 J [3.3 J]	0.61 J	<3.6	<3.4	<3.7	<3.5 [3.5]	<3.8	<3.4	<3.4	<3.5	<3.4	<3.5
Perfluoropentanoic acid (PFPeA)				--	--	ng/L	6	5.4	3.5 J	3.6 [3.3 J]	3.6	3.4 J	<3.4	<3.7	1.2 J [1 J]	<3.8	0.47 J	5.6	2.4 J	3.4 J	3.4 J
Perfluorotetradecanoic acid (PFTeA)				--	--	ng/L	<3.5	<3.5	<3.6	<3.4 [3.4]	<3.4	<3.6	<3.4	<3.7	<3.5 [3.5]	0.76 J	<3.4	<3.5	<3.4	<3.4	<3.5
Perfluorotridecanoic Acid (PFTriA)				--	--	ng/L	<3.5	<3.5	<3.6	<3.4 [3.4]	<3.4	<3.6	<3.4	<3.7	<3.5 [3.5]	<3.8	<3.4	<3.5	<3.4	<3.4	<3.5
Perfluoroundecanoic acid (PFUnA)				--	--	ng/L	<3.5	<3.5	<3.6	<3.4 [3.4]	<3.4	<3.6	<3.4	<3.7	<3.5 [3.5]	<3.8	<3.4	<3.5	<3.4	<3.4	0.56 J

See notes on last page.

Location ID: Date Collected: Sample Name:	P201 Residential Drinking Water	P201 Groundwater Surface Water Interface	Units	MW-18-99 06/09/22 MW-18-99_060822	MW-18-100 06/09/22 MW-18-100_060822	MW-18-101 06/09/22 MW-18-101_060922	MW-18-102 06/09/22 MW-18-102_060922	MW-18-103 03/01/22 MW-18-103_030122	MW-18-103 06/09/22 MW-18-103_060922	MW-18-104 06/09/22 MW-18-104_060922	MW-18-105 03/01/22 MW-18-105_030122	MW-18-105 06/09/22 MW-18-105_060922	MW-18-106 06/09/22 MW-18-106_060922	MW-19-107 06/09/22 MW-19-107_060922	MW-19-108 06/09/22 MW-19-108_060922	MW-19-111 06/09/22 MW-19-111_060922	MW-19-112 06/09/22 MW-19-112_060922
Field																	
pH	6.5 to 8.5	6.5 to 9.0	s.u.	6.78	7.48	6.88	7.71	7.13	6.79	7.72	7.11	8.14	9.05	6.50	6.59	6.53	6.54
Conductivity	--	--	mS/cm	1.03	0.68	5.13	0.51	0.52	1.64	2.46	2.03	1.92	1.54	0.84	1.25	1.28	7.98
Turbidity	--	--	NTU	1.51	10.40	3.55	8.89	10.00	1.20	5.02	10.00	6.16	7.00	1.94	2.72	1.08	11.00
Dissolved oxygen (DO)	--	--	mg/L	0.31	1.49	0.24	3.74	0.46	0.80	0.80	0.38	0.58	1.14	0.21	0.20	0.44	0.09
Temperature	--	--	Deg C	11.9	20.5	13.9	2.6	14.8	13.4	6.2	14.7	7.6	13.6	11.3	11.6	11.8	16.0
Oxidation reduction potential (ORP)	--	--	millivolts	-15.0	-152.1	-74.0	142.7	16.3	-47.4	-21.7	-11.0	-9.7	5.0	-38.5	9.2	22.3	-28.1
Volatile Organics (via EPA Method SW5030C/8260C)																	
1,1-Dichloroethane	880	740	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	7.0	130	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	200	89	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1,2-Tetrachloroethane	77	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	5.0	330	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	8.5	78	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	0.2	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane (Ethylene dibromide)	0.05	5.7	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	600	13	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	5.0	360	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	5.0	230	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	42	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trimethylbenzene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	70	99	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	63	17	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	6.6	28	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	72	45	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	75	17	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dioxane	7.2	280	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	2,200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	1,000	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	260	19	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Phenylbutane (sec-Butylbenzene)	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	730	1,700	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	2.6	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5.0	200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromobenzene	18	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane (Methyl bromide)	10	5.0	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	800	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	5.0	38	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	100	25	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobromomethane	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	430	1,100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform (Trichloromethane)	80	350	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane (Methyl chloride)	260	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	70	620	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cymene (p-Isopropyltoluene)	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromomethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane (CFC-12)	1,700	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	10	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	74	18	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	7.3	6.7	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iodomethane	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropyl benzene	800	28	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert butyl ether (MTBE)	40	7,100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	5.0	1,500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	520	11	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Butylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Propylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100	80	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethane	5.0	60	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrahydrofuran	95	11,000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	790	270	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	100	1,500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,4-Dichloro-2-butene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	5.0	200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane (CFC-11)	2,600	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	2.0	13	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m&p-Xylene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	280	49	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2
 Summary of Groundwater Analytical Results - January to June 2022
 RACER Trust Plants 2, 3, and 6
 Lansing, Michigan



Location ID: Date Collected: Sample Name:	P201 Residential Drinking Water	P201 Groundwater Surface Water Interface	Units	MW-18-99	MW-18-100	MW-18-101	MW-18-102	MW-18-103	MW-18-103	MW-18-104	MW-18-105	MW-18-105	MW-18-106	MW-19-107	MW-19-108	MW-19-111	MW-19-112
				06/08/22 MW-18-99_060822	06/08/22 MW-18-100_060822	06/09/22 MW-18-101_060922	06/09/22 MW-18-102_060922	03/01/22 MW-18-103_030122	06/09/22 MW-18-103_060922	06/09/22 MW-18-104_060922	03/01/22 MW-18-105_030122	06/09/22 MW-18-105_060922	06/09/22 MW-18-106_060922	06/09/22 MW-19-107_060922	06/09/22 MW-19-108_060922	06/09/22 MW-19-111_060922	06/09/22 MW-19-112_060922
<i>See notes on last page.</i>																	
Semi-Volatile Organics (via EPA Method 522)																	
1,4-Dioxane	7.2	280	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics-Metals (via EPA Method 6020)																	
Arsenic	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III (trivalent)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI (hexavalent)	0.1	0.011	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics-Metals, Filtered (via EPA Method 6020)																	
Arsenic (dissolved)	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III (trivalent, dissolved)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (dissolved)	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead (dissolved)	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel (dissolved)	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium (dissolved)	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry																	
Nitrate (as N)	10	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus	63	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total kjeldahl nitrogen (TKN)	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances (PFAS) (via EPA Method 537 Modified)																	
11CI-PF3OUdS (F-53B Minor)	--	--	ng/L	<7.3	<6.9	<7.2	<7.3	<9.9	<7	<7	<6.9	<7.3	<7.2	<6.7	<7.4	<6.9	<7.2
4:2 FTS	--	--	ng/L	<7.3	<6.9	<7.2	<7.3	<9.9	<7	<7	<6.9	<7.3	<7.2	<6.7	<7.4	<6.9	<7.2
6:2 FTS	--	--	ng/L	<7.3	<6.9	<7.2	<7.3	<9.9	<7	<7	<6.9	<7.3	<7.2	<6.7	<7.4	<6.9	<7.2
8:2 FTS	--	--	ng/L	<7.3	<6.9	<7.2	<7.3	<9.9	<7	<7	<6.9	<7.3	<7.2	<6.7	<7.4	<6.9	<7.2
9CI-PF3ONS (F-53B Major)	--	--	ng/L	<7.3	<6.9	<7.2	<7.3	<9.9	<7	<7	<6.9	<7.3	<7.2	<6.7	<7.4	<6.9	<7.2
ADONA	--	--	ng/L	<7.3	<6.9	<7.2	<7.3	<9.9	<7	<7	<6.9	<7.3	<7.2	<6.7	<7.4	<6.9	<7.2
Hexafluoropropylene oxide dimer acid (HFPO-DA) (GenX)	370	--	ng/L	<7.3	<6.9	<7.2	<7.3	<9.9	<7	<7	<6.9	<7.3	<7.2	<6.7	<7.4	<6.9	<7.2
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	--	--	ng/L	<7.3	<6.9	<7.2	<7.3	<9.9	<7	<7	<6.9	<7.3	<7.2	<6.7	<7.4	<6.9	<7.2
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	--	--	ng/L	<7.3	<6.9	<7.2	<7.3	<9.9	<7	<7	<6.9	<7.3	<7.2	<6.7	<7.4	<6.9	<7.2
Perfluorobutanesulfonic acid (PFBS)	420	--	ng/L	0.9 J	1.4 J	<3.6	<3.6	13	6.2	1.6 J	5.6	5.6	2.3 J	2.1 J	1.3 J	1.4 J	<3.6
Perfluorobutanoic acid (PFBA)	--	--	ng/L	12	7.5	3.8	<3.6	14	3.6	1.2 J	6.7	5.1	1.6 J	2.9 J	1.6 J	2.5 J	<3.6
Perfluorodecanesulfonic acid (PFDS)	--	--	ng/L	0.84 J	<3.5	<3.6	<3.6	<5	<3.5	<3.5	<3.6	<3.6	<3.4	<3.7	<3.4	<3.6	<3.6
Perfluorodecanoic acid (PFDA)	--	--	ng/L	0.89 J	<3.5	<3.6	<3.6	<5	<3.5	<3.5	<3.6	<3.6	<3.4	<3.7	<3.4	<3.6	<3.6
Perfluorododecanoic acid (PFDa)	--	--	ng/L	<3.6	<3.5	<3.6	<3.6	<5	<3.5	<3.5	<3.6	<3.6	<3.4	<3.7	<3.4	<3.6	<3.6
Perfluoroheptanesulfonic Acid (PFHpS)	--	--	ng/L	1.1 J	<3.5	<3.6	<3.6	<5	<3.5	<3.5	<3.6	<3.6	<3.4	<3.7	<3.4	<3.6	<3.6
Perfluoroheptanoic acid (PFHpA)	--	--	ng/L	2.7 J	1.6 J	<3.6	<3.6	<5	<3.5	<3.5	0.57 J	<3.6	0.43 J	0.59 J	0.51 J	0.98 J	<3.6
Perfluorohexanesulfonic acid (PFHxS)	51	--	ng/L	1.3 J	3 J	<3.6	<3.6	62	44	1.4 J	2.2 J	2 J	3.7	4.6	1.2 J	1.5 J	<3.6
Perfluorohexanoic acid (PFHxA)	400,000	--	ng/L	4.1	3.4 J	<3.6	<3.6	1.3 J	<3.5	<3.5	0.72 J	<3.6	<3.4	0.9 J	<3.4	1.4 J	<3.6
Perfluorononanesulfonic acid (PFNS)	--	--	ng/L	<3.6	<3.5	<3.6	<3.6	<5	<3.5	<3.5	<3.6	<3.6	<3.4	<3.7	<3.4	<3.6	<3.6
Perfluorononanoic acid (PFNA)	6	--	ng/L	1.3 J	<3.5	<3.6	<3.6	<5	<3.5	<3.5	<3.6	<3.6	<3.4	<3.7	<3.4	<3.6	<3.6
Perfluorooctane Sulfonamide (PFOSA)	--	--	ng/L	<3.6	<3.5	<3.6	<3.6	<5	<3.5	<3.5	<3.6	<3.6	<3.4	<3.7	<3.4	<3.6	<3.6
Perfluorooctane sulfonic acid (PFOS)	16	12	ng/L	78	<3.5	<3.6	<3.6	5.3	2.9 J	5.7	13	9.5	4.3	2 J	5.8	<3.4	<3.6
Perfluorooctanoic acid (PFOA)	8	12,000	ng/L	5.5	2.9 J	<3.6	<3.6	2.2 J	<3.5	<3.5	2.6 J	1.7 J	0.84 J	3.6	5.2	7.1	<3.6
Perfluoropentanesulfonic acid (PFPeS)	--	--	ng/L	<3.6	<3.5	<3.6	<3.6	8.4	5.2	0.67 J	0.54 J	0.57 J	0.61 J	<3.7	<3.4	<3.6	<3.6
Perfluoropentanoic acid (PFPeA)	--	--	ng/L	3.4 J	2.2 J	0.56 J	<3.6	2.1 J	<3.5	<3.5	1.1 J	1 J	0.77 J	1.5 J	<3.7	<3.4	4.2
Perfluorotetradecanoic acid (PFTeA)	--	--	ng/L	<3.6	<3.5	<3.6	<3.6	<5	<3.5	<3.5	<3.6	<3.6	<3.4	<3.7	<3.4	<3.6	<3.6
Perfluorotridecanoic Acid (PFTriA)	--	--	ng/L	<3.6	<3.5	<3.6	<3.6	<5	<3.5	<3.5	<3.6	<3.6	<3.4	<3.7	<3.4	<3.6	<3.6
Perfluoroundecanoic acid (PFUnA)	--	--	ng/L	<3.6	<3.5	<3.6	<3.6	<5	<3.5	<3.5	<3.6	<3.6	<3.4	<3.7	<3.4	<3.6	<3.6

See notes on last page.

Table 2
Summary of Groundwater Analytical Results - January to June 2022
RACER Trust Plants 2, 3, and 6
Lansing, Michigan



Location ID: Date Collected: Sample Name:	P201 Residential Drinking Water	P201 Groundwater Surface Water Interface	Units	MW-19-114 06/09/22 MW-19-114_060922	MW-19-115 06/03/22 MW-19-115_060322	MW-19-116 06/03/22 MW-19-116_060322	MW-19-117 06/02/22 MW-19-117_060222	MW-19-118D 06/06/22 MW-19-118D_060622	MW-19-118S 06/06/22 MW-19-118S_060622	MW-19-119D 06/08/22 MW-19-119D_060822	MW-19-119S 06/08/22 MW-19-119S_060822	MW-19-120 06/02/22 MW-19-120_060222	MW-19-121 03/01/22 MW-19-121_030122	MW-19-121 06/01/22 MW-19-121_060122	MW-19-122 06/02/22 MW-19-122_060222	MW-19-123 06/01/22 MW-19-123_060122	MW-19-124 06/02/22 MW-19-124_060222
Field																	
pH	6.5 to 8.5	6.5 to 9.0	s.u.	7.21	7.05	6.96	6.98	7.26	7.07	7.07	7.04	7.05	7.12	7.02	7.08	6.84	6.77
Conductivity	--	--	mS/cm	0.47	2.52	1.29	1.16	1.81	2.45	1.23	1.28	2.62	1.56	1.89	4.50	2.18	3.43
Turbidity	--	--	NTU	0.96	0.02	0.02	24	38.10	13.60	13.30	9.14	20.10	0.02	0.02	91.30	0.02	47.80
Dissolved oxygen (DO)	--	--	mg/L	0.21	1.63	7.01	0.48	2.09	3.40	0.46	0.59	1.08	1.89	5.79	6.05	4.25	0.48
Temperature	--	--	Deg C	13.3	19.2	17.6	22.7	21.2	21.2	16.7	18.0	21.6	10.5	19.1	16.4	18.6	17.9
Oxidation reduction potential (ORP)	--	--	millivolts	5.3	-90.8	-81.9	-124.6	-89.7	-111.2	-93.2	-58.5	34.4	230.0	69.8	109.2	118.8	-73.4
Volatile Organics (via EPA Method SW5030C/8260C)																	
1,1-Dichloroethane	880	740	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
1,1-Dichloroethene	7.0	130	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	200	89	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
1,1,1,2-Tetrachloroethane	77	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	5.0	330	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	8.5	78	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	0.2	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA
1,2-Dibromoethane (Ethylene dibromide)	0.05	5.7	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	600	13	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
1,2-Dichloroethane	5.0	360	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
1,2-Dichloropropane	5.0	230	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	42	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
1,2,3-Trimethylbenzene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	70	99	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	63	17	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	6.6	28	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	72	45	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	75	17	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
1,4-Dioxane	7.2	280	µg/L	NA	7	69	1	NA	NA	NA	NA	12	<1	<1	3	25	90 Y
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	2,200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<25	NA	NA	NA	NA	NA
2-Hexanone	1,000	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<50	NA	NA	NA	NA	NA
2-Methylnaphthalene	260	19	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA
2-Phenylbutane (sec-Butylbenzene)	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<50	NA	NA	NA	NA	NA
Acetone	730	1,700	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<50	NA	NA	NA	NA	NA
Acrylonitrile	2.6	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<2	NA	NA	NA	NA	NA
Benzene	5.0	200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
Bromobenzene	18	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
Bromodichloromethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
Bromoform	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
Bromomethane (Methyl bromide)	10	5.0	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA
Carbon disulfide	800	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA
Carbon tetrachloride	5.0	38	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
Chlorobenzene	100	25	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
Chlorobromomethane	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
Chloroethane	430	1,100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA
Chloroform (Trichloromethane)	80	350	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
Chloromethane (Methyl chloride)	260	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	70	620	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
Cymene (p-Isopropyltoluene)	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA
Dibromochloromethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA
Dibromomethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA
Dichlorodifluoromethane (CFC-12)	1,700	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA
Ethyl ether	10	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<10	NA	NA	NA	NA	NA
Ethylbenzene	74	18	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
Hexachloroethane	7.3	6.7	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA
Iodomethane	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
Isopropyl benzene	800	28	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA
Methyl tert butyl ether (MTBE)	40	7,100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA
Methylene chloride	5.0	1,500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA
Naphthalene	520	11	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA
N-Butylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
N-Propylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
Styrene	100	80	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
tert-Butylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
Tetrachloroethene	5.0	60	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
Tetrahydrofuran	95	11,000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<90	NA	NA	NA	NA	NA
Toluene	790	270	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	100	1,500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
trans-1,4-Dichloro-2-butene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
Trichloroethene	5.0	200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
Trichlorofluoromethane (CFC-11)	2,600	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
Vinyl chloride	2.0	13	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
o-Xylene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA
m&p-Xylene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<2	NA	NA	NA	NA	NA
Xylenes (total)	280	49	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	<2	NA	NA	NA	NA	NA

Table 2
 Summary of Groundwater Analytical Results - January to June 2022
 RACER Trust Plants 2, 3, and 6
 Lansing, Michigan



Location ID: Date Collected: Sample Name:	P201 Residential Drinking Water	P201 Groundwater Surface Water Interface	Units	MW-19-114 06/09/22 060922	MW-19-115 06/03/22 060322	MW-19-116 06/03/22 060322	MW-19-117 06/02/22 060222	MW-19-118D 06/06/22 060622	MW-19-118S 06/06/22 060622	MW-19-119D 06/08/22 060822	MW-19-119S 06/08/22 060822	MW-19-120 06/02/22 060222	MW-19-121 03/01/22 030122	MW-19-121 06/01/22 060122	MW-19-122 06/02/22 060222	MW-19-123 06/01/22 060122	MW-19-124 06/02/22 060222	
<i>See notes on last page.</i>																		
Semi-Volatile Organics (via EPA Method 522)																		
1,4-Dioxane	7.2	280	µg/L	NA	NA	NA	NA	0.19 J	1.2	0.5	0.43	NA	NA	NA	NA	NA	NA	
Inorganics-Metals (via EPA Method 6020)																		
Arsenic	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chromium III (trivalent)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chromium VI (hexavalent)	0.1	0.011	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Copper	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Lead	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Nickel	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Vanadium	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Inorganics-Metals, Filtered (via EPA Method 6020)																		
Arsenic (dissolved)	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chromium III (trivalent, dissolved)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Copper (dissolved)	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Lead (dissolved)	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Nickel (dissolved)	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Vanadium (dissolved)	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
General Chemistry																		
Nitrate (as N)	10	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18.6	NA	<0.5	NA	
Phosphorus	63	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.1	NA	0.01	NA	
Total kjeldahl nitrogen (TKN)	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.4	NA	0.3	NA	
Per- and Polyfluoroalkyl Substances (PFAS) (via EPA Method 537 Modified)																		
11Cl-PF3OUdS (F-53B Minor)	--	--	ng/L	<7.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4:2 FTS	--	--	ng/L	<7.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
6:2 FTS	--	--	ng/L	<7.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
8:2 FTS	--	--	ng/L	<7.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
9Cl-PF3ONS (F-53B Major)	--	--	ng/L	<7.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
ADONA	--	--	ng/L	<7.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hexafluoropropylene oxide dimer acid (HFPO-DA) (GenX)	370	--	ng/L	<7.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	--	--	ng/L	<7.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	--	--	ng/L	<7.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluorobutanesulfonic acid (PFBS)	420	--	ng/L	1.2 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluorobutanoic acid (PFBA)	--	--	ng/L	<3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluorodecanesulfonic acid (PFDS)	--	--	ng/L	<3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluorodecanoic acid (PFDA)	--	--	ng/L	<3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluorododecanoic acid (PFDoA)	--	--	ng/L	<3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoroheptanesulfonic Acid (PFHpS)	--	--	ng/L	<3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoroheptanoic acid (PFHpA)	--	--	ng/L	<3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluorohexanesulfonic acid (PFHxS)	51	--	ng/L	0.68 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluorohexanoic acid (PFHxA)	400,000	--	ng/L	<3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluorononanesulfonic acid (PFNS)	--	--	ng/L	<3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluorononanoic acid (PFNA)	6	--	ng/L	<3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluorooctane Sulfonamide (PFOSA)	--	--	ng/L	<3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluorooctane sulfonic acid (PFOS)	16	12	ng/L	2.3 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluorooctanoic acid (PFOA)	8	12,000	ng/L	<3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoropentanesulfonic acid (PFPeS)	--	--	ng/L	<3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoropentanoic acid (PFPeA)	--	--	ng/L	<3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluorotetradecanoic acid (PFTeA)	--	--	ng/L	<3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluorotridecanoic Acid (PFTriA)	--	--	ng/L	<3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoroundecanoic acid (PFUnA)	--	--	ng/L	<3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

See notes on last page.

Location ID:	P201 Residential	P201 Groundwater		MW-19-125	MW-20-126	MW-20-126	MW-20-127	MW-20-127	MW-20-128	MW-20-129	MW-20-130	MW-20-131	MW-20-132	MW-21-133	MW-21-134	MW-21-135	MW-21-136
Date Collected:	Drinking Water	Surface Water Interface	Units	06/06/22	03/01/22	06/03/22	03/01/22	06/01/22	06/01/22	06/03/22	06/07/22	06/02/22	06/02/22	06/02/22	06/02/22	06/02/22	06/02/22
Sample Name:				MW-19-125_060622	MW-20-126_030122	MW-20-126_060322	MW-20-127_030122	MW-20-127_060122	MW-20-128_060122	MW-20-129_060322	MW-20-130_060722	MW-20-131_060222	MW-20-132_060222	MW-21-133_060222	MW-21-134_060222	MW-21-135_060222	MW-21-136_060222
Field																	
pH	6.5 to 8.5	6.5 to 9.0	s.u.	9.31	7.24	7.02	6.92	6.81	7.45	6.94	6.71	7.20	7.23	6.87	7.09	7.51	7.09
Conductivity	--	--	mS/cm	0.96	2.81	3.20	2.34	3.33	3.37	2.86	0.92	5.52	2.17	0.68	0.56	0.77	1.73
Turbidity	--	--	NTU	13.80	71.40	63.80	0.02	9.59	832.00	0.02	9.41	37.30	19.00	1.16	1.29	1.78	19.00
Dissolved oxygen (DO)	--	--	mg/L	1.60	10.04	4.65	0.78	0.60	7.13	0.17	0.01	7.11	0.10	0.12	1.32	0.51	1.19
Temperature	--	--	Deg C	20.0	11.4	15.7	11.2	18.7	20.1	26.7	17.0	16.2	11.5	10.3	10.6	12.7	12.4
Oxidation reduction potential (ORP)	--	--	millivolts	-80.7	119.5	54.9	4.1	-54.5	135.7	-82.9	22.2	-27.8	-0.5	-451.3	-29.4	100.2	-6.2
Volatile Organics (via EPA Method SW5030C/8260C)																	
1,1-Dichloroethane	880	740	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	7.0	130	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	200	89	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1,2-Tetrachloroethane	77	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	5.0	330	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	8.5	78	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	0.2	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane (Ethylene dibromide)	0.05	5.7	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	600	13	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	5.0	360	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	5.0	230	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	42	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trimethylbenzene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	70	99	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	63	17	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	6.6	28	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	72	45	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	75	17	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dioxane	7.2	280	µg/L	NA	130 Y	120 Y	130 Y	142 [143]	6	80	13 [13]	NA	NA	NA	NA	NA	NA
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	2,200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	1,000	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	260	19	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Phenylbutane (sec-Butylbenzene)	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	730	1,700	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	2.6	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5.0	200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromobenzene	18	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane (Methyl bromide)	10	5.0	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	800	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	5.0	38	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	100	25	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobromomethane	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	430	1,100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform (Trichloromethane)	80	350	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane (Methyl chloride)	260	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	70	620	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cymene (p-Isopropyltoluene)	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromomethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane (CFC-12)	1,700	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl ether	10	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	74	18	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	7.3	6.7	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iodomethane	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropyl benzene	800	28	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert butyl ether (MTBE)	40	7,100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	5.0	1,500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	520	11	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Butylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Propylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100	80	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	5.0	60	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrahydrofuran	95	11,000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	790	270	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	100	1,500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,4-Dichloro-2-butene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	5.0	200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane (CFC-11)	2,600	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	2.0	13	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m&p-Xylene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	280	49	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2
Summary of Groundwater Analytical Results - January to June 2022
RACER Trust Plants 2, 3, and 6
Lansing, Michigan



Location ID: Date Collected: Sample Name:	P201 Residential Drinking Water	P201 Groundwater Surface Water Interface	Units	MW-19-125 06/06/22	MW-20-126 03/01/22	MW-20-126 06/03/22	MW-20-127 03/01/22	MW-20-127 06/01/22	MW-20-128 06/01/22	MW-20-129 06/03/22	MW-20-130 06/07/22	MW-20-131 06/02/22	MW-20-132 06/02/22	MW-21-133 06/02/22	MW-21-134 06/02/22	MW-21-135 06/02/22	MW-21-136 06/02/22
<i>See notes on last page.</i>																	
Semi-Volatile Organics (via EPA Method 522)																	
1,4-Dioxane	7.2	280	µg/L	0.31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics-Metals (via EPA Method 6020)																	
Arsenic	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III (trivalent)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI (hexavalent)	0.1	0.011	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics-Metals, Filtered (via EPA Method 6020)																	
Arsenic (dissolved)	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III (trivalent, dissolved)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (dissolved)	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead (dissolved)	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel (dissolved)	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium (dissolved)	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry																	
Nitrate (as N)	10	--	mg/L	NA	NA	NA	NA	<0.5 [<u><0.5</u>]	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus	63	--	mg/L	NA	NA	NA	NA	0.06 [0.07]	0.39	NA	NA	NA	NA	NA	NA	NA	NA
Total kjeldahl nitrogen (TKN)	--	--	mg/L	NA	NA	NA	NA	0.7 [0.8]	2.2	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances (PFAS) (via EPA Method 537 Modified)																	
11CI-PF3OUdS (F-53B Minor)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<6.9 [<u><7.1</u>]	<6.9	<6.8	<6.8	<6.7	<6.8	<6.7
4:2 FTS	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<6.9 [<u><7.1</u>]	<6.9	<6.8	<6.8	<6.7	<6.8	<6.7
6:2 FTS	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<6.9 [<u><7.1</u>]	<6.9	<6.8	<6.8	<6.7	<6.8	11
8:2 FTS	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<6.9 [<u><7.1</u>]	<6.9	<6.8	<6.8	<6.7	<6.8	<6.7
9CI-PF3ONS (F-53B Major)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<6.9 [<u><7.1</u>]	<6.9	<6.8	<6.8	<6.7	<6.8	<6.7
ADONA	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<6.9 [<u><7.1</u>]	<6.9	<6.8	<6.8	<6.7	<6.8	<6.7
Hexafluoropropylene oxide dimer acid (HFPO-DA) (GenX)	370	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<6.9 [<u><7.1</u>]	<6.9	<6.8	<6.8	<6.7	<6.8	<6.7
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<6.9 [<u><7.1</u>]	<6.9	<6.8	<6.8	<6.7	<6.8	<6.7
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<6.9 [<u><7.1</u>]	<6.9	<6.8	<6.8	<6.7	<6.8	<6.7
Perfluorobutanesulfonic acid (PFBS)	420	--	ng/L	NA	NA	NA	NA	NA	NA	NA	8.7 [9.6]	1.8 J	2.5 J	2 J	1.9 J	1.9 J	0.85 J
Perfluorobutanoic acid (PFBA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	7.6 [7.6]	17	15	14	13	12	1.8 J
Perfluorodecanesulfonic acid (PFDS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<3.5 [<u><3.6</u>]	<3.5	<3.4	<3.4	<3.4	<3.4	<3.4
Perfluorodecanoic acid (PFDA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<3.5 [<u><3.6</u>]	1 J	1.6 J	<3.4	<3.4	<3.4	<3.4
Perfluorododecanoic acid (PFDoA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<3.5 [<u><3.6</u>]	<3.5	<3.4	<3.4	<3.4	<3.4	<3.4
Perfluoroheptanesulfonic Acid (PFHpS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<3.5 [<u><3.6</u>]	<3.5	<3.4	<3.4	<3.4	<3.4	<3.4
Perfluoroheptanoic acid (PFHpA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	3.9 [3.7]	20	18	17	15	47	<3.4
Perfluorohexanesulfonic acid (PFHxS)	51	--	ng/L	NA	NA	NA	NA	NA	NA	NA	1.6 J [2 J]	2.1 J	1.8 J	1.7 J	2 J	1.6 J	<3.4
Perfluorohexanoic acid (PFHxA)	400,000	--	ng/L	NA	NA	NA	NA	NA	NA	NA	18 [18]	24	19	24	22	39	<3.4
Perfluorononanesulfonic acid (PFNS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<3.5 [<u><3.6</u>]	<3.5	<3.4	<3.4	<3.4	<3.4	<3.4
Perfluorononanoic acid (PFNA)	6	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<3.5 [<u><3.6</u>]	1.4 J	4.5	1.1 J	<3.4	1.1 J	<3.4
Perfluorooctane Sulfonamide (PFOSA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<3.5 [<u><3.6</u>]	<3.5	<3.4	<3.4	<3.4	<3.4	<3.4
Perfluorooctane sulfonic acid (PFOS)	16	12	ng/L	NA	NA	NA	NA	NA	NA	NA	<3.5 [<u><3.6</u>]	6.2	12	4.6	4.2	2.1 J	<3.4
Perfluorooctanoic acid (PFOA)	8	12,000	ng/L	NA	NA	NA	NA	NA	NA	NA	1.2 J [1.3 J]	27	29	43	23	38	0.7 J
Perfluoropentanesulfonic acid (PFPeS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	2.7 J [2.9 J]	<3.5	<3.4	0.54 J	0.77 J	1.2 J	<3.4
Perfluoropentanoic acid (PFPeA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	9.6 [10]	28	22	21	39	0.82 J	<3.4
Perfluorotetradecanoic acid (PFTeA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<3.5 [<u><3.6</u>]	<3.5	<3.4	<3.4	<3.4	<3.4	<3.4
Perfluorotridecanoic Acid (PFTriA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<3.5 [<u><3.6</u>]	<3.5	<3.4	<3.4	<3.4	<3.4	<3.4
Perfluoroundecanoic acid (PFUnA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	<3.5 [<u><3.6</u>]	<3.5	<3.4	<3.4	<3.4	<3.4	<3.4

See notes on last page.

Location ID: Date Collected: Sample Name:	P201 Residential Drinking Water	P201 Groundwater Surface Water Interface	Units	MW-21-137 06/02/22 06/02/22	MW-21-138 06/02/22 06/02/22	MW-21-139 06/07/22 06/07/22	MW-21-139 06/10/22 06/10/22	MW-21-140 06/07/22 06/07/22	MW-21-141 06/06/22 06/06/22	MW-21-142 06/07/22 06/07/22	MW-22-143 04/05/22 04/05/22	MW-22-143 06/01/22 06/01/22	MW-22-144 04/04/22 04/04/22	MW-22-144 06/01/22 06/01/22	MW-22-145 04/04/22 04/04/22	MW-22-145 06/01/22 06/01/22	MW-22-146 04/05/22 04/05/22	
Field																		
pH	6.5 to 8.5	6.5 to 9.0	s.u.	6.72	6.93	7.50	7.72	6.93	6.87	6.78	NM	7.14	NM	7.18	NM	7.08	NM	
Conductivity	--	--	mS/cm	1.07	1.65	1.77	2.04	0.65	0.95	1.56	NM	2.54	NM	0.88	NM	0.66	NM	
Turbidity	--	--	NTU	20.00	18.00	7.00	11.00	1.61	16.00	10.00	NM	1.25	NM	1.20	NM	1.03	NM	
Dissolved oxygen (DO)	--	--	mg/L	2.07	0.28	0.11	0.04	0.23	0.18	0.04	NM	0.26	NM	0.25	NM	1.13	NM	
Temperature	--	--	Deg C	11.6	12.8	15.2	16.8	13.5	14.6	13.2	NM	13.0	NM	12.5	NM	12.4	NM	
Oxidation reduction potential (ORP)	--	--	millivolts	2.1	2.5	-13.6	-39.6	-37.9	-12.5	-79.9	NM	-638.1	NM	-292.7	NM	-78.9	NM	
Volatile Organics (via EPA Method SW5030C/8260C)																		
1,1-Dichloroethane	880	740	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,1,1-Trichloroethane	7.0	130	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,1,1,2-Tetrachloroethane	200	89	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,1,2-Trichloroethane	77	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,1,2,2-Tetrachloroethane	5.0	330	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,1,2,2,2-Pentachloroethane	8.5	78	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2-Dibromo-3-chloropropane (DBCP)	0.2	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2-Dibromoethane (Ethylene dibromide)	0.05	5.7	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2-Dichlorobenzene	600	13	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2-Dichloroethane	5.0	360	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2-Dichloropropane	5.0	230	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3-Trichlorobenzene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3-Trichloropropane	42	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3-Trimethylbenzene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,4-Trichlorobenzene	70	99	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,4-Trimethylbenzene	63	17	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,3-Dichlorobenzene	6.6	28	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,3,5-Trimethylbenzene	72	45	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,4-Dichlorobenzene	75	17	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,4-Dioxane	7.2	280	µg/L	NA	NA	NA	4	<1	<1	81	NA	NA	NA	NA	NA	NA	NA	
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	2,200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Hexanone	1,000	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Methylnaphthalene	260	19	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Phenylbutane (sec-Butylbenzene)	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Acetone	730	1,700	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Acrylonitrile	2.6	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzene	5.0	200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Bromobenzene	18	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Bromodichloromethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Bromoform	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Bromomethane (Methyl bromide)	10	5.0	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Carbon disulfide	800	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Carbon tetrachloride	5.0	38	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chlorobenzene	100	25	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chlorobromomethane	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chloroethane	430	1,100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chloroform (Trichloromethane)	80	350	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chloromethane (Methyl chloride)	260	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
cis-1,2-Dichloroethane	70	620	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
cis-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Cymene (p-Isopropyltoluene)	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dibromochloromethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dibromomethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dichlorodifluoromethane (CFC-12)	1,700	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Ethyl ether	10	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Ethylbenzene	74	18	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hexachloroethane	7.3	6.7	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Iodomethane	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Isopropyl benzene	800	28	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Methyl tert butyl ether (MTBE)	40	7,100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Methylene chloride	5.0	1,500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Naphthalene	520	11	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
N-Butylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
N-Propylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Styrene	100	80	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
tert-Butylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Tetrachloroethene	5.0	60	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Tetrahydrofuran	95	11,000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Toluene	790	270	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
trans-1,2-Dichloroethene	100	1,500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
trans-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
trans-1,4-Dichloro-2-butene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Trichloroethene	5.0	200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Trichlorofluoromethane (CFC-11)	2,600	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Vinyl chloride	2.0	13	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
o-Xylene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
m&p-Xylene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Xylenes (total)	280	49	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Table 2
 Summary of Groundwater Analytical Results - January to June 2022
 RACER Trust Plants 2, 3, and 6
 Lansing, Michigan

Location ID: Date Collected: Sample Name:	P201 Residential Drinking Water	P201 Groundwater Surface Water Interface	Units	MW-21-137	MW-21-138	MW-21-139	MW-21-139	MW-21-140	MW-21-141	MW-21-142	MW-22-143	MW-22-143	MW-22-144	MW-22-144	MW-22-145	MW-22-145	MW-22-146
				06/02/22 060222	06/02/22 060222	06/07/22 060722	06/10/22 061022	06/07/22 060722	06/06/22 060622	06/07/22 060722	04/05/22 040522	06/01/22 060122	04/04/22 040422	06/01/22 060122	04/04/22 040422	06/01/22 060122	04/05/22 040522
See notes on last page.																	
Semi-Volatile Organics (via EPA Method 522)																	
1,4-Dioxane	7.2	280	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics-Metals (via EPA Method 6020)																	
Arsenic	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III (trivalent)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI (hexavalent)	0.1	0.011	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics-Metals, Filtered (via EPA Method 6020)																	
Arsenic (dissolved)	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III (trivalent, dissolved)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (dissolved)	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead (dissolved)	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel (dissolved)	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium (dissolved)	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry																	
Nitrate (as N)	10	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus	63	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total kjeldahl nitrogen (TKN)	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances (PFAS) (via EPA Method 537 Modified)																	
11Cl-PF3OUdS (F-53B Minor)	--	--	ng/L	<7	<8.4	<6.9	NA	NA	NA	NA	<6.9 [6.9]	<6.9	<7.1	<7.3	<7.2	<6.8 [6.7]	<7
4:2 FTS	--	--	ng/L	<7	<8.4	<6.9	NA	NA	NA	NA	<6.9 [6.9]	<6.9	<7.1	<7.3	<7.2	<6.8 [6.7]	<7
6:2 FTS	--	--	ng/L	<7	<8.4	29	NA	NA	NA	NA	<6.9 [6.9]	<6.9	<7.1	<7.3	<7.2	<6.8 [6.7]	<7
8:2 FTS	--	--	ng/L	<7	<8.4	12	NA	NA	NA	NA	<6.9 [6.9]	<6.9	<7.1	<7.3	<7.2	<6.8 [6.7]	<7
9Cl-PF3ONS (F-53B Major)	--	--	ng/L	<7	<8.4	<6.9	NA	NA	NA	NA	<6.9 [6.9]	<6.9	<7.1	<7.3	<7.2	<6.8 [6.7]	<7
ADONA	--	--	ng/L	<7	<8.4	<6.9	NA	NA	NA	NA	<6.9 [6.9]	<6.9	<7.1	<7.3	<7.2	<6.8 [6.7]	<7
Hexafluoropropylene oxide dimer acid (HFPO-DA) (GenX)	370	--	ng/L	<7	<8.4	<6.9	NA	NA	NA	NA	<6.9 [6.9]	<6.9	<7.1	<7.3	<7.2	<6.8 [6.7]	<7
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	--	--	ng/L	<7	<8.4	<6.9	NA	NA	NA	NA	<6.9 [6.9]	<6.9	<7.1	<7.3	<7.2	<6.8 [6.7]	<7
N-methyl perfluorooctane sulfonamidoacetic acid (NmFOSAA)	--	--	ng/L	<7	<8.4	<6.9	NA	NA	NA	NA	<6.9 [6.9]	<6.9	<7.1	<7.3	<7.2	<6.8 [6.7]	<7
Perfluorobutanesulfonic acid (PFBS)	420	--	ng/L	<3.5	<4.2	29	NA	NA	NA	NA	0.81 J [0.91 J]	1 J	1.9 J	2.3 J	3.4 J	3 J [2.8 J]	4
Perfluorobutanoic acid (PFBA)	--	--	ng/L	<3.5	<4.2	25	NA	NA	NA	NA	11 [11]	9.7	5.3	5.4	5.2	5.5 [5.6]	14
Perfluorodecane sulfonic acid (PFDS)	--	--	ng/L	<3.5	<4.2	<3.5	NA	NA	NA	NA	<3.5 [3.5]	<3.5	<3.5	<3.6	<3.6	<3.4 [3.4]	<3.5
Perfluorodecanoic acid (PFDA)	--	--	ng/L	<3.5	<4.2	2.1 J	NA	NA	NA	NA	<3.5 [3.5]	<3.5	<3.5	<3.6	<3.6	<3.4 [3.4]	<3.5
Perfluorododecanoic acid (PFDoA)	--	--	ng/L	<3.5	<4.2	<3.5	NA	NA	NA	NA	<3.5 [3.5]	<3.5	<3.5	<3.6	<3.6	<3.4 [3.4]	<3.5
Perfluoroheptanesulfonic Acid (PFHpS)	--	--	ng/L	<3.5	<4.2	12	NA	NA	NA	NA	<3.5 [3.5]	<3.5	<3.5	<3.6	<3.6	<3.4 [3.4]	<3.5
Perfluoroheptanoic acid (PFHpA)	--	--	ng/L	<3.5	<4.2	37	NA	NA	NA	NA	3.7 [3.7]	5.9	3.6	4.5	5.7	5.8 [6]	0.59 J
Perfluorohexanesulfonic acid (PFHxS)	51	--	ng/L	<3.5	<4.2	180	NA	NA	NA	NA	<3.5 [3.5]	<3.5	2.3 J	2.2 J	1.9 J	1.9 J [2.1 J]	1.1 J
Perfluorohexanoic acid (PFHxA)	400,000	--	ng/L	<3.5	<4.2	66	NA	NA	NA	NA	19 [19]	16	7.7	9.9	10	9.7 [8.7]	6.7
Perfluorononanesulfonic acid (PFNS)	--	--	ng/L	<3.5	<4.2	<3.5	NA	NA	NA	NA	<3.5 [3.5]	<3.5	<3.5	<3.6	<3.6	<3.4 [3.4]	<3.5
Perfluorononanoic acid (PFNA)	6	--	ng/L	<3.5	<4.2	6.5	NA	NA	NA	NA	<3.5 [3.5]	<3.5	<3.5	<3.6	<3.6	0.75 J [0.79 J]	<3.5
Perfluorooctane Sulfonamide (PFOSA)	--	--	ng/L	<3.5	<4.2	0.73 J	NA	NA	NA	NA	<3.5 [3.5]	<3.5	<3.5	<3.6	<3.6	1.1 J	<3.5
Perfluorooctane sulfonic acid (PFOS)	16	12	ng/L	<3.5	<4.2	680	NA	NA	NA	NA	<3.5 [3.5]	<3.5	<3.5	<3.6	<3.6	6.8 [6.9]	1.7 J
Perfluorooctanoic acid (PFOA)	8	12,000	ng/L	<3.5	<4.2	49	NA	NA	NA	NA	1.5 J [1.5 J]	4.1	5.3	7.5	16	14 [14]	6.5
Perfluoropentanesulfonic acid (PFPeS)	--	--	ng/L	<3.5	<4.2	29	NA	NA	NA	NA	<3.5 [3.5]	<3.5	<3.5	<3.6	<3.6	0.54 J [0.51 J]	<3.5
Perfluoropentanoic acid (PFPeA)	--	--	ng/L	0.56 J	0.69 J	56	NA	NA	NA	NA	18 [20]	12	8.8	9.9	9.3	9.5 [8.8]	5.4
Perfluorotetradecanoic acid (PFTeA)	--	--	ng/L	<3.5	<4.2	<3.5	NA	NA	NA	NA	<3.5 [3.5]	<3.5	<3.5	<3.6	<3.6	<3.4 [3.4]	<3.5
Perfluorotridecanoic Acid (PFTrIA)	--	--	ng/L	<3.5	<4.2	<3.5	NA	NA	NA	NA	<3.5 [3.5]	<3.5	<3.5	<3.6	<3.6	<3.4 [3.4]	<3.5
Perfluoroundecanoic acid (PFUnA)	--	--	ng/L	<3.5	<4.2	<3.5	NA	NA	NA	NA	<3.5 [3.5]	<3.5	<3.5	<3.6	<3.6	<3.4 [3.4]	<3.5

See notes on last page.

Table 2
 Summary of Groundwater Analytical Results - January to June 2022
 RACER Trust Plants 2, 3, and 6
 Lansing, Michigan



Location ID:	P201 Residential	P201 Groundwater Surface Water Interface	Units	MW-22-146	MW-22-147	MW-22-147	MW-22-148	MW-22-148	MW-22-149	MW-22-149	MW-22-150	MW-22-150	MW-22-151	MW-22-151	MW-22-152	MW-22-152	MW-22-153
Date Collected:	Drinking Water			06/01/22	04/04/22	06/01/22	04/04/22	06/01/22	04/05/22	06/01/22	04/05/22	06/01/22	04/05/22	06/01/22	04/05/22	06/01/22	04/06/22
Sample Name:				MW-22-146_060122	MW-22-147_040422	MW-22-147_060122	MW-22-148_040422	MW-22-148_060122	MW-22-149_040522	MW-22-149_060122	MW-22-150_040522	MW-22-150_060122	MW-22-151_040522	MW-22-151_060122	MW-22-152_040522	MW-22-152_060122	MW-22-153_040622
Field																	
pH	6.5 to 8.5	6.5 to 9.0	s.u.	7.25	NM	7.20	NM	7.51	NM	7.09	NM	7.19	NM	6.79	NM	6.88	7.08
Conductivity	--	--	mS/cm	0.74	NM	1.06	NM	0.76	NM	0.64	NM	5.36	NM	2.11	NM	0.87	1.56
Turbidity	--	--	NTU	1.24	NM	1.70	NM	1.50	NM	15.00	NM	18.00	NM	15.00	NM	15.00	1.21
Dissolved oxygen (DO)	--	--	mg/L	5.65	NM	3.41	NM	0.39	NM	5.06	NM	0.63	NM	0.12	NM	0.16	1.22
Temperature	--	--	Deg C	12.0	NM	11.8	NM	13.2	NM	13.3	NM	13.0	NM	13.4	NM	12.1	12.10
Oxidation reduction potential (ORP)	--	--	millivolts	9.1	NM	-52.4	NM	-173.1	NM	10.4	NM	-6.4	NM	-3.0	NM	0.5	-48.90
Volatile Organics (via EPA Method SW5030C/8260C)																	
1,1-Dichloroethane	880	740	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2
1,1,1-Trichloroethane	7.0	130	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
1,1,1,2-Tetrachloroethane	200	89	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
1,1,2-Trichloroethane	77	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
1,1,2,2-Tetrachloroethane	5.0	330	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
1,1,2,2,2-Tetrachloroethane	8.5	78	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
1,2-Dibromo-3-chloropropane (DBCP)	0.2	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5
1,2-Dibromoethane (Ethylene dibromide)	0.05	5.7	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
1,2-Dichlorobenzene	600	13	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
1,2-Dichloroethane	5.0	360	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
1,2-Dichloropropane	5.0	230	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
1,2,3-Trichlorobenzene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5
1,2,3-Trichloropropane	42	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
1,2,3-Trimethylbenzene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
1,2,4-Trichlorobenzene	70	99	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5
1,2,4-Trimethylbenzene	63	17	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
1,3-Dichlorobenzene	6.6	28	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
1,3,5-Trimethylbenzene	72	45	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
1,4-Dichlorobenzene	75	17	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
1,4-Dioxane	7.2	280	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	92
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	2,200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<25
2-Hexanone	1,000	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<50
2-Methylnaphthalene	260	19	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5
2-Phenylbutane (sec-Butylbenzene)	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<50
Acetone	730	1,700	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<50
Acrylonitrile	2.6	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2
Benzene	5.0	200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Bromobenzene	18	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Bromodichloromethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Bromoform	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Bromomethane (Methyl bromide)	10	5.0	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5
Carbon disulfide	800	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5
Carbon tetrachloride	5.0	38	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Chlorobenzene	100	25	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Chlorobromomethane	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Chloroethane	430	1,100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10
Chloroform (Trichloromethane)	80	350	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Chloromethane (Methyl chloride)	260	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5
cis-1,2-Dichloroethane	70	620	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
cis-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Cymene (p-Isopropyltoluene)	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5
Dibromochloromethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5
Dibromomethane	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5
Dichlorodifluoromethane (CFC-12)	1,700	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5
Ethyl ether	10	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10
Ethylbenzene	74	18	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Hexachloroethane	7.3	6.7	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5
Iodomethane	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Isopropyl benzene	800	28	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5
Methyl tert butyl ether (MTBE)	40	7,100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5
Methylene chloride	5.0	1,500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5
Naphthalene	520	11	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5
N-Butylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
N-Propylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Styrene	100	80	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
tert-Butylbenzene	80	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Tetrachloroethene	5.0	60	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Tetrahydrofuran	95	11,000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<90
Toluene	790	270	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
trans-1,2-Dichloroethene	100	1,500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
trans-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
trans-1,4-Dichloro-2-butene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Trichloroethene	5.0	200	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Trichlorofluoromethane (CFC-11)	2,600	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Vinyl chloride	2.0	13	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1
o-Xylene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
m&p-Xylene	--	--	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2
Xylenes (total)	280	49	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2

Table 2
 Summary of Groundwater Analytical Results - January to June 2022
 RACER Trust Plants 2, 3, and 6
 Lansing, Michigan



Location ID: Date Collected: Sample Name:	P201 Residential Drinking Water	P201 Groundwater Surface Water Interface	Units	MW-22-146 06/01/22 060122	MW-22-147 04/04/22 040422	MW-22-147 06/01/22 060122	MW-22-148 04/04/22 040422	MW-22-148 06/01/22 060122	MW-22-149 04/05/22 040522	MW-22-149 06/01/22 060122	MW-22-150 04/05/22 040522	MW-22-150 06/01/22 060122	MW-22-151 04/05/22 040522	MW-22-151 06/01/22 060122	MW-22-152 04/05/22 040522	MW-22-152 06/01/22 060122	MW-22-153 04/06/22 040622
<i>See notes on last page.</i>																	
Semi-Volatile Organics (via EPA Method 522)																	
1,4-Dioxane	7.2	280	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics-Metals (via EPA Method 6020)																	
Arsenic	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III (trivalent)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI (hexavalent)	0.1	0.011	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics-Metals, Filtered (via EPA Method 6020)																	
Arsenic (dissolved)	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III (trivalent, dissolved)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (dissolved)	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead (dissolved)	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel (dissolved)	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium (dissolved)	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry																	
Nitrate (as N)	10	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus	63	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total kjeldahl nitrogen (TKN)	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances (PFAS) (via EPA Method 537 Modified)																	
11CI-PF3OUdS (F-53B Minor)	--	--	ng/L	<7	<6.9	<6.8	<7	<7.2	<6.9	<7	<7.1	<6.8	<7.2	<6.8	<6.8	<6.8	NA
4:2 FTS	--	--	ng/L	<7	<6.9	<6.8	<7	<7.2	<6.9	<7	<7.1	<6.8	<7.2	<6.8	<6.8	<6.8	NA
6:2 FTS	--	--	ng/L	<7	<6.9	<6.8	<7	<7.2	<6.9	<7	<7.1	<6.8	<7.2	5.3 J	<6.8	<6.8	NA
8:2 FTS	--	--	ng/L	<7	<6.9	<6.8	<7	<7.2	<6.9	<7	<7.1	<6.8	<7.2	<6.8	<6.8	<6.8	NA
9CI-PF3ONS (F-53B Major)	--	--	ng/L	<7	<6.9	<6.8	<7	<7.2	<6.9	<7	<7.1	<6.8	<7.2	<6.8	<6.8	<6.8	NA
ADONA	--	--	ng/L	<7	<6.9	<6.8	<7	<7.2	<6.9	<7	<7.1	<6.8	<7.2	<6.8	<6.8	<6.8	NA
Hexafluoropropylene oxide dimer acid (HFPO-DA) (GenX)	370	--	ng/L	<7	<6.9	<6.8	<7	<7.2	<6.9	<7	<7.1	<6.8	<7.2	<6.8	<6.8	<6.8	NA
N-ethyl perfluorooctane sulfonamidoacetic acid (NETFOSAA)	--	--	ng/L	<7	<6.9	<6.8	<7	<7.2	<6.9	<7	<7.1	<6.8	<7.2	<6.8	<6.8	<6.8	NA
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	--	--	ng/L	<7	<6.9	<6.8	<7	<7.2	<6.9	<7	<7.1	<6.8	<7.2	<6.8	<6.8	<6.8	NA
Perfluorobutanesulfonic acid (PFBS)	420	--	ng/L	6	2.5 J	3.2 J	1.6 J	1 J	1.8 J	1.4 J	<3.5	<3.4	7.9	8.4	1.8 J	2.1 J	NA
Perfluorobutanoic acid (PFBA)	--	--	ng/L	16	3.8	6.1	3 J	0.88 J	1.2 J	0.91 J	3.1 J	2.9 J	11	10	3.7	4	NA
Perfluorodecanesulfonic acid (PFDS)	--	--	ng/L	<3.5	<3.5	<3.4	<3.5	<3.6	<3.5	<3.5	<3.5	<3.4	<3.6	<3.4	<3.4	<3.4	NA
Perfluorodecanoic acid (PFDA)	--	--	ng/L	<3.5	<3.5	<3.4	<3.5	<3.6	<3.5	<3.5	<3.5	<3.4	<3.6	<3.4	<3.4	<3.4	NA
Perfluorododecanoic acid (PFDoA)	--	--	ng/L	<3.5	<3.5	<3.4	<3.5	<3.6	<3.5	<3.5	<3.5	<3.4	<3.6	<3.4	<3.4	<3.4	NA
Perfluoroheptanesulfonic Acid (PFHpS)	--	--	ng/L	<3.5	<3.5	<3.4	<3.5	<3.6	<3.5	<3.5	<3.5	<3.4	<3.6	<3.4	<3.4	<3.4	NA
Perfluoroheptanoic acid (PFHpA)	--	--	ng/L	1 J	0.69 J	1.4 J	0.39 J	1.4 J	0.41 J	0.39 J	<3.5	<3.4	3.5 J	2.7 J	1 J	0.99 J	NA
Perfluorohexanesulfonic acid (PFHxS)	51	--	ng/L	1.2 J	1.3 J	1.4 J	<3.5	<3.6	0.88 J	0.91 J	<3.5	<3.4	1.8 J	<3.4	1.1 J	1.8 J	NA
Perfluorohexanoic acid (PFHxA)	400,000	--	ng/L	5.8	1.1 J	2.7 J	1.1 J	<3.6	1.7 J	1.7 J	1.2 J	6	6.2	2.4 J	2.6 J	2.6 J	NA
Perfluorononanesulfonic acid (PFNS)	--	--	ng/L	<3.5	<3.5	<3.4	<3.5	<3.6	<3.5	<3.5	<3.5	<3.4	<3.6	<3.4	<3.4	<3.4	NA
Perfluorononanoic acid (PFNA)	6	--	ng/L	<3.5	<3.5	<3.4	<3.5	<3.6	<3.5	<3.5	<3.5	<3.4	0.59 J	0.39 J	<3.4	<3.4	NA
Perfluorooctane Sulfonamide (PFOSA)	--	--	ng/L	<3.5	0.67 J	<3.4	2 J	<3.6	0.53 J	<3.5	0.57 J	1.6 J	<3.6	<3.4	<3.4	<3.4	NA
Perfluorooctane sulfonic acid (PFOS)	16	12	ng/L	1.9 J	2 J	2.2 J	<3.5	<3.6	2.1 J	<3.5	<3.4	2 J	3.4	<3.4	<3.4	<3.4	NA
Perfluorooctanoic acid (PFOA)	8	12,000	ng/L	5.8	2.8 J	3.7	1.1 J	<3.6	0.72 J	1.1 J	<3.5	<3.4	9.4	7.7	2.4 J	2.5 J	NA
Perfluoropentanesulfonic acid (PFPeS)	--	--	ng/L	<3.5	<3.5	<3.4	<3.5	<3.6	<3.5	<3.5	<3.5	<3.4	<3.6	<3.4	<3.4	<3.4	NA
Perfluoropentanoic acid (PFPeA)	--	--	ng/L	4.9	1.2 J	2.9 J	0.92 J	<3.6	<3.5	<3.5	2.1 J	1.7 J	13	14	2.7 J	3 J	NA
Perfluorotetradecanoic acid (PFTeA)	--	--	ng/L	<3.5	<3.5	<3.4	<3.5	<3.6	<3.5	<3.5	<3.5	<3.4	<3.6	<3.4	<3.4	<3.4	NA
Perfluorotridecanoic Acid (PFTriA)	--	--	ng/L	<3.5	<3.5	<3.4	<3.5	<3.6	<3.5	<3.5	<3.5	<3.4	<3.6	<3.4	<3.4	<3.4	NA
Perfluoroundecanoic acid (PFUnA)	--	--	ng/L	<3.5	<3.5	<3.4	<3.5	<3.6	<3.5	<3.5	<3.5	<3.4	<3.6	<3.4	<3.4	<3.4	NA

See notes on last page.

Table 2
 Summary of Groundwater Analytical Results - January to June 2022
 RACER Trust Plants 2, 3, and 6
 Lansing, Michigan

Location ID: Date Collected: Sample Name:	P201 Residential Drinking Water	P201 Groundwater Surface Water Interface	Units	MW-22-153 06/04/22 MW-22-153_060422	MW-23 06/08/22 MW-23_060822	MW-91-2R 06/09/22 MW-91-2R_060922	MW-91-5 06/08/22 MW-91-5_060822	MW-91-6 06/07/22 MW-91-6_060722	MWBP-10-UST5-6 06/03/22 MWBP-10-UST5-6_060322	MWBP-11-UST1-4 06/03/22 MWBP-11-UST1-4_060322	MWBP-12-UST1-4 06/03/22 MWBP-12-UST1-4_060322	P2-MW-04 06/04/22 P2-MW-04_060422	P6-SB-07 03/02/22 P6-SB-07_030222	P6-SB-07 06/03/22 P6-SB-07_060322	PW-14-01 06/07/22 PW-14-01_060722	PW-14-02 03/01/22 PW-14-02_030122	PW-14-02 06/01/22 PW-14-02_060122
Field																	
pH	6.5 to 8.5	6.5 to 9.0	s.u.	6.91	8.05	7.14	6.85	7.56	7.08	8.90	7.65	7.14	7.46	7.18	6.99	7.84	7.23
Conductivity	--	--	mS/cm	1.54	1.00	1.60	0.20	1.57	2.60	0.76	0.34	0.98	0.63	0.66	3.27	1.53	2.37
Turbidity	--	--	NTU	1.21	1.30	4.80	12.80	8.70	1.50	2.51	2.51	1.16	1.82	1.45	22.30	0.02	9.23
Dissolved oxygen (DO)	--	--	mg/L	0.10	0.09	4.35	1.20	0.34	0.75	0.10	0.15	0.15	1.03	0.10	5.76	10.81	5.46
Temperature	--	--	Deg C	13.8	14.1	18.9	17.5	18.7	13.2	15.1	14.0	12.2	8.7	12.9	14.8	7.1	22.5
Oxidation reduction potential (ORP)	--	--	millivolts	-58.2	4.1	-125.2	42.1	-177.7	-58.1	30.3	61.7	-26.9	-97.0	20.9	-9.2	209.8	7.1
Volatile Organics (via EPA Method SW5030C/8260C)																	
1,1-Dichloroethane	880	740	µg/L	3	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
1,1-Dichloroethene	7.0	130	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
1,1,1-Trichloroethane	200	89	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
1,1,1,2-Tetrachloroethane	77	--	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
1,1,2-Trichloroethane	5.0	330	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
1,1,2,2-Tetrachloroethane	8.5	78	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
1,2-Dibromo-3-chloropropane (DBCP)	0.2	--	µg/L	<5	NA	NA	NA	NA	<5	<5	<5	NA	NA	NA	NA	NA	<5
1,2-Dibromoethane (Ethylene dibromide)	0.05	5.7	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
1,2-Dichlorobenzene	600	13	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
1,2-Dichloroethane	5.0	360	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
1,2-Dichloropropane	5.0	230	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
1,2,3-Trichlorobenzene	--	--	µg/L	<5	NA	NA	NA	NA	<5	<5	<5	NA	NA	NA	NA	NA	<5
1,2,3-Trichloropropane	42	--	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
1,2,3-Trimethylbenzene	--	--	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
1,2,4-Trichlorobenzene	70	99	µg/L	<5	NA	NA	NA	NA	<5	<5	<5	NA	NA	NA	NA	NA	<5
1,2,4-Trimethylbenzene	63	17	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
1,3-Dichlorobenzene	6.6	28	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
1,3,5-Trimethylbenzene	72	45	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
1,4-Dichlorobenzene	75	17	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
1,4-Dioxane	7.2	280	µg/L	91	NA	6	NA	NA	NA	NA	NA	25 [25]	NA	NA	1	11 [12]	26
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	2,200	µg/L	<25	NA	NA	NA	NA	<25	<25	<25	NA	NA	NA	NA	NA	<25
2-Hexanone	1,000	--	µg/L	<50	NA	NA	NA	NA	<50	<50	<50	NA	NA	NA	NA	NA	<50
2-Methylnaphthalene	260	19	µg/L	<5	NA	NA	NA	NA	<5	<5	<5	NA	NA	NA	NA	NA	<5
2-Phenylbutane (sec-Butylbenzene)	80	--	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	--	µg/L	<50	NA	NA	NA	NA	<50	<50	<50	NA	NA	NA	NA	NA	<50
Acetone	730	1,700	µg/L	<50	NA	NA	NA	NA	<50	<50	<50	NA	NA	NA	NA	NA	<50
Acrylonitrile	2.6	2	µg/L	<2	NA	NA	NA	NA	<2	<2	<2	NA	NA	NA	NA	NA	<2
Benzene	5.0	200	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
Bromobenzene	18	--	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
Bromodichloromethane	80	--	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
Bromoform	80	--	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
Bromomethane (Methyl bromide)	10	5.0	µg/L	<5	NA	NA	NA	NA	<5	<5	<5	NA	NA	NA	NA	NA	<5
Carbon disulfide	800	--	µg/L	<5	NA	NA	NA	NA	<5	<5	<5	NA	NA	NA	NA	NA	<5
Carbon tetrachloride	5.0	38	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
Chlorobenzene	100	25	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
Chlorobromomethane	--	--	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
Chloroethane	430	1,100	µg/L	10	NA	NA	NA	NA	<5	<5	<5	NA	NA	NA	NA	NA	<5
Chloroform (Trichloromethane)	80	350	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
Chloromethane (Methyl chloride)	260	--	µg/L	<5	NA	NA	NA	NA	<5	<5	<5	NA	NA	NA	NA	NA	<5
cis-1,2-Dichloroethene	70	620	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
cis-1,3-Dichloropropene	--	--	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
Cymene (p-Isopropyltoluene)	--	--	µg/L	<5	NA	NA	NA	NA	<5	<5	<5	NA	NA	NA	NA	NA	<5
Dibromochloromethane	80	--	µg/L	<5	NA	NA	NA	NA	<5	<5	<5	NA	NA	NA	NA	NA	<5
Dibromomethane	80	--	µg/L	<5	NA	NA	NA	NA	<5	<5	<5	NA	NA	NA	NA	NA	<5
Dichlorodifluoromethane (CFC-12)	1,700	--	µg/L	<5	NA	NA	NA	NA	<5	<5	<5	NA	NA	NA	NA	NA	<5
Ethyl ether	10	--	µg/L	<10	NA	NA	NA	NA	<10	<10	<10	NA	NA	NA	NA	NA	<10
Ethylbenzene	74	18	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
Hexachloroethane	7.3	6.7	µg/L	<5	NA	NA	NA	NA	<5	<5	<5	NA	NA	NA	NA	NA	<5
Iodomethane	--	--	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
Isopropyl benzene	800	28	µg/L	<5	NA	NA	NA	NA	<5	<5	<5	NA	NA	NA	NA	NA	<5
Methyl tert butyl ether (MTBE)	40	7,100	µg/L	<5	NA	NA	NA	NA	<5	<5	<5	NA	NA	NA	NA	NA	<5
Methylene chloride	5.0	1,500	µg/L	<5	NA	NA	NA	NA	<5	<5	<5	NA	NA	NA	NA	NA	<5
Naphthalene	520	11	µg/L	<5	NA	NA	NA	NA	<5	<5	<5	NA	NA	NA	NA	NA	<5
N-Butylbenzene	80	--	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
N-Propylbenzene	80	--	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
Styrene	100	80	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
tert-Butylbenzene	80	--	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
Tetrachloroethene	5.0	60	µg/L	<1	NA	NA	NA	NA	<1	<1	1	NA	NA	NA	NA	NA	<1
Tetrahydrofuran	95	11,000	µg/L	<90	NA	NA	NA	NA	<90	<90	<90	NA	NA	NA	NA	NA	<90
Toluene	790	270	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
trans-1,2-Dichloroethene	100	1,500	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
trans-1,3-Dichloropropene	--	--	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
trans-1,4-Dichloro-2-butene	--	--	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
Trichloroethene	5.0	200	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
Trichlorofluoromethane (CFC-11)	2,600	--	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
Vinyl chloride	2.0	13	µg/L	1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
o-Xylene	--	--	µg/L	<1	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1
m&p-Xylene	--	--	µg/L	<2	NA	NA	NA	NA	<2	<2	<2						

Table 2
Summary of Groundwater Analytical Results - January to June 2022
RACER Trust Plants 2, 3, and 6
Lansing, Michigan



Location ID: Date Collected: Sample Name:	P201 Residential Drinking Water	P201 Groundwater Surface Water Interface	Units	MW-22-153 06/04/22 MW-22-153_060422	MW-23 06/08/22 MW-23_060822	MW-91-2R 06/09/22 MW-91-2R_060922	MW-91-5 06/08/22 MW-91-5_060822	MW-91-6 06/07/22 MW-91-6_060722	MWBP-10-UST5-6 06/03/22 MWBP-10-UST5-6_060322	MWBP-11-UST1-4 06/03/22 MWBP-11-UST1-4_060322	MWBP-12-UST1-4 06/03/22 MWBP-12-UST1-4_060322	P2-MW-04 06/04/22 P2-MW-04_060422	P6-SB-07 03/03/22 P6-SB-07_030222	P6-SB-07 06/03/22 P6-SB-07_060322	PW-14-01 06/07/22 PW-14-01_060722	PW-14-02 03/01/22 PW-14-02_030122	PW-14-02 06/01/22 PW-14-02_060122
<i>See notes on last page.</i>																	
Semi-Volatile Organics (via EPA Method 522)																	
1,4-Dioxane	7.2	280	µg/L	NA	NA	NA	<0.20	0.41	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics-Metals (via EPA Method 6020)																	
Arsenic	0.01	0.01	mg/L	NA	NA	0.01	NA	NA	0.01	0.006	0.003	NA	NA	NA	NA	NA	NA
Chromium III (trivalent)	0.1	0.16	mg/L	NA	NA	<0.005	NA	NA	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA
Chromium VI (hexavalent)	0.1	0.011	mg/L	NA	NA	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1.0	0.02	mg/L	NA	NA	<0.005	NA	NA	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA
Lead	0.004	0.044	mg/L	NA	NA	<0.003	NA	NA	<0.003	<0.003	<0.003	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.12	mg/L	NA	NA	<0.005	NA	NA	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA
Vanadium	0.0045	0.027	mg/L	NA	NA	<0.005	NA	NA	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA
Inorganics-Metals, Filtered (via EPA Method 6020)																	
Arsenic (dissolved)	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III (trivalent, dissolved)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (dissolved)	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead (dissolved)	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel (dissolved)	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium (dissolved)	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry																	
Nitrate (as N)	10	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5
Phosphorus	63	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03
Total kjeldahl nitrogen (TKN)	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.4
Per- and Polyfluoroalkyl Substances (PFAS) (via EPA Method 537 Modified)																	
11CI-PF3OUdS (F-53B Minor)	--	--	ng/L	NA	<7.2	<6.9	NA	NA	NA	NA	NA	NA	<6.8 [<7]	<6.9	NA	NA	NA
4:2 FTS	--	--	ng/L	NA	<7.2	<6.9	NA	NA	NA	NA	NA	NA	<6.8 [<7]	<6.9	NA	NA	NA
6:2 FTS	--	--	ng/L	NA	<7.2	<6.9	NA	NA	NA	NA	NA	NA	<6.8 [<7]	<6.9	NA	NA	NA
8:2 FTS	--	--	ng/L	NA	<7.2	<6.9	NA	NA	NA	NA	NA	NA	<6.8 [<7]	<6.9	NA	NA	NA
9CI-PF3ONS (F-53B Major)	--	--	ng/L	NA	<7.2	<6.9	NA	NA	NA	NA	NA	NA	<6.8 [<7]	<6.9	NA	NA	NA
ADONA	--	--	ng/L	NA	<7.2	<6.9	NA	NA	NA	NA	NA	NA	<6.8 [<7]	<6.9	NA	NA	NA
Hexafluoropropylene oxide dimer acid (HFPO-DA) (GenX)	370	--	ng/L	NA	<7.2	<6.9	NA	NA	NA	NA	NA	NA	<6.8 [<7]	<6.9	NA	NA	NA
N-ethyl perfluorooctane sulfonamidoacetic acid (NEFOSAA)	--	--	ng/L	NA	<7.2	<6.9	NA	NA	NA	NA	NA	NA	<6.8 [<7]	<6.9	NA	NA	NA
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	--	--	ng/L	NA	<7.2	<6.9	NA	NA	NA	NA	NA	NA	<6.8 [<7]	<6.9	NA	NA	NA
Perfluorobutanesulfonic acid (PFBS)	420	--	ng/L	NA	<3.6	<3.5	NA	NA	NA	NA	NA	NA	2.9 J [3.1 J]	3.4 J	NA	NA	NA
Perfluorobutanoic acid (PFBA)	--	--	ng/L	NA	1.7 J	7.3	NA	NA	NA	NA	NA	NA	190 [180]	220	NA	NA	NA
Perfluorodecanesulfonic acid (PFDS)	--	--	ng/L	NA	<3.6	<3.5	NA	NA	NA	NA	NA	NA	<3.4 [<3.5]	<3.5	NA	NA	NA
Perfluorodecanoic acid (PFDA)	--	--	ng/L	NA	<3.6	<3.5	NA	NA	NA	NA	NA	NA	20 [19]	24	NA	NA	NA
Perfluorododecanoic acid (PFDoA)	--	--	ng/L	NA	<3.6	<3.5	NA	NA	NA	NA	NA	NA	<3.4 [<3.5]	<3.5	NA	NA	NA
Perfluoroheptanesulfonic Acid (PFHpS)	--	--	ng/L	NA	<3.6	<3.5	NA	NA	NA	NA	NA	NA	<3.4 [0.43 J]	0.57 J	NA	NA	NA
Perfluoroheptanoic acid (PFHpA)	--	--	ng/L	NA	0.44 J	<3.5	NA	NA	NA	NA	NA	NA	480 [450]	530	NA	NA	NA
Perfluorohexanesulfonic acid (PFHxS)	51	--	ng/L	NA	<3.6	<3.5	NA	NA	NA	NA	NA	NA	2.6 J [2.4 J]	2.5 J	NA	NA	NA
Perfluorohexanoic acid (PFHxA)	400,000	--	ng/L	NA	<3.6	<3.5	NA	NA	NA	NA	NA	NA	640 [630]	740	NA	NA	NA
Perfluorononanesulfonic acid (PFNS)	--	--	ng/L	NA	<3.6	<3.5	NA	NA	NA	NA	NA	NA	<3.4 [<3.5]	<3.5	NA	NA	NA
Perfluorononanoic acid (PFNA)	6	--	ng/L	NA	<3.6	<3.5	NA	NA	NA	NA	NA	NA	78 [74]	82	NA	NA	NA
Perfluorooctane Sulfonamide (PFOSA)	--	--	ng/L	NA	<3.6	<3.5	NA	NA	NA	NA	NA	NA	<3.4 [<3.5]	<3.5	NA	NA	NA
Perfluorooctane sulfonic acid (PFOS)	16	12	ng/L	NA	3.1 J	<3.5	NA	NA	NA	NA	NA	NA	38 [34]	42	NA	NA	NA
Perfluorooctanoic acid (PFOA)	8	12,000	ng/L	NA	0.99 J	<3.5	NA	NA	NA	NA	NA	NA	640 [610]	720	NA	NA	NA
Perfluoropentanesulfonic acid (PFPeS)	--	--	ng/L	NA	<3.6	<3.5	NA	NA	NA	NA	NA	NA	0.71 J [1.1 J]	1 J	NA	NA	NA
Perfluoropentanoic acid (PFPeA)	--	--	ng/L	NA	0.68 J	<3.5	NA	NA	NA	NA	NA	NA	730 [710]	790	NA	NA	NA
Perfluorotetradecanoic acid (PFTeA)	--	--	ng/L	NA	<3.6	<3.5	NA	NA	NA	NA	NA	NA	<3.4 [<3.5]	<3.5	NA	NA	NA
Perfluorotridecanoic Acid (PFTriA)	--	--	ng/L	NA	<3.6	<3.5	NA	NA	NA	NA	NA	NA	<3.4 [<3.5]	<3.5	NA	NA	NA
Perfluoroundecanoic acid (PFUnA)	--	--	ng/L	NA	<3.6	<3.5	NA	NA	NA	NA	NA	NA	<3.4 [<3.5]	<3.5	NA	NA	NA

See notes on last page.

Table 2
Summary of Groundwater Analytical Results - January to June 2022
RACER Trust Plants 2, 3, and 6
Lansing, Michigan



Field	Location ID:	P201	P201	Units	PW-14-03	PW-14-03	TW-14-02	TW-14-02	TW-14-06	TW-14-06	TW-15-11	TW-15-11	TW-15-12	TW-15-12	UNK-10	UNK-11	UNK-15
	Date Collected:	Residential	Groundwater		PW-14-03	PW-14-03	TW-14-02	TW-14-02	TW-14-06	TW-14-06	TW-15-11	TW-15-11	TW-15-12	TW-15-12	UNK-10	UNK-11	UNK-15
Sample Name:	Drinking Water	Surface Water	Interface	03/02/22	06/06/22	03/02/22	06/01/22	03/02/22	06/06/22	03/02/22	06/06/22	03/02/22	06/01/22	06/08/22	06/08/22	06/09/22	
pH	6.5 to 8.5	6.5 to 9.0	s.u.	7.20	7.09	7.67	7.66	7.41	7.55	7.01	7.16	7.60	7.63	6.97	8.52	7.65	
Conductivity	--	--	mS/cm	2.68	3.46	3.29	4.99	2.55	2.99	3.01	3.20	1.69	2.32	0.40	0.32	0.68	
Turbidity	--	--	NTU	1.11	0.02	270.00	273.00	1,000	NM	78.40	248.00	NM	819.00	15.00	8.00	10.00	
Dissolved oxygen (DO)	--	--	mg/L	10.37	12.18	9.44	8.07	12.34	15.09	0.02	13.66	11.92	7.33	0.01	1.01	0.02	
Temperature	--	--	Deg C	10.2	21.1	6.3	21.2	10.6	16.6	13.5	17.6	7.3	22.4	14.8	14.5	14.4	
Oxidation reduction potential (ORP)	--	--	millivolts	190.6	66.3	160.9	165.4	315.8	64.1	120.1	74.1	176.9	101.9	-14.0	22.9	5.7	
Volatile Organics (via EPA Method SW5030C/8260C)																	
1,1-Dichloroethane	880	740	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
1,1-Dichloroethene	7.0	130	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
1,1,1-Trichloroethane	200	89	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
1,1,1,2-Tetrachloroethane	77	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
1,1,2-Trichloroethane	5.0	330	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
1,1,2,2-Tetrachloroethane	8.5	78	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
1,2-Dibromo-3-chloropropane (DBCP)	0.2	--	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	<5	<5	NA	
1,2-Dibromoethane (Ethylene dibromide)	0.05	5.7	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
1,2-Dichlorobenzene	600	13	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
1,2-Dichloroethane	5.0	360	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
1,2-Dichloropropane	5.0	230	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
1,2,3-Trichlorobenzene	--	--	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	<5	<5	NA	
1,2,3-Trichloropropane	42	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
1,2,3-Trimethylbenzene	--	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
1,2,4-Trichlorobenzene	70	99	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	<5	<5	NA	
1,2,4-Trimethylbenzene	63	17	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
1,3-Dichlorobenzene	6.6	28	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
1,3,5-Trimethylbenzene	72	45	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
1,4-Dichlorobenzene	75	17	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
1,4-Dioxane	7.2	280	µg/L	3 [2]	3 [3]	<1	<1	7	2	5	5	4	9	NA	NA	NA	
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	2,200	µg/L	NA	NA	NA	<25	NA	NA	NA	NA	NA	NA	<25	<25	NA	
2-Hexanone	1,000	--	µg/L	NA	NA	NA	<50	NA	NA	NA	NA	NA	NA	<50	<50	NA	
2-Methylnaphthalene	260	19	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	<5	<5	NA	
2-Phenylbutane (sec-Butylbenzene)	80	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	--	µg/L	NA	NA	NA	<50	NA	NA	NA	NA	NA	NA	<50	<50	NA	
Acetone	730	1,700	µg/L	NA	NA	NA	<50	NA	NA	NA	NA	NA	NA	<50	<50	NA	
Acrylonitrile	2.6	2	µg/L	NA	NA	NA	<2	NA	NA	NA	NA	NA	NA	<2	<2	NA	
Benzene	5.0	200	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	7	NA	
Bromobenzene	18	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
Bromodichloromethane	80	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
Bromoform	80	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
Bromomethane (Methyl bromide)	10	5.0	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	<5	<5	NA	
Carbon disulfide	800	--	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	<5	<5	NA	
Carbon tetrachloride	5.0	38	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
Chlorobenzene	100	25	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
Chlorobromomethane	--	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
Chloroethane	430	1,100	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	<5	<5	NA	
Chloroform (Trichloromethane)	80	350	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
Chloromethane (Methyl chloride)	260	--	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	<5	<5	NA	
cis-1,2-Dichloroethane	70	620	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
cis-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
Cymene (p-Isopropyltoluene)	--	--	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	<5	<5	NA	
Dibromochloromethane	80	--	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	<5	<5	NA	
Dibromomethane	80	--	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	<5	<5	NA	
Dichlorodifluoromethane (CFC-12)	1,700	--	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	<5	<5	NA	
Ethyl ether	10	--	µg/L	NA	NA	NA	<10	NA	NA	NA	NA	NA	NA	<10	<10	NA	
Ethylbenzene	74	18	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
Hexachloroethane	7.3	6.7	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	<5	<5	NA	
Iodomethane	--	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
Isopropyl benzene	800	28	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	<5	<5	NA	
Methyl tert butyl ether (MTBE)	40	7,100	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	<5	<5	NA	
Methylene chloride	5.0	1,500	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	<5	<5	NA	
Naphthalene	520	11	µg/L	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	<5	<5	NA	
N-Butylbenzene	80	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
N-Propylbenzene	80	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
Styrene	100	80	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
tert-Butylbenzene	80	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
Tetrachloroethane	5.0	60	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
Tetrahydrofuran	95	11,000	µg/L	NA	NA	NA	<90	NA	NA	NA	NA	NA	NA	<90	<90	NA	
Toluene	790	270	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
trans-1,2-Dichloroethane	100	1,500	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
trans-1,3-Dichloropropene	--	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
trans-1,4-Dichloro-2-butene	--	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
Trichloroethane	5.0	200	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
Trichlorofluoromethane (CFC-11)	2,600	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
Vinyl chloride	2.0	13	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
o-Xylene	--	--	µg/L	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	<1	<1	NA	
m&p-Xylene	--	--	µg/L	NA	NA	NA	<2	NA	NA	NA	NA	NA	NA	<2	<2	NA	
Xylenes (total)	280	49	µg/L	NA	NA	NA	<2	NA	NA	NA	NA	NA	NA	<2	<2	NA	

Table 2
 Summary of Groundwater Analytical Results - January to June 2022
 RACER Trust Plants 2, 3, and 6
 Lansing, Michigan



Location ID: Date Collected: Sample Name:	P201 Residential Drinking Water	P201 Groundwater Surface Water Interface	Units	PW-14-03 03/02/22	PW-14-03 06/06/22	TW-14-02 03/02/22	TW-14-02 06/01/22	TW-14-06 03/02/22	TW-14-06 06/06/22	TW-15-11 03/02/22	TW-15-11 06/06/22	TW-15-12 03/02/22	TW-15-12 06/01/22	UNK-10 06/08/22	UNK-11 06/08/22	UNK-15 06/09/22
<i>See notes on last page.</i>																
Semi-Volatile Organics (via EPA Method 522)																
1,4-Dioxane	7.2	280	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics-Metals (via EPA Method 6020)																
Arsenic	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III (trivalent)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI (hexavalent)	0.1	0.011	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics-Metals, Filtered (via EPA Method 6020)																
Arsenic (dissolved)	0.01	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III (trivalent, dissolved)	0.1	0.16	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (dissolved)	1.0	0.02	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead (dissolved)	0.004	0.044	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel (dissolved)	0.1	0.12	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium (dissolved)	0.0045	0.027	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry																
Nitrate (as N)	10	--	mg/L	NA	NA	NA	<0.5	NA	<0.5	NA	NA	NA	<0.5	NA	NA	NA
Phosphorus	63	--	mg/L	NA	NA	NA	0.11	NA	1.5	NA	NA	NA	2.5	NA	NA	NA
Total kjeldahl nitrogen (TKN)	--	--	mg/L	NA	NA	NA	0.5	NA	4.3	NA	NA	NA	5.1	NA	NA	NA
Per- and Polyfluoroalkyl Substances (PFAS) (via EPA Method 537 Modified)																
11C1-PF3OUdS (F-53B Minor)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<6.8
4:2 FTS	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<6.8
6:2 FTS	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<6.8
8:2 FTS	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<6.8
9Cl-PF3ONS (F-53B Major)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<6.8
ADONA	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<6.8
Hexafluoropropylene oxide dimer acid (HFPO-DA) (GenX)	370	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<6.8
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<6.8
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<6.8
Perfluorobutanesulfonic acid (PFBS)	420	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2 J
Perfluorobutanoic acid (PFBA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14
Perfluorodecanesulfonic acid (PFDS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3.4
Perfluorodecanoic acid (PFDA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.9 J
Perfluorododecanoic acid (PFDoA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3.4
Perfluoroheptanesulfonic Acid (PFHpS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12
Perfluoroheptanoic acid (PFHpA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.2
Perfluorohexanesulfonic acid (PFHxS)	51	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15
Perfluorohexanoic acid (PFHxA)	400,000	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11
Perfluorononanesulfonic acid (PFNS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3.4
Perfluorononanoic acid (PFNA)	6	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.3
Perfluorooctane Sulfonamide (PFOSA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3.4
Perfluorooctane sulfonic acid (PFOS)	16	12	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,100
Perfluorooctanoic acid (PFOA)	8	12,000	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	32
Perfluoropentanesulfonic acid (PFPeS)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	2.2	NA	NA	NA	2.2 J
Perfluoropentanoic acid (PFPeA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14
Perfluorotetradecanoic acid (PFTeA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3.4
Perfluorotridecanoic Acid (PFTriA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3.4
Perfluoroundecanoic acid (PFUnA)	--	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3.4

See notes on last page.

Table 2
Summary of Groundwater Analytical Results - January to December 2021
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 December 21, 2020)

Notes:

1. EGLE Part 201 Residential Drinking Water Criteria and Groundwater Surface Water Interface Criteria from the Generic Cleanup Criteria and Screening Levels (dated January 10, 2018) are used for comparison with all VOC and Inorganic data and revised criteria values (dated December 21, 2020) are used for comparison with all PFAS data.

2. 1,4-Dioxane is compared to a drinking water criteria of 7.2 µg/L per the *MDEQ Establishment of Cleanup Criteria for 1,4 -Dioxane: Emergency Rules* dated October 27, 2016.

Abbreviations:

- - = Not listed in the EGLE Criteria Tables.

* = Analyzed for low-level 1,4-Dioxane via EPA Method 522

Deg. C. = degrees Celsius

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

mg/L = milligrams per liter

NA = Not Analyzed

NR = Not Recorded

NTU = Nephelometric Turbidity Unit

s.u. = standard unit

ug/L = micrograms per liter

µS/cm = microSiemens per centimeter

Lab and Validation Data Qualifiers:

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

J = The compound was positively identified, but the associated numerical value is an estimated concentration only.

Table 3
 LNAPL Thickness, June 2022
 2022 Semi-Annual Groundwater Monitoring Report
 RACER Trust Plants 2, 3, and 6
 Lansing, Michigan



Well ID	Date Collected	Reference Elevation (TOC)	Ground Surface Elevation (feet msl)	Total Well Depth (feet below TOC)	Depth to Water (feet below TOC)	Depth to LNAPL (feet below TOC)	Calculated Thickness NAPL (feet)	Groundwater Elevation (feet msl)	Corrected Groundwater Elevation (feet msl)
Plant 2									
LMW-12-01	6/10/22	864.91	862.14	NM	4.65	NP	NP	860.26	860.26
LMW-12-02	6/10/22	865.25	862.17	NM	4.65	NP	NP	860.60	860.60
LMW-12-03D	6/10/22	864.99	862.08	NM	16.15	3.69	12.46	848.84	860.05
LMW-12-03S	6/10/22	864.93	862.06	NM	3.96	3.94	0.02	860.97	860.99
LMW-12-04	6/10/22	864.94	862.12	NM	5.79	NP	NP	859.15	859.15
LMW-12-05	6/10/22	865.03	862.17	NM	6.82	6.42	0.4	858.21	858.57
LMW-12-06	6/10/22	865.02	862.15	NM	6.21	NP	NP	858.81	858.81
LMW-12-07	6/10/22	864.13	861.50	NM	2.82	NP	NP	861.31	861.31
LMW-12-08	6/10/22	864.40	861.56	NM	5.12	3.11	2.01	859.28	861.09
LMW-14-12D	6/10/22	864.59	862.11	NM	25.00	3.70	21.3	839.59	858.75
LMW-14-13D	6/10/22	865.03	862.06	NM	4.89	NP	NP	860.14	860.14
LMW-14-14D	6/10/22	864.89	861.90	NM	7.43	NP	NP	857.46	857.46
LMW-14-15D	6/10/22	865.11	861.66	NM	21.9	4.24	17.66	843.21	859.10
LMW-15-16D	6/10/22	865.20	862.24	NM	22.20	4.81	17.39	843.00	858.64
LMW-15-17D	6/10/22	865.21	862.24	NM	5.98	NP	NP	859.23	859.23
P2-SB-37	6/10/22	865.90	861.90	NM	7.04	4.41	2.63	858.86	861.23
PMW-01	6/10/22	860.85	861.33	NM	NM*	NM*	NM*	NM*	NM*
PMW-02	6/10/22	860.94	861.33	NM	NM*	NM*	NM*	NM*	NM*
PMW-03	6/10/22	861.59	862.12	NM	0.25	NP	NP	861.34	861.34
Plant 3									
LMW-12-09	6/10/22	863.22	860.40	NM	3.69	3.65	0.04	859.53	859.57
LMW-12-10	6/10/22	866.82	863.60	NM	16.5	11.11	5.39	850.32	855.17
LMW-12-11	6/10/22	866.53	863.53	NM	11.31	NP	NP	855.22	855.22

Notes:

LNAPL = light nonaqueous phase liquid

msl = mean sea level

NAPL = nonaqueous phase liquid

NM = not measured

NP = no product

TOC = top of casing

RACER = Revitalizing Auto Communities Environmental Response

- Where LNAPL was observed, groundwater elevations have been corrected using a measured LNAPL density of 0.8995 gram per milliliter.

UNK-14 previously reported was abandoned in November 2021

* - When gauging, LNAPL and water started coming out of the casing riser.

Table 4
Groundwater Elevations, January to June 2022
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)	Ground Surface Elevation (feet msl)	Total Well Depth (feet below TOC)	Corrected Depth to Water (feet below TOC)	Corrected Groundwater Elevation (feet msl)
Plant 2								
LMW-12-01	6/10/2022	7.0	12.0	864.91	862.14	14.77	4.65	860.26
LMW-12-02	6/10/2022	5.0	10.0	865.25	862.17	13.08	4.65	860.60
LMW-12-03D	6/10/2022	17.3	22.3	864.99	862.08	25.21	4.94	860.05*
LMW-12-03S	6/10/2022	4.0	9.0	864.93	862.06	11.87	3.94	860.99*
LMW-12-04	6/10/2022	16.0	21.0	864.94	862.12	23.82	5.79	859.15
LMW-12-05	6/10/2022	7.0	12.0	865.03	862.17	14.86	6.46	858.57*
LMW-12-06	6/10/2022	4.0	9.0	865.02	862.15	11.87	6.21	858.81
LMW-12-07	6/10/2022	4.0	9.0	864.13	861.50	11.63	2.82	861.31
LMW-12-08	6/10/2022	8.0	13.0	864.40	861.56	15.84	3.31	861.09*
LMW-14-12D	6/10/2022	18.0	23.0	864.59	862.11	25.48	5.84	858.75*
LMW-14-13D	6/10/2022	17.5	22.5	865.03	862.06	25.47	4.89	860.14
LMW-14-14D	6/10/2022	18.0	23.0	864.89	861.90	25.99	7.43	857.46
LMW-14-15D	6/10/2022	18.0	23.0	865.11	861.66	26.45	6.01	859.1*
LMW-15-16D	6/10/2022	19.5	24.5	865.20	862.24	27.46	6.56	858.64*
LMW-15-17D	6/10/2022	20.0	25.0	865.21	862.24	27.98	5.98	859.23
MW-01(2)	5/31/2022	10.0	20.0	875.79	876.10	19.69	9.10	866.69
MW-12-01	2/28/2022	87.0	110.0	867.94	865.46	112.48	76.83	791.11
MW-12-01	5/31/2022	87.0	110.0	867.94	865.46	112.48	71.47	796.47
MW-12-02	2/28/2022	87.0	110.0	853.91	851.88	112.03	66.41	787.50
MW-12-02	5/31/2022	87.0	110.0	853.91	851.88	112.03	65.94	787.97
MW-12-05R	2/28/2022	100.0	112.0	864.79	862.30	114.49	75.45	789.34
MW-12-05R	5/31/2022	100.0	112.0	864.79	862.30	114.49	74.60	790.19
MW-12-06	2/28/2022	80.6	99.5	864.64	861.69	102.45	72.34	792.30
MW-12-06	5/31/2022	80.6	99.5	864.64	861.69	102.45	71.22	793.42
MW-12-07	5/31/2022	10.0	15.0	872.11	869.21	17.90	11.52	860.59
MW-12-08	5/31/2022	19.0	24.0	864.68	861.50	27.18	0.27	864.41
MW-12-09	5/31/2022	14.0	19.0	863.54	860.63	21.91	15.23	848.31
MW-12-18	5/31/2022	28.0	33.0	866.43	864.19	35.24	18.41	848.02
MW-13-43	2/28/2022	72.0	77.0	863.82	860.97	79.85	64.97	798.85
MW-13-43	5/31/2022	72.0	77.0	863.82	860.97	79.85	62.65	801.17
MW-13-44	2/28/2022	96.0	115.0	864.24	861.03	118.21	76.75	787.49
MW-13-44	5/31/2022	96.0	115.0	864.24	861.03	118.21	76.17	788.07
MW-13-45	2/28/2022	72.0	77.0	863.80	861.54	79.26	65.48	798.32
MW-13-45	5/31/2022	72.0	77.0	863.80	861.54	79.26	64.59	799.21
MW-13-51	5/31/2022	77.0	87.0	875.34	872.51	89.83	77.22	798.12
MW-14-54	5/31/2022	14.0	19.0	865.21	862.21	22.00	11.79	853.42
MW-14-55	5/31/2022	13.0	18.0	864.17	861.73	20.44	14.58	849.59
MW-14-56	5/31/2022	71.0	76.0	863.27	860.56	78.71	NM	NM
MW-14-57	5/31/2022	15.0	20.0	863.97	861.10	22.87	6.51	857.46
MW-14-58R	5/31/2022	22.0	27.0	862.93	860.09	29.84	9.75	853.18
MW-14-59	5/31/2022	12.0	17.0	865.13	861.63	20.49	5.15	859.98
MW-14-60	5/31/2022	15.0	20.0	864.65	861.70	22.95	9.00	855.65
MW-14-61	5/31/2022	70.0	75.0	865.51	862.30	78.21	65.51	800.00
MW-14-62	5/31/2022	12.0	17.0	865.17	862.25	19.92	11.38	853.79
MW-14-63	2/28/2022	68.0	73.0	854.64	851.68	75.96	66.09	788.55
MW-14-63	5/31/2022	68.0	73.0	854.64	851.68	75.96	65.25	789.39
MW-15-72	2/28/2022	63.0	68.0	865.09	862.35	70.74	56.47	808.62
MW-15-72	5/31/2022	63.0	68.0	865.09	862.35	70.74	60.49	804.60

See Notes on last page.

Table 4
Groundwater Elevations, January to June 2022
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)	Ground Surface Elevation (feet msl)	Total Well Depth (feet below TOC)	Corrected Depth to Water (feet below TOC)	Corrected Groundwater Elevation (feet msl)
Plant 2 (continued)								
MW-15-73	5/31/2022	78.0	83.0	861.56	859.12	85.44	68.91	792.65
MW-16-74	5/31/2022	66.0	71.0	864.81	862.10	73.71	65.62	799.19
MW-16-75	5/31/2022	66.0	71.0	864.87	862.13	73.74	66.46	798.41
MW-16-76	5/31/2022	70.0	75.0	867.76	865.12	77.64	72.36	795.40
MW-16-77	5/31/2022	66.0	71.0	866.17	863.42	73.75	65.89	800.28
MW-16-78	5/31/2022	68.0	73.0	864.98	862.09	75.89	63.49	801.49
MW-16-79	5/31/2022	68.0	73.0	864.80	862.07	75.73	62.82	801.98
MW-16-80	5/31/2022	68.0	73.0	853.03	853.41	72.62	63.59	789.44
MW-16-81	5/31/2022	70.0	75.0	864.68	862.04	77.64	60.63	804.05
MW-16-82	5/31/2022	70.0	75.0	864.79	862.10	77.69	65.46	799.33
MW-16-83	2/28/2022	71.0	76.0	862.97	860.17	78.80	72.40	790.57
MW-16-83	5/31/2022	71.0	76.0	862.97	860.17	78.80	68.10	794.87
MW-16-84	5/31/2022	72.0	77.0	864.09	861.81	79.29	67.82	796.27
MW-16-85	5/31/2022	74.0	79.0	864.77	861.87	81.90	69.18	795.59
MW-17-86	5/31/2022	73.0	78.0	864.55	861.92	80.63	64.81	799.74
MW-17-87	2/28/2022	100.0	112.0	862.82	860.44	114.38	74.25	788.57
MW-17-87	5/31/2022	100.0	112.0	862.82	860.44	114.38	73.42	789.40
MW-19-115	5/31/2022	72.5	77.5	865.04	862.19	80.35	69.88	795.16
MW-19-116	5/31/2022	65.0	70.0	865.12	862.17	72.95	55.91	809.21
MW-19-117	5/31/2022	54.0	59.0	865.10	862.15	61.95	58.48	806.62
MW-19-118D	2/28/2022	175.0	190.0	862.78	859.80	192.98	75.51	787.27
MW-19-118D	5/31/2022	175.0	190.0	862.78	859.80	192.98	75.13	787.65
MW-19-118S	2/28/2022	145.0	160.0	862.81	859.80	163.01	75.51	787.30
MW-19-118S	5/31/2022	145.0	160.0	862.81	859.80	163.01	75.09	787.72
MW-19-120	5/31/2022	66.0	71.0	864.73	862.13	73.60	64.72	800.01
MW-19-121	2/28/2022	66.0	71.0	864.55	862.19	73.36	63.96	800.59
MW-19-121	5/31/2022	66.0	71.0	864.55	862.19	73.36	63.12	801.43
MW-19-122	5/31/2022	59.0	64.0	865.02	862.15	66.87	59.59	805.43
MW-19-123	5/31/2022	66.0	71.0	864.45	862.04	73.41	60.13	804.32
MW-19-124	5/31/2022	65.0	70.0	864.53	862.22	72.31	60.77	803.76
MW-19-125	2/28/2022	100.0	115.0	865.11	862.11	117.99	76.62	788.49
MW-19-125	5/31/2022	100.0	115.0	865.11	862.11	117.99	75.24	789.87
MW-20-126	2/28/2022	69.0	74.0	861.89	859.50	76.39	62.80	799.09
MW-20-126	5/31/2022	69.0	74.0	861.89	859.50	76.39	68.47	793.42
MW-20-127	2/28/2022	72.0	77.0	862.58	861.30	78.28	64.90	797.68
MW-20-127	5/31/2022	72.0	77.0	862.58	861.30	78.28	64.27	798.31
MW-20-128	5/31/2022	65.0	70.0	863.73	861.40	72.33	67.70	796.03
MW-20-129	5/31/2022	64.0	69.0	864.91	862.20	71.71	61.38	803.53
MW-20-130	5/31/2022	63.0	68.0	863.98	862.20	69.78	65.83	798.15
MW-21-139	5/31/2022	7.0	12.0	865.00	862.17	14.83	3.10	861.90
MW-21-140	5/31/2022	67.0	72.0	866.06	862.76	75.30	67.29	798.77
MW-21-142	5/31/2022	71.5	76.5	853.70	850.79	79.41	72.39	781.31
MW-22-153	5/31/2022	25.0	30.0	860.43	859.44	30.99	10.25	850.18
P2-MW-02	5/31/2022	31.0	41.0	872.24	872.70	40.54	34.37	837.87
P2-MW-03	5/31/2022	27.0	32.0	854.18	854.66	31.52	18.32	835.86
P2-MW-04	5/31/2022	26.0	36.0	866.12	862.75	39.37	30.05	836.07
P2-SB-03	5/31/2022	14.0	19.0	863.89	861.03	21.87	14.89	849.00
P2-SB-06	5/31/2022	24.0	29.0	866.06	862.09	32.97	15.39	850.67

See Notes on last page.

Table 4
Groundwater Elevations, January to June 2022
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)	Ground Surface Elevation (feet msl)	Total Well Depth (feet below TOC)	Corrected Depth to Water (feet below TOC)	Corrected Groundwater Elevation (feet msl)
Plant 2 (continued)								
P2-SB-20	5/31/2022	8.0	13.0	864.46	861.12	16.34	9.24	855.22
P2-SB-37	5/31/2022	5.0	10.0	865.90	861.90	14.00	4.67	861.23*
PMW-01	6/10/2022	2.6	7.6	860.85	861.33	7.11	0.00	860.85
PMW-02	6/10/2022	2.6	7.6	860.94	861.33	7.20	0.00	860.94
PMW-03	6/10/2022	1.2	6.2	861.59	862.12	5.67	0.25	861.34
PW-14-01	5/31/2022	71.6	76.8	864.97	862.38	79.39	78.63	786.34
PW-14-02	2/28/2022	75.0	80.0	863.87	860.93	82.94	64.68	799.19
PW-14-02	5/31/2022	75.0	80.0	863.87	860.93	82.94	63.22	800.65
TW-14-02	2/28/2022	67.0	72.0	865.01	862.13	74.88	54.83	810.18
TW-14-02	5/31/2022	67.0	72.0	865.01	862.13	74.88	68.94	796.07
TW-15-12	2/28/2022	73.0	78.0	860.88	861.23	77.65	62.71	798.17
TW-15-12	5/31/2022	73.0	78.0	860.88	861.23	77.65	59.68	801.20
Plant 3								
CH-14-RO	5/31/2022	7.0	12.0	866.44	863.68	14.77	7.10	859.34
LMW-12-09	6/10/2022	3.0	8.0	863.22	860.40	10.82	3.65	859.57*
LMW-12-10	6/10/2022	14.0	19.0	866.82	863.60	22.22	11.65	855.17*
LMW-12-11	6/10/2022	15.0	20.0	866.53	863.53	23.00	11.31	855.22
MW-02-01(3)	5/31/2022	59.0	69.0	865.54	863.35	71.19	50.82	814.72
MW-02-02(3)	5/31/2022	74.0	84.0	862.70	863.11	83.59	59.90	802.80
MW-02-03(3)	5/31/2022	79.0	89.0	859.63	859.90	88.73	58.80	800.83
MW-02-04(3)	5/31/2022	76.0	86.0	859.41	859.96	85.46	59.16	800.25
MW-04-02(3)	2/28/2022	126.0	136.0	861.09	861.26	135.83	62.76	798.33
MW-04-02(3)	5/31/2022	126.0	136.0	861.09	861.26	135.83	62.10	798.99
MW-04-03(3)	2/28/2022	80.0	90.0	860.72	861.00	89.72	61.89	798.83
MW-04-03(3)	5/31/2022	80.0	90.0	860.72	861.00	89.72	60.89	799.83
MW-04-04(3)	2/28/2022	72.0	82.0	855.72	856.11	81.61	56.59	799.13
MW-04-04(3)	5/31/2022	72.0	82.0	855.72	856.11	81.61	55.50	800.22
MW-05(3)	5/31/2022	10.0	15.0	863.44	859.80	18.64	4.12	859.32
MW-12-04	2/28/2022	77.0	100.0	844.08	844.26	99.82	47.72	796.36
MW-12-04	5/31/2022	77.0	100.0	844.08	844.26	99.82	46.69	797.39
MW-12-20	5/31/2022	75.0	80.0	864.20	861.45	82.75	64.45	799.75
MW-12-21	5/31/2022	70.0	75.0	864.50	861.45	78.05	63.69	800.81
MW-13-22	2/28/2022	89.0	94.0	864.37	861.50	96.87	67.69	796.68
MW-13-22	5/31/2022	89.0	94.0	864.37	861.50	96.87	66.84	797.53
MW-13-23	5/31/2022	69.0	74.0	864.31	861.45	76.86	64.34	799.97
MW-13-24	5/31/2022	69.0	74.0	864.35	861.48	76.87	63.16	801.19
MW-13-25	5/31/2022	67.0	72.0	863.77	860.49	75.28	63.91	799.86
MW-13-26	5/31/2022	72.0	77.0	863.95	861.67	79.28	62.94	801.01
MW-13-27	5/31/2022	67.0	72.0	864.50	861.54	74.96	64.35	800.15
MW-13-28	2/28/2022	99.0	115.5	864.42	861.61	118.31	68.25	796.17
MW-13-28	5/31/2022	99.0	115.5	864.42	861.61	118.31	67.39	797.03
MW-13-29	5/31/2022	68.0	73.0	862.81	859.81	76.00	57.55	805.26
MW-13-30	5/31/2022	72.0	77.0	864.53	861.66	79.87	65.02	799.51
MW-13-31	5/31/2022	5.0	10.0	861.27	858.36	12.91	7.53	853.74
MW-13-32	5/31/2022	5.0	10.0	860.11	857.32	12.79	6.30	853.81
MW-13-34	2/28/2022	74.0	79.0	853.92	851.82	81.10	64.18	789.74
MW-13-34	5/31/2022	74.0	79.0	853.92	851.82	81.10	63.57	790.35
MW-13-36R	2/28/2022	5.5	10.5	878.04	875.28	13.26	4.63	873.41

See Notes on last page.

Table 4
Groundwater Elevations, January to June 2022
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)	Ground Surface Elevation (feet msl)	Total Well Depth (feet below TOC)	Corrected Depth to Water (feet below TOC)	Corrected Groundwater Elevation (feet msl)
Plant 3 (continued)								
MW-13-36R	5/31/2022	5.5	10.5	878.04	875.28	13.26	6.05	871.99
MW-13-37	2/28/2022	97.0	112.0	866.02	863.75	114.27	68.91	797.11
MW-13-37	5/31/2022	97.0	112.0	866.02	863.75	114.27	68.10	797.92
MW-13-38	2/28/2022	107.0	124.0	866.47	863.71	126.76	69.78	796.69
MW-13-38	5/31/2022	107.0	124.0	866.47	863.71	126.76	68.83	797.64
MW-13-39B	2/28/2022	97.0	112.0	860.20	857.33	114.87	63.22	796.98
MW-13-39B	5/31/2022	97.0	112.0	860.20	857.33	114.87	62.01	798.19
MW-13-40	5/31/2022	72.0	77.0	862.95	859.74	80.21	54.38	808.57
MW-13-41	2/28/2022	77.0	82.0	863.41	863.68	81.73	NM	NM
MW-13-41	5/31/2022	77.0	82.0	863.41	863.68	81.73	54.11	809.30
MW-13-46	2/28/2022	68.0	73.0	854.54	852.12	75.42	61.30	793.24
MW-13-46	5/31/2022	68.0	73.0	854.54	852.12	75.42	61.63	792.91
MW-13-47	2/28/2022	99.0	119.0	853.74	851.89	120.85	63.58	790.16
MW-13-47	5/31/2022	99.0	119.0	853.74	851.89	120.85	63.01	790.73
MW-13-48	2/28/2022	65.0	70.0	854.83	852.17	72.66	55.12	799.71
MW-13-48	5/31/2022	65.0	70.0	854.83	852.17	72.66	55.12	799.71
MW-13-49	5/31/2022	73.0	78.0	853.01	850.55	80.46	63.39	789.62
MW-14-64	5/31/2022	98.6	103.6	864.56	861.77	106.39	67.44	797.12
MW-14-65	6/10/2022	5.0	10.0	866.34	863.71	12.63	6.72	859.62
MW-15-71	5/31/2022	110.0	115.0	864.56	861.58	117.98	64.62	799.94
MW-18-88	2/28/2022	6.0	11.0	863.70	860.93	13.77	4.06	859.64
MW-18-88	5/31/2022	6.0	11.0	863.70	860.93	13.77	4.95	858.75
MW-18-89	2/28/2022	7.0	12.0	866.53	863.51	15.02	5.46	861.07
MW-18-89	5/31/2022	7.0	12.0	866.53	863.51	15.02	6.72	859.81
MW-18-90	2/28/2022	15.0	20.0	866.32	863.25	23.07	8.45	857.87
MW-18-90	5/31/2022	15.0	20.0	866.32	863.25	23.07	9.52	856.80
MW-18-91	2/28/2022	7.0	12.0	865.94	863.43	14.51	5.21	860.73
MW-18-91	5/31/2022	7.0	12.0	865.94	863.43	14.51	6.05	859.89
MW-18-92	5/31/2022	23.0	28.0	870.43	869.08	29.35	14.30	856.13
MW-18-93	5/31/2022	77.5	82.5	863.77	860.99	85.28	47.66	816.11
MW-18-95	2/28/2022	4.5	9.5	864.66	861.76	12.40	6.39	858.27
MW-18-95	5/31/2022	4.5	9.5	864.66	861.76	12.40	6.75	857.91
MW-18-96	5/31/2022	7.0	12.0	864.60	861.64	14.96	DRY	DRY
MW-18-97	5/31/2022	85.0	90.0	860.91	859.13	91.78	61.35	799.56
MW-18-98	2/28/2022	7.0	12.0	862.16	859.10	15.06	5.68	856.48
MW-18-98	5/31/2022	7.0	12.0	862.16	859.10	15.06	5.36	856.80
MW-18-99	2/28/2022	9.0	14.0	862.47	859.95	16.52	4.07	858.40
MW-18-99	5/31/2022	9.0	14.0	862.47	859.95	16.52	3.25	859.22
MW-18-100	5/31/2022	8.0	13.0	863.94	861.49	15.45	10.17	853.77
MW-18-101	5/31/2022	80.0	85.0	863.87	861.24	87.63	61.50	802.37
MW-18-102	5/31/2022	10.0	15.0	863.13	863.44	14.69	8.98	854.15
MW-18-103	2/28/2022	5.0	10.0	859.13	859.74	9.39	0.70	858.43
MW-18-103	5/31/2022	5.0	10.0	859.13	859.74	9.39	2.21	856.92
MW-18-104	5/31/2022	5.0	10.0	859.12	859.82	9.30	0.79	858.33
MW-18-105	2/28/2022	6.0	11.0	858.59	859.01	10.57	0.00	858.59
MW-18-105	5/31/2022	6.0	11.0	858.59	859.01	10.57	0.51	858.08
MW-18-106	5/31/2022	5.0	10.0	866.15	866.51	9.64	3.38	862.77
MW-19	5/31/2022	55.0	65.0	859.74	859.92	64.82	25.75	833.99

See Notes on last page.

Table 4
Groundwater Elevations, January to June 2022
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)	Ground Surface Elevation (feet msl)	Total Well Depth (feet below TOC)	Corrected Depth to Water (feet below TOC)	Corrected Groundwater Elevation (feet msl)
Plant 3 (continued)								
MW-19-107	5/31/2022	23.0	28.0	870.65	869.20	29.45	16.31	854.34
MW-19-108	5/31/2022	23.0	28.0	872.60	870.22	30.38	14.44	858.16
MW-19-110	5/31/2022	8.0	13.0	863.67	860.72	15.95	16.21	847.46
MW-19-111	5/31/2022	20.0	25.0	874.51	871.70	27.81	21.25	853.26
MW-19-112	5/31/2022	9.0	14.0	861.63	858.53	17.10	5.37	856.26
MW-19-113	5/31/2022	16.0	21.0	860.67	857.73	23.94	24.32	836.35
MW-19-114	5/31/2022	6.0	11.0	861.25	861.79	10.46	0.41	860.84
MW-19-119D	2/28/2022	180.0	195.0	864.42	861.66	197.76	82.15	782.27
MW-19-119D	5/31/2022	180.0	195.0	864.42	861.66	197.76	82.65	781.77
MW-19-119S	2/28/2022	145.0	160.0	864.32	861.66	162.66	69.00	795.32
MW-19-119S	5/31/2022	145.0	160.0	864.32	861.66	162.66	68.42	795.90
MW-22	5/31/2022	52.5	62.5	859.69	860.08	62.11	44.96	814.73
MW-23	5/31/2022	52.0	62.0	863.71	859.82	65.89	48.17	815.54
MW-88-1	2/28/2022	103.5	140.0	858.75	859.06	139.69	65.12	793.63
MW-88-1	5/31/2022	103.5	140.0	858.75	859.06	139.69	64.07	794.68
MW-91-2R	5/31/2022	75.0	80.0	866.84	863.63	83.21	56.58	810.26
MW-91-3	2/28/2022	105.0	117.0	860.81	859.35	118.46	66.08	794.73
MW-91-3	5/31/2022	105.0	117.0	860.81	859.35	118.46	65.00	795.81
MW-91-4	2/28/2022	116.0	132.5	855.59	855.93	132.16	57.92	797.67
MW-91-4	5/31/2022	116.0	132.5	855.59	855.93	132.16	56.87	798.72
MW-91-5	2/28/2022	112.5	128.0	860.61	861.20	127.41	61.99	798.62
MW-91-5	5/31/2022	112.5	128.0	860.61	861.20	127.41	61.25	799.36
MW-91-6	2/28/2022	82.0	98.0	851.84	852.22	97.62	60.42	791.42
MW-91-6	5/31/2022	82.0	98.0	851.84	852.22	97.62	59.69	792.15
MW-93-1	5/31/2022	65.0	75.0	866.05	863.56	77.49	67.30	798.75
P3-SB-07	5/31/2022	11.0	16.0	866.84	863.63	19.21	7.42	859.42
P3-SB-28	5/31/2022	8.0	13.0	866.43	863.63	15.80	5.94	860.49
PW-14-03	2/28/2022	85.0	90.0	864.31	861.55	92.76	70.20	794.11
PW-14-03	5/31/2022	85.0	90.0	864.31	861.55	92.76	69.29	795.02
TW-14-06	2/28/2022	82.0	87.0	864.30	861.50	89.80	30.85	833.45
TW-14-06	5/31/2022	82.0	87.0	864.30	861.50	89.80	15.12	849.18
TW-14-07	5/31/2022	83.0	88.0	864.45	861.44	91.01	NM	NM
TW-14-08	5/31/2022	84.0	89.0	864.30	861.42	91.88	NM	NM
TW-14-09	5/31/2022	84.0	89.0	864.39	861.71	91.68	NM	NM
TW-15-10	5/31/2022	85.0	90.0	864.81	861.45	93.36	NM	NM
TW-15-11	2/28/2022	85.0	90.0	864.51	861.60	92.91	65.70	798.81
TW-15-11	5/31/2022	85.0	90.0	864.51	861.60	92.91	66.31	798.20
UNK-10	5/31/2022	11.0	16.0	859.34	860.05	15.29	0.00	859.34
UNK-11	5/31/2022	6.5	11.5	859.91	860.17	11.24	0.30	859.61
UNK-15	2/28/2022	11.0	16.0	859.56	859.94	15.62	NM	NM
UNK-15	5/31/2022	11.0	16.0	859.56	859.94	15.62	0.45	859.11
Plant 6								
MW-02-02(6)	5/31/2022	35.0	45.0	868.04	868.41	44.63	28.80	839.24
MW-03-05	5/31/2022	35.0	45.0	868.90	869.14	44.76	23.58	845.32
MW-03-06	5/31/2022	30.0	40.0	870.45	870.80	39.65	34.78	835.67
MW-03-08	5/31/2022	35.0	45.0	869.03	869.39	44.64	NM	NM
MW-04-01(6)	2/28/2022	78.0	88.0	866.85	867.15	87.70	69.83	797.02
MW-04-01(6)	5/31/2022	78.0	88.0	866.85	867.15	87.70	69.22	797.63

See Notes on last page.

Table 4
Groundwater Elevations, January to June 2022
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)	Ground Surface Elevation (feet msl)	Total Well Depth (feet below TOC)	Corrected Depth to Water (feet below TOC)	Corrected Groundwater Elevation (feet msl)
Plant 6 (continued)								
MW-04-04R	2/28/2022	82.0	110.0	873.31	870.64	112.67	75.65	797.66
MW-04-04R	5/31/2022	82.0	110.0	873.31	870.64	112.67	74.98	798.33
MW-04-05(6)	5/31/2022	20.0	30.0	858.33	858.87	29.46	9.05	849.28
MW-04-06R	2/28/2022	74.0	99.5	861.56	858.59	102.47	65.20	796.36
MW-04-06R	5/31/2022	74.0	99.5	861.56	858.59	102.47	64.51	797.05
MW-12-03	2/28/2022	57.0	80.0	859.10	856.71	82.39	61.94	797.16
MW-12-03	5/31/2022	57.0	80.0	859.10	856.71	82.39	61.45	797.65
MW-12-10R	2/28/2022	10.0	15.0	862.29	858.92	18.37	10.71	851.58
MW-12-10R	5/31/2022	10.0	15.0	862.29	858.92	18.37	11.06	851.23
MW-12-11	5/31/2022	13.0	18.0	857.26	857.68	17.58	4.00	853.26
MW-12-12	2/28/2022	13.0	18.0	874.34	874.61	17.73	5.37	868.97
MW-12-12	5/31/2022	13.0	18.0	874.34	874.61	17.73	5.30	869.04
MW-12-13	2/28/2022	18.5	23.5	882.60	880.51	25.59	9.32	873.28
MW-12-13	5/31/2022	18.5	23.5	882.60	880.51	25.59	10.25	872.35
MW-12-14	5/31/2022	25.0	30.0	872.56	869.28	33.28	24.04	848.52
MW-12-16	5/31/2022	28.0	33.0	864.24	864.73	32.51	22.39	841.85
MW-13-50	2/28/2022	85.0	107.0	872.85	869.93	109.92	80.78	792.07
MW-13-50	5/31/2022	85.0	107.0	872.85	869.93	109.92	80.02	792.83
MW-13-52	2/28/2022	70.0	80.0	872.50	869.84	82.66	69.11	803.39
MW-13-52	5/31/2022	70.0	80.0	872.50	869.84	82.66	68.48	804.02
MW-13-53	2/28/2022	73.0	83.0	875.56	873.10	85.46	73.79	801.77
MW-13-53	5/31/2022	73.0	83.0	875.56	873.10	85.46	73.25	802.31
MW-14-66	5/31/2022	14.0	19.0	877.85	874.73	22.12	4.79	873.06
MW-14-67	2/28/2022	13.0	18.0	877.76	875.07	20.69	4.49	873.27
MW-14-67	5/31/2022	13.0	18.0	877.76	875.07	20.69	5.58	872.18
MW-14-69	5/31/2022	41.0	46.0	883.62	880.72	48.90	DRY	DRY
MW-14-70	2/28/2022	16.0	21.0	882.79	880.08	23.71	9.43	873.36
MW-14-70	5/31/2022	16.0	21.0	882.79	880.08	23.71	10.44	872.35
MW-20-131	5/31/2022	5.0	10.0	862.13	858.70	13.42	NM	NM
MW-20-132	5/31/2022	6.0	11.0	858.01	858.38	10.63	5.05	852.96
MW-21-133	5/31/2022	10.0	15.0	876.67	872.91	18.75	8.48	868.19
MW-21-134	5/31/2022	11.0	16.0	872.97	869.38	19.59	8.24	864.73
MW-21-135	5/31/2022	22.0	27.0	872.10	868.60	30.50	24.18	847.92
MW-21-136	5/31/2022	9.0	14.0	865.91	866.31	13.60	6.75	859.16
MW-21-137	5/31/2022	7.0	12.0	866.99	867.50	11.49	8.85	858.14
MW-21-138	5/31/2022	24.0	29.0	867.05	867.54	28.51	20.82	846.23
MW-21-141	5/31/2022	72.0	77.0	874.03	871.05	79.98	76.17	797.86
MW-22-143	5/31/2022	26.0	31.0	864.23	864.52	30.71	15.29	848.94
MW-22-144	5/31/2022	19.5	24.5	863.27	863.91	23.86	10.65	852.62
MW-22-145	5/31/2022	10.5	15.5	863.25	863.87	14.88	9.88	853.37
MW-22-146	5/31/2022	5.5	10.5	861.74	862.17	10.07	4.42	857.32
MW-22-147	5/31/2022	7.5	12.5	865.46	865.83	12.13	8.97	856.49
MW-22-148	5/31/2022	24.5	29.5	865.93	866.12	29.31	24.02	841.91
MW-22-149	5/31/2022	5.5	10.5	866.24	866.68	10.06	4.95	861.29
MW-22-150	5/31/2022	13.0	18.0	859.62	859.84	17.78	5.40	854.22
MW-22-151	5/31/2022	13.0	18.0	856.66	857.04	17.62	6.01	850.65
MW-22-152	5/31/2022	10.0	15.0	857.23	857.50	14.73	7.57	849.66
MWBP-10-UST5-6	5/31/2022	28.0	38.0	867.70	867.99	37.71	29.12	838.58

See Notes on last page.

Table 4
Groundwater Elevations, January to June 2022
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)	Ground Surface Elevation (feet msl)	Total Well Depth (feet below TOC)	Corrected Depth to Water (feet below TOC)	Corrected Groundwater Elevation (feet msl)
Plant 6 (continued)								
MWBP-11-UST1-4	5/31/2022	9.0	19.0	868.66	869.07	18.59	1.31	867.35
MWBP-12-UST1-4	5/31/2022	15.0	25.0	870.02	870.58	24.44	2.08	867.94
P6-MW-01	5/31/2022	23.0	28.0	870.10	866.87	31.23	28.38	841.72
P6-SB-07	2/28/2022	15.0	20.0	877.36	874.36	23.00	5.69	871.67
P6-SB-07	5/31/2022	15.0	20.0	877.36	874.36	23.00	6.03	871.33
P6-SB-18	5/31/2022	3.0	8.0	878.72	874.65	12.07	5.43	873.29
P6-SB-21	5/31/2022	3.0	8.0	874.20	870.92	11.28	2.74	871.46
P6-SB-37	5/31/2022	5.0	10.0	878.12	874.32	13.80	5.48	872.64

Notes:

* Groundwater elevations have been corrected for the presence of LNAPL using a measured LNAPL density of 0.8995 gram per milliliter.

bgs = below ground surface

DRY = well was dry and depth to water could not be gauged

LNAPL = light nonaqueous phase liquid

msl = mean sea level

NM = not measured

NS = not surveyed

RACER = Revitalizing Auto Communities Environmental Response

TOC = top of casing

Table 5
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-CB-32 03/26/19	P2-CB-32 07/07/20	P2-CB-32 12/10/20	P2-MH-2 01/26/19	P2-MH-2 02/05/20	P2-MH-2 07/07/20	P2-MH-2 12/10/20	P2-MH-2 02/01/21	P2-MH-2 03/09/21	P2-MH-2 05/24/21	P2-MH-2 08/30/21	P2-MH-2 12/20/21
Results														
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	6.05	15.4	3.2	161	31.3	45.4	10.1	10.6	11.7	19.0	14.0	11
Perfluorooctanoic acid (PFOA)	ng/L	170	2.94 J	4.6	1.1 J	29.2	13.5	28.7	6.9	8.7	12.6	12.8	13	15
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	1.23 J	1.3 J	1.4 J	13.1	<0.93	6.5	10.5	7.0	<0.89	17.5	4.2	3.2 J
Other PFAS	ng/L	NC	21.5	20.5	14.7	88.5	40.9	71.46	20.4	24.3	38.9	37.8	32.1	46.7

Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	P2-MH-2 03/01/22	P2-MH-2 05/12/22	P2-MH-9 01/26/19	P2-MH-9 02/05/20	P2-MH-9 07/07/20	P2-MH-10 03/26/19	P2-MH-10 02/05/20	P2-MH-10 07/07/20	P2-MH-14 03/26/19	P2-MH-14 02/06/20	P2-MH-14 07/07/20	P2-MH-14 12/10/20
Results														
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	12	8.4	26.6	4.7	36.4	14.2	10.3	32.6	25.1	5.1	25.8	78.8
Perfluorooctanoic acid (PFOA)	ng/L	170	13	13	15.8	10.1	26.0	12.2	12.8	25.1	13.5	8.9	22.5	30.8
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	1.4 J	2.0 J	1.33 J	1.3 J	1.4 J	1.44 J	2.4 J	1.1 J	1.39 J	1.2 J	1.3 J	3.4
Other PFAS	ng/L	NC	37.3	31.0	47.0	28.7	62.1	38.3	36.3	54.1	38.7	27.7	57.3	103.5

Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	P2-MH-16 03/26/19	P2-MH-16 02/06/20	P2-MH-16 07/07/20	P2-MH-25 01/26/19	P2-MH-25 03/26/19	P2-MH-25 02/06/20	P2-MH-25 07/07/20	P2-MH-25 12/10/20	P2-MH-26 01/26/19	P2-MH-26 03/26/19	P2-MH-26 02/05/20	P2-MH-26 07/07/20
Results														
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	486	17.6 [16.8]	80.7 [94.6]	207	600	12.7	45.7	7.3 [7.7]	104	111	32.1	47.1
Perfluorooctanoic acid (PFOA)	ng/L	170	46.2	15.2 [15.8]	56.5 [60.5]	50.1	77.2	13.9	40.7	13.2 [14.0]	27.5	27.5	16.6	36.2
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	7.19	1.6 J [2.9 J]	4.4 J [3.4 J]	6.39	14.0	<0.93	2.7 J	1.8 J [1.1 J]	2.72 J	7.76	<0.93	3.0 J
Other PFAS	ng/L	NC	204.0	52.2 [57.9]	225.7 [250.6]	149.0	292.7	44.1	151	31.6 [32.7]	81.78	81.22	50.2	96.7

Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	P2-MH-26 12/10/20	P2-MH-28 03/09/21	P2-MH-29 02/01/21	P2-MH-29 03/09/21	P2-MH-29_INVERT 10/20/21	P2-MH-30 03/26/19	P2-MH-30 02/05/20	P2-MH-30 07/07/20	P2-MH-30 12/10/20	P2-MH-30 02/01/21	P2-MH-30 05/24/21	P2-MH-30 08/30/21
Results														
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	6.7	2.8	58.7	31.7	3.6 J [3.7]	126	31.5	45.1	84.7	29.0 [10.7]	65.2	9.9
Perfluorooctanoic acid (PFOA)	ng/L	170	10.3	2.0	5.8	<18	4.7 [4.5]	23.6	13.9	29.8	6.6	8.3 [8.5]	9.7	12
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	2.0	1.5 J	251	288	18 [19]	8.86	<0.93	6.6	106	28.2 [6.4]	61.9	8.0
Other PFAS	ng/L	NC	24.2	25.4	48.9	89.5	23.9 [26.4]	74.8	45.6	75.8	30.7	28.6 [25.4]	41.8	33.9

Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	P2-MH-30 10/20/21	P2-MH-30 12/20/21	P2-MH-30 01/28/22	P2-MH-30 03/01/22	P2-MH-30 05/12/22	P2-MH-30_E 01/28/22	P2-MH-30_S 01/28/22	P2-MH-30_W 01/28/22	P2-MH-32 03/26/19	P2-MH-32 02/05/20	P2-MH-32 07/07/20	P2-MH-32 02/01/21
Results														
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	22	13 [11]	12	14	7.9	3.5 J	5.4 [7.7]	22	<1.5	<3.7	<6.5	1.5 J
Perfluorooctanoic acid (PFOA)	ng/L	170	20	18 [14]	12	14	13	1.9 J	15 [13]	3.1 J	2.42 J	2.1 J	<4.3	1.7 J
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	2.1 J	6.7 [6.4]	12	1.1 J	1.5 J	<0.93	1.0 J [1.3 J]	3.9 J	<1.5	<0.93	<4.3	1.52
Other PFAS	ng/L	NC	48.3	54 [44.8]	34.3	40.5	31.9	0	37.6 [37.4]	17.1	26.2	12.6	10.7	17.3

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 5
 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-36 03/26/19	P2-MH-36 02/05/20	P2-MH-36 07/07/20	P2-MH-37 01/26/19	P2-MH-58 03/27/19	P2-MH-58 02/06/20	P2-MH-58 07/06/20	P2-MH-73 03/27/19	P2-MH-73 02/06/20	P2-MH-73 07/06/20	P2-MH-79 01/26/19
Results													
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	2.23 J	1.5 J	2.4 J	2.42 J	13.5	9.1	21.8	9.28	10.4	29.5	147
Perfluorooctanoic acid (PFOA)	ng/L	170	1.95 J	1.3 J	2.9 J	2.54 J	9.79	5.7	12.3	7.17	10.2	29.8	3.70
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	1.14 J	<0.93	1.7 J	1.14 J	1.54 J	<0.93	1.4 J	1.11 J	1.4 J	1.9 J	12.4
Other PFAS	ng/L	NC	7.9	3.5	12.0	5.78	18.3	11.3	24.2	16.5	28.6	57.0	108.8

Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	P2-MH-79 03/26/19	P2-MH-79 02/06/20	P2-MH-79 07/06/20	P2-MH-86 03/27/19	P2-MH-86 02/06/20	P2-MH-96 03/27/19	P2-MH-97 01/26/19	P2-MH-97 03/26/19	P2-MH-114 03/27/19	P2-MH-122-NORTH 05/06/19	P2-MH-122-SOUTH 05/06/19
Results													
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	35.1	40.1	52.8	86.0	114 [87.7]	1160	656	394	185	24.7	14.5
Perfluorooctanoic acid (PFOA)	ng/L	170	29.3	26.3	37.9	30.2	28.0 [24.7]	77.9	84.7	56.7	29.9	4.06	10.1
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	6.9	5.3	2.4 J	36.2	<0.93	30.6	7.36	5.73	4.86	<1.0	<1.0
Other PFAS	ng/L	NC	58.8	58.2	75.5	89.6	100.3 [89.3]	449.8	260.7	197.3	199.9	34.1	39.0

Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	P2-MH-NW 03/26/19	P2-MH-NW 02/05/20	P2-MH-NW 07/07/20	P2-MH-NW 12/10/20	P2-MH-NW 02/01/21	P2-MH-W 03/27/19	P2-MH-W 07/06/20	P2-MH-W 02/06/20	P2-MH-W 12/10/20	P2-MH-W 03/09/21	P2-MH-W 05/24/21
Results													
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	131	31.0	44.1	9.0	7.9	9.43	<1.5	<3.7	2.6	1.7 J	2.4
Perfluorooctanoic acid (PFOA)	ng/L	170	26.5	14.4	31.7	5.9	11.1	25.8	4.3	0.98 J	2.5	267	2.2
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	8.29	<0.93	3.8	1.8 J	1.6 J	2.88 J	1.4 J	<0.93	1.1 J	1.1 J	1.4 J
Other PFAS	ng/L	NC	85.4	39.4	79.5	19.7	34.5	50.8	4.9	3.8	5.4	16.5	10.57

Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	P2-MH-W 08/30/21	P2-MH-W 12/20/21	P2-MH-W 03/01/22	P2-MH-W 05/12/22	P2-SAN-3-7 07/07/20
Results							
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	2.4 J	<4.1	<3.7	0.97 J	16.1
Perfluorooctanoic acid (PFOA)	ng/L	170	2.8 J	1.4 J	1.9 J	2.7 J	20.2
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	1.3 J	1.4 J	1.5 J	1.5 J	2.6 J
Other PFAS	ng/L	NC	7.1	6.6	10.1	12.8	45.2

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

Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	P3-MH-1-1 09/15/17	P3-MH-1-1 10/19/17	P3-MH-1-1N 09/14/17	P3-MH-1-2 09/15/17	P3-MH-1-3 09/15/17	P3-MH-1-4 09/14/17	P3-MH-1-5 09/14/17	P3-MH-1-5 10/19/17	P3-MH-1-7 10/19/17	P3-MH-1-8 10/19/17	P3-MH-1-9 10/19/17	P3-MH-2-0 10/19/17	P3-MH-2-1 09/14/17	P3-MH-2-1N 10/19/17	P3-MH-2-2 09/14/17	P3-MH-2-3 09/14/17	P3-MH-2-3 10/19/17	P3-MH-2-4 10/19/17	P3-MH-2-5 10/19/17
Results																					
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	31 [30]	43.8	260	31	27	25	34	25.6	11.3	23.8	11.0	82.3	240	151 [136]	180	35	35.6	14.4	<4.2
Perfluorooctanoic acid (PFOA)	ng/L	170	10 [10]	<4.2	17	10	10	10	11	<3.8	<3.8	<3.8	<3.8	<4.2	20	<4.2 [<3.8]	14	10	<3.8	<3.8	<4.2
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other PFAS	ng/L	NC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	P3-MH-284 02/06/20	P3-MH-284 07/06/20	P3-MH-284 08/18/20	P3-MH-284 12/09/20	P3-MH-284 03/09/21	P3-MH-284 05/24/21	P3-MH-284 08/30/21	P3-MH-284 12/20/21	P3-MH-284 03/01/22	P3-MH-284 05/12/22	P3-MH-290 08/18/20	P3-MH-290 12/09/20	P3-MH-297 12/09/20	P3-MH-308 08/18/20	P3-MH-NE 04/10/17	P3-MH-NW 01/26/19
Results																		
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	5.1 [6.0]	32.8	17.2 [17.3]	3.3	6.3 [5.1]	11.7	7.3	4.6	4.7	5.3	17.8	2.0 [1.5 J]	2.4	22.4	59	34.7
Perfluorooctanoic acid (PFOA)	ng/L	170	0.96 J [1.3 J]	1.7 J	1.2 J [0.87 J]	<1.0	2.6 [1.9 J]	1.4 J	1.5 J	<4.0	3.7 J	1.7 J	1.1 J	<1.0 [<0.89]	<1.0	1.3 J	6.0	2.61 J
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	1.7 J [2.4 J]	1.5 J	1.1 J [1.1 J]	1.05 J	1.1 J [5.1]	2.1	2.3 J	1.8	3.3 J	1.8 J	1.1 J	<1.0 [<1.0]	<1.0	1.7	3.8	<4.0
Other PFAS	ng/L	NC	9.5 [10.8]	7.9	3.5 [3.6]	3.0	31.5 [19.6]	12.1	8.1	3.8	38.0	8.3	3.8	2.9 [2.7]	0	5.0	27.0	19.7

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 7
 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-1 05/06/19	MichAve-MH-2 05/06/19	MichAve-MH-3 05/06/19	MichAve-MH-3 02/05/20	MichAve-MH-3 07/07/20	MichAve-MH-3 12/09/20	MichAve-MH-3 03/09/21	MichAve-MH-3 05/24/21	MichAve-MH-3 08/30/21	MichAve-MH-3 12/20/21
Results												
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	5.46	3.05 J	6.17	1.7 J	4.9	3.8	3.4	3.8	4.9	2.5 J
Perfluorooctanoic acid (PFOA)	ng/L	170	2.46 J	3.84 J	8.33	4.7	8.2	3.0	2.7	5.5	6.3	3.9
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	4.29	4.1	5.45	3.6 J	3.8	2.6	3.4	7.6	3.5	1.8
Other PFAS	ng/L	NC	10.6	24.6	25.5	18.0	29.4	10.9	15.1	24.9	23.4	16.5

Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	MichAve-MH-3 03/01/22	MichAve-MH-3 05/12/22	MichAve-MH-4 05/06/19	MichAve-MH-4 02/05/20	MichAve-MH-4 07/07/20	MichAve-MH-4 12/09/20	MichAve-MH-4 03/09/21	MichAve-MH-4 05/24/21	MichAve-MH-4 08/30/21	MichAve-MH-4 12/20/21
Results												
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	2.1 J	2.6 J	5.24	5.3	11.9	12.6	10.8	16.9	10	9.4
Perfluorooctanoic acid (PFOA)	ng/L	170	4.1	4.8	5.87	11.1	11.2	16.1	10.8	17.8	10	10
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	3.4 J	3.1 J	1.71 J	1.1 J	3.2 J	2.3	1.4	4.5	2.6 J	1.9 J
Other PFAS	ng/L	NC	22.2	22.7	19.3	30.4	28.7	39	35.6	47.3	26.7	36.7

Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	MichAve-MH-4 03/01/22	MichAve-MH-4 05/12/22	Osborn-CB-2 03/09/21	Osborn-CB-2 05/24/21	Osborn-CB-2 12/20/21	Osborn-CB-2 03/01/22	Osborn-CB-2 05/12/22	Osborn-CB-2_Drain 12/20/21	Osborn-CB-2_Drain 03/01/22	Osborn-CB-2_Drain 05/12/22
Results												
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	7.9	9.4	31.4	34.1	12 J	7.7	15	15	11	15.0
Perfluorooctanoic acid (PFOA)	ng/L	170	10	29	40.3	47.3	31 J	21	39	36	30	41
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	2.3 J	3.2 J	2	1.4 J	<40	<3.8	<3.7	<4.1	0.98 J	0.95 J
Other PFAS	ng/L	NC	35.2	61.2	89.7	91.4	373.0	47.1	62.5	97.5	65.6	62.5

Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	Osborn-MH-1 11/29/18	Osborn-MH-1 02/05/20	Osborn-MH-1 07/07/20	Osborn-MH-1 12/09/20	Osborn-MH-1 03/09/21	Osborn-MH-1 05/24/21	Osborn-MH-1 08/30/21	Osborn-MH-1 12/20/21	Osborn-MH-1 03/01/22	Osborn-MH-1 05/12/22
Results												
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	47.0	10.8	16.6	24.0	24.7	31.1	19	14	24	25
Perfluorooctanoic acid (PFOA)	ng/L	170	53.2	26	39	39.7	27.4	31.7	32	31	30	45
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	2.78 J	1.1 J	1.8 J	2.0 J	1.0 J	2.3	1.5 J	1.4 J	<3.7	1.3 J
Other PFAS	ng/L	NC	124.6	61.3	69.2	97.4	74.2	151.3	57.8	70.2	73.1	90.6

Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	P6-MH-11 01/26/19	P6-MH-13 01/26/19	P6-MH-14 01/26/19	P6-MH-16 07/06/20	P6-MH-16 12/09/20	P6-MH-16 03/09/21	P6-MH-17 12/09/20	P6-MH-17 03/09/21	P6-MH-18 12/09/20	P6-MH-18 03/09/21
Results												
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	35.3	25.3	22.5	12.8	18.6	17.8	29.1	19.9	13.9	11.6
Perfluorooctanoic acid (PFOA)	ng/L	170	49.7	48.0	64.9	54.8	45.9	50.4	120	72.5	61.9	46.8
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	1.81 J	2.60 J	2.15 J	<3.6	2.5	2.0	3.9	1.3	2.3	1.4 J
Other PFAS	ng/L	NC	98.6	111.2	161.4	119.0	110.2	124.3	227.7	160.8	105.4	82.4

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

Table 7
 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)	P6-MH-19 12/09/20	P6-MH-19 03/09/21	Verlinden-MH-1 11/29/18	Verlinden-MH-1 02/05/20	Verlinden-MH-1 12/09/20	Verlinden-MH-1 03/09/21	Verlinden-MH-1 05/24/21	Verlinden-MH-1 08/30/21	Verlinden-MH-1 12/20/21	Verlinden-MH-1 03/01/22
Results												
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	11.6	12.1	18.8	4.5	8.1	7.7	6.1	4.4	6.3	4.7
Perfluorooctanoic acid (PFOA)	ng/L	170	87.1	862	48.7	12.5	40.5	18.9	28.4	30	27	19
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	2.1 J	1.5 J	4.7	3.4 J	4.0	4.0	5.4	3.5	4.4	4.7
Other PFAS	ng/L	NC	368.5	298.3	137.1	39.2	113.3	53.6	104.9	97.5	75.2	50.2

Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	Verlinden-MH-1 05/12/22	Verlinden-MH-2 11/29/18	Verlinden-MH-2 02/05/20	Verlinden-MH-2 07/07/20	Verlinden-MH-2 12/09/20	Verlinden-MH-2 03/09/21	Verlinden-MH-2 05/24/21	Verlinden-MH-2 08/30/21	Verlinden-MH-2 12/20/21	Verlinden-MH-2 03/01/22
Results												
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	13	22.7	7.0	13.1	9.2	9.9	35.3	11	8.6	21
Perfluorooctanoic acid (PFOA)	ng/L	170	30	48.5	13.8	22.5	21.5	16.5	46.1	23	29	43
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	2.4 J	3.58 J	2.6 J	4.0	3.3	4.5	2.7	2.7 J	1.5	2.4 J
Other PFAS	ng/L	NC	77.8	122	41	59.1	267.9	114.8	155.6	254.1	121.2	113.2

Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	Verlinden-MH-2 05/12/22	Verlinden-MH-3 11/29/18	Verlinden-MH-3 02/05/20	Verlinden-MH-3 07/07/20	Verlinden-MH-3 12/09/20	Verlinden-MH-3 03/09/21	Verlinden-MH-3 05/24/21	Verlinden-MH-3 08/30/21	Verlinden-MH-3 12/20/21	Verlinden-MH-3 03/01/22
Results												
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	5.6	17.4	3.0 J	10.6	11.1 [11.3]	9.1 [8.4]	11.3 [16.3]	10 [11]	12	7.5 [6.9]
Perfluorooctanoic acid (PFOA)	ng/L	170	23	38.4	20.1	30.4	31.4 [32.1]	29.8 [29.6]	28.5 [27.2]	29 [30]	33	29 [29]
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	4.2	5.48	3.8	8.3	7.6 [7.1]	3.2 [3.9]	5.0 [5.7]	6.3 [7.0]	4.0 J	4.0 [3.9]
Other PFAS	ng/L	NC	57.8	101.2	58.1	75.7	327.3 [344.2]	162.1 [159.8]	195.0 [197.1]	226.0 [220.4]	146.1	116.7 [113.6]

Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	Verlinden-MH-3 05/12/22	Verlinden-MH-4 11/29/18	Verlinden-MH-4 05/06/19	Verlinden-MH-4 02/05/20	Verlinden-MH-4 07/07/20	Verlinden-MH-4 12/09/20	Verlinden-MH-4 03/09/21	Verlinden-MH-4 05/24/21	Verlinden-MH-4 08/30/21	Verlinden-MH-4 12/20/21
Results												
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	7.0 [4.8]	18.2	12.2	3.5 J	9.9	16.9	11.8	16.7	15	11 [9.4]
Perfluorooctanoic acid (PFOA)	ng/L	170	29 [21]	40.3	27.2	20.4	23.4	35.1	31.3	22.3	29	31 [9.6]
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	6.5 [4.3]	6.17	2.59 J	3.6 J	5.2	5.5	3.6	5.7	13.0	3.6 [2.1]
Other PFAS	ng/L	NC	96.5 [57.0]	103.0	91.7	61.5	60.1	396.4	172.9	184.9	248.9	161.6 [35.1]

Location ID: Date Collected:	Units	MI Rule 57 SW (EGLE 2017)	Verlinden-MH-4 03/01/22	Verlinden-MH-4 05/12/22
Results				
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	6.4	6.6
Perfluorooctanoic acid (PFOA)	ng/L	170	29	28
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	4.5	6.4
Other PFAS	ng/L	NC	119.0	95.3

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

Table 7
 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)	Verlinden-MH-5 02/05/20	Verlinden-MH-5 07/07/20	Verlinden-MH-5 12/09/20	Verlinden-MH-5 03/09/21	Verlinden-MH-5 05/24/21	Verlinden-MH-5 08/30/21	Verlinden-MH-5 12/20/21	Verlinden-MH-5 03/01/22	Verlinden-MH-5 05/12/22
Results											
Perfluorooctanesulfonic acid (PFOS)	ng/L	12	8.3	11.7	12.2	8.5	10.1	13	10	5.8	6.8
Perfluorooctanoic acid (PFOA)	ng/L	170	23.4	24.5	43.9	26.6	36.1	42	29	27	21
Perfluorobutane Sulfonic acid (PFBS)	ng/L	670,000	3.6 J	7.1	2.5	6.0	3.8	5.0	2.1 J	3.9	3.8
Other PFAS	ng/L	NC	60.2	58.5	194.8	84.5	86.7	126.2	108.1	88.0	102.7

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

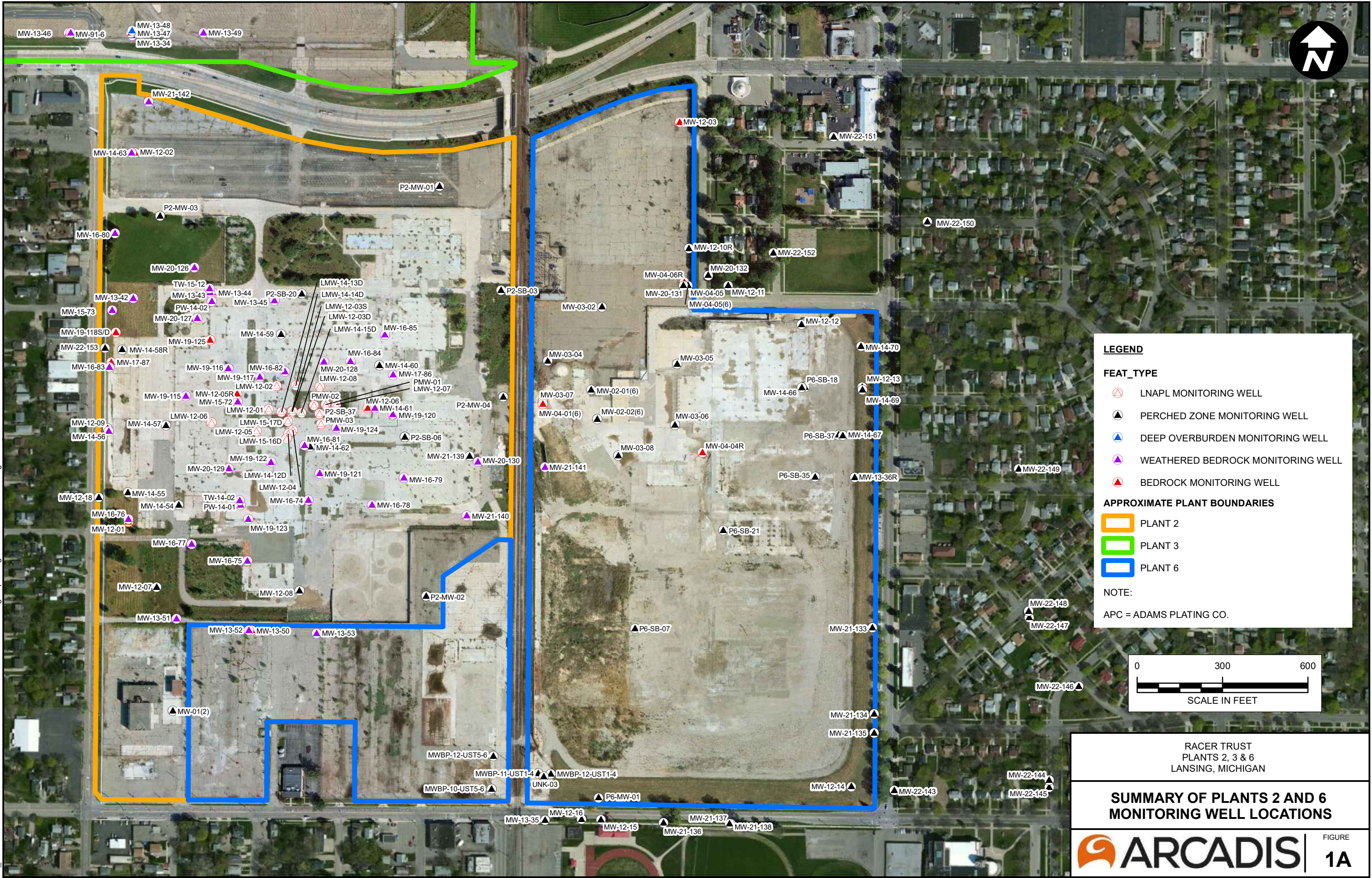
[] Indicates duplicate sample

J = Indicates an estimated value below laboratory reporting limit

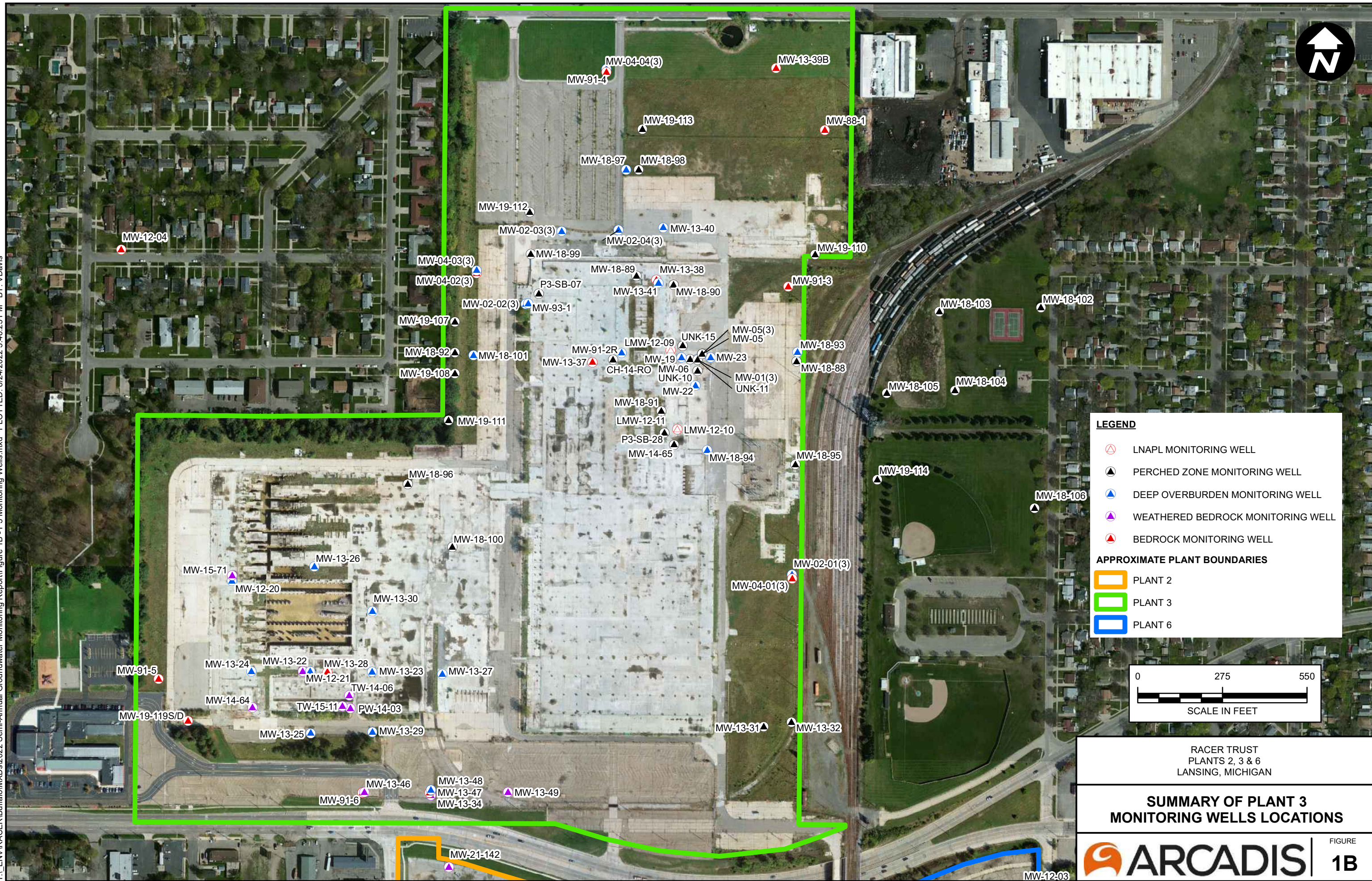
< = The compound was analyzed for but not detected.

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

Figures



CITY: KNOXVILLE DIV: ENV DB: A SMITH PIC: J. Barrett PW: T. Linder TM: A. Villhauer TR: PROJECT NUMBER: 30075941 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
 T.: ENVIRACER\Buffalo\MXDs\2022 Semi-Annual Groundwater Monitoring Report\Figure 1B - P3 Monitoring Wells.mxd PLOTTED: 8/24/2022 3:46:23 PM BY: V.Davis

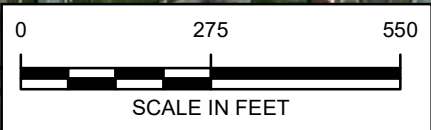


LEGEND

- LNAPL MONITORING WELL
- PERCHED ZONE MONITORING WELL
- DEEP OVERBURDEN MONITORING WELL
- WEATHERED BEDROCK MONITORING WELL
- BEDROCK MONITORING WELL

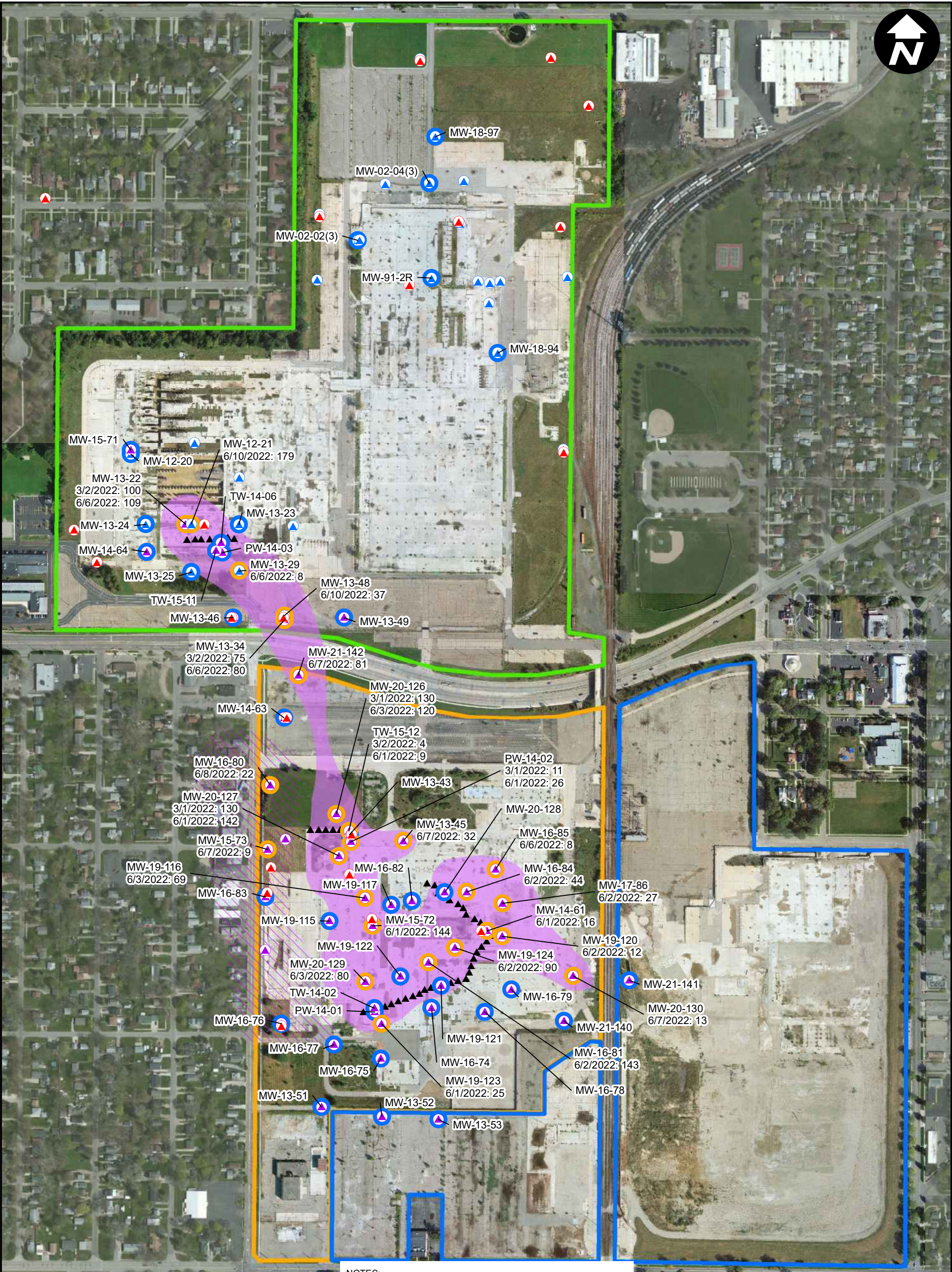
APPROXIMATE PLANT BOUNDARIES

- PLANT 2
- PLANT 3
- PLANT 6



RACER TRUST
 PLANTS 2, 3 & 6
 LANSING, MICHIGAN

**SUMMARY OF PLANT 3
 MONITORING WELLS LOCATIONS**



CITY: Novi DIV: ENV PIC: J. BARRETT PM: T. LINDER TR: PROJECT NUMBER: 30112892 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl T:_ENV\RACER\BIO\10\2022 Semi-Annual Groundwater Monitoring Report\Figure 2 - 1,4-DIOXANE Lower.mxd PLOTTED: 8/29/2022 11:30:05 AM BY: V.Davis

Legend

- BEDROCK MONITORING WELL
- DEEP OVERBURDEN MONITORING WELL
- WEATHERED BEDROCK MONITORING WELL
- WELLS SAMPLED AND 1,4-DIOXANE EXCEEDS DW CRITERIA (7.2 ug/L)
- WELLS SAMPLED AND 1,4-DIOXANE DOES NOT EXCEED DW
- BIOSPARGE
- LOWER 1,4-DIOXANE IMPACTS > DW CRITERIA
- FORMER ADAMS PLATING CO. LOWER 1,4-DIOXANE PLUME > DW CRITERIA
- PLANT BOUNDARIES**
- PLANT 2
- PLANT 3
- PLANT 6

NOTES:

APPROXIMATE EXTENT OF IMPACTS/PLUMES SHOWN ARE BASED ON SEVERAL INVESTIGATIONS PREVIOUSLY COMPLETED AT THE SITE.

ANALYTICAL DATA FROM THE FIRST QUARTER AND SECOND QUARTER 2022 ARE POSTED.

HIGHEST EXCEEDANCE IS SHOWN AT EACH LOCATION.

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

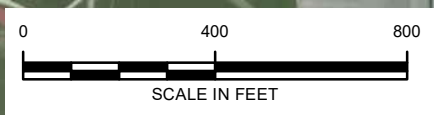
ALL ANALYTICAL DATA IS IN ug/L.

DW: EGLE Part 201 RESIDENTIAL DRINKING WATER CRITERIA.

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

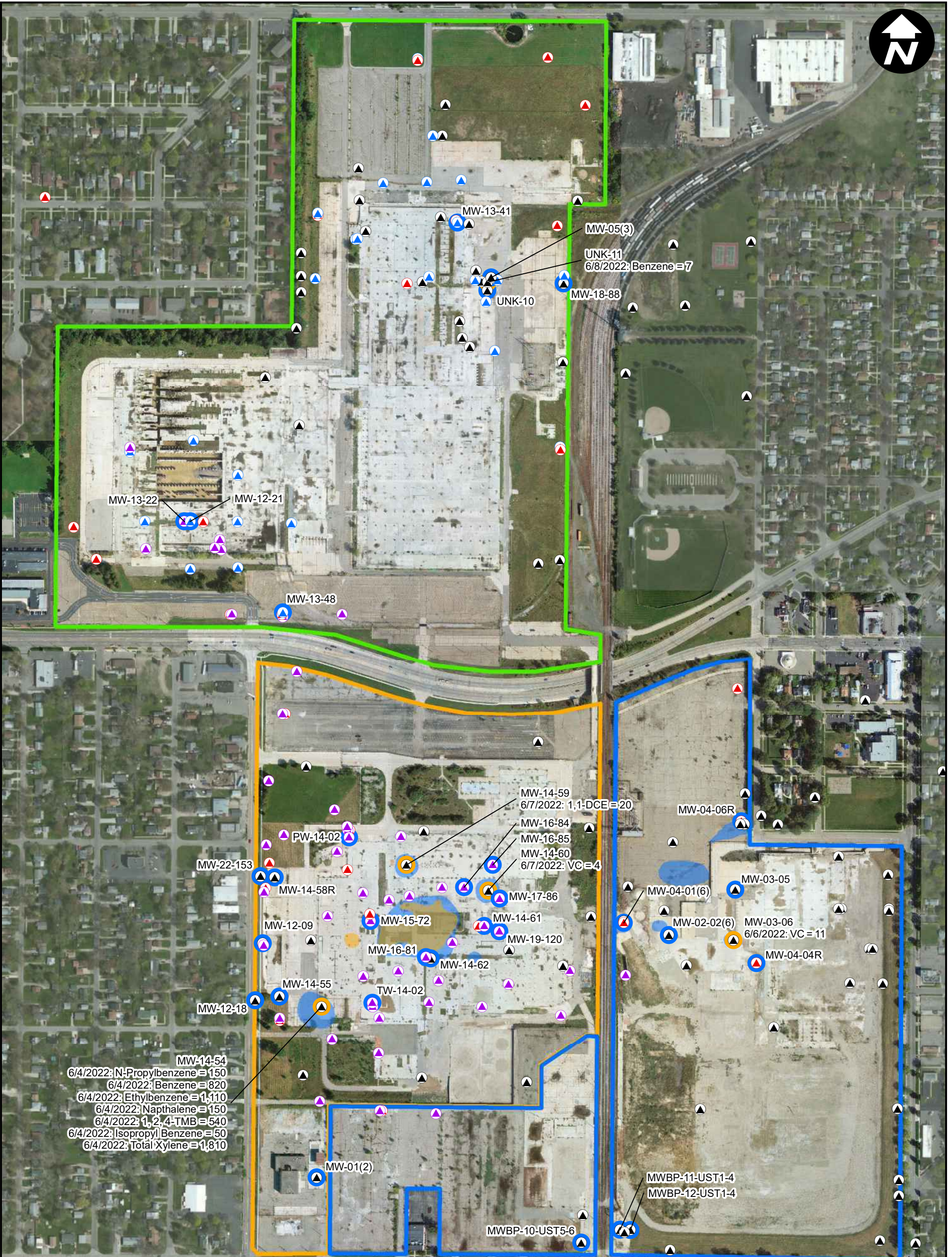
EPA: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

ug/L: MICROGRAMS PER LITER.



RACER TRUST
PLANTS 2, 3 & 6
LANSING, MICHIGAN

SUMMARY OF 1,4-DIOXANE ANALYTICAL RESULTS IN LOWER WELLS - JANUARY THROUGH JUNE 2022



MW-14-54
 6/4/2022: N-Propylbenzene = 150
 6/4/2022: Benzene = 820
 6/4/2022: Ethylbenzene = 1,110
 6/4/2022: Napthalene = 150
 6/4/2022: 1, 2, 4-TMB = 540
 6/4/2022: Isopropyl Benzene = 50
 6/4/2022: Total Xylene = 1,810

Legend

- MONITORING WELLS**
- ▲ PERCHED ZONE MONITORING WELL
 - ▲ DEEP OVBURDEN MONITORING WELL
 - ▲ WEATHERED BEDROCK MONITORING WELL
 - ▲ BEDROCK MONITORING WELL
 - WELLS SAMPLED AND VOC'S EXCEED DW AND/OR GSI
 - WELLS SAMPLED AND VOC'S DOES NOT EXCEED DW CRITERIA
 - APPROXIMATE EXTENT LNAPL
 - EXTENT VOCs IN PERCHED ZONE > DW CRITERIA
- PLANT BOUNDARIES**
- PLANT 2
 - PLANT 3
 - PLANT 6

NOTES:

APPROXIMATE EXTENT OF IMPACTS/PLUMES SHOWN ARE BASED ON SEVERAL INVESTIGATIONS PREVIOUSLY COMPLETED AT THE SITE.

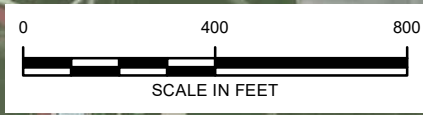
ANALYTICAL DATA FROM THE FIRST AND SECOND QUARTER 2022 ARE POSTED.

HIGHEST EXCEEDANCES ARE SHOWN AT EACH LOCATION.

SAMPLES ANALYZED VIA EPA METHOD SW5030C/8260C.

ALL ANALYTICAL DATA IS IN ug/L.

DW: EGLE Part 201 RESIDENTIAL DRINKING WATER CRITERIA.
 GSI: EGLE Part 201 GROUNDWATER SURFACE WATER INTERFACE CRITERIA.
 EGLE: MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
 EPA: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 ug/L: MICROGRAMS PER LITER.
 VC: VINYL CHLORIDE.
 1,1-DCE: 1,1-DICHLOROETHENE
 1,2,4-TMB: 1,2,4-TRIMETHYLBENZENE



RACER TRUST
 PLANTS 2, 3 & 6
 LANSING, MICHIGAN

**SUMMARY OF VOC ANALYTICAL RESULTS -
 JANUARY THROUGH JUNE 2022**

CITY: Novi DIV: ENV PIC: J. BARRETT PM: T. LINDER TR: PROJECT NUMBER: 30112892 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
 T:_ENV\RACER\Buffalo\MXDs\2022 Semi-Annual Groundwater Monitoring Report\Figure 4 - VOCs.mxd PLOTTED: 8/10/2022 10:26:24 AM BY: V.Davis



CITY: Novi DIV: ENV PIC: J. BARRETT TR: PROJECT NUMBER: 30112892 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
T:_ENV\RACER\Burl\01\2022 Semi-Annual Groundwater Monitoring Report\Figure 4 - METALS.mxd PLOTTED: 8/24/2022 3:21:17 PM BY: V.Davis

Legend

- ▲ PERCHED ZONE MONITORING WELL
 - ▲ DEEP OVBURDEN MONITORING WELL
 - ▲ WEATHERED BEDROCK MONITORING WELL
 - ▲ BEDROCK MONITORING WELL
 - WELLS SAMPLED AND METALS EXCEED DW AND/OR GSI CRITERIA
 - WELLS SAMPLED AND METALS DOES NOT EXCEED DW CRITERIA
- PLANT BOUNDARIES**
- PLANT 2
 - PLANT 3
 - PLANT 6

NOTES:

ALL ANALYTICAL DATA FROM THE FIRST AND SECOND QUARTER 2022 ARE POSTED.

SAMPLES ANALYZED VIA EPA METHOD 200.8 OR EPA METHOD SM3500-Cr B.

HIGHEST EXCEEDANCE IS SHOWN AT EACH LOCATION.

ALL ANALYTICAL DATA IS IN mg/L.

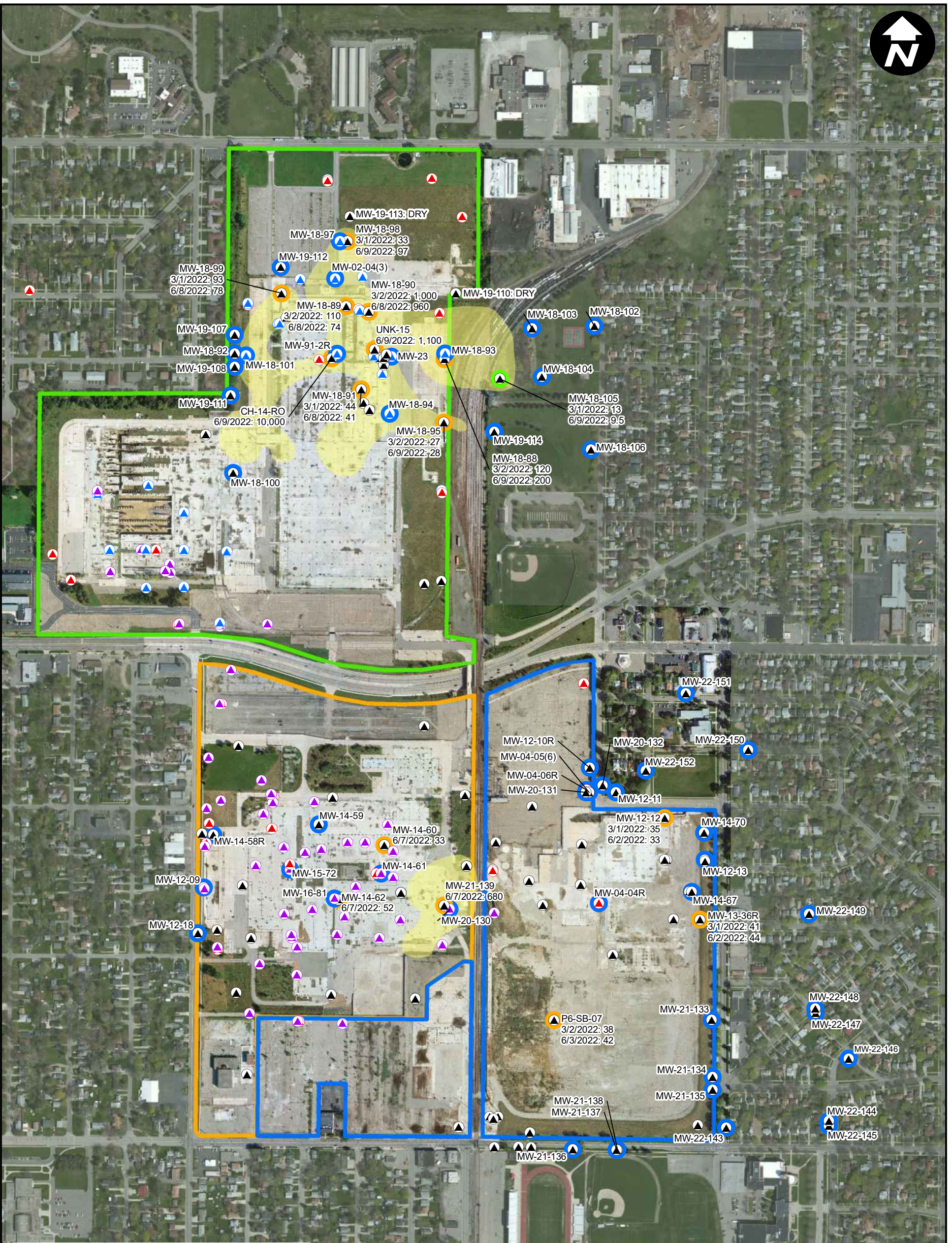
DW: EGLE Part 201 RESIDENTIAL DRINKING WATER CRITERIA.
GSI: EGLE Part 201 GROUNDWATER SURFACE WATER INTERFACE CRITERIA.

EGLE: MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
EPA: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
mg/L: MILLIGRAMS PER LITER.



RACER TRUST
PLANTS 2, 3 & 6
LANSING, MICHIGAN

SUMMARY OF METALS ANALYTICAL RESULTS - JANUARY THROUGH JUNE 2022



CITY: Novi DIV: ENV PIC: J. BARRETT TR: PROJECT NUMBER: 30112892 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl T:_ENV\RACER\BIO\2022 Semi-Annual Groundwater Monitoring Report\Figure 5 - PFOS.mxd PLOTTED: 8/24/2022 3:17:41 PM BY: V.Davis

Legend

MONITORING WELLS

- PERCHED ZONE MONITORING WELL
- DEEP OVBURDEN MONITORING WELL
- WEATHERED BEDROCK MONITORING WELL
- BEDROCK MONITORING WELL
- WELLS SAMPLED AND PFOS EXCEEDS GSI CRITERIA (12ng/L) AND DW CRITERIA (16 ng/L)
- WELLS SAMPLED AND PFOS EXCEEDS GSI CRITERIA (12ng/L) BUT DOES NOT EXCEED DW CRITERIA (16 ng/L)
- WELLS SAMPLED AND PFOS DOES NOT EXCEED GSI OR DW CRITERIA
- PFOS IN PERCHED GROUNDWATER (>12 ng/L)

PLANT BOUNDARIES

- PLANT 2
- PLANT 3
- PLANT 6

NOTES:

APPROXIMATE EXTENT OF IMPACTS/PLUMES IN SHOWN ARE BASED ON SEVERAL INVESTIGATIONS PREVIOUSLY COMPLETED AT THE SITE.

ANALYTICAL DATA FROM THE FIRST AND SECOND QUARTER 2022 ARE POSTED.

HIGHEST EXCEEDANCE IS SHOWN AT EACH LOCATION.

SAMPLES ANALYZED VIA EPA METHOD 537 MODIFIED.

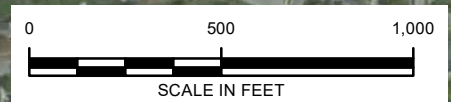
ALL ANALYTICAL DATA IS IN ng/L.

DW: EGLE Part 201 RESIDENTIAL DRINKING WATER CRITERIA.
GSI: EGLE PART 201 GROUNDWATER SURFACE WATER INTERFACE CRITERION.

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

EPA: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

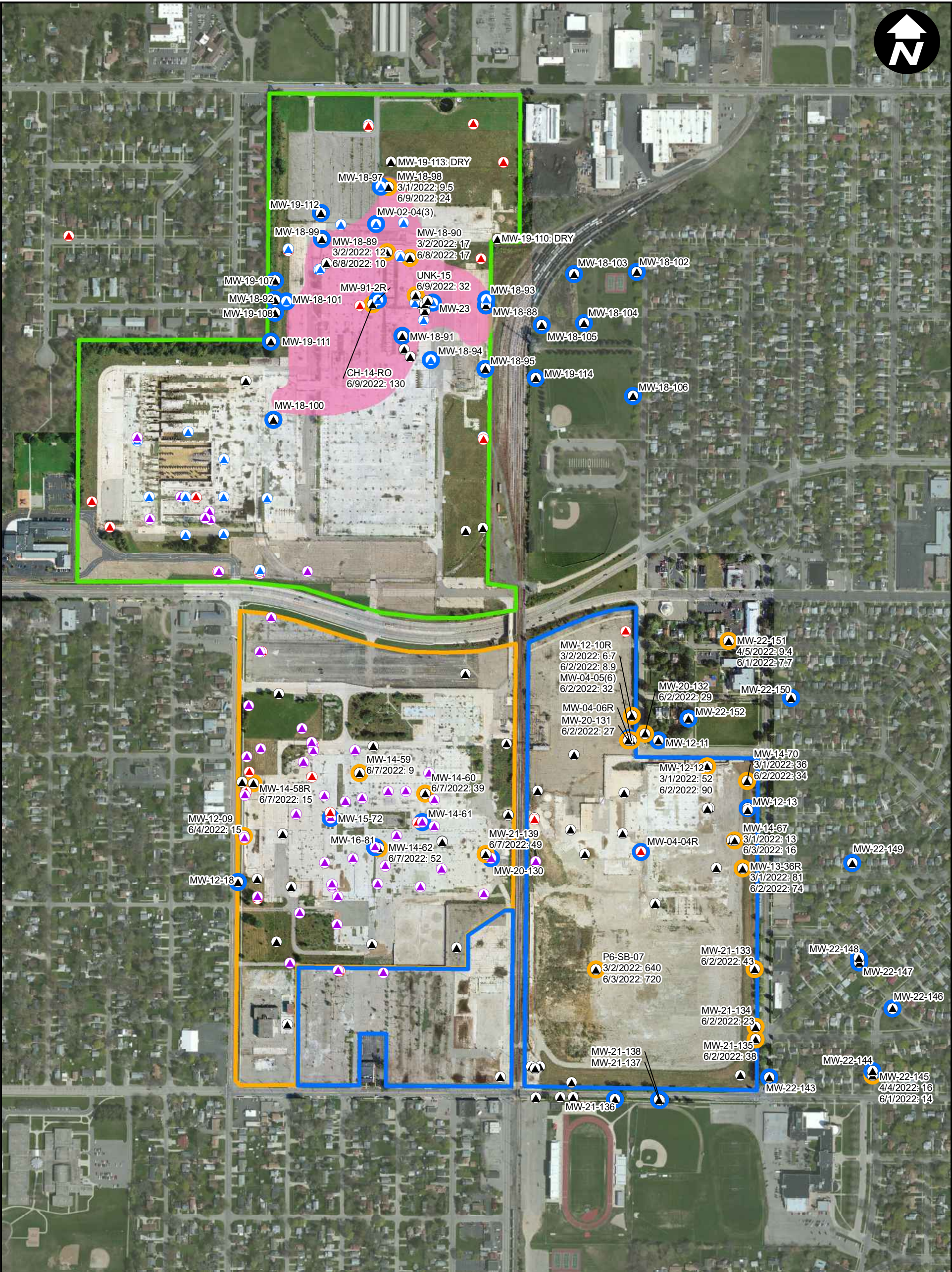
PFOS: PERFLUOROCTANE SULFONIC ACID
ng/L: NANOGRAM PER LITER.



RACER TRUST
PLANTS 2, 3 & 6
LANSING, MICHIGAN

**SUMMARY OF PFOS ANALYTICAL RESULTS -
JANUARY THROUGH JUNE 2022**





CITY: Novi DIV: ENV PIC: J. BARRETT PM: T. LINDER TR: PROJECT NUMBER: 30112892 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl T:_ENV\RACER\BIO\2022 Semi-Annual Groundwater Monitoring Report\Figure 6 - PFOA.mxd PLOTTED: 8/24/2022 3:06:10 PM BY: V.Davis

Legend

- MONITORING WELLS**
- ▲ PERCHED ZONE MONITORING WELL
 - ▲ DEEP OVERBURDEN MONITORING WELL
 - ▲ WEATHERED BEDROCK MONITORING WELL
 - ▲ BEDROCK MONITORING WELL
 - WELLS SAMPLED AND PFOA EXCEEDS DW CRITERIA (8 ng/L)
 - WELLS SAMPLED AND PFOA DOES NOT EXCEED DW CRITERIA
- PLANT BOUNDARIES**
- PLANT 2
 - PLANT 3
 - PLANT 6

NOTES:

APPROXIMATE EXTENT OF IMPACTS/PLUMES SHOWN ARE BASED ON SEVERAL INVESTIGATIONS PREVIOUSLY COMPLETED AT THE SITE.

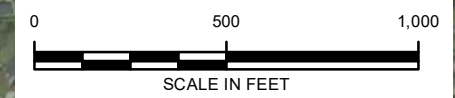
ANALYTICAL DATA FROM THE FIRST AND SECOND QUARTER 2022 ARE POSTED.

HIGHEST EXCEEDANCES ARE SHOWN AT EACH LOCATION.

SAMPLES ANALYZED VIA EPA METHOD 537 MODIFIED.

ALL ANALYTICAL DATA IS IN ng/L.

DW: EGLE Part 201 RESIDENTIAL DRINKING WATER CRITERIA.
 EGLE: MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
 EPA: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 PFOA: PERFLUOROCTANOIC ACID
 ng/L: NANOGRAM PER LITER.

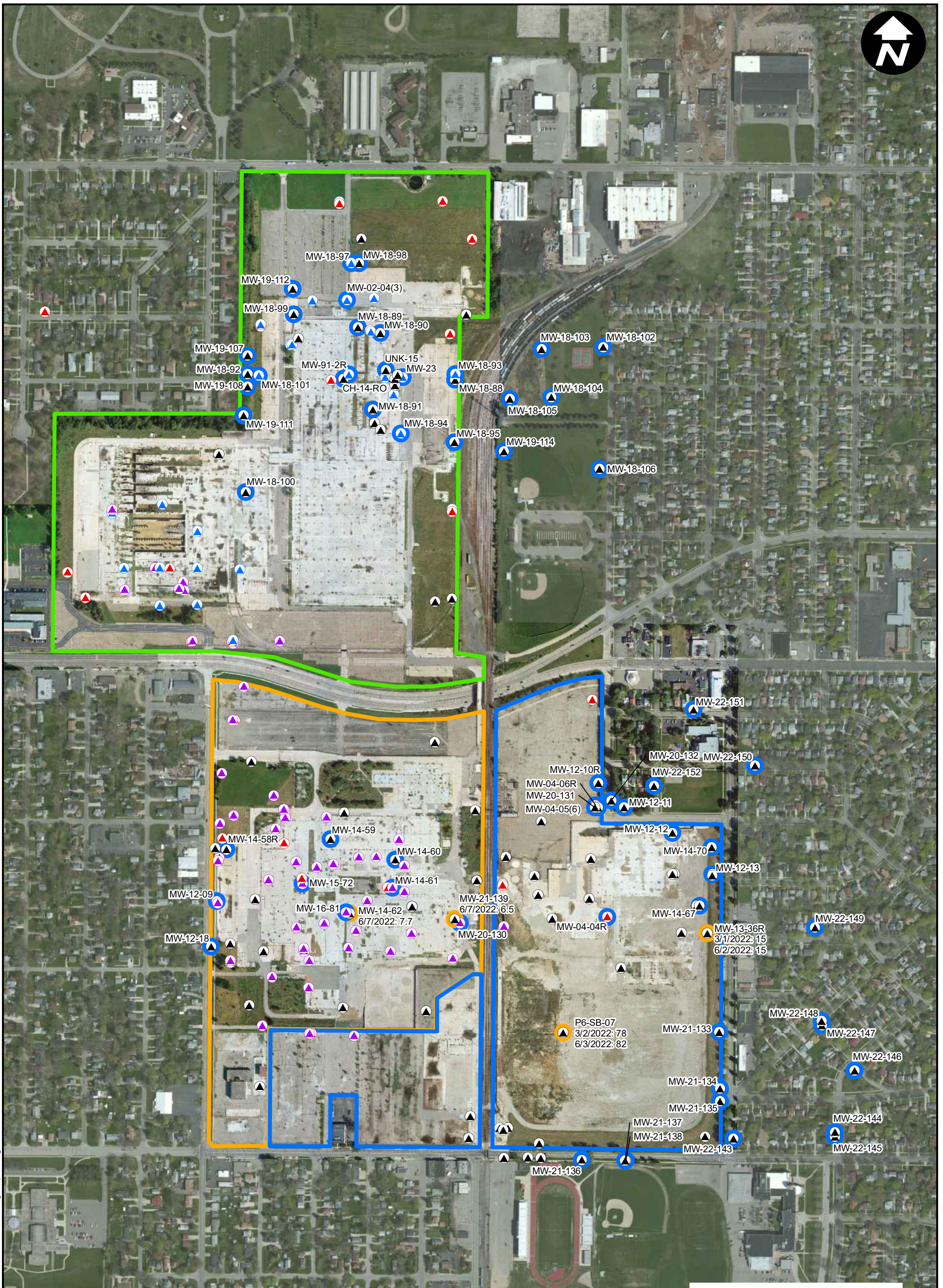


RACER TRUST
PLANTS 2, 3 & 6
LANSING, MICHIGAN

SUMMARY OF PFOA ANALYTICAL RESULTS - JANUARY THROUGH JUNE 2022



FIGURE
6



CITY: Novi DIV: ENV PIC: J. BARRETT PM: T. LINDER TR: PROJECT NUMBER: 30112892 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl T:_ENV\RACER\Buffalo\MXDs\2022 Semi-Annual Groundwater Monitoring Report\Figure 8 - PFNA.mxd PLOTTED: 8/10/2022 2:01:48 PM BY: VDavis

Legend

- PERCHED ZONE MONITORING WELL
- DEEP OVERBURDEN MONITORING WELL
- WEATHERED BEDROCK MONITORING WELL
- BEDROCK MONITORING WELL
- WELLS SAMPLED AND PFNA EXCEEDS DW CRITERIA (6 ng/L)
- WELLS SAMPLED AND PFNA DOES NOT EXCEED DW CRITERIA

PLANT BOUNDARIES

- PLANT 2
- PLANT 3
- PLANT 6

NOTES:

ANALYTICAL DATA FROM THE FIRST AND SECOND QUARTER 2022 ARE POSTED.

SAMPLES ANALYZED VIA EPA METHOD 537 MODIFIED.

HIGHEST EXCEEDANCE IS SHOWN AT EACH LOCATION.

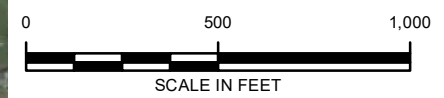
ALL ANALYTICAL DATA IS IN ng/L.

DW: EGLE Part 201 RESIDENTIAL DRINKING WATER CRITERIA. EGLE: MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

EPA: UNITES STATES ENVIRONMENTAL PROTECTION AGENCY

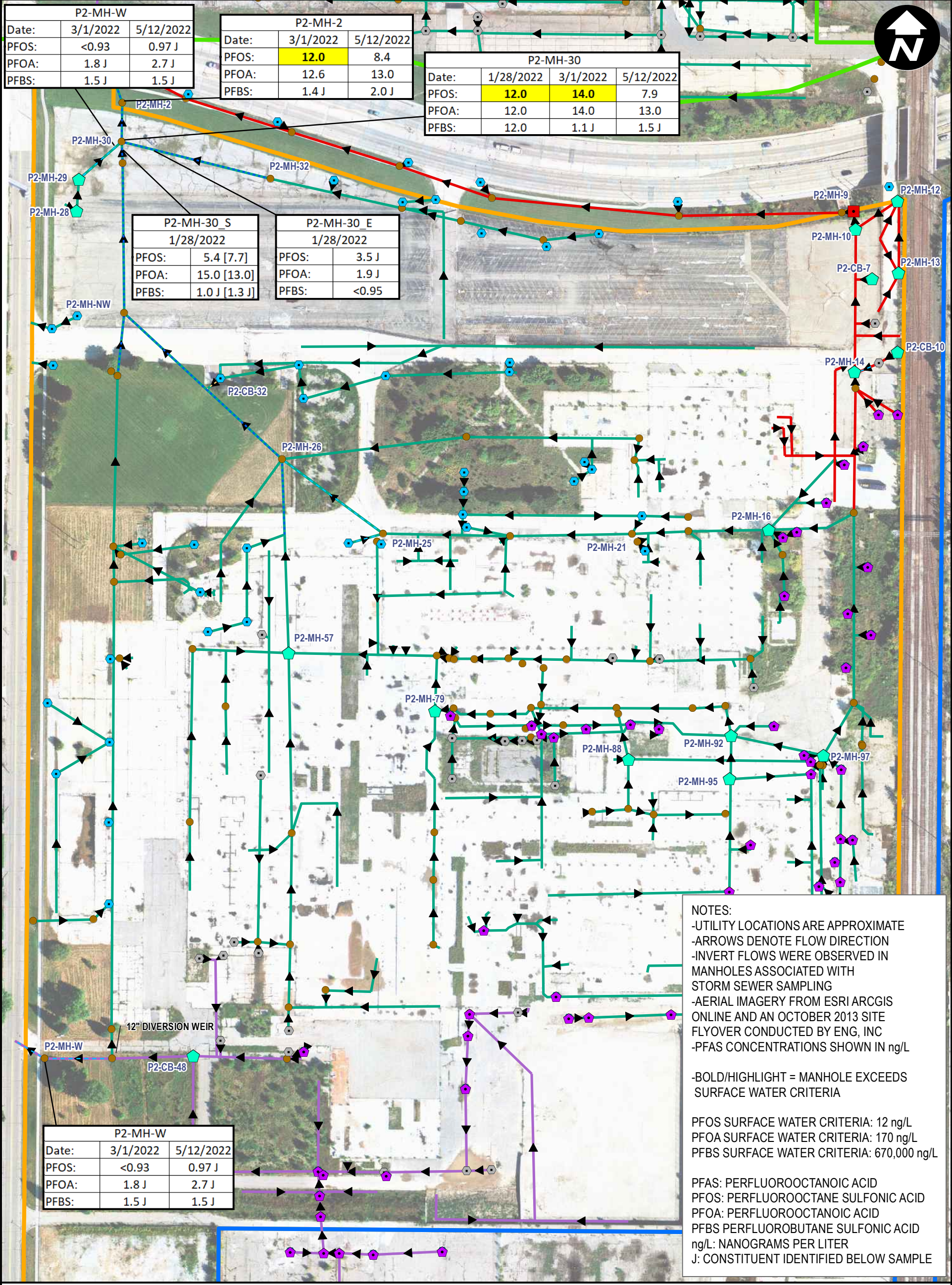
PFNA: PERFLUORONONANOIC ACID

ng/L: NANOGRAM PER LITER.



RACER TRUST
PLANTS 2, 3 & 6
LANSING, MICHIGAN

**SUMMARY OF PFNA ANALYTICAL RESULTS -
JANUARY THROUGH JUNE 2022**



P2-MH-W		
Date:	3/1/2022	5/12/2022
PFOS:	<0.93	0.97 J
PFOA:	1.8 J	2.7 J
PFBS:	1.5 J	1.5 J

P2-MH-2		
Date:	3/1/2022	5/12/2022
PFOS:	12.0	8.4
PFOA:	12.6	13.0
PFBS:	1.4 J	2.0 J

P2-MH-30			
Date:	1/28/2022	3/1/2022	5/12/2022
PFOS:	12.0	14.0	7.9
PFOA:	12.0	14.0	13.0
PFBS:	12.0	1.1 J	1.5 J

P2-MH-30_S	
Date:	1/28/2022
PFOS:	5.4 [7.7]
PFOA:	15.0 [13.0]
PFBS:	1.0 J [1.3 J]

P2-MH-30_E	
Date:	1/28/2022
PFOS:	3.5 J
PFOA:	1.9 J
PFBS:	<0.95

P2-MH-W		
Date:	3/1/2022	5/12/2022
PFOS:	<0.93	0.97 J
PFOA:	1.8 J	2.7 J
PFBS:	1.5 J	1.5 J

NOTES:

- UTILITY LOCATIONS ARE APPROXIMATE
- ARROWS DENOTE FLOW DIRECTION
- INVERT FLOWS WERE OBSERVED IN MANHOLES ASSOCIATED WITH STORM SEWER SAMPLING
- AERIAL IMAGERY FROM ESRI ARCGIS ONLINE AND AN OCTOBER 2013 SITE FLYOVER CONDUCTED BY ENG, INC
- PFAS CONCENTRATIONS SHOWN IN ng/L

-BOLD/HIGHLIGHT = MANHOLE EXCEEDS SURFACE WATER CRITERIA

PFOS SURFACE WATER CRITERIA: 12 ng/L
PFOA SURFACE WATER CRITERIA: 170 ng/L
PFBS SURFACE WATER CRITERIA: 670,000 ng/L

PFAS: PERFLUOROCTANOIC ACID
PFOS: PERFLUOROCTANE SULFONIC ACID
PFOA: PERFLUOROCTANOIC ACID
PFBS: PERFLUOROBUTANE SULFONIC ACID
ng/L: NANOGRAMS PER LITER
J: CONSTITUENT IDENTIFIED BELOW SAMPLE

ADJUSTMENT TYPE

- FILLED STRUCTURE
- CAPPED STRUCTURE
- COULD NOT LOCATE STRUCTURE
- CATCH BASIN REMAINING OPEN

STRUCTURES & SAMPLE POINTS

- MANHOLE
- DRY MANHOLE

PLANT 2 DRAINAGE NETWORKS

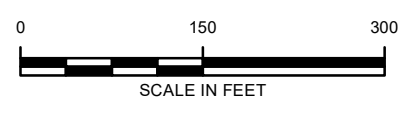
- NORTHEAST (ABANDONED)
- CENTRAL (PARTIALLY ABANDONED)
- SOUTHWEST (ABANDONED)

OBSERVED FLOW (MAY 2022)

- NO FLOW
- TRICKLE (~1 GPM OR LESS)
- LITTLE (~1-3 GPM)
- MODERATE (~3 GPM OR GREATER)

PLANT BOUNDARIES

- PLANT 2
- PLANT 3
- PLANT 6



RACER TRUST
PLANTS 2, 3 & 6
LANSING, MICHIGAN

PLANT 2 PFAS STORM SEWER SAMPLING ANALYTICAL RESULTS - JANUARY THROUGH JUNE 2022

ARCADIS

FIGURE **8**

CITY: Novi DIV: ENV PIC: J. BARRETT PM: T. LINDER TR: A. LORENZ PROJECT NUMBER: 30112892 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
T:_ENV\RACER\Burl\Info\2022\2022 P2 P3 P6 Storm Sewer Modifications Completion Report\Figure 1 - Plant 2 PFAS Sampling Results_KP_Aug2022.mxd PLOTTED: 8/30/2022 2:25:28 PM BY: KPullen



P3-MH-NE		
Date:	3/1/2022	5/12/2022
	No Flow	No Flow

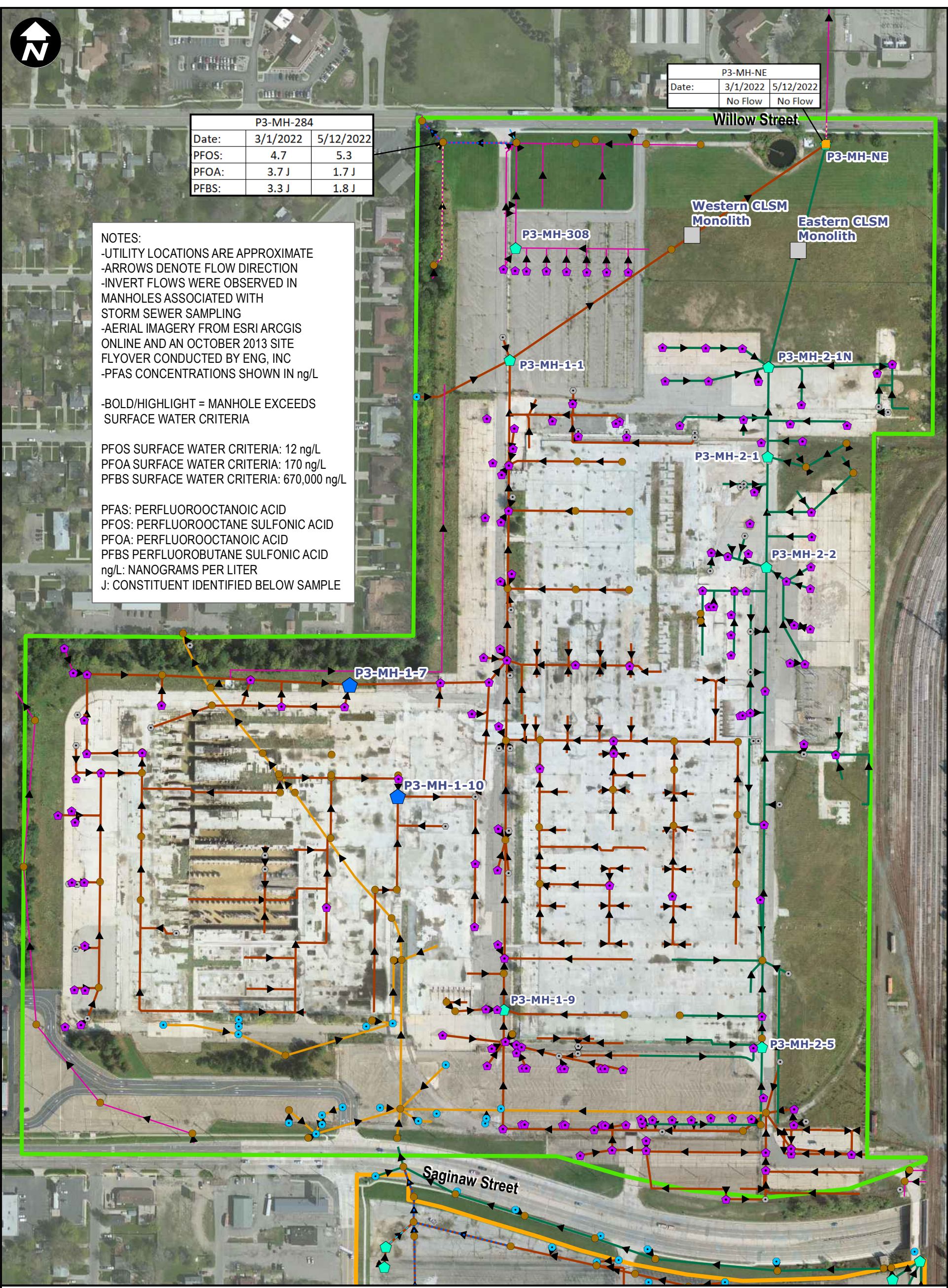
P3-MH-284		
Date:	3/1/2022	5/12/2022
PFOS:	4.7	5.3
PFOA:	3.7 J	1.7 J
PFBS:	3.3 J	1.8 J

NOTES:
 -UTILITY LOCATIONS ARE APPROXIMATE
 -ARROWS DENOTE FLOW DIRECTION
 -INVERT FLOWS WERE OBSERVED IN MANHOLES ASSOCIATED WITH STORM SEWER SAMPLING
 -AERIAL IMAGERY FROM ESRI ARCGIS ONLINE AND AN OCTOBER 2013 SITE FLYOVER CONDUCTED BY ENG, INC
 -PFAS CONCENTRATIONS SHOWN IN ng/L

-BOLD/HIGHLIGHT = MANHOLE EXCEEDS SURFACE WATER CRITERIA

PFOS SURFACE WATER CRITERIA: 12 ng/L
 PFOA SURFACE WATER CRITERIA: 170 ng/L
 PFBS SURFACE WATER CRITERIA: 670,000 ng/L

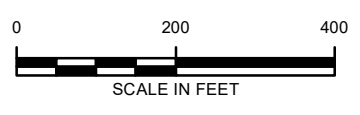
PFAS: PERFLUOROCTANOIC ACID
 PFOS: PERFLUOROCTANE SULFONIC ACID
 PFOA: PERFLUOROCTANOIC ACID
 PFBS PERFLUOROBUTANE SULFONIC ACID
 ng/L: NANOGRAMS PER LITER
 J: CONSTITUENT IDENTIFIED BELOW SAMPLE



- FILLED STRUCTURE
- CAPPED STRUCTURE
- CLSM MONOLITH
- BULKHEAD
- DISCHARGE OPEN WITH CUSTOM POUR
- STRUCTURES & SAMPLE POINTS**
- MANHOLE
- MANHOLE COULD NOT BE LOCATED
- CATCH BASIN REMAINING OPEN
- CATCH BASIN COULD NOT BE LOCATED

- PLANT 3 DRAINAGE NETWORKS**
- COUNTY MAIN (ACTIVE)
- EAST MAIN (ABANDONED)
- WEST MAIN (ABANDONED)
- OTHER (ACTIVE)
- OBSERVED FLOW (MAY 2022)**
- NO FLOW
- TRICKLE (~1 GPM OR LESS)
- LITTLE (~1-3 GPM)
- MODERATE (~3 GPM OR GREATER)

- PLANT BOUNDARIES**
- PLANT 2
- PLANT 3



RACER TRUST
 PLANTS 2, 3 & 6
 LANSING, MICHIGAN

PLANT 3 PFAS STORM SEWER SAMPLING ANALYTICAL RESULTS - JANUARY THROUGH JUNE 2022

ARCADIS

FIGURE **9**

CITY: NOVI DIV: ENV PIC: J. BARRETT PM: T. LINDER TR: J. SALING PROJECT NUMBER: 30112892 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
 T:\ENVRG\RCR\Bulfil\Map\2022_P2_P3_P6 Storm Sewer Modifications_Combination_Report\Figure 9 - Plant 3 PFAS Sampling Results KP_Apr2022.mxd PLOTTED: 8/30/2022 11:29:23 AM BY: KP/llm



NOTES:

- UTILITY LOCATIONS ARE APPROXIMATE
- ARROWS DENOTE FLOW DIRECTION
- INVERT FLOWS WERE OBSERVED IN MANHOLES ASSOCIATED WITH STORM SEWER SAMPLING
- AERIAL IMAGERY FROM ESRI ARCGIS ONLINE AND AN OCTOBER 2013 SITE FLYOVER CONDUCTED BY ENG, INC
- PFAS CONCENTRATIONS SHOWN IN ng/L

-BOLD/HIGHLIGHT = MANHOLE EXCEEDS SURFACE WATER CRITERIA

PFOS SURFACE WATER CRITERIA: 12 ng/L
 PFOA SURFACE WATER CRITERIA: 170 ng/L
 PFBS SURFACE WATER CRITERIA: 670,000 ng/L

- PFAS: PERFLUOROCTANOIC ACID
- PFOS: PERFLUOROCTANE SULFONIC ACID
- PFOA: PERFLUOROCTANOIC ACID
- PFBS: PERFLUOROBUTANE SULFONIC ACID
- ng/L: NANOGRAMS PER LITER
- J: CONSTITUENT IDENTIFIED BELOW SAMPLE

Osborn-MH-1		
Date:	3/1/2022	5/12/2022
PFOS:	24.0	25.0
PFOA:	30.0	45.0
PFBS:	<0.94	1.3 J

Osborn-CB-2		
Date:	3/1/2022	5/12/2022
PFOS:	7.7	15.0
PFOA:	21.0	39.0
PFBS:	<0.94	<0.92

Osborn-CB-2_Drain		
Date:	3/1/2022	5/12/2022
PFOS:	11.0	15.0
PFOA:	30.0	41.0
PFBS:	0.98 J	0.97 J

Verlinden-MH-1		
Date:	3/1/2022	5/12/2022
PFOS:	4.7	13.0
PFOA:	19.0	30.0
PFBS:	4.7	2.4 J

Verlinden-MH-2		
Date:	3/1/2022	5/12/2022
PFOS:	21.0	5.6
PFOA:	43.0	23.0
PFBS:	2.4 J	4.2

Verlinden-MH-3		
Date:	3/1/2022	5/12/2022
PFOS:	7.5 [6.9]	7.0 [4.8]
PFOA:	29.0 [29.0]	29.0 [21.0]
PFBS:	4.0 [3.9]	6.5 [4.3]

Verlinden-MH-4		
Date:	3/1/2022	5/12/2022
PFOS:	6.4	6.6
PFOA:	29.0	28.0
PFBS:	4.5	6.4

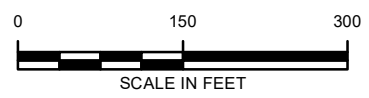
MichAve-MH-3		
Date:	3/1/2022	5/12/2022
PFOS:	2.1 J	2.6 J
PFOA:	4.1	4.8
PFBS:	3.4 J	3.1 J

MichAve-MH-4		
Date:	3/1/2022	5/12/2022
PFOS:	7.9	9.4
PFOA:	10.0	29.0
PFBS:	2.3 J	3.2 J

Verlinden-MH-5		
Date:	3/1/2022	5/12/2022
PFOS:	5.8	6.8
PFOA:	27.0	21.0
PFBS:	3.9	3.8

- BULKHEAD
 - FILLED STRUCTURE
 - CAPPED STRUCTURE
- STRUCTURES & SAMPLE POINTS**
- MANHOLE
 - MANHOLE COULD NOT BE LOCATED
 - CATCH BASIN REMAINING OPEN
 - DRY MANHOLE
- PLANT BOUNDARIES**
- PLANT 2
 - PLANT 6

- PLANT 6 DRAINAGE NETWORKS**
- STORM LINE
 - SANITARY LINE
- OBSERVED FLOW (MAY 2022)**
- NO FLOW
 - TRICKLE (~1 GPM OR LESS)
 - LITTLE (~1-3 GPM)
 - MODERATE (~3 GPM OR GREATER)
 - SEWER LINE CUT AND CAPPED AT PROPERTY LINE DURING 2014 DEMOLITION



RACER TRUST
 PLANTS 2, 3 & 6
 LANSING, MICHIGAN

PLANT 6 PFAS STORM SEWER SAMPLING ANALYTICAL RESULTS - JANUARY THROUGH JUNE 2022

ARCADIS

FIGURE **10**

CITY: Novi DIV: ENV PIC: J. BARRETT PM: T. LINDER TR: J. SALING PROJECT NUMBER: 30112892 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
 T:\ENV\RACER\Buffalo\MXDs\2022\P2 P3 P6 Storm Sewer Modifications Completion Report\Figure 3 - Plant 6 PFAS Storm Sewer Sampling Analytical Results Aug2022.mxd PLOTTED: 8/30/2022 1:43:38 PM BY: KPullen

Attachment 1

Low-Flow Groundwater Sampling Logs – January to June 2022

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-12-10R	Date	03/02/2022
Project Name/Location	RACER Lansing GWS		Weather(*F)	25.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	10.84	Total Depth (ft-bmp)	17.96	Water Column (ft)	7.12
				Gallons in Well	1.16
Purge Start	09:05	Pump Intake (ft-bmp)	15.46	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	09:45	Volumes Purged	1.82	Sample ID	MW-12-10R_030222
				Sampled by	Austin Westhuis
Sample Time	09:40	Gallons Purged	2.11	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:10	0	0	200	11.28	0.26	6.91	2.99	8.94	0.75	4.6	163	--	--
09:15	5	5	200	11.28	0.53	6.91	3.03	3.7	0.71	4.5	206.3	--	--
09:20	5	10	200	11.28	0.79	6.91	3.08	1.89	0.66	5.1	126.3	--	--
09:25	5	15	200	11.28	1.06	6.9	3.13	1.61	0.62	5.5	141	--	--
09:30	5	20	200	11.28	1.32	6.9	3.18	1.29	0.59	5.7	82.1	--	--
09:35	5	25	200	11.28	1.59	6.9	3.19	1.2	0.58	5.8	81.2	--	--
09:40	5	30	200	11.28	1.85	6.9	3.23	1.09	0.57	5.8	79.3	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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



Project Number	30112892	Well ID	MW-12-12	Date	03/01/2022
Project Name/Location	RACER Lansing GWS		Weather(°F)	46.0 degrees F and Cloudy. The wind is blowing W at 13.9 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	6.48	Total Depth (ft-bmp)	17.2	Water Column (ft)	10.72
				Gallons in Well	1.74
Purge Start	14:55	Pump Intake (ft-bmp)	14.7	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	15:25	Volumes Purged	0.91	Sample ID	MW-12-12_030122
				Sampled by	Austin Westhuis
Sample Time	15:20	Gallons Purged	1.59	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:00	0	0	200	7.57	0.26	8.02	0.38	17.6	0.42	9.4	48.2	--	--
15:05	5	5	200	8.06	0.53	8.03	0.371	4.09	0.45	9.3	86.2	--	--
15:10	5	10	200	8.26	0.79	8.01	0.375	2.51	0.48	9.3	108.1	--	--
15:15	5	15	200	8.31	1.06	7.99	0.383	2.14	0.48	9.2	111.5	--	--
15:20	5	20	200	8.34	1.32	7.97	0.386	1.9	0.49	9.2	113.1	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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>Flush mount</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



Project Number	30112892	Well ID	MW-12-13	Date	03/01/2022
Project Name/Location	RACER Lansing GWS		Weather(°F)	42.1 degrees F and Cloudy. The wind is blowing W at 10.3 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material	PVC		
Static Water Level (ft-bmp)	9.01	Total Depth (ft-bmp)	25.43	Water Column (ft)	16.42
		Gallons in Well	2.67		
Purge Start	10:55	Pump Intake (ft-bmp)	22.93	Purge Method	Low-Flow
		Purge Equipment	Peristaltic		
Purge End	11:40	Volumes Purged	0.89	Sample ID	MW-12-13_030122
		Sampled by	Austin Westhuis		
Sample Time	11:35	Gallons Purged	2.38	Replicate/ Code No.	NA
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:00	0	0	200	9.01	0.26	7.49	0.71	4.12	2.66	9.7	311.2	--	--
11:05	5	5	200	9.01	0.53	7.51	0.71	2.21	2.06	9.9	261.5	--	--
11:10	5	10	200	9.01	0.79	7.51	0.71	1.79	2	10	254.4	--	--
11:15	5	15	200	9.01	1.06	7.5	0.71	1.61	1.62	10	209	--	--
11:20	5	20	200	9.01	1.32	7.48	0.69	1.24	1.55	10.2	149	--	--
11:25	5	25	200	9.01	1.59	7.47	0.69	1.2	1	10.02	84.1	--	--
11:30	5	30	200	9.01	1.85	7.48	0.68	1.11	0.95	10.02	81.1	--	--
11:35	5	35	200	9.01	2.11	7.48	0.67	1.03	0.93	10.01	79.3	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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



Project Number	30112892	Well ID	MW-13-22	Date	03/02/2022			
Project Name/Location	RACER Lansing GWS		Weather(°F)	NR				
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC	
Static Water Level (ft-bmp)	67.59	Total Depth (ft-bmp)	96.13	Water Column (ft)	28.54	Gallons in Well	4.64	
Purge Start	13:10	Pump Intake (ft-bmp)	NR	Purge Method	Low-Flow		Purge Equipment	Bladder
Purge End	13:40	Volumes Purged	NR	Sample ID	MW-13-22_030222	Sampled by	Donald Richmond	
Sample Time	13:40	Gallons Purged	NR	Replicate/ Code No.	NA	Sample Type	Grab	

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:20	0	0	200	67.59	--	7	1.54	10.3	0.44	11	-49.6	--	--
13:25	5	5	200	67.59	--	6.97	1.55	3.72	0.4	11.5	-52.8	--	--
13:30	5	10	200	67.59	--	6.96	1.52	8.61	0.35	10.4	-54.9	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	40ml 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: _____	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



Project Number	30112892	Well ID	MW-13-34	Date	03/02/2022
Project Name/Location	RACER Lansing GWS		Weather(°F)	43.0 degrees F and Cloudy. The wind is blowing SW at 12.8 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material	PVC		
Static Water Level (ft-bmp)	64.01	Total Depth (ft-bmp)	79.9	Water Column (ft)	15.89
		Gallons in Well	2.58		
Purge Start	14:00	Pump Intake (ft-bmp)	77.5	Purge Method	Low-Flow
		Purge Equipment	Bladder		
Purge End	14:55	Volumes Purged	0.51	Sample ID	MW-13-34_030222
		Sampled by	Billy Cobern		
Sample Time	14:50	Gallons Purged	1.32	Replicate/ Code No.	NA
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:05	0	0	100	64.21	0.13	7.53	2.03	87.5	6.71	10.3	-32	--	--
14:10	5	5	100	64.21	0.26	7.17	2.11	147	4.31	10.5	-44.1	--	--
14:15	5	10	100	64.21	0.40	7.13	2.11	124	2.05	10.6	-59.6	--	--
14:20	5	15	100	64.21	0.53	7.11	2.12	104	1.26	10.8	-76.6	--	--
14:25	5	20	100	64.21	0.66	7.1	2.15	89.7	1.93	10.7	-79.1	--	--
14:30	5	25	100	64.21	0.79	7.08	2.17	83.7	1.28	10.6	-84.6	--	--
14:35	5	30	100	64.21	0.92	7.07	2.19	77.8	0.99	10.5	-88.9	--	--
14:40	5	35	100	64.21	1.06	7.06	2.21	72.7	0.95	10.4	-93.3	--	--
14:45	5	40	100	64.21	1.19	7.05	2.23	72.6	0.88	10.3	-95.7	--	--
14:50	5	45	100	64.21	1.32	7.05	2.24	70.3	0.86	10.3	-96.1	Brown	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 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



Project Number	30112892	Well ID	MW-13-36R	Date	03/01/2022		
Project Name/Location	RACER Lansing GWS		Weather(°F)	43.0 degrees F and Cloudy. The wind is blowing W/NW at 12.8 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	4.34	Total Depth (ft-bmp)	12.65	Water Column (ft)	8.31	Gallons in Well	1.35
Purge Start	12:55	Pump Intake (ft-bmp)	10.15	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	13:30	Volumes Purged	1.37	Sample ID	MW-13-36R_030122	Sampled by	Austin Westhuis
Sample Time	13:25	Gallons Purged	1.85	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:00	0	0	200	4.34	0.26	12.2	1.11	11.8	2.75	5.8	157.3	--	--
13:05	5	5	200	4.34	0.53	12.22	1.12	4.12	2.93	5.9	130.1	--	--
13:10	5	10	200	4.34	0.79	12.25	1.13	2.14	2.16	5.9	104.9	--	--
13:15	5	15	200	4.34	1.06	12.26	1.13	1.81	2.1	5.9	95.1	--	--
13:20	5	20	200	4.34	1.32	12.23	1.14	1.61	2.04	5.9	91.1	--	--
13:25	5	25	200	4.34	1.59	12.22	1.14	1.29	2.02	5.9	90.3	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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



Project Number	30112892	Well ID	MW-14-58R	Date	02/10/2022		
Project Name/Location	RACER Lansing GWS		Weather(°F)	30.0 degrees F and Haze. The wind is blowing W/SW at 12.8 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	13.84	Total Depth (ft-bmp)	29.6	Water Column (ft)	15.76	Gallons in Well	2.56
Purge Start	10:50	Pump Intake (ft-bmp)	27.1	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	11:25	Volumes Purged	0.72	Sample ID	MW-14-58R_021022	Sampled by	Austin Westhuis
Sample Time	11:20	Gallons Purged	1.85	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:55	0	0	200	13.84	0.26	7.03	1.48	24.6	0.31	7	-35.2	--	--
11:00	5	5	200	13.84	0.53	7.03	1.48	10.6	0.22	7.2	-42.8	--	--
11:05	5	10	200	13.84	0.79	7.03	1.46	3.63	0.2	7.1	-47.8	--	--
11:10	5	15	200	13.84	1.06	7.03	1.48	2.21	0.19	7.2	-51.8	--	--
11:15	5	20	200	13.84	1.32	7.03	1.47	2.01	0.19	7.2	-54.8	--	--
11:20	5	25	200	13.84	1.59	7.04	1.46	1.77	0.19	7.1	-55.8	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8260 SIMS	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 = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-14-67	Date	03/01/2022
Project Name/Location	RACER Lansing GWS		Weather(°F)	45.0 degrees F and Cloudy. The wind is blowing W at 15.0 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material	PVC		
Static Water Level (ft-bmp)	4.22	Total Depth (ft-bmp)	20.83	Water Column (ft)	16.61
		Gallons in Well	2.7		
Purge Start	11:55	Pump Intake (ft-bmp)	18.33	Purge Method	Low-Flow
		Purge Equipment	Peristaltic		
Purge End	12:35	Volumes Purged	0.78	Sample ID	MW-14-67_030122
		Sampled by	Austin Westhuis		
Sample Time	12:30	Gallons Purged	2.11	Replicate/ Code No.	NA
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:00	0	0	200	4.22	0.26	7.42	0.9	11.9	0.72	7.5	214.2	--	--
12:05	5	5	200	4.22	0.53	7.41	0.91	3.44	0.35	7.9	214.1	--	--
12:10	5	10	200	4.22	0.79	7.41	0.92	2.14	0.26	8	214.8	--	--
12:15	5	15	200	4.22	1.06	7.4	0.94	1.76	0.24	8.1	209	--	--
12:20	5	20	200	4.22	1.32	7.39	0.95	1.51	0.23	8.2	189.9	--	--
12:25	5	25	200	4.22	1.59	7.38	0.96	1.42	0.22	8.2	189.6	--	--
12:30	5	30	200	4.22	1.85	7.38	0.96	1.28	0.22	8.2	185.2	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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



Project Number	30112892	Well ID	MW-14-70	Date	03/01/2022		
Project Name/Location	RACER Lansing GWS		Weather(°F)	45.0 degrees F and Mostly Cloudy. The wind is blowing W at 12.8 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	9.43	Total Depth (ft-bmp)	23.1	Water Column (ft)	13.67	Gallons in Well	2.22
Purge Start	14:00	Pump Intake (ft-bmp)	20.6	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	14:35	Volumes Purged	0.83	Sample ID	MW-14-70_030122	Sampled by	Austin Westhuis
Sample Time	14:30	Gallons Purged	1.85	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:05	0	0	200	10.10	0.26	7.46	0.96	26.6	0.77	9.4	165.2	--	--
14:10	5	5	200	10.10	0.53	7.45	0.97	11.8	0.57	9.4	171.3	--	--
14:15	5	10	200	10.10	0.79	7.44	0.97	5.61	0.58	9.4	171.6	--	--
14:20	5	15	200	10.10	1.06	7.44	0.97	3.18	0.47	9.5	174.5	--	--
14:25	5	20	200	10.10	1.32	7.43	0.96	2.81	0.46	9.5	176.7	--	--
14:30	5	25	200	10.10	1.59	7.43	0.96	2.66	0.44	9.6	177.9	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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



Project Number	30112892	Well ID	MW-18-103	Date	03/01/2022
Project Name/Location	RACER Lansing GWS		Weather(°F)	42.1 degrees F and Cloudy. The wind is blowing W at 10.3 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	0.74	Total Depth (ft-bmp)	10	Water Column (ft)	9.26
		Gallons in Well			1.5
Purge Start	10:50	Pump Intake (ft-bmp)	7.5	Purge Method	Low-Flow
		Purge Equipment			Peristaltic
Purge End	11:30	Volumes Purged	0.62	Sample ID	MW-18-103_030122
		Sampled by			Billy Cobern
Sample Time	11:25	Gallons Purged	0.92	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:55	0	0	100	1.05	0.13	7.07	0.8	14.4	2.51	6.2	43.3	--	--
11:00	5	5	100	1.11	0.26	7.01	0.81	12.4	1.9	6.2	44.6	--	--
11:05	5	10	100	1.15	0.40	7.01	0.81	10.9	1.43	6.2	44.7	--	--
11:10	5	15	100	1.19	0.53	7.02	0.81	9.9	1.21	6.2	44.4	--	--
11:15	5	20	100	1.22	0.66	7.02	0.81	9.41	0.99	6.3	43.9	--	--
11:20	5	25	100	1.24	0.79	7.02	0.81	9.22	0.92	6.2	43.5	--	--
11:25	5	30	100	1.25	0.92	7.02	0.81	9.15	0.93	6.2	43.4	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Comments: 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 3	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute
 mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter
 mV = milliv

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-18-105	Date	03/01/2022		
Project Name/Location	RACER Lansing GWS		Weather(*F)	39.0 degrees F and Mostly Cloudy. The wind is blowing W at 6.9 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	0.01	Total Depth (ft-bmp)	11	Water Column (ft)	10.99	Gallons in Well	1.79
Purge Start	09:40	Pump Intake (ft-bmp)	8.5	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	10:25	Volumes Purged	0.52	Sample ID	MW-18-105_030122	Sampled by	Billy Cobern
Sample Time	10:15	Gallons Purged	0.92	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:45	0	0	100	0.35	0.13	6.83	0.84	17.3	3.61	4.8	45.4	--	--
09:50	5	5	100	0.69	0.26	6.9	0.82	12.6	2.34	4.9	26.7	--	--
09:55	5	10	100	1.02	0.40	6.91	0.81	10.3	1.83	4.9	17.9	--	--
10:00	5	15	100	1.29	0.53	6.93	0.793	9.63	1.21	5	2.9	--	--
10:05	5	20	100	1.50	0.66	6.94	0.782	8.93	1.1	4.9	-2.9	--	--
10:10	5	25	100	1.71	0.79	6.95	0.779	8.73	1.07	4.9	-3.7	--	--
10:15	5	30	100	1.89	0.92	6.95	0.776	8.57	1.01	5	-4.5	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Comments: 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 3	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute
 mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter
 mV = milliv

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-18-88	Date	03/02/2022
Project Name/Location	RACER Lansing GWS		Weather(°F)	25.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material	PVC		
Static Water Level (ft-bmp)	3.8	Total Depth (ft-bmp)	15	Water Column (ft)	11.2
		Gallons in Well	1.82		
Purge Start	09:00	Pump Intake (ft-bmp)	12.5	Purge Method	Low-Flow
		Purge Equipment	Peristaltic		
Purge End	09:45	Volumes Purged	0.58	Sample ID	MW-18-88_030222
		Sampled by	Billy Cobern		
Sample Time	09:40	Gallons Purged	1.06	Replicate/ Code No.	NA
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:05	0	0	100	3.92	0.13	7.18	0.64	10.2	0.95	4.1	136.4	--	--
09:10	5	5	100	3.92	0.26	7.13	0.641	8.78	0.77	3.9	123.9	--	--
09:15	5	10	100	3.92	0.40	7.18	0.64	8.49	0.75	4	115.2	--	--
09:20	5	15	100	3.92	0.53	7.19	0.64	7.78	0.71	3.8	107.6	--	--
09:25	5	20	100	3.92	0.66	7.19	0.64	7.37	0.69	3.9	104.6	--	--
09:30	5	25	100	3.92	0.79	7.18	0.641	7.07	0.69	4.1	97.4	--	--
09:35	5	30	100	3.92	0.92	7.18	0.642	7.18	0.64	4	96.1	--	--
09:40	5	35	100	3.92	1.06	7.18	0.64	7.49	0.63	4	95	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

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



Project Number	30112892	Well ID	MW-18-89	Date	03/02/2022		
Project Name/Location	RACER Lansing GWS		Weather(°F)	It is Clear. The wind is blowing S at 6.9 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	5.73	Total Depth (ft-bmp)	15.6	Water Column (ft)	9.87	Gallons in Well	1.6
Purge Start	10:00	Pump Intake (ft-bmp)	13	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	10:35	Volumes Purged	0.50	Sample ID	MW-18-89_030222	Sampled by	Billy Cobern
Sample Time	10:30	Gallons Purged	0.79	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:05	0	0	100	6.91	0.13	7.74	0.91	8.16	0.61	5.3	147.8	--	--
10:10	5	5	100	7.82	0.26	7.71	0.91	7.89	0.56	5.7	135.6	--	--
10:15	5	10	100	8.45	0.40	7.72	0.91	6.52	0.55	5.4	128.8	--	--
10:20	5	15	100	9.12	0.53	7.71	0.91	6.82	0.54	5.7	122.5	--	--
10:25	5	20	100	9.85	0.66	7.71	0.91	6.45	0.53	5.8	122.2	--	--
10:30	5	25	100	10.24	0.79	7.71	0.91	6.2	0.51	5.8	121.4	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Comments: 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 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



Project Number	30112892	Well ID	MW-18-90	Date	03/02/2022
Project Name/Location	RACER Lansing GWS		Weather(°F)	It is Clear. The wind is blowing S at 6.9 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material	PVC		
Static Water Level (ft-bmp)	8.63	Total Depth (ft-bmp)	23.15	Water Column (ft)	14.52
		Gallons in Well	2.36		
Purge Start	11:10	Pump Intake (ft-bmp)	21	Purge Method	Low-Flow
		Purge Equipment	Peristaltic		
Purge End	12:15	Volumes Purged	0.67	Sample ID	MW-18-90_030222
		Sampled by	Billy Cobern		
Sample Time	12:10	Gallons Purged	1.59	Replicate/ Code No.	NA
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:15	0	0	100	8.64	0.13	12.15	1.95	5.1	0.84	8.8	43.6	--	--
11:20	5	5	100	8.64	0.26	12.2	2	3.79	0.72	8.6	29.5	--	--
11:25	5	10	100	8.64	0.40	12.21	2.02	1.43	0.69	8.7	5.8	--	--
11:30	5	15	100	8.64	0.53	12.25	2.06	0.02	1.49	8.8	-26	--	--
11:35	5	20	100	8.64	0.66	12.28	2.1	0.02	1.39	8.8	-62.6	--	--
11:40	5	25	100	8.64	0.79	12.31	2.12	0.02	1.24	9.1	-96.4	--	--
11:45	5	30	100	8.64	0.92	12.32	2.15	0.02	0.81	8.9	-107.4	--	--
11:50	5	35	100	8.64	1.06	12.31	2.14	0.02	1	8.9	-117.4	--	--
11:55	5	40	100	8.64	1.19	12.31	2.14	0.02	1.07	9.6	-134.5	--	--
12:00	5	45	100	8.64	1.32	12.31	2.15	0.02	1.09	9.9	-142.3	--	--
12:05	5	50	100	8.64	1.45	12.31	2.16	0.02	1.14	10	-147.6	--	--
12:10	5	55	100	8.64	1.59	12.31	2.16	0.02	1.17	9.8	-150.7	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

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



Project Number	30112892	Well ID	MW-18-91	Date	03/01/2022
Project Name/Location	RACER Lansing GWS		Weather(*F)	46.0 degrees F and Cloudy. The wind is blowing W at 13.9 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	5.3	Total Depth (ft-bmp)	14.5	Water Column (ft)	9.2
				Gallons in Well	1.49
Purge Start	14:25	Pump Intake (ft-bmp)	12	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	15:15	Volumes Purged	0.80	Sample ID	MW-18-91_030122
				Sampled by	Billy Cobern
Sample Time	15:10	Gallons Purged	1.19	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:30	0	0	100	5.86	0.13	7.97	0.77	8.93	1.91	7.6	23.2	--	--
14:35	5	5	100	6.40	0.26	7.84	0.726	7.73	0.87	7.7	27.4	--	--
14:40	5	10	100	6.73	0.40	7.82	0.717	7.81	0.9	7.5	25.7	--	--
14:45	5	15	100	7.11	0.53	7.81	0.709	7.28	0.89	7.5	15	--	--
14:50	5	20	100	7.34	0.66	7.81	0.708	7.07	0.86	7.5	10.7	--	--
14:55	5	25	100	7.50	0.79	7.8	0.707	6.88	0.84	7.4	4.7	--	--
15:00	5	30	100	7.69	0.92	7.8	0.706	6.89	0.67	7.5	1.8	--	--
15:05	5	35	100	7.85	1.06	7.8	0.706	6.52	0.65	7.6	1.5	--	--
15:10	5	40	100	7.98	1.19	7.8	0.705	6.41	0.63	7.7	1.3	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Comments: 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: <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



Project Number	30112892	Well ID	MW-18-95	Date	03/02/2022
Project Name/Location	RACER Lansing GWS		Weather(°F)	23.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material	PVC		
Static Water Level (ft-bmp)	6.44	Total Depth (ft-bmp)	12.45	Water Column (ft)	6.01
		Gallons in Well	0.98		
Purge Start	08:00	Pump Intake (ft-bmp)	10	Purge Method	Low-Flow
		Purge Equipment	Peristaltic		
Purge End	08:45	Volumes Purged	0.94	Sample ID	MW-18-95_030222
		Sampled by	Billy Cobern		
Sample Time	08:35	Gallons Purged	0.92	Replicate/ Code No.	DUP-02_030222
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
08:05	0	0	100	6.60	0.13	7.97	0.518	18.7	7.56	2.4	151.9	--	--
08:10	5	5	100	6.58	0.26	7.8	0.519	15.4	6.53	2.3	153	--	--
08:15	5	10	100	6.58	0.40	7.74	0.517	11.3	5.42	2.3	149.3	--	--
08:20	5	15	100	6.58	0.53	7.72	0.516	10.1	4.21	2.5	146.2	--	--
08:25	5	20	100	6.58	0.66	7.71	0.514	9.45	4.03	2.6	143.5	--	--
08:30	5	25	100	6.58	0.79	7.71	0.514	9.12	3.89	2.6	143.1	--	--
08:35	5	30	100	6.58	0.92	7.71	0.513	8.89	3.74	2.6	142.7	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	4	None

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



Project Number	30112892	Well ID	MW-18-98	Date	03/01/2022
Project Name/Location	RACER Lansing GWS		Weather(°F)	45.0 degrees F and Mostly Cloudy. The wind is blowing W at 12.8 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	5.42	Total Depth (ft-bmp)	14.5	Water Column (ft)	9.08
		Gallons in Well			1.48
Purge Start	13:10	Pump Intake (ft-bmp)	12	Purge Method	Low-Flow
		Purge Equipment			Peristaltic
Purge End	13:50	Volumes Purged	0.71	Sample ID	MW-18-98_030122
		Sampled by			Billy Cobern
Sample Time	13:50	Gallons Purged	1.06	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:15	0	0	100	5.95	0.13	7.99	2.45	12.9	3.85	6.6	3.4	--	--
13:20	5	5	100	6.39	0.26	7.81	2.48	8.79	1.23	6	-2.1	--	--
13:25	5	10	100	6.88	0.40	7.78	2.48	6.62	2.15	5.6	-10.1	--	--
13:30	5	15	100	7.29	0.53	7.77	2.48	5.78	0.97	5.6	-18.1	--	--
13:35	5	20	100	7.66	0.66	7.75	2.47	5.57	0.88	5.7	-20.8	--	--
13:40	5	25	100	7.98	0.79	7.74	2.45	5.11	0.83	6.1	-22	--	--
13:45	5	30	100	8.31	0.92	7.73	2.45	5.28	0.81	6.2	-21.9	--	--
13:50	5	35	100	8.62	1.06	7.72	2.46	5.02	0.8	6.2	-21.7	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Comments: 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: <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



Project Number	30112892	Well ID	MW-18-99	Date	03/01/2022
Project Name/Location	RACER Lansing GWS		Weather(*F)	45.0 degrees F and Cloudy. The wind is blowing W at 15.0 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material	PVC		
Static Water Level (ft-bmp)	4.09	Total Depth (ft-bmp)	16.85	Water Column (ft)	12.76
		Gallons in Well	2.07		
Purge Start	12:05	Pump Intake (ft-bmp)	14	Purge Method	Low-Flow
		Purge Equipment	Peristaltic		
Purge End	12:55	Volumes Purged	0.57	Sample ID	MW-18-99_030122
		Sampled by	Billy Cobern		
Sample Time	12:50	Gallons Purged	1.19	Replicate/ Code No.	NA
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:10	0	0	100	4.86	0.13	8.11	1.96	8.74	1.12	7.1	89.1	--	--
12:15	5	5	100	5.32	0.26	8.12	1.99	7.75	0.83	6.9	67	--	--
12:20	5	10	100	5.64	0.40	8.13	1.97	7.05	0.63	7	49.5	--	--
12:25	5	15	100	5.82	0.53	8.14	1.95	7.39	0.62	7	34.6	--	--
12:30	5	20	100	5.96	0.66	8.16	1.94	6.79	0.61	7.1	22.8	--	--
12:35	5	25	100	6.11	0.79	8.21	1.91	6.62	0.6	7.2	4.2	--	--
12:40	5	30	100	6.21	0.92	8.18	1.93	6.41	0.59	7.5	-5.4	--	--
12:45	5	35	100	6.29	1.06	8.18	1.93	6.34	0.57	7.6	-7.3	--	--
12:50	5	40	100	6.35	1.19	8.14	1.92	6.16	0.58	7.6	-9.7	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Comments: 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: <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



Project Number	30112892	Well ID	MW-19-121	Date	03/01/2022			
Project Name/Location	RACER Lansing GWS		Weather(°F)	NR				
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC	
Static Water Level (ft-bmp)	63.64	Total Depth (ft-bmp)	73.6	Water Column (ft)	9.96	Gallons in Well	1.62	
Purge Start	10:40	Pump Intake (ft-bmp)	NR	Purge Method	Low-Flow		Purge Equipment	Bladder
Purge End	11:40	Volumes Purged	NR	Sample ID	MW-19-121_030122	Sampled by	Donald Richmond	
Sample Time	11:40	Gallons Purged	NR	Replicate/ Code No.	NA	Sample Type	Grab	

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:55	0	0	200	63.64	--	7.15	1.58	0.24	3.48	10.9	296	--	--
11:00	5	5	200	63.72	--	7.17	1.59	0.56	3.26	10.6	285.6	--	--
11:05	5	10	200	63.72	--	7.17	1.57	0.2	3.34	10.5	282.8	--	--
11:10	5	15	200	63.72	--	7.13	1.58	0.02	3.16	10.8	271.3	--	--
11:15	5	20	200	63.72	--	7.12	1.57	0.02	2.66	10.3	257.7	--	--
11:20	5	25	200	63.72	--	7.14	1.56	0.02	2.49	10	251.3	--	--
11:25	5	30	200	63.72	--	7.13	1.57	0.02	2.2	10.6	242.3	--	--
11:30	5	35	200	63.72	--	7.15	1.57	0.02	2.09	10.4	234.8	--	--
11:35	5	40	200	63.72	--	7.12	1.56	0.02	1.89	10.5	230	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	40ml 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: _____	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



Project Number	30112892	Well ID	MW-20-126	Date	03/01/2022		
Project Name/Location	RACER Lansing GWS		Weather(°F)	NR			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	62.8	Total Depth (ft-bmp)	75.45	Water Column (ft)	12.65	Gallons in Well	2.06
Purge Start	12:30	Pump Intake (ft-bmp)	NR	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	13:30	Volumes Purged	NR	Sample ID	MW-20-126_030122	Sampled by	Donald Richmond
Sample Time	13:30	Gallons Purged	NR	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:50	0	0	200	62.80	--	7.29	2.67	240	10.74	9.1	249.7	--	--
12:55	5	5	200	62.80	--	7.33	2.72	186	10.44	10.2	217.3	--	--
13:00	5	10	200	62.80	--	7.33	2.72	200	10.79	9.7	208.2	--	--
13:05	5	15	200	62.80	--	7.31	2.64	194	11.3	8.8	199.2	--	--
13:10	5	20	200	62.80	--	7.28	2.79	148	9.7	11.5	189.6	--	--
13:15	5	25	200	62.80	--	7.27	2.81	132	10.1	11.5	151	--	--
13:20	5	30	200	62.80	--	7.24	2.81	109	10.61	11.4	122.8	--	--
13:25	5	35	200	62.80	--	7.24	2.81	71.4	10.04	11.4	119.5	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	40ml 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: _____	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



Project Number	30112892	Well ID	MW-20-127	Date	03/01/2022			
Project Name/Location	RACER Lansing GWS		Weather(°F)	NR				
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC	
Static Water Level (ft-bmp)	64.62	Total Depth (ft-bmp)	78.65	Water Column (ft)	14.03	Gallons in Well	2.28	
Purge Start	14:20	Pump Intake (ft-bmp)	NR	Purge Method	Low-Flow		Purge Equipment	Bladder
Purge End	15:15	Volumes Purged	NR	Sample ID	MW-20-127_030122	Sampled by	Donald Richmond	
Sample Time	15:15	Gallons Purged	NR	Replicate/ Code No.	NA	Sample Type	Grab	

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:30	0	0	200	64.62	--	7.25	1.98	10.3	2.98	11.6	219	--	--
14:35	5	5	200	64.62	--	7.15	2.21	2	1.74	11.5	109	--	--
14:40	5	10	200	64.62	--	6.99	2.27	0.5	1.45	11.6	52.8	--	--
14:45	5	15	200	64.62	--	6.96	2.3	0.02	1.26	11.5	21.9	--	--
14:50	5	20	200	64.62	--	6.95	2.33	0.02	1.09	11.5	12.5	--	--
14:55	5	25	200	64.62	--	6.92	2.35	0.02	0.87	11.4	8.3	--	--
15:00	5	30	200	64.62	--	6.92	2.35	0.02	0.73	11.3	5.3	--	--
15:05	5	35	200	64.62	--	6.92	2.36	0.02	0.72	11.3	4	--	--
15:10	5	40	200	64.62	--	6.92	2.34	0.02	0.78	11.2	4.1	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	40ml 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: _____	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



Project Number	30112892	Well ID	P6-SB-07	Date	03/02/2022
Project Name/Location	RACER Lansing GWS		Weather(°F)	It is Clear. The wind is blowing S at 6.9 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material	PVC		
Static Water Level (ft-bmp)	5.58	Total Depth (ft-bmp)	23.65	Water Column (ft)	18.07
		Gallons in Well	2.94		
Purge Start	10:20	Pump Intake (ft-bmp)	21.15	Purge Method	Low-Flow
		Purge Equipment	Peristaltic		
Purge End	11:05	Volumes Purged	0.81	Sample ID	P6-SB-07_030222
		Sampled by	Austin Westhuis		
Sample Time	11:00	Gallons Purged	2.38	Replicate/ Code No.	DUP-04
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:25	0	0	200	5.77	0.26	7.72	0.5	12.3	4.08	8	103.5	--	--
10:30	5	5	200	5.77	0.53	7.56	0.56	7.44	2.75	8.3	-30.5	--	--
10:35	5	10	200	5.77	0.79	7.49	0.61	3.4	1.58	8.5	-121	--	--
10:40	5	15	200	5.77	1.06	7.48	0.62	2.58	1.41	8.4	-133	--	--
10:45	5	20	200	5.77	1.32	7.47	0.62	2.31	1.12	8.5	-76.9	--	--
10:50	5	25	200	5.77	1.59	7.47	0.62	2.22	1.11	8.6	-92	--	--
10:55	5	30	200	5.77	1.85	7.46	0.63	1.91	1.09	8.6	-94.7	--	--
11:00	5	35	200	5.77	2.11	7.46	0.63	1.82	1.03	8.7	-97	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	4	None

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



Project Number	30112892	Well ID	PW-14-02			Date	03/01/2022
Project Name/Location	RACER Lansing GWS		Weather(°F)	NR			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	6	Well Casing Material	PVC
Static Water Level (ft-bmp)	64.36	Total Depth (ft-bmp)	71.74	Water Column (ft)	7.38	Gallons in Well	10.79
Purge Start	15:40	Pump Intake (ft-bmp)	NR	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	16:20	Volumes Purged	NR	Sample ID	PW-14-02_030122	Sampled by	Donald Richmond
Sample Time	16:20	Gallons Purged	NR	Replicate/ Code No.	DUP-01	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:55	0	0	200	64.36	--	7.82	1.52	0.02	10.55	6.9	232	--	--
16:00	5	5	200	64.36	--	7.81	1.51	0.02	10.74	6.7	226.4	--	--
16:05	5	10	200	64.36	--	7.84	1.53	0.02	10.55	7.1	215.6	--	--
16:10	5	15	200	64.36	--	7.84	1.53	0.02	10.67	7	214.5	--	--
16:15	5	20	200	64.36	--	7.84	1.53	0.02	10.81	7.1	209.8	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	40ml 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: _____	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



Project Number	30112892	Well ID	PW-14-03	Date	03/02/2022
Project Name/Location	RACER Lansing GWS		Weather(°F)	NR	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	6
Static Water Level (ft-bmp)	70.3	Total Depth (ft-bmp)	94.3	Water Column (ft)	24
Purge Start	14:20	Pump Intake (ft-bmp)	NR	Purge Method	Low-Flow
Purge End	15:05	Volumes Purged	NR	Sample ID	PW-14-03_030222
Sample Time	15:05	Gallons Purged	NR	Replicate/ Code No.	DUP-03
				Well Casing Material	PVC
				Gallons in Well	35.1
				Purge Equipment	Bladder
				Sampled by	Donald Richmond
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:35	0	0	200	70.30	--	7.31	2.69	1.62	10.47	10.5	156.5	--	--
14:40	5	5	200	70.30	--	7.27	2.71	1.9	10.68	10.5	161.9	--	--
14:45	5	10	200	70.30	--	7.24	2.69	1.72	10.66	10.3	168.5	--	--
14:50	5	15	200	70.30	--	7.21	2.68	1.42	10.15	10.2	182.4	--	--
14:55	5	20	200	70.30	--	7.2	2.68	1.25	10.43	10.1	186.2	--	--
15:00	5	25	200	70.30	--	7.2	2.68	1.11	10.37	10.2	190.6	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	40ml 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: _____	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



Project Number	30112892	Well ID	TW-14-02	Date	03/02/2022			
Project Name/Location	RACER Lansing GWS		Weather(°F)	NR				
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC	
Static Water Level (ft-bmp)	57.65	Total Depth (ft-bmp)	71.74	Water Column (ft)	14.09	Gallons in Well	2.29	
Purge Start	10:40	Pump Intake (ft-bmp)	NR	Purge Method	Low-Flow		Purge Equipment	Bladder
Purge End	11:40	Volumes Purged	NR	Sample ID	TW-14-02_030222		Sampled by	Donald Richmond
Sample Time	11:40	Gallons Purged	NR	Replicate/ Code No.	NA		Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:50	0	0	200	57.65	--	8.05	3.55	239	10.28	9.9	185.1	--	--
10:55	5	5	200	57.65	--	8.01	3.62	197	10.29	10.9	181.2	--	--
11:00	5	10	200	57.65	--	7.95	3.61	129	11.14	10.8	178	--	--
11:05	5	15	200	57.65	--	7.91	3.59	145	10.54	10.4	173.6	--	--
11:10	5	20	200	57.65	--	7.9	3.56	138	10.77	10.1	172.3	--	--
11:15	5	25	200	57.65	--	7.85	3.47	159	11.6	9.2	170.9	--	--
11:20	5	30	200	57.65	--	7.82	3.39	179	11.57	7.8	169.3	--	--
11:25	5	35	200	57.65	--	7.79	3.33	220	10.64	7.4	167.8	--	--
11:30	5	40	200	57.65	--	7.71	3.32	246	9.49	7.3	165	--	--
11:35	5	45	200	57.65	--	7.69	3.31	237	9.32	7	162.6	--	--
11:40	5	50	200	57.65	--	7.67	3.29	270	9.44	6.3	160.9	Brown	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	40ml 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: _____	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



Project Number	30112892	Well ID	TW-14-06			Date	03/02/2022
Project Name/Location	RACER Lansing GWS		Weather(°F)	42.1 degrees F and Cloudy. The wind is blowing W/SW at 11.4 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	59.6	Total Depth (ft-bmp)	86.5	Water Column (ft)	26.9	Gallons in Well	4.37
Purge Start	15:15	Pump Intake (ft-bmp)	84	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	16:25	Volumes Purged	0.85	Sample ID	TW-14-06_030222	Sampled by	Austin Westhuis
Sample Time	16:20	Gallons Purged	3.70	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:20	0	0	200	59.60	0.26	7.42	2.65	1000	10.49	13.2	242.0	--	--
15:25	5	5	200	59.60	0.53	7.41	2.62	1000	10.32	13.5	257.7	--	--
15:30	5	10	200	59.60	0.79	7.40	2.64	1000	10.23	13.4	264.3	--	--
15:35	5	15	200	59.60	1.06	7.41	2.56	1000	10.16	12.8	276.5	--	--
15:40	5	20	200	59.60	1.32	7.41	2.55	1000	11.38	12.7	277.6	--	--
15:45	5	25	200	59.60	1.59	7.43	2.60	1000	12.33	11.8	282.3	--	--
15:50	5	30	200	59.60	1.85	7.42	2.59	1000	12.66	12.2	292.5	--	--
15:55	5	35	200	59.60	2.11	7.44	2.60	1000	13.16	11.9	298.5	--	--
16:00	5	40	200	59.60	2.38	7.43	2.48	1000	12.85	12.6	302.9	--	--
16:05	5	45	200	59.60	2.64	7.41	2.50	1000	12.72	11.0	312.5	--	--
16:10	5	50	200	59.60	2.91	7.41	2.50	1000	12.49	11.4	312.8	--	--
16:15	5	55	200	59.60	3.17	7.41	1.34	1000	12.64	11.5	314.9	--	--
16:20	5	60	200	59.60	3.43	7.41	2.55	1000	12.34	10.6	315.8	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8260B SIMS	40 mL Glass	3	HCL

Comments: Well under pressure and influenced by the nearby biosparge treatment. Turbidity remained above range. Purge water brown.

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



Project Number	30112892	Well ID	TW-15-11	Date	03/02/2022
Project Name/Location	RACER Lansing GWS		Weather(°F)	43.0 degrees F and Cloudy. The wind is blowing SW at 11.4 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	66.5	Total Depth (ft-bmp)	87.02	Water Column (ft)	20.52
				Gallons in Well	3.33
Purge Start	13:55	Pump Intake (ft-bmp)	84.52	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	14:50	Volumes Purged	0.87	Sample ID	TW-15-11_030222
				Sampled by	Austin Westhuis
Sample Time	14:45	Gallons Purged	2.91	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:00	0	0	200	66.50	0.26	7.05	2.87	86.6	11.4	11.7	314.7	--	--
14:05	5	5	200	66.50	0.53	7.05	2.82	71.1	9.73	13.5	308.6	--	--
14:10	5	10	200	66.50	0.79	7.02	3.02	65.9	8.42	13.5	205.0	--	--
14:15	5	15	200	66.50	1.06	7.02	3.01	74.9	0.14	13.5	156.1	--	--
14:20	5	20	200	66.50	1.32	7.02	3.03	63.3	2.39	13.5	149.8	--	--
14:25	5	25	200	66.50	1.59	7.03	2.90	55.2	0.17	13.5	134.1	--	--
14:30	5	30	200	66.50	1.85	7.02	2.86	92.2	0.04	13.6	131.2	--	--
14:35	5	35	200	66.50	2.11	7.01	3.03	86.6	0.02	13.4	126.6	--	--
14:40	5	40	200	66.50	2.38	7.01	3.03	82.3	0.02	13.6	120.5	--	--
14:45	5	45	200	66.50	2.64	7.01	3.01	78.4	0.02	13.5	120.1	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8260 SIMS	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



Project Number	30112892	Well ID	TW-15-12	Date	03/02/2022		
Project Name/Location	RACER Lansing GWS		Weather(°F)	NR			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	4	Well Casing Material	PVC
Static Water Level (ft-bmp)	63.16	Total Depth (ft-bmp)	76.7	Water Column (ft)	13.54	Gallons in Well	8.8
Purge Start	09:00	Pump Intake (ft-bmp)	NR	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	10:00	Volumes Purged	NR	Sample ID	TW-15-12_030222	Sampled by	Donald Richmond
Sample Time	10:00	Gallons Purged	NR	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:15	0	0	200	63.16	--	7.50	1.69	87.3	10.86	7.2	221.3	--	--
09:20	10	10	200	62.32	--	7.50	1.66	121	10.86	7.0	217.9	--	--
09:25	5	10	200	61.40	--	7.47	1.64	238	10.59	6.9	208.7	--	--
09:30	5	15	200	61.40	--	7.48	1.66	557	11.08	6.7	196.5	--	--
09:35	5	20	200	61.40	--	7.49	1.66	923	11.30	6.8	-190.7	--	--
09:40	5	25	200	61.40	--	7.51	1.69	994	11.33	7.5	185.6	--	--
09:45	5	30	200	61.40	--	7.55	1.69	958	11.55	7.3	182.7	--	--
09:50	5	35	200	61.40	--	7.57	1.70	--	11.64	7.6	178.5	--	--
09:55	5	40	200	61.40	--	7.60	1.69	--	11.92	7.3	176.9	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	40ml 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: _____	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
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



RACER Lansing GW Sampling

Project Number 30112892 **Well ID** CH-14-RO **Date** 6/9/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** Sunny

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 5 **Total Depth (ft-bmp)** 12 **Water Column(ft)** 7 **Gallons in Well** 1.14

MP Elevation NA **Pump Intake (ft-bmp)** 11 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 16:10 **Gallons Purged** 1.72 **Replicate/ Code No.** DUP-07_060922 **Evacuation Method** Peristaltic

Purge Start: 15:10

Purge End: 16:10

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
15:10	0	100	5	0.13	6.78	0.004	15	3.15	20.4	-11.9	--	--
15:15	5	100	5	0.26	7.51	0.004	12	3.96	19.4	-13.8	--	--
15:20	5	100	5	0.40	7.47	0.004	12	4.66	19.4	-8.2	--	--
15:25	5	100	5	0.53	7.46	0.004	15	4.65	19.4	-3.6	--	--
15:30	5	100	5	0.66	7.47	0.004	15	4.66	19.3	-6.4	--	--
15:35	5	100	5	0.79	7.48	0.004	14	4.67	18.9	14.3	--	--
15:40	5	100	5	0.79	7.48	0.004	11	4.86	18.6	21.8	--	--
15:45	5	100	5	1.06	7.51	0.004	15	4.67	18.4	29	--	--
15:50	5	100	5	1.19	7.53	0.004	15	4.62	18.1	32.8	--	--
15:55	5	100	5	1.32	7.54	0.004	14	4.6	17.9	34.4	--	--
16:00	5	100	5	1.45	7.47	0.003	14	4.45	17.7	36.3	--	--
16:05	5	100	5	1.59	7.46	0.003	14	4.41	17.7	37.7	--	--
16:10	5	100	5	1.72	7.46	0.0003	14	4.48	17.6	38.3	--	--

Constituent Sampled	Container	Number	Preservative
Metals, Dissolved	125 mL Plastic	2	HNO3
Metals, Total	125 mL Plastic	2	HNO3
Hexavalent Chromium	125 mL Plastic	2	None
PFAS	250 mL HDPE Plastic	4	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

ft-bmp = feet below measuring point
in. = inches

mS/cm = milliSiemens per centimeter
NTU = N

mV = millivolts

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-01(2)	Date	06/04/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	73.0 degrees F and Partly Cloudy. The wind is blowing W at 8.1 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	7.87	Total Depth (ft-bmp)	15.98	Water Column (ft)	8.11
				Gallons in Well	1.32
Purge Start	15:40	Pump Intake (ft-bmp)	13.48	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	16:15	Volumes Purged	1.40	Sample ID	MW-01(2)_060422
				Sampled by	Austin Westhuis
Sample Time	16:10	Gallons Purged	1.85	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:45	0	0	200	8.75	0.26	6.56	3.2	4.84	1.29	14.1	19.1	--	--
15:50	5	5	200	9.31	0.53	6.66	3.21	1.78	1.11	14	14.7	--	--
15:55	5	10	200	9.37	0.79	6.68	3.21	1.56	1.02	14	11	--	--
16:00	5	15	200	9.37	1.06	6.7	3.21	1.41	0.95	14	8.9	--	--
16:05	5	20	200	9.37	1.32	6.7	3.19	1.23	0.93	13.9	4.6	--	--
16:10	5	25	200	9.37	1.59	6.72	3.21	1.09	0.9	13.9	1.4	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

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

Well Information

Well Location: 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



Project Number	30112892	Well ID	MW-02-02(3)	Date	06/10/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Haze. The wind is blowing SW at 6.9 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	59.91	Total Depth (ft-bmp)	83.7	Water Column (ft)	23.79	Gallons in Well	3.87
Purge Start	09:15	Pump Intake (ft-bmp)	81	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	10:05	Volumes Purged	0.34	Sample ID	MW-02-02(3)	Sampled by	Billy Cobern
Sample Time	10:05	Gallons Purged	1.32	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:20	0	0	100	60.35	0.13	6.84	1.98	53.9	5.97	18.3	-26.1	--	--
09:25	5	5	100	60.55	0.26	6.77	3.75	48	4.42	18.4	-26.3	--	--
09:30	5	10	100	60.45	0.40	6.67	3.85	37.6	3.02	18.3	-28.7	--	--
09:35	5	15	100	60.35	0.53	6.65	3.87	32.1	2.22	18.3	-31.4	--	--
09:40	5	20	100	60.21	0.66	6.65	3.86	24.7	1.72	18.6	-34.4	--	--
09:45	5	25	100	60.2	0.79	6.65	3.87	16.7	1.54	18.9	-38.1	--	--
09:50	5	30	100	60.2	0.92	6.64	3.87	12	1.37	19.1	-39.9	--	--
09:55	5	35	100	60.2	1.06	6.64	3.88	10.4	1.34	19.2	-40.1	--	--
10:00	5	40	100	60.2	1.19	6.64	3.88	9.76	1.32	19.2	-40.3	--	--
10:05	5	45	100	60.2	1.32	6.64	3.88	9.87	1.31	19.2	-40.6	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: <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>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



RACER Lansing GW Sampling

Project Number	30112892	Well ID	MW-02-02(6)	Date	6/6/2022		
Project Name/Location	RACER Lansing, MI			Weather(°F)	Sunny		
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	NR	Casing Diameter (in.)	2	Well Material	NR
Static Water Level (ft-bmp)	26.89	Total Depth (ft-bmp)	45	Water Column(ft)	18.11	Gallons in Well	2.94
MP Elevation	NA	Pump Intake (ft-bmp)	42	Purge Method:	Low-Flow	Sample Method	Grab
Sample Time:	17:00	Gallons Purged	NA	Replicate/ Code No.	NA	Evacuation Method	Bladder
Purge Start:	16:30						
Purge End:	16:55						

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
16:35	0	200	30.15	0.00	6.91	7.88	116	2.06	15	-13.9	Clear	None
16:40	5	200	30.19	0.00	6.94	7.2	23.1	1.71	14.9	-15.5	Clear	None
16:45	5	200	30.22	0.00	6.98	6.82	13.7	2.09	14.8	-14.9	Clear	None
16:50	5	200	30.3	0.00	7	6.83	12.6	2.28	14.9	-15.6	Clear	None
16:55	5	200	30.31	0.00	7	6.82	12.5	2.31	15.2	-15.5	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane	40 mL Vial	3	HCL
VOCs	40 mL Vial	3	HCL

Sampling By Monica Dostert

Comments: PME Sampler: Jarrett Humpula

Well Casing Volume Conversion

Well diameter(inc)=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: MW-02-02(6)

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-02-04(3)	Date	06/08/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Clear. The wind is blowing E/SE at 5.8 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material	PVC		
Static Water Level (ft-bmp)	58.71	Total Depth (ft-bmp)	83.87	Water Column (ft)	25.16
		Gallons in Well	4.09		
Purge Start	10:00	Pump Intake (ft-bmp)	81.37	Purge Method	Low-Flow
		Purge Equipment	Peristaltic		
Purge End	10:50	Volumes Purged	0.65	Sample ID	MW-02-04(3)_060822
		Sampled by	Austin Westhuis		
Sample Time	10:50	Gallons Purged	2.64	Replicate/ Code No.	Dup-10_060822
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:05	0	0	200	59.93	0.26	6.53	5.47	804	1.55	14.8	-24.9	--	--
10:10	5	5	200	60.11	0.53	6.63	5.33	691	1.02	14.6	-34.7	--	--
10:15	5	10	200	60.32	0.79	6.71	5.17	556	0.65	14.7	-41	--	--
10:20	5	15	200	60.37	1.06	6.72	5.21	192	0.29	14.6	-42.1	--	--
10:25	5	20	200	60.37	1.32	6.72	5.27	116	0.25	14.6	-42.4	--	--
10:30	5	25	200	60.37	1.59	6.72	5.3	111	0.22	14.6	-43.4	--	--
10:35	5	30	200	60.37	1.85	6.72	5.33	93.7	0.21	14.6	-43.9	--	--
10:40	5	35	200	60.37	2.11	6.72	5.38	90.1	0.2	14.6	-43.5	--	--
10:45	5	40	200	60.37	2.38	6.72	5.37	87.6	0.2	14.6	-43.5	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8260B SIMS	40 mL Glass	6	HCL
Total Select Metals (As, Ni, P)	125 mL Plastic	2	HNO3
PFAS	250mL HDPE Plastic	4	None
Dissolved Select Metals (As, N)	125 mL Plastic	2	HNO3

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: <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



Project Number	30112892	Well ID	MW-03-05	Date	06/06/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	71.1 degrees F and Mostly Clear. The wind is blowing S at 6.9 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	23.41	Total Depth (ft-bmp)	47.98	Water Column (ft)	24.57
				Gallons in Well	3.99
Purge Start	10:45	Pump Intake (ft-bmp)	45.48	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	11:25	Volumes Purged	0.53	Sample ID	MW-03-05_060622
				Sampled by	Austin Westhuis
Sample Time	11:20	Gallons Purged	2.11	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:50	0	0	200	25	0.26	7.4	1.81	3.63	0.68	14.3	34.8	--	--
10:55	5	5	200	25.58	0.53	7.49	1.83	2.08	0.81	14.6	13	--	--
11:00	5	10	200	25.78	0.79	7.51	1.83	1.61	0.78	14.6	-3	--	--
11:05	5	15	200	25.89	1.06	7.52	1.83	1.43	0.75	14.6	-10.3	--	--
11:10	5	20	200	25.96	1.32	7.52	1.83	1.33	0.72	14.6	-19.7	--	--
11:15	5	25	200	25.96	1.59	7.54	1.83	1.3	0.7	14.6	-24.7	--	--
11:20	5	30	200	25.97	1.85	7.54	1.82	1.21	0.7	14.5	-28.4	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs and 1,4-Dioxane	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



Project Number	30112892	Well ID	MW-03-06	Date	06/06/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	72.0 degrees F and Mostly Cloudy. The wind is blowing S at 6.9 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	35.8	Total Depth (ft-bmp)	40.57	Water Column (ft)	4.77
				Gallons in Well	0.78
Purge Start	11:50	Pump Intake (ft-bmp)	37.07	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	12:25	Volumes Purged	2.37	Sample ID	MW-03-06_060622
				Sampled by	Austin Westhuis
Sample Time	12:20	Gallons Purged	1.85	Replicate/ Code No.	Dup-14_060622
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:55	0	0	200	36.66	0.26	6.76	8.59	11.6	0.47	14	-25.3	--	--
12:00	5	5	200	36.91	0.53	6.78	8.58	4.39	0.35	14	-32	--	--
12:05	5	10	200	37.05	0.79	6.79	8.57	2.61	0.35	13.9	-36	--	--
12:10	5	15	200	37.09	1.06	6.79	8.58	2.13	0.3	14	-38.1	--	--
12:15	5	20	200	37.11	1.32	6.79	8.57	1.81	0.31	13.9	-41.3	--	--
12:20	5	25	200	37.12	1.59	6.79	8.57	1.41	0.3	13.9	-44	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs and 1,4-Dioxane	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: no
Condition of Well: Good condition	Well Locked at Departure: no
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



RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-04-01(6) **Date** 6/3/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** NR

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** NR **Well Material** NR

Static Water Level (ft-bmp) 69.17 **Total Depth (ft-bmp)** NA **Water Column(ft)** **Gallons in Well**

MP Elevation NA **Pump Intake (ft-bmp)** NA **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 15:25 **Gallons Purged** NA **Replicate/ Code No.** NA **Evacuation Method** Bladder

Purge Start: 14:25

Purge End: 15:30

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
14:35	0	--	69.32	0.00	6.67	0.96	302	2.71	17.6	-0.1	--	--
14:45	10	--	69.32	0.00	6.8	0.95	219	0.49	15.6	-3.7	--	--
14:55	10	--	69.37	0.00	6.81	0.95	121	0.38	15	-1.9	--	--
15:05	10	--	69.28	0.00	6.84	0.96	56.5	0.23	15	-5.3	--	--
15:10	5	--	69.37	0.00	6.86	0.96	56.4	0.23	14.9	-6.6	--	--
15:15	5	--	69.4	0.00	6.89	0.97	42	0.17	14.9	-7.9	--	--
15:20	5	--	69.4	0.00	6.9	0.97	32.4	0.17	15.1	-7.8	--	--
15:25	5	--	69.4	0.00	6.91	0.97	43.5	0.16	15.2	-6.9	--	--

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane	40 mL Vial	3	HCL

Sampling By Kaitlyn Hunt

Comments: PME sampler: J. Meshew. K. Hunt entered into Fulcrum

Well Casing Volume Conversion

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

Well Information

Well Location: _____

Well Locked at Arrival: _____

Condition of Well: _____

Well Locked at Departure: _____

RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-04-04R **Date** 6/3/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** NR

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** NR **Well Material** NR

Static Water Level (ft-bmp) 74.92 **Total Depth (ft-bmp)** NA **Water Column(ft)** **Gallons in Well**

MP Elevation NA **Pump Intake (ft-bmp)** NA **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 13:35 **Gallons Purged** NA **Replicate/ Code No.** NA **Evacuation Method** Bladder

Purge Start: 12:55

Purge End: 13:40

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
13:05	0	--	75.09	0.00	6.72	1.76	17.6	1.19	15.9	-7.8	--	--
13:15	10	--	75.15	0.00	6.8	1.76	7.15	0.28	15.9	-9.9	--	--
13:20	5	--	75.17	0.00	6.86	1.77	4.35	0.26	15.6	-12.6	--	--
13:25	5	--	75.17	0.00	6.87	1.77	3.38	0.26	15.5	-13.4	--	--
13:30	5	--	75.17	0.00	6.88	1.77	4.28	0.26	15.6	-13.4	--	--

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane	40 mL Vial	3	HCL
PFAS	250 mL HDPE Plastic	2	None

Sampling By Kaitlyn Hunt

Comments: PME Sampler: J. Meshew, K. Hunt entered in Fulcrum

Well Casing Volume Conversion

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

Well Information

Well Location: _____

Well Locked at Arrival: _____

Condition of Well: _____

Well Locked at Departure: _____

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-04-05(6)	Date	06/02/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	75.0 degrees F and Mostly Clear. The wind is blowing at 3.4 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material	PVC		
Static Water Level (ft-bmp)	9.04	Total Depth (ft-bmp)	29.61	Water Column (ft)	20.57
		Gallons in Well	3.34		
Purge Start	15:45	Pump Intake (ft-bmp)	27.11	Purge Method	Low-Flow
		Purge Equipment	Peristaltic		
Purge End	16:15	Volumes Purged	0.47	Sample ID	MW-04-05(6)_060222
		Sampled by	Austin Westhuis		
Sample Time	16:10	Gallons Purged	1.59	Replicate/ Code No.	NA
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:50	0	0	200	9.04	0.26	7.25	2.94	3.36	0.25	12.2	45.8	--	--
15:55	5	5	200	9.04	0.53	7.27	2.95	1.84	1.49	12.3	36	--	--
16:00	5	10	200	9.04	0.79	7.27	2.86	1.66	1.52	12.1	19.6	--	--
16:05	5	15	200	9.04	1.06	7.26	2.82	1.6	1.49	12.1	19.3	--	--
16:10	5	20	200	9.04	1.32	7.26	2.79	1.43	1.51	12	12.2	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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

RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-04-06R **Date** 6/3/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** NR

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** NR **Well Material** NR

Static Water Level (ft-bmp) 64.5 **Total Depth (ft-bmp)** NA **Water Column(ft)** NR **Gallons in Well** NR

MP Elevation NA **Pump Intake (ft-bmp)** NA **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 11:00 **Gallons Purged** NA **Replicate/ Code No.** DUP-16_060322 **Evacuation Method** Bladder

Purge Start: 10:20

Purge End: 11:11

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
10:30	0	--	64.6	0.00	7.73	5.68	12.6	0.38	15.6	-32.8	--	--
10:40	10	--	64.6	0.00	7.79	5.76	11.4	0.23	15.1	-43.5	--	--
10:45	5	--	64.6	0.00	7.84	5.79	11.4	0.19	15.2	-44.8	--	--
10:50	5	--	64.6	0.00	7.77	5.83	10.9	0.18	15.2	-45.9	--	--
10:55	5	--	64.6	0.00	7.76	5.86	11.6	0.13	15.3	-46.1	--	--

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane	40 mL Vial	6	HCL
PFAS	250 mL HDPE Plastic	4	None

Sampling By Kaitlyn Hunt

Comments: Sampler is J. Meshew (PME) handwritten field logs transferred by K. Hunt

Well Casing Volume Conversion

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

Well Information

Well Location: _____

Well Locked at Arrival: _____

Condition of Well: _____

Well Locked at Departure: _____

RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-05(3) **Date** 6/7/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** NR

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 4 **Well Material** NR

Static Water Level (ft-bmp) 5.5 **Total Depth (ft-bmp)** 15 **Water Column(ft)** 9.5 **Gallons in Well** 6.17

MP Elevation NA **Pump Intake (ft-bmp)** 14 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 16:15 **Gallons Purged** 1.19 **Replicate/ Code No.** DUP-08_060722 **Evacuation Method** Peristaltic

Purge Start: 15:35

Purge End: 16:15

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
15:35	0	100	5.5	0.13	8.36	0.65	22	1.51	15.8	7.9	--	--
15:40	5	100	5.5	0.26	8.21	0.65	9	1.34	15.1	14.8	--	--
15:45	5	100	5.5	0.40	8.2	0.65	8	1.29	15.3	15.3	--	--
15:50	5	100	5.5	0.53	8.22	0.65	8	1.31	15.1	13.9	--	--
15:55	5	100	5.5	0.66	8.23	0.65	6	1.34	15.2	13.2	--	--
16:00	5	100	5.5	0.79	8.26	0.65	6	1.36	15.2	12	--	--
16:05	5	100	5.5	0.92	8.27	0.65	6	1.37	15.1	11.3	--	--
16:10	5	100	5.5	1.06	8.28	0.65	6	1.54	15.1	11.2	--	--
16:15	5	100	5.5	1.19	8.27	0.65	6	1.64	14.9	11.6	--	--

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Vial	6	HCL

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-12-01	Date	06/06/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Clear. The wind is blowing S at 9.2 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	4
		Well Casing Material	Steel		
Static Water Level (ft-bmp)	76.28	Total Depth (ft-bmp)	91.05	Water Column (ft)	14.77
		Gallons in Well	9.6		
Purge Start	09:00	Pump Intake (ft-bmp)	89	Purge Method	Low-Flow
		Purge Equipment	Bladder		
Purge End	09:45	Volumes Purged	0.12	Sample ID	MW-12-01_060622
		Sampled by	Billy Cobern		
Sample Time	09:45	Gallons Purged	1.19	Replicate/ Code No.	NA
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:05	0	0	100	76.29	0.13	7.08	0.91	29.4	9.3	17.9	-67.3	--	--
09:10	5	5	100	76.29	0.26	7.06	1.67	27.7	10.02	16.3	-66	--	--
09:15	5	10	100	76.29	0.40	7.07	1.67	25.4	10.16	15.8	-70.6	--	--
09:20	5	15	100	76.29	0.53	7.07	1.66	19.3	10.19	15.4	-75.4	--	--
09:25	5	20	100	76.29	0.66	7.06	1.65	15.4	9.99	15.4	-77.2	--	--
09:30	5	25	100	76.29	0.79	7.05	1.65	12.8	9.87	15.3	-79.9	--	--
09:35	5	30	100	76.29	0.92	7.03	1.65	10.1	9.8	15.2	-83.1	--	--
09:40	5	35	100	76.29	1.06	7.05	1.65	9.93	9.63	15.2	-86.5	--	--
09:45	5	40	100	76.29	1.19	7.05	1.64	9.84	9.56	15.2	-89	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 522	250 mL Amber	1	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



Project Number	30112892	Well ID	MW-12-02	Date	06/07/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	60.1 degrees F and Cloudy. The wind is blowing N at 8.1 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	4
				Well Casing Material	Steel
Static Water Level (ft-bmp)	65.9	Total Depth (ft-bmp)	108.9	Water Column (ft)	43
				Gallons in Well	27.95
Purge Start	09:40	Pump Intake (ft-bmp)	106.5	Purge Method	Low-Flow
				Purge Equipment	Bladder
Purge End	10:35	Volumes Purged	0.05	Sample ID	MW-12-02
				Sampled by	Billy Cobern
Sample Time	10:35	Gallons Purged	1.45	Replicate/ Code No.	DUP-06_060722
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:45	0	0	100	65.99	0.13	7.23	1.2	63.8	2.53	15.3	-136.6	--	--
09:50	5	5	100	65.99	0.26	7.21	1.21	54.7	3.42	15.4	-127.2	--	--
09:55	5	10	100	65.99	0.40	7.21	1.21	50.1	4.42	15.5	-123.9	--	--
10:00	5	15	100	65.99	0.53	7.05	1.21	42.3	2.25	15.8	-95.5	--	--
10:05	5	20	100	65.99	0.66	7	1.22	34.6	1.8	15.8	-90.5	--	--
10:10	5	25	100	65.99	0.79	6.98	1.22	28.7	1.2	15.8	-88.1	--	--
10:15	5	30	100	65.99	0.92	6.97	1.22	21.2	1.24	15.9	-88.4	--	--
10:20	5	35	100	65.99	1.06	6.98	1.22	23.7	1.23	16	-90	--	--
10:25	5	40	100	65.99	1.19	6.98	1.22	20.3	1.22	16.1	-92.2	--	--
10:30	5	45	100	65.99	1.32	6.98	1.22	20.7	1.22	16.2	-92.4	--	--
10:35	5	50	100	65.99	1.45	6.98	1.22	21.2	1.22	16.2	-92.7	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 522	250 mL Amber	2	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



Project Number	30112892	Well ID	MW-12-06	Date	06/06/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	70.0 degrees F and Cloudy. The wind is blowing SW at 9.2 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	4	Well Casing Material	Steel
Static Water Level (ft-bmp)	71.13	Total Depth (ft-bmp)	103.5	Water Column (ft)	32.37	Gallons in Well	21.04
Purge Start	15:40	Pump Intake (ft-bmp)	101	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	16:35	Volumes Purged	0.07	Sample ID	MW-12-06_060622	Sampled by	Billy Cobern
Sample Time	16:35	Gallons Purged	1.45	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:45	0	0	100	71.19	0.13	7.22	0.85	10.3	3.24	21.9	-139.1	--	--
15:50	5	5	100	71.19	0.26	7.22	0.84	16.7	2.65	22.4	-130.9	--	--
15:55	5	10	100	71.19	0.40	7.18	0.9	19.2	1.42	22.4	-133.7	--	--
16:00	5	15	100	71.19	0.53	7.18	0.91	15.6	1.11	22.7	-140.2	--	--
16:05	5	20	100	71.19	0.66	7.19	0.92	12.7	0.8	23.5	-144.4	--	--
16:10	5	25	100	71.19	0.79	7.19	0.92	10.8	0.69	23.7	-146.2	--	--
16:15	5	30	100	71.19	0.92	7.19	0.92	9.69	0.66	23.8	-147.2	--	--
16:20	5	35	100	71.19	1.06	7.19	0.93	10.8	0.63	23.7	-149	--	--
16:25	5	40	100	71.19	1.19	7.19	0.93	14.8	0.55	23.6	-149.3	--	--
16:30	5	45	100	71.19	1.32	7.19	0.93	15.5	0.51	23.6	-149.1	--	--
16:35	5	50	100	71.19	1.45	7.19	0.93	15.7	0.54	23.7	-149	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 522	250 mL Amber	1	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



Project Number	30112892	Well ID	MW-12-09	Date	06/04/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(*F)	70.0 degrees F and Mostly Clear. The wind is blowing at 3.4 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	12.25	Total Depth (ft-bmp)	21.6	Water Column (ft)	9.35
				Gallons in Well	1.52
Purge Start	13:25	Pump Intake (ft-bmp)	19.1	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	14:05	Volumes Purged	1.39	Sample ID	MW-12-09_060422
				Sampled by	Austin Westhuis
Sample Time	14:00	Gallons Purged	2.11	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:30	0	0	200	12.33	0.26	6.83	2.01	824	0.2	13.3	-19.3	--	--
13:35	5	5	200	12.33	0.53	6.9	1.7	341	0.15	12.6	-27.9	--	--
13:40	5	10	200	12.33	0.79	6.93	1.59	171	0.13	12.5	-34	--	--
13:45	5	15	200	12.33	1.06	6.95	1.56	96	0.15	12.4	-37.4	--	--
13:50	5	20	200	12.33	1.32	6.97	1.53	54.1	0.13	12.4	-41	--	--
13:55	5	25	200	12.33	1.59	6.98	1.51	51.1	0.13	12.6	-43.2	--	--
14:00	5	30	200	12.33	1.85	6.99	1.49	49.1	0.13	12.5	-46.2	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8260B SIMS	40 mL Glass	3	HCL
VOCs	40 mL Glass	3	HCL
PFAS	250mL HDPE Plastic	1	None

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



Project Number	30112892	Well ID	MW-12-10R	Date	06/02/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	73.9 degrees F and Clear. The wind is blowing N at 6.9 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	11.11	Total Depth (ft-bmp)	17.96	Water Column (ft)	6.85	Gallons in Well	1.11
Purge Start	14:50	Pump Intake (ft-bmp)	15.46	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	15:25	Volumes Purged	1.67	Sample ID	MW-12-10R_060222	Sampled by	Austin Westhuis
Sample Time	15:20	Gallons Purged	1.85	Replicate/ Code No.	Dup-15_060222	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:55	0	0	200	11.11	0.26	6.7	3.81	1.91	0.36	16.2	84	--	--
15:00	5	5	200	11.11	0.53	6.74	3.74	1.61	1.08	16	78.9	--	--
15:05	5	10	200	11.11	0.79	6.75	3.7	1.47	1.09	15.8	77.8	--	--
15:10	5	15	200	11.11	1.06	6.77	3.52	1.4	1.04	15.7	75.4	--	--
15:15	5	20	200	11.11	1.32	6.78	3.52	1.22	1.04	15.6	74.2	--	--
15:20	5	25	200	11.11	1.59	6.78	3.55	1.11	1.05	15.4	73.1	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	4	None

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



RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-12-11 **Date** 6/2/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** Cloudy

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 15 **Total Depth (ft-bmp)** 18 **Water Column(ft)** 3 **Gallons in Well** 0.49

MP Elevation NA **Pump Intake (ft-bmp)** 15 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 09:35 **Gallons Purged** 1.32 **Replicate/ Code No.** NA **Evacuation Method** Peristaltic

Purge Start: 08:55

Purge End: 09:35

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
08:55	0	100	14	0.13	6.66	4.68	26	0.3	11.2	0.6	--	--
09:00	5	100	14	0.26	6.69	4.46	21	0.18	11	-6.4	--	--
09:05	5	100	14	0.40	6.81	3.28	20	0.25	10.8	-5.5	--	--
09:10	5	100	14	0.53	6.77	3.46	20	0.37	10.9	-4.09	--	--
09:15	5	100	14	0.66	6.75	3.75	20	0.45	10.9	-3	--	--
09:20	5	100	14	0.79	6.75	3.95	20	0.56	10.8	-2.3	--	--
09:25	5	100	14	0.92	6.75	4.08	20	0.67	10.8	-1.7	--	--
09:30	5	100	14	1.06	6.75	4.16	20	0.69	10.8	-1.7	--	--
09:35	5	100	14	1.32	6.74	4.2	20	0.7	10.8	-1.7	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

Project Number 30112892 **Well ID** MW-12-12 **Date** 6/2/2022

Project Name/Location RACER Lansing, MI **Weather(°F)**

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 12 **Total Depth (ft-bmp)** 18 **Water Column(ft)** 6 **Gallons in Well** 0.97

MP Elevation NA **Pump Intake (ft-bmp)** 17 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 16:05 **Gallons Purged** 1.72 **Replicate/ Code No.** NA **Evacuation Method** Peristaltic

Purge Start: 15:05

Purge End: 16:05

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
15:05	0	100	14	0.13	6.83	1.73	26	0.31	14	4.1	--	--
15:10	5	100	14	0.26	7.35	0.95	22	0.09	13	8.9	--	--
15:15	5	100	14	0.40	7.35	0.71	20	0.08	12.7	10.7	--	--
15:20	5	100	14	0.53	7.35	0.67	20	0.09	12.5	11.7	--	--
15:25	5	100	14	0.66	7.38	0.653	20	0.06	12.7	10.7	--	--
15:30	5	100	14	0.79	7.42	0.66	19	0.05	12.8	7.9	--	--
15:35	5	100	14	0.92	7.38	0.68	19	0.07	12.6	9.1	--	--
15:40	5	100	14	1.06	7.36	0.7	19	0.1	12.8	9.5	--	--
15:45	5	100	14	1.19	7.42	0.72	18	0.15	12.6	7.3	--	--
15:50	5	100	14	1.32	7.38	0.74	18	0.22	12.6	8.7	--	--
15:55	5	100	14	1.45	7.38	0.77	18	0.25	12.7	6.4	--	--
16:00	5	100	14	1.59	7.35	0.78	18	0.24	12.9	7.9	--	--
16:05	5	100	14	1.72	7.39	0.79	18	0.26	12.6	4.9	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: no

Condition of Well: Bad no bolts

Well Locked at Departure: no

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-12-13	Date	06/02/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	62.1 degrees F and Cloudy. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material	PVC		
Static Water Level (ft-bmp)	10.51	Total Depth (ft-bmp)	25.43	Water Column (ft)	14.92
		Gallons in Well	2.42		
Purge Start	10:25	Pump Intake (ft-bmp)	22.93	Purge Method	Low-Flow
		Purge Equipment	Peristaltic		
Purge End	11:00	Volumes Purged	0.76	Sample ID	MW-12-13_060222
		Sampled by	Austin Westhuis		
Sample Time	10:55	Gallons Purged	1.85	Replicate/ Code No.	NA
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:30	0	0	200	10.51	0.26	7.29	0.75	2.21	0.54	10.8	-159.4	--	--
10:35	5	5	200	10.51	0.53	7.33	0.73	1.79	0.4	10.9	-192.5	--	--
10:40	5	10	200	10.51	0.79	7.35	0.72	1.61	0.39	10.9	-248.1	--	--
10:45	5	15	200	10.51	1.06	7.36	0.7	1.34	0.31	11	-268.9	--	--
10:50	5	20	200	10.51	1.32	7.37	0.69	1.3	0.3	11	-274.4	--	--
10:55	5	25	200	10.51	1.59	7.37	0.69	1.22	0.3	11	-278.6	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None
Total Select Metals (As, Ni, P)	125 mL Plastic	2	HNO3

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



Project Number	30112892	Well ID	MW-12-18	Date	06/04/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	70.0 degrees F and Mostly Clear. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	21.46	Total Depth (ft-bmp)	32.8	Water Column (ft)	11.34	Gallons in Well	1.84
Purge Start	14:25	Pump Intake (ft-bmp)	30.3	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	14:55	Volumes Purged	0.86	Sample ID	MW-12-18_060422	Sampled by	Austin Westhuis
Sample Time	14:50	Gallons Purged	1.59	Replicate/ Code No.	DUP-01_060422	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:30	0	0	200	21.8	0.26	6.87	1.87	3.37	0.19	13.1	12.9	--	--
14:35	5	5	200	21.8	0.53	6.9	1.84	1.44	0.13	13.1	8.1	--	--
14:40	5	10	200	21.8	0.79	6.97	1.78	1.4	0.11	13	3.5	--	--
14:45	5	15	200	21.8	1.06	7.02	1.76	1.31	0.11	12.9	-3.5	--	--
14:50	5	20	200	21.81	1.32	7	1.79	1.23	0.1	13	-6.5	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	6	HCL
PFAS	250mL HDPE Plastic	4	None

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



Project Number	30112892	Well ID	MW-12-20	Date	06/10/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Haze. The wind is blowing SW at 6.9 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	63.5	Total Depth (ft-bmp)	83	Water Column (ft)	19.5	Gallons in Well	3.17
Purge Start	09:45	Pump Intake (ft-bmp)	80.5	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	10:35	Volumes Purged	0.83	Sample ID	MW-12-20_061022	Sampled by	Austin Westhuis
Sample Time	10:30	Gallons Purged	2.64	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:50	0	0	200	63.95	0.26	6.78	1.11	84	2.77	13.6	-48.1	--	--
09:55	5	5	200	64.15	0.53	6.81	1.12	41.1	3.22	13.6	-47	--	--
10:00	5	10	200	64.19	0.79	6.84	1.14	18.8	3.39	13.4	-45	--	--
10:05	5	15	200	64.22	1.06	6.84	1.14	18.8	3.39	13.4	-40.2	--	--
10:10	5	20	200	64.23	1.32	6.86	1.16	8.32	3.23	13.3	-37	--	--
10:15	5	25	200	64.23	1.59	6.88	1.23	3.39	3.23	13.3	-37	--	--
10:20	5	30	200	64.23	1.85	6.89	1.27	2.29	3.2	13.1	-40.1	--	--
10:25	5	35	200	64.23	2.11	6.89	1.28	2.2	3.18	13.1	-42.7	--	--
10:30	5	40	200	64.23	2.38	6.9	1.29	2.01	3.18	13.2	-42.9	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8260B SIMS	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>See figure</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



Project Number	30112892	Well ID	MW-12-21	Date	06/10/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Clear. The wind is blowing W/SW at 9.2 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	63.67	Total Depth (ft-bmp)	78.04	Water Column (ft)	14.37
				Gallons in Well	2.33
Purge Start	11:05	Pump Intake (ft-bmp)	75.54	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	11:55	Volumes Purged	1.13	Sample ID	MW-12-21_061022
				Sampled by	Austin Westhuis
Sample Time	11:50	Gallons Purged	2.64	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:10	0	0	200	67.3	0.26	6.43	1.32	55.6	5.63	14.5	-51.8	--	--
11:15	5	5	200	67.59	0.53	6.55	1.3	27.4	5.45	14.9	-50.4	--	--
11:20	5	10	200	67.77	0.79	6.59	1.28	12.7	5.22	14.7	-45.2	--	--
11:25	5	15	200	67.84	1.06	6.6	1.28	3.81	5.22	14.9	-44.4	--	--
11:30	5	20	200	67.89	1.32	6.65	1.3	3.12	5.02	14.8	-40.4	--	--
11:35	5	25	200	67.9	1.59	6.66	1.33	2.77	4.93	14.7	-40.1	--	--
11:40	5	30	200	67.94	1.85	6.66	1.38	2.18	4.66	14.8	-37.9	--	--
11:45	5	35	200	67.96	2.11	6.68	1.41	1.99	4.6	14.8	-39.2	--	--
11:50	5	40	200	67.97	2.38	6.69	1.42	1.81	4.55	14.7	-42.2	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs and 1,4-Dioxane	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>See figure</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



Project Number	30112892	Well ID	MW-13-23	Date	06/10/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Partly Cloudy. The wind is blowing W at 10.3 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	64.32	Total Depth (ft-bmp)	77.83	Water Column (ft)	13.51
				Gallons in Well	2.2
Purge Start	12:25	Pump Intake (ft-bmp)	75.33	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	13:05	Volumes Purged	0.96	Sample ID	MW-13-23_061022
				Sampled by	Austin Westhuis
Sample Time	13:00	Gallons Purged	2.11	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:30	0	0	200	64.86	0.26	6.23	1.85	698	5.79	16	41.9	--	--
12:35	5	5	200	64.99	0.53	6.3	1.83	396	5.64	15.7	45.8	--	--
12:40	5	10	200	65.03	0.79	6.29	1.89	212	4.89	15.8	50.3	--	--
12:45	5	15	200	65.03	1.06	6.32	1.86	161	5.27	15.3	51.7	--	--
12:50	5	20	200	65.03	1.32	6.33	1.85	144	4.99	15.4	51.7	--	--
12:55	5	25	200	65.03	1.59	6.35	1.84	139	4.97	15.3	51.7	--	--
13:00	5	30	200	65.03	1.85	6.38	1.84	132	4.96	15.2	52	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8260B SIMS	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



RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-13-24 **Date** 6/10/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** Cloudy

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 63.15 **Total Depth (ft-bmp)** 77.33 **Water Column(ft)** 14.18 **Gallons in Well** 2.3

MP Elevation NA **Pump Intake (ft-bmp)** 76 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 14:20 **Gallons Purged** 1.72 **Replicate/ Code No.** NA **Evacuation Method** Bladder

Purge Start: 13:05

Purge End: 14:20

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
13:20	0	100	63.1	0.13	7.43	0.83	16	2.52	14.8	174.1	--	--
13:25	5	100	63.1	0.26	7.47	0.8	15	3.62	15	163.5	--	--
13:30	5	100	63.1	0.40	7.29	0.82	12	2.79	14.7	154.3	--	--
13:35	5	100	63.1	0.53	7.13	0.87	12	1.87	14.9	142.6	--	--
13:40	5	100	63.1	0.66	7.07	0.9	11	1.44	15.3	130.3	--	--
13:45	5	100	63.1	0.79	7.03	0.93	10	1.03	14.9	113.7	--	--
13:50	5	100	63.1	0.92	7	0.94	10	0.74	14.8	100.6	--	--
13:55	5	100	63.1	1.06	6.99	0.95	10	0.68	15.2	94.4	--	--
14:00	5	100	63.1	1.19	6.97	0.95	9	0.63	15.4	87	--	--
14:05	5	100	63.1	1.32	6.97	0.95	9	0.58	15.7	80	--	--
14:10	5	100	63.1	1.45	6.97	0.96	9	0.55	15.6	70.7	--	--
14:15	5	100	63.1	1.59	6.96	0.97	9	0.45	15.3	63	--	--
14:20	5	100	63.1	1.72	6.96	0.97	9	0.44	15.4	61.3	--	--

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane	40 mL Vial	3	HCL

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

ft-bmp = feet below measuring point
in. = inches

mS/cm = milliSiemens per centimeter
NTU = N

mV = millivolts

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-13-25	Date	06/10/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	75.0 degrees F and Cloudy. The wind is blowing W/SW at 9.2 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material	PVC		
Static Water Level (ft-bmp)	63.88	Total Depth (ft-bmp)	74.99	Water Column (ft)	11.11
		Gallons in Well	1.81		
Purge Start	13:35	Pump Intake (ft-bmp)	72.49	Purge Method	Low-Flow
		Purge Equipment	Peristaltic		
Purge End	14:05	Volumes Purged	0.88	Sample ID	MW-13-25_061022
		Sampled by	Austin Westhuis		
Sample Time	14:00	Gallons Purged	1.59	Replicate/ Code No.	NA
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:40	0	0	200	63.98	0.26	6.28	1.53	22.8	0.59	15.1	-5.9	--	--
13:45	5	5	200	63.98	0.53	6.29	1.54	4.39	0.77	15.2	-8.8	--	--
13:50	5	10	200	63.98	0.79	6.3	1.55	1.71	0.82	15	-10.5	--	--
13:55	5	15	200	63.98	1.06	6.31	1.56	1.44	0.82	15.3	-12	--	--
14:00	5	20	200	63.98	1.32	6.32	1.58	1.4	0.84	15.2	-12.6	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dipxane 8260B SIMS	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



Project Number	30112892	Well ID	MW-13-28	Date	06/08/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Clear. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	4
				Well Casing Material	Steel
Static Water Level (ft-bmp)	67.67	Total Depth (ft-bmp)	114.75	Water Column (ft)	47.08
				Gallons in Well	30.6
Purge Start	08:45	Pump Intake (ft-bmp)	112	Purge Method	Low-Flow
				Purge Equipment	Bladder
Purge End	09:45	Volumes Purged	0.05	Sample ID	MW-13-28_060822
				Sampled by	Billy Cobern
Sample Time	09:45	Gallons Purged	1.59	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
08:50	0	0	100	67.85	0.13	10.32	0.2	87.7	5.45	16	-42.9	--	--
08:55	5	5	100	67.85	0.26	9.66	0.175	96.7	0.6	15.8	-56.5	--	--
09:35	40	45	100	67.85	1.32	9.77	0.175	17	0.36	17.6	-105.4	--	--
09:40	5	50	100	67.85	1.45	9.77	0.176	16.9	0.38	17.7	-106.3	--	--
09:45	5	55	100	67.85	1.59	9.78	0.176	17.2	0.38	17.7	-106.8	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 522	250 mL Amber	1	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



Project Number	30112892	Well ID	MW-13-29	Date	06/06/2022			
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	NR				
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC	
Static Water Level (ft-bmp)	56.38	Total Depth (ft-bmp)	76.3	Water Column (ft)	19.92	Gallons in Well	3.24	
Purge Start	15:05	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow		Purge Equipment	Bladder
Purge End	15:45	Volumes Purged	NA	Sample ID	MW-13-29_060622	Sampled by	Donald Richmond	
Sample Time	15:45	Gallons Purged	NA	Replicate/ Code No.	NA	Sample Type	Grab	

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:20	0	0	200	56.38	--	6.33	3.15	171	3.15	18.9	51.8	--	--
15:25	5	5	200	56.38	--	6.39	3.15	152	2.98	19.3	52.1	--	--
15:30	5	10	200	56.38	--	6.4	3.18	150	3.43	19.4	52	--	--
15:35	5	15	200	56.38	--	6.4	3.16	149	3.43	19.3	52.6	--	--
15:40	5	20	200	56.38	--	6.39	3.07	142	3.46	18.2	53.6	Orange	None

Constituent Sampled	Container	Number	Preservative
1,4 D, VOCS	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

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

Well Information

Well Location: _____	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

RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-13-32 **Date** 6/10/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** Sunny

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 3 **Total Depth (ft-bmp)** 10 **Water Column(ft)** 7 **Gallons in Well** 1.14

MP Elevation NA **Pump Intake (ft-bmp)** 9 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 12:55 **Gallons Purged** 1.72 **Replicate/ Code No.** NA **Evacuation Method** Peristaltic

Purge Start: 11:55

Purge End: 12:55

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
11:55	0	100	6	0.13	7.75	1.53	19	2.56	11.9	146.2	--	--
12:00	5	100	6	0.26	7.49	1.5	13	1.11	12	133.6	--	--
12:05	5	100	6	0.40	7.21	1.48	13	0.42	11.8	69.5	--	--
12:10	5	100	6	0.53	7.13	1.45	13	0.27	11.9	45.8	--	--
12:15	5	100	6	0.66	7.12	1.39	12	0.4	12.1	55.5	--	--
12:20	5	100	6	0.79	7.11	1.3	9	0.87	11.7	80.9	--	--
12:25	5	100	6	0.92	7.11	1.17	10	0.5	11.4	64.6	--	--
12:30	5	100	6	1.06	7.1	1.07	10	0.19	11.4	38.4	--	--
12:35	5	100	6	1.19	7.1	0.92	10	0.12	11.4	32.1	--	--
12:40	5	100	6	1.32	7.1	0.86	10	0.09	11.4	33	--	--
12:45	5	100	6	1.32	7.1	0.84	10	0.09	11.1	34.8	--	--
12:50	5	100	6	1.59	7.1	0.81	10	0.09	11.4	35.4	--	--
12:55	5	100	6	1.72	7.1	0.81	10	0.09	11.4	36.2	--	--

Constituent Sampled	Container	Number	Preservative
Metals, Total	125 mL Plastic	2	HNO3

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-13-34	Date	06/06/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)				
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	62.93	Total Depth (ft-bmp)	79.71	Water Column (ft)	16.78	Gallons in Well	2.73
Purge Start	16:40	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	17:40	Volumes Purged	NA	Sample ID	MW-13-34_060622	Sampled by	Donald Richmond
Sample Time	17:40	Gallons Purged	NA	Replicate/ Code No.	MS/MSD	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
17:20	0	0	200	62.93	--	7.04	1.91	128	0.62	17.6	-82.1	--	--
17:25	5	5	200	62.93	--	7.04	1.92	118	0.61	17.8	-84.1	--	--
17:30	5	10	200	62.93	--	7.03	1.98	114	0.47	17.7	-87.7	--	--
17:35	5	15	200	62.93	--	7.04	1.94	94.7	0.33	17.1	-90.5	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4 D, VOCS	40 mL Glass	9	HCL

Comments:

Well Casing Volume Conversion

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

Well Information

Well Location: _____	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

RACER Lansing GW Sampling

Project Number	30112892	Well ID	MW-13-36R	Date	6/2/2022		
Project Name/Location	RACER Lansing, MI			Weather(°F)	NR		
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	NR	Casing Diameter (in.)	2	Well Material	NR
Static Water Level (ft-bmp)	8.5	Total Depth (ft-bmp)	10.5	Water Column(ft)	2	Gallons in Well	0.32
MP Elevation	NA	Pump Intake (ft-bmp)	9	Purge Method:	Low-Flow	Sample Method	Low-Flow
Sample Time:	17:05	Gallons Purged	1.45	Replicate/ Code No.	NA	Evacuation Method	Peristaltic
Purge Start:	16:25						
Purge End:	17:05						

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
16:25	0	100	8	0.13	11.77	1.79	36	0.06	13.4	20.2	--	--
16:30	5	100	8	0.26	11.64	1.78	35	0.47	13.8	25	--	--
16:35	5	100	8	0.40	11.7	1.78	28	0.41	13.9	21.7	--	--
16:40	5	100	8	0.53	11.77	1.78	25	0.27	13.7	18	--	--
16:45	5	100	8	0.66	11.8	1.76	23	0.4	13.6	18.4	--	--
16:50	5	100	8	0.79	11.77	1.72	22	0.13	13.6	18	--	--
16:55	5	100	8	0.92	11.79	1.66	20	0.09	13.6	16.6	--	--
17:00	5	100	8	1.06	11.8	1.63	20	0.08	13.5	17.2	--	--
17:05	5	100	8	1.45	11.9	1.61	20	0.03	13.6	17.7	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-13-36R	Date	06/06/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	73.0 degrees F and Cloudy. The wind is blowing W/SW at 4.7 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	6.58	Total Depth (ft-bmp)	12.6	Water Column (ft)	6.02	Gallons in Well	0.98
Purge Start	12:50	Pump Intake (ft-bmp)	10.1	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	13:30	Volumes Purged	2.16	Sample ID	MW-13-36R_060622	Sampled by	Austin Westhuis
Sample Time	13:25	Gallons Purged	2.11	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:55	0	0	200	6.58	0.26	11.66	1.39	4.41	0.09	13.7	-14.4	--	--
13:00	5	5	200	6.58	0.53	11.6	1.36	2.02	0.07	13.6	-6	--	--
13:05	5	10	200	6.58	0.79	11.61	1.22	1.69	0.06	13.3	-8.2	--	--
13:10	5	15	200	6.58	1.06	11.65	1.18	1.65	0.05	13.4	-12.7	--	--
13:15	5	20	200	6.58	1.32	11.65	1.18	1.65	0.04	13.5	-12.9	--	--
13:20	5	25	200	6.58	1.59	11.7	1.18	1.39	0.04	13.4	-15.8	--	--
13:25	5	30	200	6.58	1.85	11.67	1.18	1.21	0.04	13.4	-14.4	Clear	None

Constituent Sampled	Container	Number	Preservative
Total Select Metals (As, Ni, P)	125 mL Plastic	2	HNO3

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



Project Number	30112892	Well ID	MW-13-37	Date	06/07/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	72.0 degrees F and Partly Cloudy. The wind is blowing at 6.9 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	4
		Well Casing Material			Steel
Static Water Level (ft-bmp)	68.02	Total Depth (ft-bmp)	114.35	Water Column (ft)	46.33
		Gallons in Well			30.11
Purge Start	15:35	Pump Intake (ft-bmp)	112	Purge Method	Low-Flow
		Purge Equipment			Bladder
Purge End	16:10	Volumes Purged	0.03	Sample ID	MW-13-37_060722
		Sampled by			Billy Cobern
Sample Time	16:10	Gallons Purged	0.92	Replicate/ Code No.	DUP-13_060722
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:40	0	0	100	68.09	0.13	8.19	0.82	22.2	3.35	21.8	-77	--	--
15:45	5	5	100	68.09	0.26	7.54	0.93	19.1	3.65	21.5	-88.9	--	--
15:50	5	10	100	68.09	0.40	7.19	1.06	17.3	1.38	22.1	-114.9	--	--
15:55	5	15	100	68.09	0.53	7.21	1.08	16.8	0.96	22.8	-122.5	--	--
16:00	5	20	100	68.09	0.66	7.21	1.09	15.9	0.94	23.2	-123.1	--	--
16:05	5	25	100	68.09	0.79	7.21	1.09	15.4	0.86	23.1	-123	--	--
16:10	5	30	100	68.09	0.92	7.22	1.09	15.2	0.88	23.3	-123.6	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 522	250 mL Amber	2	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



Project Number	30112892	Well ID	MW-13-38	Date	06/07/2022
Project Name/Location	RACER Lansing GWS 2022	Weather(°F)	NR		
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	4
		Well Casing Material			Steel
Static Water Level (ft-bmp)	68.73	Total Depth (ft-bmp)	126.5	Water Column (ft)	57.77
		Gallons in Well			37.55
Purge Start	13:55	Pump Intake (ft-bmp)	124	Purge Method	Low-Flow
		Purge Equipment			Bladder
Purge End	15:00	Volumes Purged	0.05	Sample ID	MW-13-38_060722
		Sampled by			Billy Cobern
Sample Time	15:00	Gallons Purged	1.72	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:00	0	0	100	68.75	0.13	10.04	2.25	65.7	2.31	22.4	-105.2	--	--
14:05	5	5	100	68.75	0.26	10	2.25	59.7	2.36	22.7	-109.9	--	--
14:10	5	10	100	68.75	0.40	9.99	2.25	55.1	2.87	22.9	-109.3	--	--
14:15	5	15	100	68.75	0.53	9.98	2.25	47.3	2.5	23.3	-106.2	--	--
14:20	5	20	100	68.75	0.66	9.94	2.25	48.3	2.58	23.9	-103	--	--
14:25	5	25	100	68.75	0.79	9.92	2.25	40.7	2.82	24.3	-98.7	--	--
14:30	5	30	100	68.75	0.92	10.16	2.45	36.8	2.11	24.7	-114.4	--	--
14:35	5	35	100	68.75	1.06	10.29	2.73	44.4	2.09	23.9	-127	--	--
14:40	5	40	100	68.75	1.19	10.33	2.78	30.6	1.71	22.5	-140	--	--
14:45	5	45	100	68.75	1.32	10.31	2.77	28.6	1.17	23	-147.5	--	--
14:50	5	50	100	68.75	1.45	10.29	2.77	28.3	1.01	23.9	-150.8	--	--
14:55	5	55	100	68.75	1.59	10.29	2.78	26.8	1.04	24.1	-150.6	--	--
15:00	5	60	100	68.75	1.72	10.29	2.78	27.1	1.08	24.2	-150.4	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 522	250 mL Amber	1	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: no
Condition of Well: Needs repairs	Well Locked at Departure: no
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



Project Number	30112892	Well ID	MW-13-41	Date	06/10/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Clear. The wind is blowing W/SW at 9.2 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	54.12	Total Depth (ft-bmp)	81.55	Water Column (ft)	27.43	Gallons in Well	4.46
Purge Start	10:35	Pump Intake (ft-bmp)	79	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	11:15	Volumes Purged	0.24	Sample ID	MW-13-41_061022	Sampled by	Billy Cobern
Sample Time	11:15	Gallons Purged	1.06	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:40	0	0	100	54.14	0.13	7.47	3.42	22.1	4.18	19.4	-94.3	--	--
10:45	5	5	100	54.14	0.26	7.24	4.16	15.7	1.65	16.9	-122.6	--	--
10:50	5	10	100	54.14	0.40	7.24	4.21	12.3	0.8	16.3	-137.4	--	--
10:55	5	15	100	54.14	0.53	7.25	4.22	9.2	0.7	16.3	-142.1	--	--
11:00	5	20	100	54.14	0.66	7.26	4.23	7.93	0.58	16.5	-144.7	--	--
11:05	5	25	100	54.14	0.79	7.25	4.23	6.16	0.57	16.8	-145.6	--	--
11:10	5	30	100	54.14	0.92	7.25	4.23	6.91	0.57	16.8	-146	--	--
11:15	5	35	100	54.14	1.06	7.25	4.23	6.52	0.59	16.9	-146.2	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

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

Well Information

Well Location: Plant 3	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute
 mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = milliv

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-13-43	Date	06/07/2022			
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	NR				
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC	
Static Water Level (ft-bmp)	57.95	Total Depth (ft-bmp)	77.9	Water Column (ft)	19.95	Gallons in Well	3.24	
Purge Start	13:40	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow		Purge Equipment	Bladder
Purge End	14:40	Volumes Purged	NA	Sample ID	MW-13-43_060722	Sampled by	Donald Richmond	
Sample Time	14:40	Gallons Purged	NA	Replicate/ Code No.	NA	Sample Type	Grab	

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:50	0	0	200	57.95	--	7.55	2.65	992	10.44	23.8	34.7	--	--
13:55	5	5	200	57.95	--	7.5	2.61	1010	11.18	22.8	37	--	--
14:00	5	10	200	57.95	--	7.54	2.51	1030	11.9	21.2	37.7	--	--
14:05	5	15	200	57.95	--	7.52	2.47	--	11.98	20.5	38.5	--	--
14:10	5	20	200	57.95	--	7.5	2.6	--	10.29	22.8	38.9	--	--
14:15	5	25	200	57.95	--	7.49	2.63	--	10.13	23.1	38.9	--	--
14:20	5	30	200	57.95	--	7.28	2.35	--	13.25	18.7	42	--	--
14:25	5	35	200	57.95	--	7.15	2.36	--	14.33	18.6	51.6	--	--
14:30	5	40	200	57.95	--	7.14	2.36	--	15.21	18.4	53.4	--	--
14:35	5	45	200	57.95	--	7.14	2.37	857	14.84	18.9	53.8	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: _____	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



Project Number	30112892	Well ID	MW-13-44	Date	06/07/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	60 °F, Light Rain, winds at 5 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	4
		Well Casing Material	Steel		
Static Water Level (ft-bmp)	76.14	Total Depth (ft-bmp)	118.95	Water Column (ft)	42.81
		Gallons in Well	27.83		
Purge Start	08:30	Pump Intake (ft-bmp)	116.5	Purge Method	Low-Flow
		Purge Equipment	Bladder		
Purge End	09:10	Volumes Purged	0.04	Sample ID	MW-13-44_060722
		Sampled by	Billy Cobern		
Sample Time	09:10	Gallons Purged	1.06	Replicate/ Code No.	NA
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
08:35	0	0	100	76.18	0.13	9.39	1.42	42.9	2.94	16.4	26.1	--	--
08:40	5	5	100	76.18	0.26	9.2	1.43	46.6	3.66	16.5	14.9	--	--
08:45	5	10	100	76.18	0.40	7.05	1.69	42	2.39	15.7	-84.2	--	--
08:50	5	15	100	76.18	0.53	6.99	1.72	39.2	1.59	15.7	-89.3	--	--
08:55	5	20	100	76.18	0.66	7.02	1.73	35.1	1.31	15.6	-92.1	--	--
09:00	5	25	100	76.18	0.79	7.04	1.74	31.1	1.14	15.6	-93.6	--	--
09:05	5	30	100	76.18	0.92	7.04	1.74	32.7	1.12	15.5	-93.8	--	--
09:10	5	35	100	76.18	1.06	7.04	1.74	29.7	1.11	15.5	-93.9	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 522	250 mL Amber	1	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



Project Number	30112892	Well ID	MW-13-45	Date	06/07/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	NR	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	65.22	Total Depth (ft-bmp)	78.28	Water Column (ft)	13.06
				Gallons in Well	2.12
Purge Start	15:10	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
				Purge Equipment	Bladder
Purge End	16:05	Volumes Purged	NA	Sample ID	MW-13-45_060722
				Sampled by	Donald Richmond
Sample Time	16:05	Gallons Purged	NA	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:20	0	0	200	65.22	--	6.65	1.14	202	1.76	16.9	-34.4	--	--
15:25	5	5	200	65.22	--	6.66	1.13	109	0.98	16.4	-38.9	--	--
15:30	5	10	200	65.22	--	6.7	1.14	59.1	0.97	17.3	-44.9	--	--
15:35	5	15	200	65.22	--	6.69	1.15	96.7	0.86	17.3	-45.6	--	--
15:40	5	20	200	65.22	--	6.7	1.16	43	0.65	17.7	-47.5	--	--
15:45	5	25	200	65.22	--	6.7	1.15	27.4	0.76	16.9	-48.2	--	--
15:50	5	30	200	65.22	--	6.72	1.13	35	0.48	16.4	-49	--	--
15:55	5	35	200	65.22	--	6.72	1.15	35.1	0.47	16.6	-50.3	--	--
16:00	5	40	200	65.22	--	6.72	1.16	34	0.39	17.1	-51	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: _____	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



Project Number	30112892	Well ID	MW-13-46	Date	06/10/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Clear. The wind is blowing W at 8.1 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	61.83	Total Depth (ft-bmp)	74.65	Water Column (ft)	12.82	Gallons in Well	2.08
Purge Start	12:05	Pump Intake (ft-bmp)	72	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	12:35	Volumes Purged	0.38	Sample ID	MW-13-46_061022	Sampled by	Billy Cobern
Sample Time	12:35	Gallons Purged	0.79	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:10	0	0	100	62.18	0.13	7.18	2.6	14.9	6.65	19.5	59.7	--	--
12:15	5	5	100	62.16	0.26	7.03	2.54	10.7	5.79	19.1	59.5	--	--
12:20	5	10	100	62.15	0.40	7.04	2.57	16.6	5.28	22	59.2	--	--
12:25	5	15	100	62.15	0.53	7.04	2.57	16.1	5.27	21.7	60.1	--	--
12:30	5	20	100	62.15	0.66	7.04	2.58	15.7	5.56	21.5	62.4	--	--
12:35	5	25	100	62.15	0.79	7.03	2.58	15.4	5.34	21.4	63.7	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: 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



Project Number	30112892	Well ID	MW-13-47	Date	06/07/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	62.1 degrees F and Cloudy. The wind is blowing N/NW at 6.9 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	62.95	Total Depth (ft-bmp)	113.65	Water Column (ft)	50.7
		Gallons in Well			8.24
Purge Start	11:30	Pump Intake (ft-bmp)	111	Purge Method	Low-Flow
		Purge Equipment			Bladder
Purge End	12:10	Volumes Purged	0.13	Sample ID	MW-13-47_060722
		Sampled by			Billy Cobern
Sample Time	12:10	Gallons Purged	1.06	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:35	0	0	100	63.22	0.13	7.08	1.76	18.8	4.2	17.2	-89.6	--	--
11:40	5	5	100	63.19	0.26	6.96	1.81	15.7	1.4	17.7	-93	--	--
11:45	5	10	100	63.19	0.40	6.97	1.82	13.8	1.39	19	-99	--	--
11:50	5	15	100	63.19	0.53	6.97	1.83	12.2	1.18	21.2	-103.3	--	--
11:55	5	20	100	63.19	0.66	6.98	1.84	11	1.05	22.1	-106.1	--	--
12:00	5	25	100	63.19	0.79	6.96	1.86	10.3	0.99	22	-104.1	--	--
12:05	5	30	100	63.19	0.92	6.95	1.86	9.87	0.93	21.9	-102.5	--	--
12:10	5	35	100	63.19	1.06	6.95	1.86	9.69	0.97	21.8	-101.6	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 522	250 mL Amber	1	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



Project Number	30112892	Well ID	MW-13-48	Date	06/10/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Partly Cloudy. The wind is blowing W at 10.3 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	55.19	Total Depth (ft-bmp)	73.25	Water Column (ft)	18.06
				Gallons in Well	2.93
Purge Start	13:00	Pump Intake (ft-bmp)	71	Purge Method	Low-Flow
				Purge Equipment	Bladder
Purge End	13:35	Volumes Purged	0.32	Sample ID	MW-13-48_061022
				Sampled by	Billy Cobern
Sample Time	13:35	Gallons Purged	0.92	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:05	0	0	100	55.2	0.13	6.8	2.73	16.9	2.81	21.1	-96.2	--	--
13:10	5	5	100	55.2	0.26	6.73	2.74	18.4	1.16	20.5	-101.7	--	--
13:15	5	10	100	55.2	0.40	6.73	2.74	15.8	0.9	20.8	-104.7	--	--
13:20	5	15	100	55.2	0.53	6.73	2.75	16.1	0.78	21.1	-106	--	--
13:25	5	20	100	55.2	0.66	6.73	2.75	16.3	0.7	21.3	-106.7	--	--
13:30	5	25	100	55.2	0.79	6.73	2.74	16.6	0.69	21.6	-106.7	--	--
13:35	5	30	100	55.2	0.92	6.73	2.75	16.5	0.65	21.7	-106.6	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM, VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

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

Well Information

Well Location: 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



Project Number	30112892	Well ID	MW-13-49	Date	06/09/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Mostly Clear. The wind is blowing W at 9.2 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	63.56	Total Depth (ft-bmp)	81.65	Water Column (ft)	18.09	Gallons in Well	2.94
Purge Start	11:35	Pump Intake (ft-bmp)	79	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	12:20	Volumes Purged	0.40	Sample ID	MW-13-49_060922	Sampled by	Billy Cobern
Sample Time	12:20	Gallons Purged	1.19	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:40	0	0	100	63.96	0.13	7.45	0.9	13.5	5.92	20.6	24.4	--	--
11:45	5	5	100	64.18	0.26	6.95	1.86	9.68	0.76	18	-87.6	--	--
11:50	5	10	100	64	0.40	6.99	1.84	9.12	0.84	20.2	-83.9	--	--
11:55	5	15	100	63.88	0.53	6.99	1.84	8.18	0.91	20.4	-83.1	--	--
12:00	5	20	100	63.88	0.66	6.99	1.83	7.94	0.95	20.9	-81.5	--	--
12:05	5	25	100	63.88	0.79	6.99	1.85	6.89	0.88	20.6	-83.6	--	--
12:10	5	30	100	63.88	0.92	6.98	1.84	6.89	0.8	21.3	-85.7	--	--
12:15	5	35	100	63.88	1.06	6.97	1.85	6.56	0.82	21.3	-85.8	--	--
12:20	5	40	100	63.88	1.19	6.97	1.85	6.41	0.82	21.3	-86.2	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: <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

Project Number 30112892 **Well ID** MW-13-50 **Date** 6/6/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** Rain

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 79.9 **Total Depth (ft-bmp)** 107 **Water Column(ft)** 27.1 **Gallons in Well** 4.4

MP Elevation NA **Pump Intake (ft-bmp)** 104 **Purge Method:** Low-Flow **Sample Method** Grab

Sample Time: 12:40 **Gallons Purged** NA **Replicate/ Code No.** NA **Evacuation Method** Bladder

Purge Start: 11:35

Purge End: 12:35

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
11:50	0	200	79.9	0.00	6.91	1.28	26.4	4.64	20.3	-15.1	Clear	None
11:55	5	200	80.28	0.00	6.74	1.44	9.23	3.13	17.9	-9.8	Clear	None
12:00	5	200	80.31	0.00	6.77	1.45	7	1.92	18.5	-10.8	Clear	None
12:05	5	200	80.35	0.00	6.83	1.46	6	1.38	18.8	-13.8	Clear	None
12:10	5	200	80.35	0.00	6.85	1.47	6	1.25	18.8	-15	Clear	None
12:15	5	200	80.35	0.00	6.87	1.47	6	1.08	18.9	-16.4	Clear	None
12:20	5	200	80.35	0.00	6.89	1.47	5	0.95	19	-17.3	Clear	None
12:25	5	200	79.9	0.00	6.89	1.47	5	0.85	18.9	-17.5	Clear	None
12:30	5	200	79.9	0.00	6.88	1.47	5	0.91	19.2	-16.9	Clear	None
12:35	5	200	79.9	0.00	6.89	1.47	5	0.93	19.2	-17.6	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane	40 mL Vial	3	HCL

Sampling By Monica Dostert

Comments: PME Sampler: Jarrett Humpala

Well Casing Volume Conversion

Well diameter(inc)=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: MW-13-50 Well Locked at Arrival: yes

Condition of Well: Good Well Locked at Departure: yes

ft-bmp = feet below measuring point mS/cm = milliSiemens per centimeter mV = millivolts
in. = inches NTU = N

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-13-51	Date	06/07/2022
Project Name/Location	RACER Lansing GWS 2022	Weather(°F)	NR		
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	70.91	Total Depth (ft-bmp)	88.28	Water Column (ft)	17.37
		Gallons in Well			2.82
Purge Start	11:50	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
		Purge Equipment			Bladder
Purge End	12:50	Volumes Purged	NA	Sample ID	MW-13-51_060722
		Sampled by			Donald Richmond
Sample Time	12:50	Gallons Purged	NA	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:00	0	0	200	70.91	--	6.86	1.41	137	1.03	19.4	-46.2	--	--
12:05	5	5	200	70.91	--	6.96	1.39	113	0.66	19	-50.8	--	--
12:10	5	10	200	70.91	--	6.97	1.37	108	0.62	18.5	-52.8	--	--
12:15	5	15	200	70.91	--	6.95	1.4	99.6	0.57	19.7	-53.9	--	--
12:20	5	20	200	70.91	--	6.96	1.39	83.5	0.85	18.8	-54.4	--	--
12:25	5	25	200	70.91	--	6.96	1.39	67.3	0.82	18.6	-54.8	--	--
12:30	5	30	200	70.91	--	6.97	1.38	56.2	0.89	18	-55.1	--	--
12:35	5	35	200	70.91	--	6.96	1.41	44.9	0.88	17.6	-55.5	--	--
12:40	5	40	200	70.91	--	6.96	1.45	35.7	0.84	18.1	-56.1	--	--
12:45	5	45	200	70.91	--	6.96	1.46	34	0.81	18.3	-56.5	--	--
12:50	5	50	200	70.91	--	6.96	1.49	29.7	0.74	18.8	-57.4	Gray	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: _____	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

RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-13-52 **Date** 6/6/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** Rain

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 68.73 **Total Depth (ft-bmp)** 80 **Water Column(ft)** 11.27 **Gallons in Well** 1.83

MP Elevation NA **Pump Intake (ft-bmp)** 77 **Purge Method:** Low-Flow **Sample Method** Grab

Sample Time: 13:55 **Gallons Purged** NA **Replicate/ Code No.** NA **Evacuation Method** Bailer

Purge Start: 13:05

Purge End: 13:50

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
13:10	0	200	68.8	0.00	6.93	1.61	786	2.11	15.8	-10.3	Clear	None
13:15	5	200	68.8	0.00	6.85	1.59	577	0.26	15	-8.1	Clear	None
13:20	5	200	68.8	0.00	6.91	1.59	372	0.41	14.6	-8.3	Clear	None
13:25	5	200	68.9	0.00	6.95	1.59	167	0.38	14.9	-8.2	Clear	None
13:30	5	200	68.9	0.00	6.96	1.58	76	0.33	14.5	-9.1	Clear	None
13:35	5	200	68.9	0.00	6.96	1.58	33	0.23	14.3	-9.5	Clear	None
13:40	5	200	68.9	0.00	6.96	1.59	17	0.19	14.5	-10.6	Clear	None
13:45	5	200	68.9	0.00	6.98	1.58	18	0.18	14.3	-11.6	Clear	None
13:50	5	200	68.9	0.00	6.97	1.58	17	0.17	14.8	-11.9	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane	40 mL Vial	3	HCL

Sampling By Monica Dostert

Comments: PME Sampler: Jarrett Humpula

Well Casing Volume Conversion

Well diameter(inc)=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: MW-13-52

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes



RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-13-53 **Date** 6/6/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** Overcast

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 73.52 **Total Depth (ft-bmp)** 83 **Water Column(ft)** 9.48 **Gallons in Well** 1.54

MP Elevation NA **Pump Intake (ft-bmp)** 80 **Purge Method:** Low-Flow **Sample Method** Grab

Sample Time: 11:00 **Gallons Purged** NA **Replicate/ Code No.** NA **Evacuation Method** Bladder

Purge Start: 09:55

Purge End: 10:56

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
09:55	0	200	73.25	0.00	7.34	0.002	67	8.65	20.8	-5.5	Clear	None
10:00	5	200	73.25	0.00	6.83	1.59	165	4.33	18.7	-3	Clear	None
10:05	5	200	73.25	0.00	6.72	1.58	93	2.76	18.4	0.3	Clear	None
10:10	5	200	73.25	0.00	6.69	1.57	223	1.56	18.4	-1.6	Clear	None
10:15	5	200	73.25	0.00	6.74	1.57	180	1.26	18.5	-5.9	Clear	None
10:20	5	200	73.25	0.00	6.79	1.57	136	1.22	18.4	-8.8	Clear	None
10:25	5	200	73.25	0.00	6.82	1.58	105	1.07	18.4	-9.8	Clear	None
10:30	5	200	73.25	0.00	6.83	1.57	77	0.98	18.4	-9.8	Clear	None
10:35	5	200	73.25	0.00	6.84	1.58	51	0.84	18.3	-10.1	Clear	None
10:40	5	200	73.25	0.00	6.84	1.57	33	0.81	18.4	-9.4	Clear	None
10:45	5	200	73.25	0.00	6.85	1.58	18	0.76	18.3	-9	Clear	None
10:50	5	200	73.25	0.00	6.84	1.57	15	0.84	18.5	-7.1	Clear	None
10:55	5	200	73.25	0.00	6.86	1.58	16	0.76	18.3	-7.9	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane	40 mL Vial	3	HCL

Sampling By Monica Dostert

Comments: Turbidity did not stabilize, PME Sampler: Jarrett Humpala

Well Casing Volume Conversion

Well diameter(inc)=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: MW-13-53

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

ft-bmp = feet below measuring point
in. = inches

mS/cm = milliSiemens per centimeter
NTU = N

mV = millivolts

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-14-54	Date	06/04/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	64.0 degrees F and Clear. The wind is blowing S at 9.2 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	8.54	Total Depth (ft-bmp)	19.03	Water Column (ft)	10.49
				Gallons in Well	1.7
Purge Start	10:20	Pump Intake (ft-bmp)	16.53	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	11:00	Volumes Purged	1.24	Sample ID	MW-14-54_060422
				Sampled by	Austin Westhuis
Sample Time	10:55	Gallons Purged	2.11	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:25	0	0	200	8.85	0.26	8.11	0.99	8.89	0.19	13	-62.4	--	--
10:30	5	5	200	8.85	0.53	8.1	0.98	3.61	0.08	12.9	-86.5	--	--
10:35	5	10	200	8.85	0.79	8.1	0.96	2.12	0.04	12.8	-104.4	--	--
10:40	5	15	200	8.85	1.06	8.1	0.93	1.78	0.04	12.6	-116.2	--	--
10:45	5	20	200	8.85	1.32	8.07	0.86	1.64	0.04	12.5	-134.2	--	--
10:50	5	25	200	8.85	1.59	8.08	0.84	1.47	0.04	12.6	-142.1	--	--
10:55	5	30	200	8.85	1.85	8.08	0.84	1.31	0.04	12.6	-143.9	Clear	Mild

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

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

Well Information

Well Location: 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



Project Number	30112892	Well ID	MW-14-55	Date	06/04/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	64.0 degrees F and Clear. The wind is blowing S at 9.2 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	14.18	Total Depth (ft-bmp)	20.05	Water Column (ft)	5.87	Gallons in Well	0.95
Purge Start	11:15	Pump Intake (ft-bmp)	17.55	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	11:55	Volumes Purged	2.22	Sample ID	MW-14-55_060422	Sampled by	Austin Westhuis
Sample Time	11:50	Gallons Purged	2.11	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:20	0	0	200	14.18	0.26	6.97	0.56	11.7	0.19	12.1	-74	--	--
11:25	5	5	200	14.18	0.53	6.95	0.56	4.44	0.12	12	-51.4	--	--
11:30	5	10	200	14.18	0.79	7	0.56	2.03	0.11	12	-40.5	--	--
11:35	5	15	200	14.18	1.06	7.04	0.56	1.81	0.1	11.9	-35.5	--	--
11:40	5	20	200	14.18	1.32	7.07	0.56	1.46	0.1	11.8	-27.8	--	--
11:45	5	25	200	14.18	1.59	7.05	0.56	1.22	0.1	11.9	-22.1	--	--
11:50	5	30	200	14.18	1.85	7.08	0.57	1.04	0.1	12.1	-18.3	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

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

Well Information

Well Location: 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



Project Number	30112892	Well ID	MW-14-57	Date	06/04/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	66.9 degrees F and Clear. The wind is blowing S at 5.8 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	10.22	Total Depth (ft-bmp)	21.4	Water Column (ft)	11.18	Gallons in Well	1.82
Purge Start	12:30	Pump Intake (ft-bmp)	18.9	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	13:05	Volumes Purged	1.02	Sample ID	MW-14-57_060422	Sampled by	Austin Westhuis
Sample Time	13:00	Gallons Purged	1.85	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:35	0	0	200	10.22	0.26	7.21	0.77	2.66	0.29	12.6	36.3	--	--
12:40	5	5	200	10.26	0.53	7.23	0.76	1.93	0.22	12.4	44.7	--	--
12:45	5	10	200	10.26	0.79	7.21	0.76	1.61	0.17	12.5	44.7	--	--
12:50	5	15	200	10.26	1.06	7.27	0.76	1.5	0.15	12.5	44.6	--	--
12:55	5	20	200	10.26	1.32	7.29	0.75	1.29	0.14	12.4	43.7	--	--
13:00	5	25	200	10.26	1.59	7.3	0.75	1.2	0.14	12.3	42.8	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8260B SIMS	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



Project Number	30112892	Well ID	MW-14-58R	Date	04/06/2022
Project Name/Location	RACER Lansing GWS		Weather(°F)	51.1 degrees F and Mostly Clear. The wind is blowing E at 8.1 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	12.06	Total Depth (ft-bmp)	29.59	Water Column (ft)	17.53
				Gallons in Well	2.85
Purge Start	12:00	Pump Intake (ft-bmp)	27.59	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	12:25	Volumes Purged	0.46	Sample ID	MW-14-58R_040622
				Sampled by	Austin Westhuis
Sample Time	12:20	Gallons Purged	1.32	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:05	0	0	200	12.06	0.26	6.95	1.983	4.41	0.75	9.8	-24.3	--	--
12:10	5	5	200	12.06	0.53	6.97	1.988	1.91	0.71	9.8	-35	--	--
12:15	5	10	200	12.06	0.79	6.98	1.983	1.3	0.7	9.8	-36.6	--	--
12:20	5	15	200	12.06	1.06	6.99	1.976	1.22	0.69	9.8	-37.1	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs 8260 and 1,4-Dioxane 8260	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: <u>Good condition</u>	Well Locked at Departure: yes
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



RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-14-58R **Date** 6/7/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** NR

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 9.75 **Total Depth (ft-bmp)** 27 **Water Column(ft)** 17.25 **Gallons in Well** 2.8

MP Elevation NA **Pump Intake (ft-bmp)** 19 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 11:55 **Gallons Purged** NA **Replicate/ Code No.** NA **Evacuation Method** Peristaltic

Purge Start: 11:05

Purge End: 11:55

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
11:05	0	100	9.75	0.13	8.04	2.5	25	2.02	13.6	-8.3	--	--
11:10	5	100	9.75	0.13	7.98	2.52	15	0.37	14	-4.3	--	--
11:15	5	100	9.75	0.40	7.94	2.53	12	0.17	13.9	-3.5	--	--
11:20	5	100	9.75	0.53	7.95	2.54	11	0.08	13.9	-3.8	--	--
11:25	5	100	9.75	0.66	7.3	2.66	8	0.06	14.3	-12.7	--	--
11:30	5	100	9.75	0.79	7.01	2.75	8	0.08	14.2	-16.9	--	--
11:35	5	100	9.75	0.92	7	2.76	8	0.05	14.2	-17.6	--	--
11:40	5	100	9.75	1.06	7	2.75	8	0.03	14.2	-18	--	--
11:45	5	100	9.75	1.19	7	2.75	8	0.02	14.4	-18.9	--	--
11:50	5	100	9.75	1.32	7	2.75	8	0.02	14.5	-20	--	--
11:55	5	100	9.75	1.45	7	2.75	8	0.04	14.8	-20	--	--

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane	40 mL Vial	3	HCL
VOCs	40 mL Vial	3	HCL
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

ft-bmp = feet below measuring point
in. = inches

mS/cm = milliSiemens per centimeter
NTU = N

mV = millivolts



RACER Lansing GW Sampling

Project Number	30112892	Well ID	MW-14-59	Date	6/7/2022		
Project Name/Location	RACER Lansing, MI			Weather(°F)	NR		
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	NR	Casing Diameter (in.)	2	Well Material	NR
Static Water Level (ft-bmp)	5.15	Total Depth (ft-bmp)	20	Water Column(ft)	14.85	Gallons in Well	2.41
MP Elevation	NA	Pump Intake (ft-bmp)	13	Purge Method:	Low-Flow	Sample Method	Low-Flow
Sample Time:	10:45	Gallons Purged	1.45	Replicate/ Code No.	NA	Evacuation Method	Peristaltic
Purge Start:	09:55						
Purge End:	10:45						

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
09:55	0	100	13	0.13	7.38	0.71	21	1.44	13.6	-5.9	--	--
10:00	5	100	13	0.26	7.32	0.71	18	0.2	13.5	-1.8	--	--
10:05	5	100	13	0.40	7.28	0.71	18	0.12	13.4	0.5	--	--
10:10	5	100	13	0.53	7.27	0.71	15	0.08	13.2	0.6	--	--
10:15	5	100	13	0.66	7.26	0.71	15	0.05	13.2	1.3	--	--
10:20	5	100	13	0.79	7.25	0.71	18	0.04	13.2	0.7	--	--
10:25	5	100	13	0.92	7.27	0.71	15	0.07	13.6	-0.6	--	--
10:30	5	100	13	1.06	7.3	0.71	15	0.07	13.6	-2.3	--	--
10:35	5	100	13	1.19	7.31	0.71	15	0.07	13.6	-3.1	--	--
10:40	5	100	13	1.32	7.32	0.71	15	0.06	13.6	-3.2	--	--
10:45	5	100	13	1.45	7.31	0.71	15	0.06	13.5	-3.1	--	--

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane	40 mL Vial	3	HCL
VOCs	40 mL Vial	3	HCL
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

ft-bmp = feet below measuring point
in. = inches

mS/cm = milliSiemens per centimeter
NTU = N

mV = millivolts



RACER Lansing GW Sampling

Project Number	30112892	Well ID	MW-14-60	Date	6/7/2022		
Project Name/Location	RACER Lansing, MI			Weather(°F)	NR		
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	NR	Casing Diameter (in.)	2	Well Material	NR
Static Water Level (ft-bmp)	13	Total Depth (ft-bmp)	20	Water Column(ft)	7	Gallons in Well	1.14
MP Elevation	NA	Pump Intake (ft-bmp)	13	Purge Method:	Low-Flow	Sample Method	Low-Flow
Sample Time:	09:35	Gallons Purged	1.19	Replicate/ Code No.	NA	Evacuation Method	Peristaltic
Purge Start:	08:55						
Purge End:	09:35						

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
08:55	0	100	13	0.13	7.36	1.13	25	0.21	13.5	-7.2	--	--
09:00	5	100	13	0.26	7.31	1.12	21	0.07	13.1	-9.8	--	--
09:05	5	100	13	0.40	7.32	1.13	18	0.06	13.1	-11.2	--	--
09:10	5	100	13	0.53	7.33	1.13	18	0.04	13	-11.9	--	--
09:15	5	100	13	0.66	7.35	1.14	18	0.01	13	-12.3	--	--
09:20	5	100	13	0.79	7.36	1.14	15	0.02	13	-12.2	--	--
09:25	5	100	13	0.92	7.36	1.15	15	0.01	12.9	-12.9	--	--
09:30	5	100	13	1.06	7.37	1.16	15	0.01	12.9	-13.5	--	--
09:35	5	100	13	1.19	7.37	1.16	15	0.02	12.9	-13.6	--	--

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Vial	3	HCL
1,4-Dioxane	40 mL Vial	3	None
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

ft-bmp = feet below measuring point
in. = inches

mS/cm = millisiemens per centimeter
NTU = N

mV = millivolts

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-14-61	Date	06/01/2022
Project Name/Location	RACER Lansing GWS 2022	Weather(°F)	NR		
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	65.59	Total Depth (ft-bmp)	78.83	Water Column (ft)	13.24
				Gallons in Well	2.15
Purge Start	10:00	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
				Purge Equipment	Bladder
Purge End	10:25	Volumes Purged	NA	Sample ID	MW-14-61_060122
				Sampled by	Donald Richmond
Sample Time	10:30	Gallons Purged	NA	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:10	0	0	200	65.59	--	6.92	2.02	1.92	2.86	17.4	70.6	--	--
10:15	5	5	200	65.59	--	6.94	2.03	9.96	2.35	17.7	64.9	--	--
10:20	5	10	200	65.59	--	6.92	2.05	1.35	2.1	17.5	63.3	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS, 1,4 D, Nutrients, VOCs	40 mL Glass, 250mL HDPE Plastic	7	H2SO4, 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: _____	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

Project Number 30112892 Well ID MW-14-62 Date 6/7/2022

Project Name/Location RACER Lansing, MI Weather(°F) Cloudy

Measuring Pt. Description Top of Casing Screen Setting (ft-bmp) NR Casing Diameter (in.) 2 Well Material NR

Static Water Level (ft-bmp) 11.38 Total Depth (ft-bmp) 17 Water Column(ft) 5.62 Gallons in Well 0.91

MP Elevation NA Pump Intake (ft-bmp) 15 Purge Method: Low-Flow Sample Method Low-Flow

Sample Time: 14:50 Gallons Purged 1.72 Replicate/ Code No. NA Evacuation Method Peristaltic

Purge Start: 13:50

Purge End: 14:50

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
13:50	0	100	10	0.13	10.81	0.521	13	1.4	17.2	0.5	--	--
13:55	5	100	10	0.26	10.77	0.578	12	0.15	17.2	7.5	--	--
14:00	5	100	10	0.40	10.84	0.64	8	0.05	16.7	8.1	--	--
14:05	5	100	10	0.53	10.89	0.65	6	0.01	16.2	8.6	--	--
14:10	5	100	10	0.66	10.9	0.65	6	0.01	16.5	9.4	--	--
14:15	5	100	10	0.79	10.95	0.66	6	0.01	16.4	7.7	--	--
14:20	5	100	10	0.92	10.99	0.66	6	0.01	16.5	6.4	--	--
14:25	5	100	10	1.06	11.03	0.66	6	0.02	16.4	5.1	--	--
14:30	5	100	10	1.19	11.05	0.65	6	0.02	16.4	4.4	--	--
14:35	5	100	10	1.32	11.07	0.65	6	0.02	16.4	3.9	--	--
14:40	5	100	10	1.45	11.1	0.65	6	0.03	16.5	2.8	--	--
14:45	5	100	10	1.59	11.12	0.65	5	0.04	16.4	2	--	--
14:50	5	100	10	1.72	11.13	0.65	5	0.03	16.5	1.7	--	--

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane	40 mL Vial	3	HCL
VOCs	40 mL Vial	3	HCL
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-14-63	Date	06/08/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	NR	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
Static Water Level (ft-bmp)	66.51	Total Depth (ft-bmp)	76.72	Water Column (ft)	10.21
Purge Start	09:20	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
Purge End	10:20	Volumes Purged	NA	Sample ID	MW-14-63_060822
Sample Time	10:20	Gallons Purged	NA	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	1.66
				Purge Equipment	Bladder
				Sampled by	Donald Richmond
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:35	0	0	200	66.51	--	6.98	1.04	581	0.36	15.2	-63.1	--	--
09:40	5	5	200	66.51	--	6.99	1.04	286	0.32	15.3	-68.3	--	--
09:45	5	10	200	66.51	--	6.99	1.06	206	0.26	16	-70	--	--
09:50	5	15	200	66.51	--	7	1.05	131	0.22	15.2	-72.7	--	--
09:55	5	20	200	66.51	--	6.99	1.06	108	0.18	15.5	-73.7	--	--
10:00	5	25	200	66.51	--	6.99	1.06	93.9	0.15	15.8	-74.9	--	--
10:05	5	30	200	66.51	--	6.99	1.07	82.1	0.14	16	-75.3	--	--
10:10	5	35	200	66.51	--	6.99	1.07	71	0.16	15.7	-76.1	--	--
10:15	5	40	200	66.51	--	6.99	1.06	57.7	0.15	15.5	-76.7	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: _____	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



Project Number	30112892	Well ID	MW-14-64	Date	06/09/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Mostly Clear. The wind is blowing W/SW at 10.3 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	67.56	Total Depth (ft-bmp)	106.3	Water Column (ft)	38.74
		Gallons in Well			6.29
Purge Start	10:15	Pump Intake (ft-bmp)	104	Purge Method	Low-Flow
		Purge Equipment			Bladder
Purge End	11:00	Volumes Purged	0.19	Sample ID	MW-14-64_060922
		Sampled by			Billy Cobern
Sample Time	11:00	Gallons Purged	1.19	Replicate/ Code No.	DUP-11_060922
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:20	0	0	100	67.69	0.13	7.15	1.62	22.9	6.21	17.3	91.4	--	--
10:25	5	5	100	67.69	0.26	7.01	1.62	20.8	2.95	16.9	83.9	--	--
10:30	5	10	100	67.69	0.40	7	1.63	19.4	2.48	17	76.8	--	--
10:35	5	15	100	67.69	0.53	7.01	1.64	15.1	2.39	17	73.5	--	--
10:40	5	20	100	67.69	0.66	7.01	1.63	12.7	2.48	17.3	71.7	--	--
10:45	5	25	100	67.69	0.79	7.01	1.64	10.3	2.33	17.4	70.9	--	--
10:50	5	30	100	67.69	0.92	7.01	1.64	9.56	2.39	17.5	70.8	--	--
10:55	5	35	100	67.69	1.06	7.01	1.64	8.82	2.33	17.5	70.7	--	--
11:00	5	40	100	67.69	1.19	7.01	1.64	8.79	2.31	17.5	70.6	Clear	None

Constituent Sampled	Container	Number	Preservative
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: <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



Project Number	30112892	Well ID	MW-14-66	Date	06/03/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Mostly Cloudy. The wind is blowing W/SW at 16.1 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	5.11	Total Depth (ft-bmp)	22.21	Water Column (ft)	17.1
		Gallons in Well			2.78
Purge Start	10:50	Pump Intake (ft-bmp)	20.21	Purge Method	Low-Flow
		Purge Equipment			Peristaltic
Purge End	11:20	Volumes Purged	0.57	Sample ID	MW-14-66_060322
		Sampled by			Austin Westhuis
Sample Time	11:15	Gallons Purged	1.59	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:55	0	0	200	6.24	0.26	7.43	0.62	4.41	0.19	14.6	65.4	--	--
11:00	5	5	200	6.46	0.53	7.42	0.6	2.18	0.16	14.5	62.5	--	--
11:05	5	10	200	6.63	0.79	7.39	0.58	1.78	0.13	14.1	56.3	--	--
11:10	5	15	200	6.67	1.06	7.38	0.58	1.35	0.13	14	51.3	--	--
11:15	5	20	200	6.68	1.32	7.41	0.58	1.22	0.12	13.9	50.1	Clear	None

Constituent Sampled	Container	Number	Preservative
Total Select Metals (As, Ni, P)	125 mL Plastic	2	HNO3

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



Project Number	30112892	Well ID	MW-14-67	Date	06/03/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Mostly Clear. The wind is blowing W/SW at 10.3 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	5.75	Total Depth (ft-bmp)	20.83	Water Column (ft)	15.08
		Gallons in Well			2.45
Purge Start	09:50	Pump Intake (ft-bmp)	18.33	Purge Method	Low-Flow
		Purge Equipment			Peristaltic
Purge End	10:20	Volumes Purged	0.65	Sample ID	MW-14-67_060322
		Sampled by			Austin Westhuis
Sample Time	10:15	Gallons Purged	1.59	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:55	0	0	200	5.75	0.26	6.91	1.12	2.34	0.72	13.2	146.3	--	--
10:00	5	5	200	5.75	0.53	7.15	1.12	1.74	0.68	13	130.2	--	--
10:05	5	10	200	5.75	0.79	7.17	1.12	1.61	0.67	12.9	127	--	--
10:10	5	15	200	5.75	1.06	7.19	1.12	1.29	0.65	12.9	123.3	--	--
10:15	5	20	200	5.75	1.32	7.2	1.12	1.2	0.65	12.8	120.3	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None
Total Select Metals (As, Ni, P)	125 mL Plastic	2	HNO3

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



Project Number	30112892	Well ID	MW-14-70	Date	06/02/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	60.1 degrees F and Cloudy. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	10.68	Total Depth (ft-bmp)	23.1	Water Column (ft)	12.42
				Gallons in Well	2.02
Purge Start	09:20	Pump Intake (ft-bmp)	20.6	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	10:00	Volumes Purged	1.05	Sample ID	MW-14-70_060222
				Sampled by	Austin Westhuis
Sample Time	09:55	Gallons Purged	2.11	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:25	0	0	200	11.29	0.26	7.06	0.97	1.94	0.22	10.5	-649	--	--
09:30	5	5	200	11.29	0.53	7.1	0.97	1.81	0.15	10.8	-616.2	--	--
09:35	5	10	200	11.29	0.79	7.2	0.98	1.63	0.14	11	-521.4	--	--
09:40	5	15	200	11.29	1.06	7.24	0.98	1.51	0.1	10.9	-457	--	--
09:45	5	20	200	11.29	1.32	7.26	0.98	1.45	0.1	10.9	-378.8	--	--
09:50	5	25	200	11.29	1.59	7.28	0.98	1.23	0.1	10.9	-380.2	--	--
09:55	5	30	200	11.29	1.85	7.28	0.98	1.05	0.1	10.8	-388.4	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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



Project Number	30112892	Well ID	MW-15-71	Date	06/09/2022			
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	NR				
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC	
Static Water Level (ft-bmp)	64.65	Total Depth (ft-bmp)	119.1	Water Column (ft)	54.45	Gallons in Well	8.85	
Purge Start	09:00	Pump Intake (ft-bmp)	116.5	Purge Method	Low-Flow		Purge Equipment	Bladder
Purge End	09:45	Volumes Purged	0.13	Sample ID	MW-15-71_060922	Sampled by	Billy Cobern	
Sample Time	09:45	Gallons Purged	1.19	Replicate/ Code No.	NA		Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:05	0	0	100	64.66	0.13	7.26	1.43	19.2	5.92	15.6	71.6	--	--
09:10	5	5	100	64.66	0.26	7.08	1.45	18.3	3	15	71.1	--	--
09:15	5	10	100	64.66	0.40	7.04	1.45	16.8	2.31	15	69.4	--	--
09:20	5	15	100	64.66	0.53	7.03	1.45	14.3	1.88	14.9	68.3	--	--
09:25	5	20	100	64.66	0.66	7.01	1.45	14.9	1.43	14.9	67.2	--	--
09:30	5	25	100	64.66	0.79	6.98	1.45	14.3	1.23	14.9	66	--	--
09:35	5	30	100	64.66	0.92	6.95	1.46	13	1.08	14.9	64.6	--	--
09:40	5	35	100	64.66	1.06	6.94	1.45	12.8	1.05	14.8	63.2	--	--
09:45	5	40	100	64.66	1.19	6.94	1.46	12.6	1	14.8	61.7	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 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



Project Number	30112892	Well ID	MW-15-72	Date	06/01/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	NR			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	55.71	Total Depth (ft-bmp)	68.65	Water Column (ft)	12.94	Gallons in Well	2.1
Purge Start	16:40	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	17:15	Volumes Purged	NA	Sample ID	MW-15-72_060122	Sampled by	Donald Richmond
Sample Time	17:15	Gallons Purged	NA	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
16:45	0	0	200	55.71	--	7.06	0.94	27.5	0.37	18	-85.1	--	--
16:50	5	5	200	55.71	--	6.91	0.93	0.02	0.18	18.3	-81.4	--	--
16:55	5	10	200	55.71	--	6.91	0.95	0.02	0.18	17.7	-84.4	--	--
17:00	5	15	200	55.71	--	6.92	1.03	0.02	0.13	17.6	-88.5	--	--
17:05	5	20	200	55.71	--	6.94	1.07	0.02	0.11	17.5	-90.8	--	--
17:10	5	25	200	55.71	--	6.95	1.1	0.02	0.11	17.2	-92.6	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4 D, VOCS, PFAS	250mL HDPE Plastic; 40mL Glass	5	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: _____	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



Project Number	30112892	Well ID	MW-15-73	Date	06/07/2022
Project Name/Location	RACER Lansing GWS 2022	Weather(°F)	NR		
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	70.61	Total Depth (ft-bmp)	79.25	Water Column (ft)	8.64
		Gallons in Well			1.4
Purge Start	10:00	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
		Purge Equipment			Bladder
Purge End	10:50	Volumes Purged	NA	Sample ID	MW-15-73_060722
		Sampled by			Donald Richmond
Sample Time	10:50	Gallons Purged	NA	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:20	0	0	200	70.61	--	6.49	2.81	46.4	4.55	15	-38	--	--
10:25	5	5	200	70.61	--	6.59	3.02	--	0.72	16.6	-45.5	--	--
10:30	5	10	200	70.61	--	6.53	3.04	--	0.18	16.7	-41.1	--	--
10:35	5	15	200	70.61	--	6.61	3.04	777	0.62	16.1	-50.3	--	--
10:40	5	20	200	70.61	--	--	3.04	777	0.58	16	-51.1	--	--
10:45	5	25	200	70.61	--	6.63	3.04	777	0.62	16.2	-50.7	Gray	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: _____	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



Project Number	30112892	Well ID	MW-16-74	Date	06/01/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	NR	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
Static Water Level (ft-bmp)	63.25	Total Depth (ft-bmp)	75.75	Water Column (ft)	12.5
Purge Start	14:50	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
Purge End	15:50	Volumes Purged	NA	Sample ID	MW-16-74_060122
Sample Time	15:50	Gallons Purged	NA	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	2.03
				Purge Equipment	Bladder
				Sampled by	Donald Richmond
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:00	0	0	200	63.25	--	6.92	1.97	85.9	0.4	17.3	-4.1	--	--
15:05	5	5	200	63.25	--	6.92	1.98	240	0.29	17.1	-50.4	--	--
15:10	5	10	200	63.25	--	6.92	2	301	0.18	17.6	-56	--	--
15:15	5	15	200	63.25	--	6.93	1.99	304	0.14	17.5	-57.9	--	--
15:20	5	20	200	63.25	--	6.94	1.98	343	0.24	17	-60.3	--	--
15:25	5	25	200	63.25	--	6.95	1.97	315	0.14	17.1	-61.5	--	--
15:30	5	30	200	63.25	--	6.95	1.97	337	0.17	17.2	-63.3	--	--
15:35	5	35	200	63.25	--	6.96	1.97	332	0.14	17.1	-63.8	--	--
15:40	5	40	200	63.25	--	6.96	1.97	359	0.12	17.3	-65.3	--	--
15:45	5	45	200	63.25	--	6.97	1.97	384	0.17	17.2	-66.2	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: _____	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



Project Number	30112892	Well ID	MW-16-75	Date	06/08/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	NR	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	60.72	Total Depth (ft-bmp)	72.68	Water Column (ft)	11.96
				Gallons in Well	1.94
Purge Start	15:55	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
				Purge Equipment	Bladder
Purge End	16:55	Volumes Purged	NA	Sample ID	MW-16-75_060822
				Sampled by	Donald Richmond
Sample Time	16:55	Gallons Purged	NA	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
16:05	0	0	200	60.72	--	7.1	1.85	283	0.42	17.1	-67.6	--	--
16:10	5	5	200	60.72	--	7.09	1.85	418	0.3	17.1	-71.4	--	--
16:15	5	10	200	60.72	--	7.09	1.86	498	0.21	17.2	-76.9	--	--
16:20	5	15	200	60.72	--	7.09	1.85	--	0.18	17.2	-78.9	--	--
16:35	15	30	200	60.72	--	7.1	1.88	620	0.48	17.4	-83.2	--	--
16:40	5	35	200	60.72	--	7.11	1.87	407	0.21	17.1	85.9	--	--
16:45	5	40	200	60.72	--	7.11	1.87	386	0.15	16.8	-87.3	--	--
16:50	5	45	200	60.72	--	7.11	1.85	317	0.11	16.5	-88.7	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: _____	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



Project Number	30112892	Well ID	MW-16-76	Date	06/08/2022
Project Name/Location	RACER Lansing GWS 2022	Weather(°F)	NR		
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	63.65	Total Depth (ft-bmp)	80.97	Water Column (ft)	17.32
		Gallons in Well			2.81
Purge Start	12:50	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
		Purge Equipment			Bladder
Purge End	13:20	Volumes Purged	NA	Sample ID	MW-16-76_060822
		Sampled by			Donald Richmond
Sample Time	13:20	Gallons Purged	NA	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:00	0	0	200	63.65	--	7.13	1.97	13.8	0.65	15	-45.3	--	--
13:05	5	5	200	63.65	--	7.13	1.97	9.03	0.36	14.7	-57.9	--	--
13:10	5	10	200	63.65	--	7.13	2	10.9	0.36	14.6	-62.9	--	--
13:15	5	15	200	63.65	--	7.13	2.04	10.1	0.33	14.8	-63.9	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: _____	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



Project Number	30112892	Well ID	MW-16-77	Date	06/08/2022
Project Name/Location	RACER Lansing GWS 2022	Weather(°F)	NR		
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	59.04	Total Depth (ft-bmp)	71.62	Water Column (ft)	12.58
		Gallons in Well			2.04
Purge Start	14:05	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
		Purge Equipment			Bladder
Purge End	15:05	Volumes Purged	NA	Sample ID	MW-16-77_060822
		Sampled by			Donald Richmond
Sample Time	15:05	Gallons Purged	NA	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:20	0	0	200	59.04	--	6.97	2.28	2.26	0.85	14	-47.5	--	--
14:25	5	5	200	59.04	--	7.13	2.14	1.47	1.73	14.3	-45.8	--	--
14:30	5	10	200	59.04	--	7.2	2.12	17.2	2.27	14.3	-46	--	--
14:35	5	15	200	59.04	--	7.26	2.1	21.1	2.94	14.7	-44	--	--
14:40	5	20	200	59.04	--	7.09	2.46	101	2.24	14.6	-46.5	--	--
14:45	5	25	200	59.04	--	7.06	2.6	116	0.97	15	-55.3	--	--
14:50	5	30	200	59.04	--	7.06	2.63	106	0.9	15.2	-57.7	--	--
14:55	5	35	200	59.04	--	7.03	2.72	64.9	0.66	16.4	-60.3	--	--
15:00	5	40	200	59.04	--	7.03	2.77	57.2	0.61	17.6	-62.9	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: _____	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



Project Number	30112892	Well ID	MW-16-78	Date	06/02/2022
Project Name/Location	RACER Lansing GWS 2022	Weather(°F)	NR		
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	63.49	Total Depth (ft-bmp)	77.42	Water Column (ft)	13.93
		Gallons in Well			2.26
Purge Start	11:05	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
		Purge Equipment			Bladder
Purge End	11:50	Volumes Purged	NA	Sample ID	MW-16-78_060222
		Sampled by			Donald Richmond
Sample Time	11:50	Gallons Purged	NA	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:20	0	0	200	63.49	--	7.16	1.39	11.7	5.74	16.9	-45.3	--	--
11:25	5	5	200	63.49	--	6.9	1.32	2.69	0.19	15.8	-66.4	--	--
11:30	5	10	200	63.49	--	6.91	1.33	0.61	0.17	16	-71.1	--	--
11:35	5	15	200	63.49	--	6.95	1.32	0.21	0.1	15.8	-79.1	--	--
11:40	5	20	200	63.49	--	6.96	1.32	2.2	0.12	16	-82.2	--	--
11:45	5	25	200	63.49	--	6.97	1.33	3.49	0.12	16.2	-84.4	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: _____	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



Project Number	30112892	Well ID	MW-16-79	Date	06/02/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	NR	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
Static Water Level (ft-bmp)	64.4	Total Depth (ft-bmp)	73.45	Water Column (ft)	9.05
Purge Start	09:05	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
Purge End	10:00	Volumes Purged	NA	Sample ID	MW-16-79_060222
Sample Time	10:00	Gallons Purged	NA	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	1.47
				Purge Equipment	Bladder
				Sampled by	Donald Richmond
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:20	0	0	200	64.4	--	6.99	0.99	52.3	0.42	15	-60.9	--	--
09:25	5	5	200	64.4	--	7.05	0.98	51.5	0.37	14.8	-73.3	--	--
09:30	5	10	200	64.4	--	7.07	0.97	59.2	0.31	14.9	-77.6	--	--
09:35	5	15	200	64.4	--	7.11	0.96	92.3	0.5	15.1	-76.2	--	--
09:40	5	20	200	70.54	--	7.12	0.96	100	0.59	15.7	-74.9	--	--
09:45	5	25	200	70.54	--	7.12	0.97	102	0.64	15.4	-74.7	--	--
09:50	5	30	200	70.54	--	7.14	0.97	84.5	0.71	15.7	-73.4	Clear	Strong

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	40 mL Glass	3	HCL

Comments: Product was observed on the tubing and bladder pump when it was removed from the well.

Well Casing Volume Conversion

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

Well Information

Well Location: _____	Well Locked at Arrival: yes _____
Condition of Well: 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



Project Number	30112892	Well ID	MW-16-80	Date	06/08/2022
Project Name/Location	RACER Lansing GWS 2022	Weather(°F)	NR		
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	62.47	Total Depth (ft-bmp)	71.52	Water Column (ft)	9.05
		Gallons in Well			1.47
Purge Start	11:00	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
		Purge Equipment			Bladder
Purge End	12:00	Volumes Purged	NA	Sample ID	MW-16-80_060822
		Sampled by			Donald Richmond
Sample Time	12:00	Gallons Purged	NA	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:05	0	0	200	62.47	--	6.43	3	105	1.13	14.1	-24.7	--	--
11:10	5	5	200	62.47	--	6.52	2.92	80.7	0.25	13.7	-36.1	--	--
11:15	5	10	200	62.47	--	6.53	2.91	68.6	0.26	13.4	-37.9	--	--
11:20	5	15	200	62.47	--	6.56	2.88	42.9	0.21	12.8	-43.1	--	--
11:25	5	20	200	62.47	--	6.57	2.86	32	0.18	12.9	-44.4	--	--
11:30	5	25	200	62.47	--	6.59	2.85	25.7	0.15	13.4	-49.9	--	--
11:35	5	30	200	62.47	--	6.59	2.85	20.7	0.17	13.4	-50.7	--	--
11:40	5	35	200	62.47	--	6.6	2.82	20.9	0.15	13.1	-51.8	--	--
11:45	5	40	200	62.47	--	6.62	2.77	9.11	0.15	12.9	-54	--	--
11:50	5	45	200	62.47	--	6.62	2.77	5.55	0.14	12.8	-55	--	--
11:55	5	50	200	62.47	--	6.63	2.75	4.9	0.1	13.3	-57.4	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: _____	Well Locked at Arrival: <u>yes</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>yes</u>
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

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-16-81	Date	06/02/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	NR			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	62.89	Total Depth (ft-bmp)	77.24	Water Column (ft)	14.35	Gallons in Well	2.33
Purge Start	12:35	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	13:15	Volumes Purged	NA	Sample ID	MW-16-81_060222	Sampled by	Donald Richmond
Sample Time	13:15	Gallons Purged	NA	Replicate/ Code No.	MS/MSD	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:45	0	0	200	63.49	--	6.72	3.21	34.7	6.7	19.4	41.7	--	--
12:50	5	5	200	63.49	--	6.71	3.15	41	6.79	19.1	38.3	--	--
12:55	5	10	200	63.49	--	6.72	3.16	28.7	6.35	19.4	35.5	--	--
13:00	5	15	200	63.49	--	6.73	3.14	22.2	6.38	19.3	34.3	--	--
13:05	5	20	200	63.49	--	6.73	3.12	21	6.99	19.9	28.8	--	--
13:10	5	25	200	63.49	--	6.74	3.12	21.6	6.55	19.8	24.7	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM,VOCs SW-	40 mL Glass	9	HCL

Comments: MSMSD taken

Well Casing Volume Conversion

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

Well Information

Well Location: _____	Well Locked at Arrival: <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



Project Number	30112892	Well ID	MW-16-82	Date	06/02/2022
Project Name/Location	RACER Lansing GWS 2022	Weather(°F)	NR		
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	64.23	Total Depth (ft-bmp)	77.14	Water Column (ft)	12.91
		Gallons in Well			2.1
Purge Start	14:15	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
		Purge Equipment			Bladder
Purge End	14:50	Volumes Purged	NA	Sample ID	MW-16-82_060222
		Sampled by			Donald Richmond
Sample Time	14:50	Gallons Purged	NA	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:20	0	0	200	64.23	--	6.91	1.15	3.08	0.33	20.4	-91.9	--	--
14:25	5	5	200	64.23	--	6.93	1.18	0.02	0.17	20.7	-101.9	--	--
14:30	5	10	200	67.3	--	6.95	1.17	0.02	0.14	20.5	-104.3	--	--
14:35	5	15	200	67.3	--	6.95	1.19	0.02	0.17	20.6	-108.9	--	--
14:40	5	20	200	67.3	--	6.99	1.17	0.02	0.09	20.7	-116.2	--	--
14:45	5	25	200	67.3	--	7	1.19	0.02	0.09	20.6	-119.1	--	--
14:50	5	30	200	67.3	--	7	1.2	0.02	0.09	21	-122.7	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: _____	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



Project Number	30112892	Well ID	MW-16-83	Date	06/06/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	70.0 degrees F and Cloudy. The wind is blowing SW at 9.2 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	71.16	Total Depth (ft-bmp)	79.07	Water Column (ft)	7.91
		Gallons in Well			1.29
Purge Start	15:30	Pump Intake (ft-bmp)	76.57	Purge Method	Low-Flow
		Purge Equipment			Peristaltic
Purge End	16:05	Volumes Purged	1.43	Sample ID	MW-16-83_060622
		Sampled by			Austin Westhuis
Sample Time	16:00	Gallons Purged	1.85	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:35	0	0	200	71.16	0.26	6.59	3.58	14.3	0.11	16.7	-54.9	--	--
15:40	5	5	200	71.16	0.53	6.6	3.51	4.04	0.09	15.7	-62.6	--	--
15:45	5	10	200	71.16	0.79	6.6	3.49	2.19	0.06	15.9	-62.9	--	--
15:50	5	15	200	71.16	1.06	6.62	3.48	1.77	0.05	15.9	-63.3	--	--
15:55	5	20	200	71.16	1.32	6.71	3.44	1.6	0.05	15.6	-65.5	--	--
16:00	5	25	200	71.16	1.59	6.72	3.43	1.51	0.05	15.7	-68	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8260B SIMS	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



Project Number	30112892	Well ID	MW-16-84	Date	06/02/2022
Project Name/Location	RACER Lansing GWS 2022	Weather(°F)	NR		
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	66.84	Total Depth (ft-bmp)	81.15	Water Column (ft)	14.31
		Gallons in Well			2.33
Purge Start	15:25	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
		Purge Equipment			Bladder
Purge End	16:00	Volumes Purged	NA	Sample ID	MW-16-84_060222
		Sampled by			Donald Richmond
Sample Time	16:00	Gallons Purged	NA	Replicate/ Code No.	Dup-04_060222
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:35	0	0	200	66.84	--	7.08	1.41	84	0.28	16.7	-82.4	--	--
15:40	5	5	200	66.84	--	7.1	1.48	52.8	0.22	16.8	-87.1	--	--
15:45	5	10	200	66.84	--	7.12	1.5	43	0.18	16.7	-89.9	--	--
15:50	5	15	200	66.84	--	7.13	1.54	40	0.15	16.9	-93.2	--	--
15:55	5	20	200	66.84	--	7.14	1.54	42.8	0.14	16.8	-95.1	--	--
16:00	5	25	200	66.84	--	7.14	1.55	46.9	0.14	16.6	-96.5	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCS, 1,4 D	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: _____	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



Project Number	30112892	Well ID	MW-16-85	Date	06/06/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	71.1 degrees F and Light Rain. The wind is blowing N at 3.4 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	68.44	Total Depth (ft-bmp)	82	Water Column (ft)	13.56
				Gallons in Well	2.2
Purge Start	14:20	Pump Intake (ft-bmp)	79.5	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	15:00	Volumes Purged	0.96	Sample ID	MW-16-85_060622
				Sampled by	Austin Westhuis
Sample Time	14:55	Gallons Purged	2.11	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:25	0	0	200	68.44	0.26	7.21	0.95	3.08	1.91	16.3	-68.9	--	--
14:30	5	5	200	68.44	0.53	7.19	0.68	2.18	0.03	15.7	-58.7	--	--
14:35	5	10	200	68.44	0.79	7.15	0.64	2.02	0.03	15.6	-51.2	--	--
14:40	5	15	200	68.44	1.06	7.16	0.62	1.62	0.03	15.6	-46.7	--	--
14:45	5	20	200	68.44	1.32	7.17	0.64	1.36	0.03	15.6	-45	--	--
14:50	5	25	200	68.44	1.59	7.16	0.65	1.22	0.03	15.6	-44.8	--	--
14:55	5	30	200	68.44	1.85	7.16	0.65	1.03	0.03	15.6	-46.2	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs and 1,4-Dioxane	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



Project Number	30112892	Well ID	MW-17-86	Date	06/02/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	72.0 degrees F and Clear. The wind is blowing W at 8.1 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	64.81	Total Depth (ft-bmp)	81.4	Water Column (ft)	16.59
		Gallons in Well			2.7
Purge Start	13:20	Pump Intake (ft-bmp)	79	Purge Method	Low-Flow
		Purge Equipment			Bladder
Purge End	14:00	Volumes Purged	0.39	Sample ID	MW-17-86_060222
		Sampled by			Billy Cobern
Sample Time	14:00	Gallons Purged	1.06	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:25	0	0	100	64.89	0.13	7.04	2.09	28.4	2.02	22.1	-85.1	--	--
13:30	5	5	100	64.89	0.26	6.99	2.03	24.7	0.93	21.9	-83.1	--	--
13:35	5	10	100	64.89	0.40	6.99	2.03	22.9	0.63	21.9	-83.5	--	--
13:40	5	15	100	64.89	0.53	6.99	2.03	13.2	0.59	22	-85.1	--	--
13:45	5	20	100	64.89	0.66	6.98	2.05	10.2	0.47	22.1	-88.2	--	--
13:50	5	25	100	64.89	0.79	6.98	2.04	9.47	0.45	22.5	-89.8	--	--
13:55	5	30	100	64.89	0.92	6.98	2.04	9.04	0.43	22.5	-90.1	--	--
14:00	5	35	100	64.89	1.06	6.99	2.05	9.23	0.42	22.5	-91.4	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM,VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

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

Well Information

Well Location: <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



Project Number	30112892	Well ID	MW-17-87	Date	06/06/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Mostly Cloudy. The wind is blowing S at 8.1 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	4
		Well Casing Material			Steel
Static Water Level (ft-bmp)	73.52	Total Depth (ft-bmp)	113.75	Water Column (ft)	40.23
		Gallons in Well			26.15
Purge Start	10:10	Pump Intake (ft-bmp)	111.5	Purge Method	Low-Flow
		Purge Equipment			Bladder
Purge End	11:05	Volumes Purged	0.06	Sample ID	MW-17-87_060622
		Sampled by			Billy Cobern
Sample Time	11:05	Gallons Purged	1.45	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:15	0	0	100	73.53	0.13	8.62	2.55	48.3	2.23	20.4	-93.3	--	--
10:20	5	5	100	73.53	0.26	8.58	2.55	41	2.34	20.7	-88	--	--
10:25	5	10	100	73.53	0.40	8.53	2.55	39.8	2.35	20.9	-79	--	--
10:30	5	15	100	73.53	0.53	8.45	2.55	39.4	3.48	21.4	-66.7	--	--
10:35	5	20	100	73.53	0.66	7.11	3.06	37.3	2.78	19.6	-108.8	--	--
10:40	5	25	100	73.53	0.79	6.96	3.23	35.8	1.35	18.6	-100.6	--	--
10:45	5	30	100	73.53	0.92	7.04	3.26	34.3	0.74	18.6	-116.1	--	--
10:50	5	35	100	73.53	1.06	7.08	3.26	31.9	0.6	18.8	-124.3	--	--
10:55	5	40	100	73.53	1.19	7.09	3.26	30.1	0.54	18.8	-126.7	--	--
11:00	5	45	100	73.53	1.32	7.1	3.26	29.8	0.49	18.8	-127.6	--	--
11:05	5	50	100	73.53	1.45	7.11	3.27	27.8	0.49	18.7	-128.3	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 522	250 mL Amber	1	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

RACER Lansing GW Sampling

Project Number	30112892	Well ID	MW-18-88	Date	6/9/2022		
Project Name/Location	RACER Lansing, MI			Weather(°F)	NR		
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	NR	Casing Diameter (in.)	2	Well Material	NR
Static Water Level (ft-bmp)	5	Total Depth (ft-bmp)	11	Water Column(ft)	6	Gallons in Well	0.97
MP Elevation	NA	Pump Intake (ft-bmp)	10	Purge Method:	Low-Flow	Sample Method	Low-Flow
Sample Time:	14:05	Gallons Purged	1.45	Replicate/ Code No.	MS/MSD	Evacuation Method	Peristaltic
Purge Start:	13:15						
Purge End:	14:05						

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
13:15	0	100	5	0.13	7.27	0.66	22	1.97	15.9	-11.3	--	--
13:20	5	100	5	0.26	6.88	0.67	19	1.82	16.1	10	--	--
13:25	5	100	5	0.40	6.85	0.67	18	2.02	16.2	12.3	--	--
13:30	5	100	5	0.53	6.86	0.66	12	2.13	16	12.9	--	--
13:35	5	100	5	0.53	6.86	0.66	11	2.04	16	12.6	--	--
13:40	5	100	5	0.92	6.86	0.66	11	1.5	15.9	12.2	--	--
13:45	5	100	5	1.06	6.86	0.67	11	2.3	16.1	12.1	--	--
13:50	5	100	5	1.19	6.87	0.67	11	0.82	15.8	9.9	--	--
13:55	5	100	5	1.32	6.87	0.67	11	0.56	15.1	8.8	--	--
14:00	5	100	5	1.45	6.86	0.66	11	0.42	15.7	10.1	--	--
14:05	5	100	5	1.45	6.87	0.67	11	0.42	15.9	8.9	--	--
--	--	--	--	--	--	--	--	--	--	--	--	--

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Vial	9	HCL
Metals, Total	125 mL Plastic	3	HNO3
Metals, Dissolved	125 mL Plastic	3	HNO3
PFAS	250 mL HDPE Plastic	6	None
Hexavalent Chromium	125 mL Plastic	3	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-18-89 **Date** 6/8/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** Sunny

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 4 **Total Depth (ft-bmp)** 12 **Water Column(ft)** 8 **Gallons in Well** 1.3

MP Elevation NA **Pump Intake (ft-bmp)** 11 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 13:30 **Gallons Purged** 1.72 **Replicate/ Code No.** NA **Evacuation Method** Peristaltic

Purge Start: 12:30

Purge End: 13:30

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
12:30	0	100	4	0.13	7.75	0.89	16	0.62	13.5	0.4	--	--
12:35	5	100	4	0.26	7.41	0.89	15	0.14	13.4	15.5	--	--
12:40	5	100	4	0.40	7.34	0.87	12	0.06	13.3	15.2	--	--
12:45	5	100	4	0.53	7.34	0.84	12	0.07	13.4	13.2	--	--
12:50	5	100	4	0.66	7.39	0.83	10	0.2	13.4	10.4	--	--
12:55	5	100	4	0.79	7.44	0.82	8	0.27	13.4	8.5	--	--
13:00	5	100	4	0.92	7.55	0.85	8	0.21	13.2	7.94	--	--
13:05	5	100	4	1.06	7.63	0.79	8	4.12	13.7	7.7	--	--
13:10	5	100	4	1.19	7.79	0.78	8	7.76	15.8	5.3	--	--
13:15	5	100	4	1.32	8.08	0.77	8	8.46	17	-4.7	--	--
13:20	5	100	4	1.45	8.16	0.76	8	8.51	17.6	-5.9	--	--
13:25	5	100	4	1.59	8.16	0.75	8	8.51	17.9	-3.7	--	--
13:30	5	100	4	1.72	8.15	0.75	8	8.51	18.1	-2.8	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments: Well ran dry had to recharge

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes



RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-18-90 **Date** 6/8/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** NR

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 5 **Total Depth (ft-bmp)** 14 **Water Column(ft)** 9 **Gallons in Well** 1.46

MP Elevation NA **Pump Intake (ft-bmp)** 5 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 14:40 **Gallons Purged** 1.72 **Replicate/ Code No.** DUP-09_060822 **Evacuation Method** Peristaltic

Purge Start: 13:40

Purge End: 14:40

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
13:40	0	100	5	0.13	8.52	0.0005	26	2.45	17.8	12.8	--	--
13:45	5	100	5	0.26	8.31	0.0004	15	4.61	16.3	4	--	--
13:50	5	100	5	0.40	8.26	0.0004	10	5.11	16	3.4	--	--
13:55	5	100	5	0.53	7.97	0.0004	12	5.36	15.7	5.8	--	--
14:00	5	100	5	0.66	8.36	0.0003	10	4.97	16.8	3.7	--	--
14:05	5	100	5	0.79	11.28	0.0003	10	4.43	16.1	28	--	--
14:10	5	100	5	0.92	11.29	0.003	10	4.65	15.1	30.8	--	--
14:15	5	100	5	1.06	11.31	0.003	8	5.46	14.8	27.5	--	--
14:20	5	100	5	1.19	11.32	0.003	8	5.51	14.8	24.4	--	--
14:25	5	100	5	1.32	11.32	0.003	8	5.23	15.2	20.7	--	--
14:30	5	100	5	1.45	11.32	0.003	8	5.03	15.4	21.2	--	--
14:35	5	100	5	1.59	11.32	0.003	8	4.87	15.4	18.5	--	--
14:40	5	100	5	1.72	11.33	0.003	8	4.85	15.5	17.6	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	4	HCL

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

ft-bmp = feet below measuring point
in. = inches

mS/cm = milliSiemens per centimeter
NTU = N

mV = millivolts

Project Number	30112892	Well ID	MW-18-91	Date	6/8/2022		
Project Name/Location	RACER Lansing, MI			Weather(°F)	Sunny		
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	NR	Casing Diameter (in.)	2	Well Material	NR
Static Water Level (ft-bmp)	6	Total Depth (ft-bmp)	12	Water Column(ft)	6	Gallons in Well	0.97
MP Elevation	NA	Pump Intake (ft-bmp)	11	Purge Method:	Low-Flow	Sample Method	Low-Flow
Sample Time:	09:35	Gallons Purged	1.19	Replicate/ Code No.	NA	Evacuation Method	Peristaltic
Purge Start:	09:00						
Purge End:	09:35						

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
09:00	0	100	5.5	0.13	7.63	0.77	27	0.34	14.4	-29.8	--	--
09:05	5	100	5.5	0.26	7.67	0.75	16	0.2	14.6	-28.7	--	--
09:10	5	100	5.5	0.40	7.65	0.74	12	0.11	14.5	-28	--	--
09:15	5	100	5.5	0.53	7.66	0.72	9	0.06	14.5	-25.8	--	--
09:20	5	100	5.5	0.66	7.65	0.71	8	0.05	14.4	-23.6	--	--
09:25	5	100	5.5	0.79	7.65	0.71	8	0.05	14.2	-22	--	--
09:30	5	100	5.5	0.92	7.65	0.7	6	0.01	14.4	-21.3	--	--
09:35	5	100	5.5	1.06	7.65	0.69	8	0.03	14.2	-19.9	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-18-92	Date	06/09/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Partly Cloudy. The wind is blowing W at 10.3 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	15.3	Total Depth (ft-bmp)	30.13	Water Column (ft)	14.83
		Gallons in Well			2.41
Purge Start	12:10	Pump Intake (ft-bmp)	27.63	Purge Method	Low-Flow
		Purge Equipment			Peristaltic
Purge End	12:40	Volumes Purged	0.66	Sample ID	MW-18-92_060922
		Sampled by			Austin Westhuis
Sample Time	12:35	Gallons Purged	1.59	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:15	0	0	200	15.3	0.26	6.75	1.03	4.55	0.34	12.2	1.2	--	--
12:20	5	5	200	15.3	0.53	6.76	1.03	2.33	0.34	12.2	-0.1	--	--
12:25	5	10	200	15.3	0.79	6.77	1.02	2.02	0.32	12	-10.3	--	--
12:30	5	15	200	15.3	1.06	6.77	1.03	1.64	0.31	12	-12.3	--	--
12:35	5	20	200	15.3	1.32	6.78	1.03	1.51	0.31	11.9	-15	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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



Project Number	30112892	Well ID	MW-18-93	Date	06/09/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	75.9 degrees F and Mostly Clear. The wind is blowing W at 13.9 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	47.49	Total Depth (ft-bmp)	85	Water Column (ft)	37.51
				Gallons in Well	6.1
Purge Start	16:10	Pump Intake (ft-bmp)	82.5	Purge Method	Low-Flow
				Purge Equipment	Bladder
Purge End	17:05	Volumes Purged	0.24	Sample ID	MW-18-93_060922
				Sampled by	Billy Cobern
Sample Time	17:05	Gallons Purged	1.45	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
16:15	0	0	100	47.39	0.13	7.63	0.72	44.2	5.04	20.1	-126	--	--
16:20	5	5	100	47.79	0.26	7.5	0.69	40.1	2.3	18.1	-142.6	--	--
16:25	5	10	100	48.22	0.40	7.48	0.68	35.1	1.54	19.8	-164.5	--	--
16:30	5	15	100	48.71	0.53	7.48	0.69	28.2	1.51	20	-165.3	--	--
16:35	5	20	100	49.15	0.66	7.47	0.69	23.1	1.44	19.7	-160.8	--	--
16:40	5	25	100	49.58	0.79	7.47	0.68	16.9	1.43	20.1	-156.7	--	--
16:45	5	30	100	49.99	0.92	7.48	0.68	13.8	1.46	20.1	-155.6	--	--
16:50	5	35	100	50.38	1.06	7.48	0.68	13	1.43	20.3	-154.4	--	--
16:55	5	40	100	50.69	1.19	7.48	0.68	10.7	1.44	20.3	-153.6	--	--
17:00	5	45	100	50.98	1.32	7.48	0.68	10.1	1.46	20.4	-153.5	--	--
17:05	5	50	100	51.26	1.45	7.48	0.68	10.4	1.49	20.5	-152.1	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Comments: Didn't meet drawdown requirements. 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



Project Number	30112892	Well ID	MW-18-94	Date	06/08/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	69.1 degrees F and Clear. The wind is blowing at 5.8 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	52.57	Total Depth (ft-bmp)	79.65	Water Column (ft)	27.08	Gallons in Well	4.4
Purge Start	11:35	Pump Intake (ft-bmp)	77.15	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	12:30	Volumes Purged	0.66	Sample ID	MW-18-94_060822	Sampled by	Austin Westhuis
Sample Time	12:25	Gallons Purged	2.91	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:40	0	0	200	52.64	0.26	6.72	5.29	310	0.59	14.4	-48.8	--	--
11:45	5	5	200	52.64	0.53	6.82	5.21	122	0.41	13.9	-56.9	--	--
11:50	5	10	200	52.64	0.79	6.84	5.2	65.1	0.33	14	-62.4	--	--
11:55	5	15	200	52.64	1.06	6.86	5.18	41.1	0.24	14	-66.7	--	--
12:00	5	20	200	52.64	1.32	6.86	5.16	24.4	0.23	14	-68.6	--	--
12:05	5	25	200	52.64	1.59	6.86	5.14	11.6	0.25	14	-70.2	--	--
12:10	5	30	200	52.64	1.85	6.87	5.14	7.9	0.24	14	-73	--	--
12:15	5	35	200	52.64	2.11	6.87	5.14	4.22	0.25	14	-73.8	--	--
12:20	5	40	200	52.64	2.38	6.87	5.13	3.89	0.25	13.9	-73.6	--	--
12:25	5	45	200	52.64	2.64	6.88	5.13	3.55	0.24	13.9	-74	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8260B SIMS	40 mL Glass	3	HCL
PFAS	250mL HDPE Plastic	2	None

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: <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



RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-18-95 **Date** 6/9/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** Sunny

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 9 **Total Depth (ft-bmp)** 9.5 **Water Column(ft)** 0.5 **Gallons in Well** 0.08

MP Elevation NA **Pump Intake (ft-bmp)** 5 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 13:00 **Gallons Purged** 0.79 **Replicate/ Code No.** NA **Evacuation Method** Peristaltic

Purge Start: 12:40

Purge End: 13:00

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
12:40	0	100	5	0.13	7.25	0.522	19	2.74	14.7	12.1	--	--
12:45	5	100	5	0.26	7.07	0.52	12	3.3	14.7	18.5	--	--
12:50	5	100	5	0.40	7.13	0.519	11	3.21	14.7	16.9	--	--
12:53	3	100	5	0.40	7.12	0.516	10	3.22	14.8	16.5	--	--
12:55	2	100	5	0.66	7.13	0.516	10	3.2	14.8	16.3	--	--
13:00	5	100	5	0.79	7.13	0.516	10	3.21	14.8	16.33	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-18-97	Date	06/08/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	71.6 degrees F and Mostly Cloudy. The wind is blowing E/SE at 8.1 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material	PVC		
Static Water Level (ft-bmp)	61.36	Total Depth (ft-bmp)	91.68	Water Column (ft)	30.32
		Gallons in Well	4.93		
Purge Start	13:05	Pump Intake (ft-bmp)	89.18	Purge Method	Low-Flow
		Purge Equipment	Peristaltic		
Purge End	13:35	Volumes Purged	0.32	Sample ID	MW-18-97_060822
		Sampled by	Austin Westhuis		
Sample Time	13:30	Gallons Purged	1.59	Replicate/ Code No.	NA
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:10	0	0	200	61.36	0.26	6.73	1.64	12.6	0.52	13.6	-41	--	--
13:15	5	5	200	61.36	0.53	6.76	1.65	3.08	0.5	13.4	-44.9	--	--
13:20	5	10	200	61.36	0.79	6.77	1.65	1.44	0.48	13.4	-46.2	--	--
13:25	5	15	200	61.36	1.06	6.79	1.64	1.29	0.46	13.3	-47.1	--	--
13:30	5	20	200	61.36	1.32	6.79	1.64	1.2	0.46	13.4	-47.4	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8260B SIMS	40 mL Glass	3	HCL
PFAS	250mL HDPE Plastic	2	None

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



RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-18-98 **Date** 6/9/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** Sunny

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 5 **Total Depth (ft-bmp)** 12 **Water Column(ft)** 7 **Gallons in Well** 1.14

MP Elevation NA **Pump Intake (ft-bmp)** 11 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 11:35 **Gallons Purged** 1.32 **Replicate/ Code No.** NA **Evacuation Method** Peristaltic

Purge Start: 10:50

Purge End: 11:35

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
10:50	0	100	5	0.13	6.93	2.44	19	0.19	14.8	-9.7	--	--
10:55	5	100	5	0.26	6.98	2.5	15	0.1	14.7	-13.6	--	--
11:00	5	100	5	0.40	7	2.49	14	0.04	14.8	-14.7	--	--
11:05	5	100	5	0.53	7.01	2.45	12	0.03	14.7	-14.7	--	--
11:10	5	100	5	0.66	7.02	2.44	12	0.03	14.8	-14.5	--	--
11:15	5	100	5	0.79	7.04	2.37	9	0.06	14.8	-14.4	--	--
11:20	5	100	5	0.92	7.1	2.3	10	0.17	14	-13.9	--	--
11:25	5	100	5	1.06	7.1	2.11	10	0.24	14.7	-12.1	--	--
11:30	5	100	5	1.19	7.11	2.05	10	0.37	15	-11.3	--	--
11:35	5	100	5	1.32	7.11	2.03	10	0.38	14.7	-11	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-18-99 **Date** 6/8/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** Cloudy

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 5 **Total Depth (ft-bmp)** 14 **Water Column(ft)** 9 **Gallons in Well** 1.46

MP Elevation NA **Pump Intake (ft-bmp)** 13 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 16:00 **Gallons Purged** 1.72 **Replicate/ Code No.** NA **Evacuation Method** Peristaltic

Purge Start: 15:00

Purge End: 16:00

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
15:00	0	100	5	0.13	7.98	2.04	19	0.34	15	-15.3	--	--
15:05	5	100	5	0.26	7.81	2.05	15	0.09	14.5	-13.8	--	--
15:10	5	100	5	0.40	7.83	2.04	11	0.04	14.4	-15.9	--	--
15:15	5	100	5	0.53	8	1.95	8	0.03	14.3	-11.4	--	--
15:20	5	100	5	0.66	8.06	1.89	8	0.01	14.3	-8.8	--	--
15:25	5	100	5	0.79	8.15	1.83	7	0.02	14.1	-7.2	--	--
15:30	5	100	5	0.92	8.25	1.79	7	0.07	14.1	-6	--	--
15:35	5	100	5	1.06	8.41	1.73	7	0.17	14	-3.9	--	--
15:40	5	100	5	1.19	8.54	1.64	7	0.23	13.9	-1.6	--	--
15:45	5	100	5	1.32	8.69	1.58	7	0.22	13.9	0.2	--	--
15:50	5	100	5	1.45	8.82	1.55	7	0.23	13.8	1.5	--	--
15:55	5	100	5	1.59	9.02	1.53	7	0.22	13.7	2.7	--	--
16:00	5	100	5	1.72	9.05	1.54	7	1.14	13.6	5	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map Well Locked at Arrival: yes

Condition of Well: Good Well Locked at Departure: yes

ft-bmp = feet below measuring point mS/cm = milliSiemens per centimeter mV = millivolts
in. = inches NTU = N



RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-18-100 **Date** 6/8/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** Rain

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 6 **Total Depth (ft-bmp)** 13 **Water Column(ft)** 7 **Gallons in Well** 1.14

MP Elevation NA **Pump Intake (ft-bmp)** 12 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 16:40 **Gallons Purged** 0.79 **Replicate/ Code No.** NA **Evacuation Method** Peristaltic

Purge Start: 16:15

Purge End: 16:40

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
16:15	0	100	6	0.13	7.52	0.86	26	1.76	14	-20.9	--	--
16:20	5	100	6	0.26	7.43	0.85	20	1.73	14.8	-7.3	--	--
16:25	5	100	6	0.40	7.47	0.85	17	1.71	15	-5.1	--	--
16:30	5	100	6	0.53	7.49	0.84	10	2.2	14.2	-4.4	--	--
16:35	5	100	6	0.66	7.49	0.84	10	2.52	14	-4	--	--
16:40	5	100	6	0.79	7.48	0.83	10	2.43	14.3	-4.2	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-18-101	Date	06/09/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	73.0 degrees F and Mostly Clear.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
Static Water Level (ft-bmp)	61.52	Total Depth (ft-bmp)	87.45	Water Column (ft)	25.93
Purge Start	14:30	Pump Intake (ft-bmp)	85	Purge Method	Low-Flow
Purge End	15:15	Volumes Purged	0.28	Sample ID	MW-18-101_060922
Sample Time	15:15	Gallons Purged	1.19	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	4.21
				Purge Equipment	Bladder
				Sampled by	Billy Cobern
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:35	0	0	100	61.61	0.13	7.22	1.61	15.4	3.05	25	-200.9	--	--
14:40	5	5	100	61.75	0.26	7.17	1.68	12.2	2.99	24.5	-205.6	--	--
14:45	5	10	100	61.75	0.40	7.06	1.68	9.6	2.4	24.9	-237	--	--
14:50	5	15	100	61.75	0.53	7.07	1.69	7.17	1.73	26.2	-255.8	--	--
14:55	5	20	100	61.75	0.66	7.04	1.7	8.1	1.67	26	-272	--	--
15:00	5	25	100	61.75	0.79	7.02	1.7	7.62	1.72	25.2	-276.9	--	--
15:05	5	30	100	61.75	0.92	6.98	1.69	6.12	1.65	24.8	-287.9	--	--
15:10	5	35	100	61.75	1.06	6.98	1.69	6.51	1.55	25	-293.4	--	--
15:15	5	40	100	61.75	1.19	6.97	1.69	6.12	1.6	25.1	-295.1	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

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



Project Number	30112892	Well ID	MW-18-102	Date	06/09/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Partly Cloudy. The wind is blowing W at 10.3 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	9.49	Total Depth (ft-bmp)	15.25	Water Column (ft)	5.76
		Gallons in Well			0.94
Purge Start	13:00	Pump Intake (ft-bmp)	12.5	Purge Method	Low-Flow
		Purge Equipment			Peristaltic
Purge End	13:45	Volumes Purged	2.13	Sample ID	MW-18-102_060922
		Sampled by			Scott Filipiak
Sample Time	13:45	Gallons Purged	2.00	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:05	0	0	200	9.75	0.26	7.27	0.55	1.09	3.44	13.6	45	--	--
13:10	5	5	200	9.75	0.53	7.25	0.54	3	2.86	13.2	40.9	--	--
13:15	5	10	200	9.75	0.79	7.24	0.54	1.78	2.45	13.3	39.3	--	--
13:20	5	15	200	9.75	1.06	7.25	0.54	1.56	1.93	13.3	37.2	--	--
13:25	5	20	200	9.75	1.32	7.25	0.54	1.9	1.57	13.3	35.4	--	--
13:30	5	25	200	9.75	0.16	7.21	0.54	1.55	1.4	13.3	34.2	--	--
13:35	5	30	200	9.75	1.85	7.25	0.54	1.88	1.31	13.3	33	--	--
13:40	5	35	200	9.75	2.11	7.25	0.53	2.22	1.3	13.1	33	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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>North of playground</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>Flush mount</u>	Key Number To Well: <u>10G200</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



Project Number	30112892	Well ID	MW-18-103	Date	06/09/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Partly Cloudy. The wind is blowing W at 10.3 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	2.72	Total Depth (ft-bmp)	10.7	Water Column (ft)	7.98
		Gallons in Well			1.3
Purge Start	12:05	Pump Intake (ft-bmp)	7.5	Purge Method	Low-Flow
		Purge Equipment			Peristaltic
Purge End	12:45	Volumes Purged	1.35	Sample ID	MW-18-103
		Sampled by			Scott Filipiak
Sample Time	12:45	Gallons Purged	1.75	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:10	0	0	200	3.33	0.26	7.12	0.62	75.9	0.53	14.4	27.9	--	--
12:15	5	5	200	3.35	0.53	7.1	0.61	4.56	0.3	14.2	25.3	--	--
12:20	5	10	200	3.35	0.79	7.08	0.61	3.18	0.25	14.1	22.5	--	--
12:25	5	15	200	3.35	1.06	7.08	0.61	2.05	0.24	14.3	20.8	--	--
12:30	5	20	200	3.35	1.32	7.07	0.6	2.18	0.24	14.1	20	--	--
12:35	5	25	200	3.35	1.59	7.08	0.61	1.98	0.23	14.1	19.7	--	--
12:40	5	30	200	3.35	1.85	7.08	0.61	2.07	0.22	14.1	19.6	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

Comments: Angry Birds in nearby trees. ??

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: NE of playground	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: 10G200

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



Project Number	30112892	Well ID	MW-18-104	Date	06/09/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Mostly Clear. The wind is blowing W/SW at 10.3 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	1.32	Total Depth (ft-bmp)	10	Water Column (ft)	8.68	Gallons in Well	1.41
Purge Start	11:10	Pump Intake (ft-bmp)	7.5	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	11:50	Volumes Purged	1.24	Sample ID	MW-18-104_060922	Sampled by	Scott Filipiak
Sample Time	11:50	Gallons Purged	1.75	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:15	0	0	200	2.05	0.26	7.12	0.55	37.2	1.91	13.7	51	--	--
11:20	5	5	200	2.22	0.53	7.13	0.55	5.32	0.38	13.9	39.7	--	--
11:25	5	10	200	2.22	0.79	7.11	0.54	3.18	0.52	14.1	37.2	--	--
11:30	5	15	200	2.22	1.06	7.12	0.54	2.15	0.22	14.1	29.2	--	--
11:35	5	20	200	2.22	1.32	7.12	0.54	1.8	0.21	14.1	26.7	--	--
11:40	5	25	200	2.22	1.59	7.13	0.55	1.69	0.21	14.3	24.2	--	--
11:45	5	30	200	2.22	1.85	7.14	0.55	1.75	0.22	14.3	24	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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: West of Playground	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: 10G2000

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



Project Number	30112892	Well ID	MW-18-105	Date	06/09/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Mostly Clear. The wind is blowing W/SW at 10.3 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	1.15	Total Depth (ft-bmp)	11.2	Water Column (ft)	10.05
		Gallons in Well			1.63
Purge Start	10:15	Pump Intake (ft-bmp)	8.5	Purge Method	Low-Flow
		Purge Equipment			Peristaltic
Purge End	10:55	Volumes Purged	1.07	Sample ID	MW-18-105_060922
		Sampled by			Scott Filipiak
Sample Time	10:55	Gallons Purged	1.75	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:20	0	0	200	1.51	0.26	7.15	0.55	13.2	1.34	13.9	22.2	--	--
10:25	5	5	200	1.51	0.53	7.11	0.53	3.76	0.54	13.1	22.4	--	--
10:30	5	10	200	1.51	0.79	7.13	0.54	2.12	0.42	13.1	18.4	--	--
10:35	5	15	200	1.51	1.06	7.13	0.53	1.81	0.34	13	16.3	--	--
10:40	5	20	200	1.51	1.32	7.12	0.53	2.02	0.25	13.1	13.9	--	--
10:45	5	25	200	1.51	1.59	7.12	0.53	1.96	0.25	13.1	11	--	--
10:50	5	30	200	1.51	1.85	7.13	0.54	2.1	0.25	13.1	10.2	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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: Baseball Field	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: 10G200

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



Project Number	30112892	Well ID	MW-18-106	Date	06/09/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Mostly Clear. The wind is blowing SW at 11.4 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	4.46	Total Depth (ft-bmp)	9.7	Water Column (ft)	5.24
		Gallons in Well			0.85
Purge Start	14:15	Pump Intake (ft-bmp)	7.5	Purge Method	Low-Flow
		Purge Equipment			Peristaltic
Purge End	15:00	Volumes Purged	2.35	Sample ID	MW-18-106_060922
		Sampled by			Scott Filipiak
Sample Time	15:00	Gallons Purged	2.00	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:20	0	0	200	4.91	0.26	7.12	0.63	61.3	0.94	15.2	-31.7	--	--
14:25	5	5	200	4.91	0.53	7.11	0.61	29	0.86	15.3	-33.7	--	--
14:30	5	10	200	4.91	0.79	7.09	0.58	12.4	0.95	14.8	-39.9	--	--
14:35	5	15	200	4.91	1.06	7.1	0.58	3.39	0.58	14.6	-46.9	--	--
14:40	5	20	200	4.91	1.32	7.1	0.59	3.33	0.38	14.7	-51.8	--	--
14:45	5	25	200	4.91	1.59	7.11	0.61	3.01	0.3	15	-53.5	--	--
14:50	5	30	200	4.91	1.85	7.11	0.61	2.36	0.3	15	-53.8	--	--
14:55	5	35	200	4.91	2.11	7.11	0.61	2.55	0.3	15	-53.8	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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: East of baseball field	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: 10G200

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



Project Number	30112892	Well ID	MW-19-107	Date	06/09/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Partly Cloudy. The wind is blowing W at 10.3 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material	PVC		
Static Water Level (ft-bmp)	17.4	Total Depth (ft-bmp)	29.88	Water Column (ft)	12.48
		Gallons in Well	2.03		
Purge Start	13:05	Pump Intake (ft-bmp)	27.38	Purge Method	Low-Flow
		Purge Equipment	Peristaltic		
Purge End	13:30	Volumes Purged	0.65	Sample ID	MW-19-107_060922
		Sampled by	Austin Westhuis		
Sample Time	13:25	Gallons Purged	1.32	Replicate/ Code No.	NA
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:10	0	0	200	17.4	0.26	6.35	0.85	3.36	0.45	11.6	-26.9	--	--
13:15	5	5	200	17.4	0.53	6.43	0.84	2.77	0.22	11.4	-32.5	--	--
13:20	5	10	200	17.4	0.79	6.44	0.84	2.17	0.22	11.4	-33.7	--	--
13:25	5	15	200	17.4	1.06	6.5	0.84	1.94	0.21	11.3	-38.5	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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: <u>Good condition</u>	Well Locked at Departure: yes
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



Project Number	30112892	Well ID	MW-19-108	Date	06/09/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Mostly Clear. The wind is blowing W at 9.2 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	15.5	Total Depth (ft-bmp)	30.02	Water Column (ft)	14.52	Gallons in Well	2.36
Purge Start	11:20	Pump Intake (ft-bmp)	27.52	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	11:55	Volumes Purged	0.78	Sample ID	MW-19-108_060922	Sampled by	Austin Westhuis
Sample Time	11:50	Gallons Purged	1.85	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:25	0	0	200	15.5	0.26	6.28	1.25	91.1	2.75	12	28.2	--	--
11:30	5	5	200	15.5	0.53	6.5	1.23	42.2	0.35	11.7	15.3	--	--
11:35	5	10	200	15.5	0.79	6.53	1.21	12.6	0.24	11.6	12.2	--	--
11:40	5	15	200	15.5	1.06	6.56	1.26	3.08	0.21	11.7	10.7	--	--
11:45	5	20	200	15.5	1.32	6.58	1.25	2.92	0.2	11.6	9.8	--	--
11:50	5	25	200	15.5	1.59	6.59	1.25	2.72	0.2	11.6	9.2	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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



Project Number	30112892	Well ID	MW-19-111	Date	06/09/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Mostly Clear. The wind is blowing W/SW at 10.3 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	21.75	Total Depth (ft-bmp)	27.42	Water Column (ft)	5.67	Gallons in Well	0.92
Purge Start	10:35	Pump Intake (ft-bmp)	24.92	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	11:05	Volumes Purged	1.72	Sample ID	MW-19-111_060922	Sampled by	Austin Westhuis
Sample Time	11:00	Gallons Purged	1.59	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:40	0	0	200	21.75	0.26	6.17	1.31	2.24	1.14	12	62.5	--	--
10:45	5	5	200	21.75	0.53	6.39	1.28	1.61	0.66	11.6	33.1	--	--
10:50	5	10	200	21.75	0.79	6.45	1.27	1.2	0.47	11.7	27.1	--	--
10:55	5	15	200	21.75	1.06	6.48	1.28	1.18	0.45	11.8	23.9	--	--
11:00	5	20	200	21.75	1.32	6.53	1.28	1.08	0.44	11.8	22.3	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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

RACER Lansing GW Sampling

Project Number	30112892	Well ID	MW-19-112	Date	6/9/2022		
Project Name/Location	RACER Lansing, MI			Weather(°F)	NR		
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	NR	Casing Diameter (in.)	2	Well Material	NR
Static Water Level (ft-bmp)	7	Total Depth (ft-bmp)	14	Water Column(ft)	7	Gallons in Well	1.14
MP Elevation	NA	Pump Intake (ft-bmp)	13	Purge Method:	Low-Flow	Sample Method	Low-Flow
Sample Time:	17:05	Gallons Purged	0.92	Replicate/ Code No.	NA	Evacuation Method	Peristaltic
Purge Start:	16:35						
Purge End:	17:05						

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
16:35	0	100	5	0.13	6.41	8.21	20	0.12	16.3	-19.6	--	--
16:40	5	100	5	0.26	6.44	8.24	15	0.11	16.2	-22.7	--	--
16:45	5	100	5	0.40	6.47	8.22	11	0.04	16.2	-24.8	--	--
16:50	5	100	5	0.53	6.5	8.11	11	0.05	16.2	-26.7	--	--
16:55	5	100	5	0.66	6.53	8	11	0.09	15.9	-28	--	--
17:00	5	100	5	0.92	6.54	7.98	11	0.09	16	-28.1	--	--
17:05	5	100	5	0.92	6.54	7.98	11	0.09	16	-28.1	--	--
Constituent Sampled		Container			Number		Preservative					
PFAS		250 mL HDPE Plastic			2		None					

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-19-114	Date	06/09/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	61.0 degrees F and Mostly Cloudy. The wind is blowing W at 8.1 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	2.14	Total Depth (ft-bmp)	10.8	Water Column (ft)	8.66
				Gallons in Well	1.41
Purge Start	09:15	Pump Intake (ft-bmp)	8.8	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	10:02	Volumes Purged	1.60	Sample ID	MW-19-114_060922
				Sampled by	Scott Filipiak
Sample Time	10:00	Gallons Purged	2.25	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:20	0	0	200	3.25	0.26	7.24	0.465	1.02	0.7	12.9	30.2	--	--
09:25	5	5	200	3.33	0.53	7.23	0.465	1.11	0.78	12.9	28.4	--	--
09:30	5	10	200	3.33	0.79	7.18	0.466	1.31	0.64	13.1	21.2	--	--
09:35	5	15	200	3.33	1.06	7.17	0.468	0.96	0.29	13.3	15.8	--	--
09:40	5	20	200	3.33	1.32	7.19	0.47	0.74	0.31	13.2	9.9	--	--
09:45	5	25	200	3.33	1.59	7.2	0.469	0.71	0.18	13.2	8.1	--	--
09:50	5	30	200	3.33	1.85	7.2	0.471	1	0.2	13.2	6.1	--	--
09:55	5	35	200	3.33	2.11	7.21	0.473	0.96	0.21	13.3	5.3	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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>Baseball Field</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>Flush mount</u>	Key Number To Well: <u>10G200</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



Project Number	30112892	Well ID	MW-19-115	Date	06/03/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	NR			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	57.43	Total Depth (ft-bmp)	78.72	Water Column (ft)	21.29	Gallons in Well	3.46
Purge Start	13:20	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	13:50	Volumes Purged	NA	Sample ID	MW-19-115_060322	Sampled by	Donald Richmond
Sample Time	13:50	Gallons Purged	NA	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:30	0	0	200	57.43	--	7.01	2.47	2.54	0.98	18.3	-63.9	--	--
13:35	5	5	200	57.43	--	7.08	2.4	0.02	1.67	18.2	-87	--	--
13:40	5	10	200	57.43	--	7.07	2.44	0.02	1.69	19.6	-91.8	--	--
13:45	5	15	200	57.43	--	7.05	2.52	0.02	1.63	19.2	-90.8	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: _____	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



Project Number	30112892	Well ID	MW-19-116	Date	06/03/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	NR			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	55.75	Total Depth (ft-bmp)	73.2	Water Column (ft)	17.45	Gallons in Well	2.84
Purge Start	12:20	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	12:45	Volumes Purged	NA	Sample ID	MW-19-116_060322	Sampled by	Donald Richmond
Sample Time	12:45	Gallons Purged	NA	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:30	0	0	200	55.75	--	6.93	1.29	4.38	7.77	17.1	-75.6	--	--
12:35	5	5	200	55.75	--	6.94	1.29	0.02	7.35	17.3	-78	--	--
12:40	5	10	200	55.75	--	6.96	1.29	0.02	7.01	17.6	-81.9	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: _____	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



Project Number	30112892	Well ID	MW-19-117	Date	06/02/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	73.9 degrees F and Clear. The wind is blowing N at 6.9 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	58.42	Total Depth (ft-bmp)	62.8	Water Column (ft)	4.38
				Gallons in Well	0.71
Purge Start	14:25	Pump Intake (ft-bmp)	62	Purge Method	Low-Flow
				Purge Equipment	Bladder
Purge End	15:05	Volumes Purged	1.49	Sample ID	MW-19-117_060222
				Sampled by	Billy Cobern
Sample Time	15:05	Gallons Purged	1.06	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:30	0	0	100	58.62	0.13	7.04	1.17	410	0.58	20	-124.4	--	--
14:35	5	5	100	58.75	0.26	7	1.16	141	0.53	21.1	-125.5	--	--
14:40	5	10	100	58.75	0.40	7	1.17	66.5	0.61	21.5	-125.4	--	--
14:45	5	15	100	58.75	0.53	6.99	1.16	35	0.57	21.7	-124.8	--	--
14:50	5	20	100	58.75	0.66	6.98	1.16	27.3	0.47	22.1	-124.6	--	--
14:55	5	25	100	58.75	0.79	6.98	1.16	24.7	0.49	22.5	-125	--	--
15:00	5	30	100	58.75	0.92	6.98	1.16	25.7	0.49	22.7	-124.7	--	--
15:05	5	35	100	58.75	1.06	6.98	1.16	23.9	0.48	22.7	-124.6	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: 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



Project Number	30112892	Well ID	MW-19-118D	Date	06/06/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	73.0 degrees F and Cloudy. The wind is blowing W/SW at 4.7 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	75.05	Total Depth (ft-bmp)	192.95	Water Column (ft)	117.9
				Gallons in Well	19.16
Purge Start	12:40	Pump Intake (ft-bmp)	190	Purge Method	Low-Flow
				Purge Equipment	Bladder
Purge End	13:40	Volumes Purged	0.08	Sample ID	MW-19-118D
				Sampled by	Billy Cobern
Sample Time	13:40	Gallons Purged	1.59	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:45	0	0	100	75.08	0.13	7.33	1.84	37.2	2.87	22	19.9	--	--
12:50	5	5	100	75.08	0.26	7.32	1.83	37.6	2.77	21.8	14	--	--
12:55	5	10	100	75.08	0.40	7.31	1.82	40.1	2.67	21.6	-1	--	--
13:00	5	15	100	75.08	0.53	7.3	1.82	32.6	2.44	21.7	-8.3	--	--
13:05	5	20	100	75.08	0.66	7.3	1.81	38.2	2.47	21.5	-25.3	--	--
13:10	5	25	100	75.08	0.79	7.29	1.81	35.8	2.34	21.6	-32.6	--	--
13:15	5	30	100	75.08	0.92	7.28	1.81	33.7	2.47	21.5	-50.4	--	--
13:20	5	35	100	75.08	1.06	7.28	1.81	35.4	2.28	21.4	-57.8	--	--
13:25	5	40	100	75.08	1.19	7.27	1.81	34.3	2.33	21.3	-67.8	--	--
13:30	5	45	100	75.08	1.32	7.26	1.81	36.2	2.16	21.4	-79.9	--	--
13:35	5	50	100	75.08	1.45	7.26	1.81	35.9	2.19	21.3	-82.5	--	--
13:40	5	55	100	75.08	1.59	7.26	1.81	38.1	2.09	21.2	-89.7	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 522	250 mL Amber	1	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



Project Number	30112892	Well ID	MW-19-118S	Date	06/06/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(*F)	72.0 degrees F and Mostly Cloudy. The wind is blowing S at 6.9 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material	PVC		
Static Water Level (ft-bmp)	75.01	Total Depth (ft-bmp)	162.85	Water Column (ft)	87.84
		Gallons in Well	14.27		
Purge Start	11:35	Pump Intake (ft-bmp)	160	Purge Method	Low-Flow
		Purge Equipment	Bladder		
Purge End	12:20	Volumes Purged	0.08	Sample ID	MW-19-118S
		Sampled by	Billy Cobern		
Sample Time	12:20	Gallons Purged	1.19	Replicate/ Code No.	NA
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:40	0	0	100	75.03	0.13	7.19	2.46	29.7	3.76	19.9	-97.3	--	--
11:45	5	5	100	75.03	0.26	7.18	2.44	29.1	3.39	20.1	-96.3	--	--
11:50	5	10	100	75.03	0.40	7.19	2.45	18.3	4.04	20.6	-93.2	--	--
11:55	5	15	100	75.03	0.53	7.21	2.45	15.4	6.63	20.8	-91.5	--	--
12:00	5	20	100	75.03	0.66	7.23	2.45	14.9	4.13	21.2	-90.7	--	--
12:05	5	25	100	75.03	0.79	7.13	2.45	14.8	3.65	21.3	-109.1	--	--
12:10	5	30	100	75.03	0.92	7.11	2.45	13.8	3.45	21.3	-110.9	--	--
12:15	5	35	100	75.03	1.06	7.08	2.45	13.7	3.3	21.2	-111.2	--	--
12:20	5	40	100	75.03	1.19	7.07	2.45	13.6	3.4	21.2	-111.2	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 522	250 mL Amber	1	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



Project Number	30112892	Well ID	MW-19-119D	Date	06/08/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	71.1 degrees F and Partly Cloudy. The wind is blowing E at 5.8 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	82.51	Total Depth (ft-bmp)	197.9	Water Column (ft)	115.39
				Gallons in Well	18.75
Purge Start	13:45	Pump Intake (ft-bmp)	195	Purge Method	Low-Flow
				Purge Equipment	Bladder
Purge End	14:35	Volumes Purged	0.07	Sample ID	MW-19-119D_060822
				Sampled by	Billy Cobern
Sample Time	14:35	Gallons Purged	1.32	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:50	0	0	100	82.52	0.13	7.21	1.23	39.9	4.91	17.8	-43.7	--	--
13:55	5	5	100	82.52	0.26	7.08	1.24	24.2	2.21	16.2	-74.7	--	--
14:00	5	10	100	82.52	0.40	7.06	1.24	20.1	0.99	16.1	-82.8	--	--
14:05	5	15	100	82.52	0.53	7.06	1.23	18.2	0.68	15.9	-86	--	--
14:10	5	20	100	82.52	0.66	7.06	1.23	15.7	0.56	15.9	-88	--	--
14:15	5	25	100	82.52	0.79	7.06	1.23	13.3	0.54	15.9	-88.8	--	--
14:20	5	30	100	82.52	0.92	7.06	1.23	10.8	0.55	16.3	-91.7	--	--
14:25	5	35	100	82.52	1.06	7.07	1.23	14.2	0.47	16.4	-91.9	--	--
14:30	5	40	100	82.52	1.19	7.07	1.23	13.9	0.45	16.5	-92.4	--	--
14:35	5	45	100	82.52	1.32	7.07	1.23	13.3	0.46	16.7	-93.2	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 522	250 mL Amber	1	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



Project Number	30112892	Well ID	MW-19-119S	Date	06/08/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	71.6 degrees F and Mostly Cloudy. The wind is blowing E/SE at 8.1 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	68.49	Total Depth (ft-bmp)	163.9	Water Column (ft)	95.41
				Gallons in Well	15.5
Purge Start	11:35	Pump Intake (ft-bmp)	161.5	Purge Method	Low-Flow
				Purge Equipment	Bladder
Purge End	12:40	Volumes Purged	0.11	Sample ID	MW-19-119S_060822
				Sampled by	Billy Cobern
Sample Time	12:40	Gallons Purged	1.72	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:20	0	0	100	68.79	1.19	7.03	1.28	10.1	0.63	18.1	-57.4	--	--
12:25	5	5	100	68.79	1.32	7.04	1.29	9.92	0.63	18	-58	--	--
12:30	5	10	100	68.79	1.45	7.04	1.28	9.8	0.56	18	-58.2	--	--
12:35	5	15	100	68.79	1.59	7.04	1.28	9.63	0.58	18	-58.4	--	--
12:40	5	20	100	68.79	1.72	7.04	1.28	9.14	0.59	18	-58.5	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 522	250 mL Amber	1	HCL

Comments: Fulcrum app closed out/ deleted the first 40 minutes of data collection

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



Project Number	30112892	Well ID	MW-19-120	Date	06/02/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	NR			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	64.66	Total Depth (ft-bmp)	74	Water Column (ft)	9.34	Gallons in Well	1.52
Purge Start	11:55	Pump Intake (ft-bmp)	72	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	12:55	Volumes Purged	1.04	Sample ID	MW-19-120	Sampled by	Billy Cobern
Sample Time	12:55	Gallons Purged	1.59	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:00	0	0	100	64.72	0.13	7.14	2.51	135	3.25	21.8	11.6	--	--
12:05	5	5	100	64.72	0.26	7.02	2.71	100	0.97	21.9	-3.9	--	--
12:10	5	10	100	64.72	0.40	7.01	2.72	92	0.76	21.9	-4.5	--	--
12:15	5	15	100	64.72	0.53	7.01	2.72	70.2	0.66	22	-5.8	--	--
12:20	5	20	100	64.72	0.66	7	2.72	48.3	0.58	22	-2.5	--	--
12:25	5	25	100	64.72	0.79	7.01	2.72	35	0.6	21.7	9.6	--	--
12:30	5	30	100	64.72	0.92	7.01	2.7	28.6	0.69	21.6	19.7	--	--
12:35	5	35	100	64.72	1.06	7.02	2.68	25.1	0.77	21.5	24	--	--
12:40	5	40	100	64.72	1.19	7.04	2.64	23.9	1.09	21.7	31.8	--	--
12:45	5	45	100	64.72	1.32	7.04	2.62	21.1	1.13	21.8	32.9	--	--
12:50	5	50	100	64.72	1.45	7.05	2.62	19.8	1.12	21.8	33.6	--	--
12:55	5	55	100	64.72	1.59	7.05	2.62	20.1	1.08	21.6	34.4	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM, VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

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

Well Information

Well Location: 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



Project Number	30112892	Well ID	MW-19-121	Date	06/01/2022
Project Name/Location	RACER Lansing GWS 2022	Weather(°F)	NR		
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	63.35	Total Depth (ft-bmp)	71.74	Water Column (ft)	8.39
		Gallons in Well			1.36
Purge Start	13:40	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
		Purge Equipment			Bladder
Purge End	14:05	Volumes Purged	NA	Sample ID	MW-19-121_060122
		Sampled by			Donald Richmond
Sample Time	14:05	Gallons Purged	NA	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:45	0	0	200	63.35	--	7.03	1.87	0.02	6.56	18.3	83.6	--	--
13:50	5	5	200	63.35	--	7.01	1.9	0.02	5.87	19.1	75.3	--	--
13:55	5	10	200	63.35	--	7.02	1.87	0.02	5.73	18.9	71.7	--	--
14:00	5	15	200	63.35	--	7.02	1.89	0.02	5.79	19.1	69.8	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4 D, Nutrients	40 mL Glass	7	H2SO4, 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: _____	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



Project Number	30112892	Well ID	MW-19-122	Date	06/02/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	60.1 degrees F and Cloudy. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material	PVC		
Static Water Level (ft-bmp)	61.79	Total Depth (ft-bmp)	66.85	Water Column (ft)	5.06
		Gallons in Well	0.82		
Purge Start	09:10	Pump Intake (ft-bmp)	65	Purge Method	Low-Flow
		Purge Equipment	Bladder		
Purge End	10:00	Volumes Purged	1.61	Sample ID	MW-19-122_060222
		Sampled by	Billy Cobern		
Sample Time	10:00	Gallons Purged	1.32	Replicate/ Code No.	NA
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:15	0	0	100	62.15	0.13	7.05	4.52	908	631	15.7	95.2	--	--
09:20	5	5	100	62.1	0.26	7.07	4.52	878	6.2	16.1	97.1	--	--
09:25	5	10	100	62.1	0.40	7.08	4.53	612	6.44	15.8	105	--	--
09:30	5	15	100	62.1	0.53	7.08	4.53	529	6.23	15.8	104	--	--
09:35	5	20	100	62.1	0.66	7.08	4.53	581	6.06	15.8	104.1	--	--
09:40	5	25	100	62.1	0.79	7.09	4.53	522	6.15	15.8	105.5	--	--
09:45	5	30	100	62.1	0.92	7.09	4.51	134	6.18	16	108.5	--	--
09:50	5	35	100	62.1	1.06	7.08	4.5	98.6	6.34	16.4	109.2	--	--
09:55	5	40	100	62.1	1.19	7.08	4.5	94.1	6.17	16.4	109.2	--	--
10:00	5	45	100	62.1	1.32	7.08	4.5	91.3	6.05	16.4	109.2	Brown	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	40 mL Glass	3	HCL

Comments: Cleaned flow cell at 9:40

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



Project Number	30112892	Well ID	MW-19-123	Date	06/01/2022		
Project Name/Location	RACER Lansing GWS 2022	Weather(°F)	NR				
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	60.54	Total Depth (ft-bmp)	72.2	Water Column (ft)	11.66	Gallons in Well	1.89
Purge Start	11:40	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	12:30	Volumes Purged	NA	Sample ID	MW-19-123_060122	Sampled by	Donald Richmond
Sample Time	12:30	Gallons Purged	NA	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:50	0	0	200	60.54	--	6.72	2.09	2.4	5.91	17.9	97.2	--	--
11:55	5	5	200	60.54	--	6.82	2.08	0.02	5.65	17.3	76.9	--	--
12:00	5	10	200	60.54	--	6.82	2.14	0.02	4.61	18.4	104.8	--	--
12:05	5	15	200	60.54	--	6.83	2.16	0.02	4.15	18.7	107.9	--	--
12:10	5	20	200	60.54	--	6.82	2.22	0.02	3.86	19.9	118.3	--	--
12:15	5	25	200	60.54	--	6.83	2.16	0.02	4.32	18.7	119.1	--	--
12:20	5	30	200	60.54	--	6.84	2.19	0.02	4.57	18.3	119	--	--
12:25	5	35	200	60.54	--	6.84	2.18	0.02	4.25	18.6	118.8	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4 D, Nutrients	40 mL Glass	7	H2SO4, 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: _____	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



Project Number	30112892	Well ID	MW-19-124	Date	06/02/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	62.1 degrees F and Cloudy. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	63.89	Total Depth (ft-bmp)	72.3	Water Column (ft)	8.41
				Gallons in Well	1.37
Purge Start	10:30	Pump Intake (ft-bmp)	70	Purge Method	Low-Flow
				Purge Equipment	Bladder
Purge End	11:25	Volumes Purged	1.06	Sample ID	MW-19-124
				Sampled by	Billy Cobern
Sample Time	11:25	Gallons Purged	1.45	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:35	0	0	100	63.89	0.13	6.97	3.46	189	3.04	17.9	-67.7	--	--
10:40	5	5	100	63.89	0.26	6.8	3.47	242	1.01	17	-69.5	--	--
10:45	5	10	100	63.89	0.40	6.79	3.45	267	0.73	17.5	-72.4	--	--
10:50	5	15	100	63.89	0.53	6.78	3.45	222	0.67	17.9	-74	--	--
10:55	5	20	100	63.89	0.66	6.78	3.44	174	0.56	17.9	-74.1	--	--
11:00	5	25	100	63.89	0.79	6.77	3.44	114	0.53	17.9	-73.6	--	--
11:05	5	30	100	63.89	0.92	6.77	3.44	72.2	0.52	17.9	-73.6	--	--
11:10	5	35	100	63.89	1.06	6.77	3.44	57.2	0.51	17.9	-73.6	--	--
11:15	5	40	100	63.89	1.19	6.77	3.43	50.2	0.48	17.9	-73.5	--	--
11:20	5	45	100	63.89	1.32	6.77	3.43	49.8	0.48	17.9	-73.5	--	--
11:25	5	50	100	63.89	1.45	6.77	3.43	47.8	0.48	17.9	-73.4	Brown	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



Project Number	30112892	Well ID	MW-19-125	Date	06/06/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	71.1 degrees F and Light Rain. The wind is blowing N at 3.4 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	4
		Well Casing Material	Steel		
Static Water Level (ft-bmp)	75.3	Total Depth (ft-bmp)	104.75	Water Column (ft)	29.45
		Gallons in Well	19.14		
Purge Start	14:15	Pump Intake (ft-bmp)	102	Purge Method	Low-Flow
		Purge Equipment	Bladder		
Purge End	14:55	Volumes Purged	0.06	Sample ID	MW-19-125
		Sampled by	Billy Cobern		
Sample Time	14:55	Gallons Purged	1.06	Replicate/ Code No.	NA
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:20	0	0	100	75.31	0.13	9.91	0.79	26.6	5.64	19.8	-47.9	--	--
14:25	5	5	100	75.31	0.26	9.32	0.96	29.7	3.58	18.8	-40	--	--
14:30	5	10	100	75.31	0.40	9.25	0.98	23	1.88	19.2	-59.1	--	--
14:35	5	15	100	75.31	0.53	9.28	0.98	23.1	1.6	19.7	-68.5	--	--
14:40	5	20	100	75.31	0.66	9.3	0.98	17.4	1.55	19.8	-74.4	--	--
14:45	5	25	100	75.31	0.79	9.31	0.97	14.8	1.58	19.9	-78	--	--
14:50	5	30	100	75.31	0.92	9.31	0.96	15.1	1.6	20	-80.9	--	--
14:55	5	35	100	75.31	1.06	9.31	0.96	13.8	1.6	20	-80.7	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 522	250 mL Amber	1	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



Project Number	30112892	Well ID	MW-20-126	Date	06/03/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	NR	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	62.55	Total Depth (ft-bmp)	74.43	Water Column (ft)	11.88
				Gallons in Well	1.93
Purge Start	10:30	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
				Purge Equipment	Bladder
Purge End	11:25	Volumes Purged	NA	Sample ID	MW-20-126_060322
				Sampled by	Donald Richmond
Sample Time	11:25	Gallons Purged	NA	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:40	0	0	200	62.55	--	7.14	3.11	--	9.21	19.2	57.6	--	--
10:45	5	5	200	62.55	--	7.17	1.53	1080	13.54	19.8	61.6	--	--
10:50	5	10	200	62.55	--	7.16	3.16	1080	8.83	15.5	60.9	--	--
10:55	5	15	200	62.55	--	7.05	3.15	176	5.88	15.5	59.6	--	--
11:00	5	20	200	62.55	--	7.24	4.27	246	7.51	16.8	58.9	--	--
11:05	5	25	200	62.55	--	7.03	3.19	149	6	15.6	58.4	--	--
11:10	5	30	200	62.55	--	7.02	3.18	67.8	4.57	16	57.7	--	--
11:15	5	35	200	62.55	--	7.02	3.18	68.1	4.18	15.6	56.4	--	--
11:20	5	40	200	62.55	--	7.02	3.2	63.8	4.65	15.7	54.9	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: _____	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



Project Number	30112892	Well ID	MW-20-127	Date	06/01/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	75.0 degrees F and Mostly Cloudy. The wind is blowing W at 10.3 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	63.91	Total Depth (ft-bmp)	78.67	Water Column (ft)	14.76
		Gallons in Well			2.4
Purge Start	12:00	Pump Intake (ft-bmp)	76	Purge Method	Low-Flow
		Purge Equipment			Bladder
Purge End	12:40	Volumes Purged	0.44	Sample ID	MW-20-127_060122
		Sampled by			Billy Cobern
Sample Time	12:40	Gallons Purged	1.06	Replicate/ Code No.	DUP-05_060122
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:05	0	0	100	64.18	0.13	7.16	3.03	166	5.07	22.9	14.4	--	--
12:10	5	5	100	64.28	0.26	6.87	3.28	55.5	3.54	22	-40.7	--	--
12:15	5	10	100	64.5	0.40	6.81	3.35	9.83	1.2	19.8	-52.7	--	--
12:20	5	15	100	64.71	0.53	6.79	3.34	9.21	0.89	19.3	-53.7	--	--
12:25	5	20	100	64.87	0.66	6.79	3.33	9.52	0.76	19.1	-53.6	--	--
12:30	5	25	100	65.01	0.79	6.8	3.33	9.28	0.66	18.6	-53.3	--	--
12:35	5	30	100	65.17	0.92	6.81	3.33	9.61	0.6	18.7	-54.4	--	--
12:40	5	35	100	65.29	1.06	6.81	3.33	9.59	0.6	18.7	-54.5	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	40 mL Glass	6	HCL
Nitrate	125 mL Plastic	2	None
Total Phosphorus TKN	250 mL Plastic	2	H2SO4

Comments: 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: <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



Project Number	30112892	Well ID	MW-20-128	Date	06/01/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	75.0 degrees F and Mostly Cloudy. The wind is blowing W at 10.3 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	67.72	Total Depth (ft-bmp)	70.15	Water Column (ft)	2.43
				Gallons in Well	0.39
Purge Start	10:25	Pump Intake (ft-bmp)	67	Purge Method	Low-Flow
				Purge Equipment	Bladder
Purge End	11:15	Volumes Purged	3.39	Sample ID	MW-20-128_060122
				Sampled by	Billy Cobern
Sample Time	11:15	Gallons Purged	1.32	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:30	0	0	100	67.2	0.13	7.53	3.32	999	7.32	23.2	148.4	--	--
10:35	5	5	100	67.4	0.26	7.52	3.33	999	7.21	23.4	147.8	--	--
10:40	5	10	100	67.7	0.40	7.51	3.33	999	7.16	23.5	147.4	--	--
10:45	5	15	100	67.7	0.53	7.48	3.36	999	7.08	22.6	143.6	--	--
10:50	5	20	100	67.7	0.66	7.46	3.36	740	6.96	22.3	141.5	--	--
10:55	5	25	100	67.7	0.79	7.45	3.39	8.89	6.84	21.3	140.7	--	--
11:00	5	30	100	67.7	0.92	7.47	3.37	8.65	7.33	20.2	136.8	--	--
11:05	5	35	100	67.7	1.06	7.45	3.37	834	6.93	20.2	136.1	--	--
11:10	5	40	100	67.7	1.19	7.45	3.37	840	7.11	20.1	135.9	--	--
11:15	5	45	100	67.7	1.32	7.45	3.37	832	7.13	20.1	135.7	Brown	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM, VOCs	40 mL Glass	3	HCL
Nitrate	125 mL Plastic	1	None
Phosphorus TKN	250 mL Plastic	1	H2SO4

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



Project Number	30112892	Well ID	MW-20-129	Date	06/03/2022
Project Name/Location	RACER Lansing GWS 2022	Weather(°F)	NR		
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	60.55	Total Depth (ft-bmp)	69.14	Water Column (ft)	8.59
		Gallons in Well			1.4
Purge Start	14:25	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
		Purge Equipment			Bladder
Purge End	15:10	Volumes Purged	NA	Sample ID	MW-20-129_060322
		Sampled by			Donald Richmond
Sample Time	15:10	Gallons Purged	NA	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:35	0	0	200	60.55	--	6.45	1.12	11.1	0.14	20.2	-34.9	--	--
14:40	5	5	200	60.55	--	6.5	1.22	11.2	0.12	21.2	-37.7	--	--
14:45	5	10	200	60.55	--	6.63	1.63	5.38	0.14	24.6	-49.5	--	--
14:50	5	15	200	60.55	--	6.62	2.04	6.68	0.16	25.4	-58.5	--	--
14:55	5	20	200	60.55	--	6.9	2.64	0.77	0.17	26.4	-76.5	--	--
15:00	5	25	200	60.55	--	6.93	2.76	0.02	0.18	26.4	-80.4	--	--
15:05	5	30	200	60.55	--	6.94	2.86	0.02	0.17	26.7	-82.9	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: _____	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



Project Number	30112892	Well ID	MW-20-130	Date	06/07/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	60.1 degrees F and Cloudy. The wind is blowing N at 8.1 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	65.75	Total Depth (ft-bmp)	70.3	Water Column (ft)	4.55
		Gallons in Well			0.74
Purge Start	10:00	Pump Intake (ft-bmp)	68.3	Purge Method	Low-Flow
		Purge Equipment			Peristaltic
Purge End	10:55	Volumes Purged	3.93	Sample ID	MW-20-130_060722
		Sampled by			Austin Westhuis
Sample Time	10:50	Gallons Purged	2.91	Replicate/ Code No.	Dup-03_060722
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:05	0	0	200	65.75	0.26	6.35	1.12	766	0.01	14.1	68.7	--	--
10:10	5	5	200	65.75	0.53	6.52	1.09	455	0.01	14	50.6	--	--
10:15	5	10	200	65.75	0.79	6.6	1.06	318	0.01	14	43.1	--	--
10:20	5	15	200	65.75	1.06	6.63	1.03	221	0.01	14	39.2	--	--
10:25	5	20	200	65.75	1.32	6.66	0.99	86.2	0.01	14	39.6	--	--
10:30	5	25	200	65.75	1.59	6.68	0.97	28.3	0.01	14	33	--	--
10:35	5	30	200	65.75	1.85	6.68	0.95	12.1	0.01	14	28.1	--	--
10:40	5	35	200	65.75	2.11	6.7	0.94	10.4	0.01	14	25.4	--	--
10:45	5	40	200	65.75	2.38	6.7	0.94	10.1	0.01	14	25.2	--	--
10:50	5	45	200	65.75	2.64	6.71	0.92	9.41	0.01	14	22.2	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	4	None
1,4-Dioxane 8260B SIMS	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>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



Project Number	30112892	Well ID	MW-20-131	Date	06/02/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	73.0 degrees F and Partly Cloudy. The wind is blowing W/NW at 8.1 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	5.24	Total Depth (ft-bmp)	8.45	Water Column (ft)	3.21
		Gallons in Well			0.52
Purge Start	16:25	Pump Intake (ft-bmp)	7.24	Purge Method	Low-Flow
		Purge Equipment			Peristaltic
Purge End	16:55	Volumes Purged	3.05	Sample ID	MW-20-131_060222
		Sampled by			Austin Westhuis
Sample Time	16:50	Gallons Purged	1.59	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
16:30	0	0	200	5.34	0.26	7.1	5.83	74.7	1.49	16.5	-0.7	--	--
16:35	5	5	200	5.34	0.53	7.17	5.7	56.6	1.19	16.7	-17.2	--	--
16:40	5	10	200	5.34	0.79	7.17	5.66	41.2	1.18	16.6	-20.5	--	--
16:45	5	15	200	5.34	1.06	7.19	5.6	40.1	1.16	16.4	-22.9	--	--
16:50	5	20	200	5.34	1.32	7.2	5.52	37.3	1.11	16.2	-27.8	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Comments: Well recently struck and damaged. Confirmed with project team we will attempt to sample the well as is for now. The well will be converted to a flush mount at a later time. Depth to water and total depth measurements collected below ground surface (bgs).

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: Needs repairs	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



RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-20-132 **Date** 6/2/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** NR

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 8 **Total Depth (ft-bmp)** 10 **Water Column(ft)** 2 **Gallons in Well** 0.32

MP Elevation NA **Pump Intake (ft-bmp)** 9 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 10:35 **Gallons Purged** 1.45 **Replicate/ Code No.** NA **Evacuation Method** Peristaltic

Purge Start: 09:45

Purge End: 10:35

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
09:45	0	100	9	0.13	7.35	2.28	25	0.23	11.3	-4.3	--	--
09:50	5	100	9	0.26	7.28	2.24	21	0.38	11.4	-0.8	--	--
09:55	5	100	9	0.40	7.26	2.21	21	0.13	11.4	-0.1	--	--
10:00	5	100	9	0.53	7.25	2.2	20	0.07	11.4	-0.2	--	--
10:05	5	100	9	0.66	7.25	2.19	20	0.08	11.5	-0.3	--	--
10:10	5	100	9	0.79	7.24	2.19	20	0.8	11.6	-0.4	--	--
10:15	5	100	9	0.92	7.24	2.18	20	0.14	11.5	-0.7	--	--
10:20	5	100	9	1.06	7.23	2.17	19	0.28	11.6	-0.5	--	--
10:25	5	100	9	1.19	7.24	2.17	19	0.09	11.5	-0.9	--	--
10:30	5	100	9	1.32	7.23	2.17	19	0.07	11.4	-0.4	--	--
10:35	5	100	9	1.45	7.23	2.17	19	0.1	11.5	-0.5	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-21-133	Date	06/02/2022
Project Name/Location	RACER Lansing GWS 2022	Weather(°F)	NR		
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	8.6	Total Depth (ft-bmp)	18.74	Water Column (ft)	10.14
		Gallons in Well			1.65
Purge Start	11:30	Pump Intake (ft-bmp)	16.24	Purge Method	Low-Flow
		Purge Equipment			Peristaltic
Purge End	11:55	Volumes Purged	0.80	Sample ID	MW-21-133_060222
		Sampled by			Austin Westhuis
Sample Time	11:50	Gallons Purged	1.32	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:35	0	0	200	10.38	0.26	6.82	0.68	3.72	0.13	10.4	-447	--	--
11:40	5	5	200	10.68	0.53	6.84	0.68	1.59	0.12	10.4	-461.2	--	--
11:45	5	10	200	10.68	0.79	6.87	0.67	1.22	0.12	10.4	-455.4	--	--
11:50	5	15	200	10.69	1.06	6.87	0.68	1.16	0.12	10.3	-451.3	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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: <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



Project Number	30112892	Well ID	MW-21-134	Date	06/02/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	NR			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	8.32	Total Depth (ft-bmp)	20.08	Water Column (ft)	11.76	Gallons in Well	1.91
Purge Start	12:15	Pump Intake (ft-bmp)	17.58	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	12:55	Volumes Purged	1.11	Sample ID	MW-21-134_060222	Sampled by	Austin Westhuis
Sample Time	12:50	Gallons Purged	2.11	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:20	0	0	200	10.4	0.26	6.9	0.65	1.91	0.22	10.8	-177.8	--	--
12:25	5	5	200	10.51	0.53	6.92	0.64	1.8	0.31	10.7	-117.8	--	--
12:30	5	10	200	11	0.79	7.02	0.6	1.74	1.25	10.8	-33.3	--	--
12:35	5	15	200	11.02	1.06	7.04	0.59	1.7	1.28	10.7	-27.4	--	--
12:40	5	20	200	11.03	1.32	7.09	0.57	1.66	1.3	10.6	-28.8	--	--
12:45	5	25	200	11.03	1.59	7.09	0.57	1.41	1.32	10.6	-29.2	--	--
12:50	5	30	200	11.03	1.85	7.09	0.56	1.29	1.32	10.6	-29.4	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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



Project Number	30112892	Well ID	MW-21-135	Date	06/02/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	72.0 degrees F and Clear. The wind is blowing W at 8.1 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	24.16	Total Depth (ft-bmp)	29.55	Water Column (ft)	5.39	Gallons in Well	0.88
Purge Start	14:05	Pump Intake (ft-bmp)	29.05	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	14:35	Volumes Purged	1.80	Sample ID	MW-21-135_060222	Sampled by	Austin Westhuis
Sample Time	14:30	Gallons Purged	1.59	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:10	0	0	200	24.16	0.26	7.09	0.81	12.6	0.85	13.2	128.1	--	--
14:15	5	5	200	24.16	0.53	7.62	0.78	4.19	0.64	12.8	113.1	--	--
14:20	5	10	200	24.16	0.79	7.54	0.78	2.25	0.54	12.8	105.6	--	--
14:25	5	15	200	24.16	1.06	7.53	0.77	2.2	0.51	12.7	101.1	--	--
14:30	5	20	200	24.16	1.32	7.51	0.77	1.78	0.51	12.7	100.2	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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



RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-21-136 **Date** 6/2/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** NR

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 13 **Total Depth (ft-bmp)** 14 **Water Column(ft)** 1 **Gallons in Well** 0.16

MP Elevation NA **Pump Intake (ft-bmp)** 14 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 12:15 **Gallons Purged** 1.72 **Replicate/ Code No.** NA **Evacuation Method** Peristaltic

Purge Start: 11:15

Purge End: 12:15

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
11:15	0	100	13	0.13	7.27	1.94	25	0.75	12.2	-2.4	--	--
11:20	5	100	13	0.26	7.02	1.85	21	3.8	12.2	5.3	--	--
11:25	5	100	13	0.40	7.05	1.83	21	3.94	12.3	2	--	--
11:30	5	100	13	0.53	7.04	1.91	21	1.22	12.2	-2.1	--	--
11:35	5	100	13	0.66	7.01	1.92	20	1.22	12.2	-4	--	--
11:40	5	100	13	0.79	7.06	1.9	20	1.13	12.1	-6.4	--	--
11:45	5	100	13	0.92	7.06	1.86	19	1.14	11.9	-7.1	--	--
11:50	5	100	13	1.06	7.04	1.83	19	1.28	12.5	-6.2	--	--
11:55	5	100	13	1.19	7.1	1.78	19	1.26	12.4	-9.7	--	--
12:00	5	100	13	1.32	7.1	1.75	19	1.32	12.6	-9	--	--
12:05	5	100	13	1.45	7.11	1.71	19	1.39	12.3	-8.9	--	--
12:10	5	100	13	1.59	7.09	1.67	19	1.19	12.5	-6.2	--	--
12:15	5	100	13	1.72	7.09	1.73	19	1.19	12.4	-6.2	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

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

Well Information

Well Location: _____

Well Locked at Arrival: _____

Condition of Well: _____

Well Locked at Departure: _____

ft-bmp = feet below measuring point
in. = inches

mS/cm = milliSiemens per centimeter
NTU = N

mV = millivolts



RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-21-137 **Date** 6/2/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** Sunny

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 7 **Total Depth (ft-bmp)** 12 **Water Column(ft)** 5 **Gallons in Well** 0.81

MP Elevation NA **Pump Intake (ft-bmp)** 8 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 13:30 **Gallons Purged** 1.32 **Replicate/ Code No.** MS/MSD **Evacuation Method** Peristaltic

Purge Start: 12:40

Purge End: 13:25

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
12:40	0	100	8	0.13	6.89	1.08	30	1.63	11.9	-2.4	--	--
12:45	5	100	8	0.26	6.59	1.06	23	1.59	11.7	10.9	--	--
12:50	5	100	8	0.40	6.64	1.07	20	2.05	11.7	10.1	--	--
12:55	5	100	8	0.53	6.68	1.08	19	2.2	11.7	6.9	--	--
13:00	5	100	8	0.66	6.7	1.08	20	2.09	11.7	5	--	--
13:05	5	100	8	0.79	6.71	1.07	20	2.1	11.7	4.6	--	--
13:10	5	100	8	0.92	6.71	1.07	20	2.03	11.8	3.5	--	--
13:15	5	100	8	1.06	6.73	1.07	20	2.05	11.7	4.1	--	--
13:20	5	100	8	1.19	6.73	1.07	20	2.1	11.8	4.1	--	--
13:25	5	100	8	1.32	6.72	1.07	20	2.07	11.6	2.1	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	6	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

Project Number 30112892 **Well ID** MW-21-138 **Date** 6/2/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** NR

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 23 **Total Depth (ft-bmp)** 29 **Water Column(ft)** 6 **Gallons in Well** 0.97

MP Elevation NA **Pump Intake (ft-bmp)** 28 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 14:45 **Gallons Purged** 1.85 **Replicate/ Code No.** NA **Evacuation Method** Peristaltic

Purge Start: 12:56

Purge End: 14:45

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
13:40	0	100	28	0.13	7.01	1.63	33	0.2	12.6	-8.9	--	--
13:45	5	100	28	0.26	6.84	1.62	20	0.08	12.6	1.5	--	--
13:50	5	100	28	0.40	6.83	1.61	19	0.03	12.6	3.6	--	--
13:55	5	100	28	0.53	6.86	1.61	18	0.05	12.6	3.3	--	--
14:00	5	100	28	0.66	6.86	1.61	18	0.17	12.5	4	--	--
14:05	5	100	28	0.79	6.87	1.6	18	0.07	12.5	4.2	--	--
14:10	5	100	28	0.92	6.87	1.6	18	0.18	12.7	4	--	--
14:15	5	100	28	1.06	6.89	1.61	18	0.23	12.6	3.7	--	--
14:20	5	100	28	1.19	6.88	1.61	18	0.2	12.8	4.1	--	--
14:25	5	100	28	1.32	6.91	1.63	18	0.24	12.5	3.2	--	--
14:30	5	100	28	1.45	6.89	1.63	18	0.24	12.8	3.6	--	--
14:35	5	100	28	1.59	6.91	1.64	18	0.27	12.9	2.9	--	--
14:40	5	100	28	1.72	6.92	1.65	18	0.25	12.9	2.7	--	--
14:45	5	100	28	1.85	6.93	1.65	18	0.28	12.8	2.5	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

Project Number 30112892 **Well ID** MW-21-139 **Date** 6/7/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** Cloudy

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 3.1 **Total Depth (ft-bmp)** 12 **Water Column(ft)** 8.9 **Gallons in Well** 1.45

MP Elevation NA **Pump Intake (ft-bmp)** 10 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 13:25 **Gallons Purged** 1.19 **Replicate/ Code No.** NA **Evacuation Method** Peristaltic

Purge Start: 12:40

Purge End: 13:25

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
12:40	0	100	10	0.13	7.86	2.28	15	0.01	15.5	-26.3	--	--
12:45	5	100	10	0.26	7.75	2.25	12	0.05	15.4	-30.8	--	--
12:50	5	100	10	0.40	7.69	2.19	13	0.06	15.5	-29	--	--
12:55	5	100	10	0.53	7.6	2.06	10	0.13	15.3	-25.4	--	--
13:00	5	100	10	0.66	7.55	1.92	8	0.12	15.4	-20.9	--	--
13:05	5	100	10	0.79	7.53	1.83	7	0.12	15.4	-18	--	--
13:10	5	100	10	0.92	7.53	1.8	7	0.15	15.2	-16.3	--	--
13:15	5	100	10	1.06	7.5	1.78	6	0.11	15	-14.6	--	--
13:20	5	100	10	1.19	7.5	1.77	7	0.11	15.2	-13.6	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes



RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-21-139 **Date** 6/10/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** Sunny

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 6 **Total Depth (ft-bmp)** 12 **Water Column(ft)** 6 **Gallons in Well** 0.97

MP Elevation NA **Pump Intake (ft-bmp)** 11 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 11:20 **Gallons Purged** 0.79 **Replicate/ Code No.** NA **Evacuation Method** Peristaltic

Purge Start: 10:55

Purge End: 11:20

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
10:55	0	100	6	0.13	8.02	2.24	22	1.03	16.4	-31.5	--	--
11:00	5	100	6	0.26	7.98	2.24	16	0.28	16.4	-35.5	--	--
11:05	5	100	6	0.40	7.79	2.07	12	0.25	17	-39.8	--	--
11:10	5	100	6	0.53	7.73	2.05	12	0.09	16.8	-38.6	--	--
11:15	5	100	6	0.53	7.73	2.03	11	0.04	16.8	-39.5	--	--
11:20	5	100	6	0.79	7.72	2.04	11	0.04	16.8	-39.6	--	--

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane	40 mL Vial	3	HCL

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-21-140	Date	06/07/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	62.1 degrees F and Cloudy. The wind is blowing N/NW at 6.9 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	67.2	Total Depth (ft-bmp)	75.95	Water Column (ft)	8.75
				Gallons in Well	1.42
Purge Start	11:25	Pump Intake (ft-bmp)	73.45	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	11:55	Volumes Purged	1.12	Sample ID	MW-21-140_060722
				Sampled by	Austin Westhuis
Sample Time	11:50	Gallons Purged	1.59	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:30	0	0	200	67.46	0.26	6.88	0.66	16.8	0.53	13.6	-22	--	--
11:35	5	5	200	67.5	0.53	6.89	0.65	5.52	0.39	13.5	-28.7	--	--
11:40	5	10	200	67.5	0.79	6.91	0.65	2.11	0.25	13.5	-34.5	--	--
11:45	5	15	200	67.5	1.06	6.92	0.65	1.77	0.24	13.6	-36.2	--	--
11:50	5	20	200	67.5	1.32	6.93	0.65	1.61	0.23	13.5	-37.9	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8260B SIMS	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

RACER Lansing GW Sampling

Project Number	30112892	Well ID	MW-21-141	Date	6/6/2022		
Project Name/Location	RACER Lansing, MI			Weather(°F)	Overcast		
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	NR	Casing Diameter (in.)	2	Well Material	NR
Static Water Level (ft-bmp)	74.32	Total Depth (ft-bmp)	77	Water Column(ft)	2.68	Gallons in Well	0.44
MP Elevation	NA	Pump Intake (ft-bmp)	76	Purge Method:	Low-Flow	Sample Method	Grab
Sample Time:	16:10	Gallons Purged	NA	Replicate/ Code No.	MS/MSD	Evacuation Method	Bladder
Purge Start:	15:20						
Purge End:	16:05						

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
15:25	0	200	74.63	0.00	6.41	1.07	100	0.68	14.4	13.5	Clear	None
15:30	5	200	74.63	0.00	6.48	1.07	47	0.34	14.3	10.2	Clear	None
15:35	5	200	74.75	0.00	6.59	1.04	14	0.32	14.2	6.8	Clear	None
15:40	5	200	74.95	0.00	6.66	1.04	12	0.29	14.5	2.6	Clear	None
15:45	5	200	74.95	0.00	6.71	1.01	15	0.24	14.2	-1.1	Clear	None
15:50	5	200	74.99	0.00	6.77	1	14	0.25	14.4	-6.3	Clear	None
15:55	5	200	75.06	0.00	6.81	0.98	14	0.19	14.7	-9.6	Clear	None
16:00	5	200	75.06	0.00	6.82	0.97	15	0.2	14.3	-11.4	Clear	None
16:05	5	200	75.06	0.00	6.87	0.95	16	0.18	14.6	-12.5	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane	40 mL Vial	9	HCL

Sampling By	Monica Dostert
Comments:	PME Sampler: Jarrett Humpula

Well Casing Volume Conversion

Well diameter(inc)=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: MW-21-141

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-21-142	Date	06/07/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Mostly Cloudy. The wind is blowing NW at 8.1 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	64.44	Total Depth (ft-bmp)	78.83	Water Column (ft)	14.39
				Gallons in Well	2.34
Purge Start	12:20	Pump Intake (ft-bmp)	76.33	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	13:10	Volumes Purged	1.02	Sample ID	MW-21-142_060722
				Sampled by	Austin Westhuis
Sample Time	13:05	Gallons Purged	2.38	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:25	0	0	200	64.52	0.26	6.8	1.39	548	0.08	13.9	-61	--	--
12:30	5	5	200	64.52	0.53	6.82	1.42	330	0.06	13.3	-70.4	--	--
12:35	5	10	200	64.52	0.79	6.84	1.45	225	0.04	13.3	-76.7	--	--
12:40	5	15	200	64.52	1.06	6.83	1.46	55.5	0.04	13.2	-78.4	--	--
12:45	5	20	200	64.52	1.32	6.83	1.47	21.1	0.04	13.2	-78.8	--	--
12:50	5	25	200	64.52	1.59	6.82	1.5	13.6	0.04	13.1	-79.8	--	--
12:55	5	30	200	64.52	1.85	6.81	1.52	11	0.04	13.3	-79.7	--	--
13:00	5	35	200	64.52	2.11	6.8	1.54	10.5	0.04	13.3	-79.6	--	--
13:05	5	40	200	64.52	2.11	6.78	1.56	10	0.04	13.2	-79.9	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8260B SIMS	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



Project Number	30112892	Well ID	MW-22-143	Date	06/01/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	75.0 degrees F and Clear. The wind is blowing W/NW at 10.3 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material	PVC		
Static Water Level (ft-bmp)	15.3	Total Depth (ft-bmp)	31.02	Water Column (ft)	15.72
		Gallons in Well	2.55		
Purge Start	10:15	Pump Intake (ft-bmp)	29.02	Purge Method	Low-Flow
		Purge Equipment	Peristaltic		
Purge End	10:50	Volumes Purged	0.73	Sample ID	MW-22-143_060122
		Sampled by	Austin Westhuis		
Sample Time	10:45	Gallons Purged	1.85	Replicate/ Code No.	NA
		Sample Type	Grab		

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:20	0	0	200	15.3	0.26	6.99	2.54	2.33	0.4	13.4	-741.4	--	--
10:25	5	5	200	15.3	0.53	7.04	2.53	1.77	0.35	13.1	-703.9	--	--
10:30	5	10	200	15.3	0.79	7.1	2.53	1.51	0.31	13.1	-677.9	--	--
10:35	5	15	200	15.3	1.06	7.12	2.53	1.39	0.28	13	-644.5	--	--
10:40	5	20	200	15.3	1.32	7.14	2.55	1.3	0.27	13	-642.1	--	--
10:45	5	25	200	15.3	1.59	7.14	2.54	1.25	0.26	13	-638.1	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

Comments: Well locked with Arcadis 2035 Master Lock.

Well Casing Volume Conversion

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

Well Information

Well Location: See figure.	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no
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



Project Number	30112892	Well ID	MW-22-144	Date	06/01/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(*F)	75.0 degrees F and Mostly Cloudy. The wind is blowing W at 10.3 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	10.67	Total Depth (ft-bmp)	24.08	Water Column (ft)	13.41	Gallons in Well	2.18
Purge Start	11:15	Pump Intake (ft-bmp)	22.08	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	12:05	Volumes Purged	1.21	Sample ID	MW-22-144_060122	Sampled by	Austin Westhuis
Sample Time	12:00	Gallons Purged	2.64	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:20	0	0	200	10.67	0.26	7.04	0.8	3.19	0.44	12.1	-232.3	--	--
11:25	5	5	200	10.67	0.53	7	0.81	2.14	0.32	11.9	-264	--	--
11:30	5	10	200	10.67	0.79	7.1	0.87	2.01	0.28	12.1	-323.2	--	--
11:35	5	15	200	10.67	1.06	7.13	0.88	1.83	0.28	12.1	-329.3	--	--
11:40	5	20	200	10.67	1.32	7.16	0.88	1.61	0.26	12.1	-290.3	--	--
11:45	5	25	200	10.67	1.59	7.17	0.88	1.55	0.25	12.1	-299.9	--	--
11:50	5	30	200	10.67	1.85	7.17	0.89	1.41	0.25	12.2	-283.3	--	--
11:55	5	35	200	10.67	2.11	7.18	0.89	1.25	0.25	12.2	-291.9	--	--
12:00	5	40	200	10.67	2.38	7.18	0.88	1.2	0.25	12.5	-292.7	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

Comments: Well locked with Arcadis 2035 Master Lock.

Well Casing Volume Conversion

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

Well Information

Well Location: See figure.	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no
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



Project Number	30112892	Well ID	MW-22-145	Date	06/01/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	75.0 degrees F and Mostly Cloudy. The wind is blowing W at 10.3 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	9.98	Total Depth (ft-bmp)	14.95	Water Column (ft)	4.97
				Gallons in Well	0.81
Purge Start	12:10	Pump Intake (ft-bmp)	12.95	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	12:40	Volumes Purged	1.96	Sample ID	MW-22-145_060122
				Sampled by	Austin Westhuis
Sample Time	12:35	Gallons Purged	1.59	Replicate/ Code No.	Dup-17_060122
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:15	0	0	200	9.98	0.26	7.03	0.66	4.16	1.36	12.4	-37.8	--	--
12:20	5	5	200	9.98	0.53	7.01	0.65	1.39	1.28	12.1	-55.6	--	--
12:25	5	10	200	9.98	0.79	7.04	0.65	1.22	1.16	12.1	-69.1	--	--
12:30	5	15	200	9.98	1.06	7.04	0.66	1.12	1.12	12.2	-72.4	--	--
12:35	5	20	200	9.98	1.32	7.08	0.66	1.03	1.13	12.4	-78.9	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	4	None

Comments: Well locked with Arcadis 2035 Master Lock.

Well Casing Volume Conversion

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

Well Information

Well Location: See figure.	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>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



Project Number	30112892	Well ID	MW-22-146	Date	06/01/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	71.1 degrees F and Cloudy. The wind is blowing NW at 9.2 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	4.53	Total Depth (ft-bmp)	9.89	Water Column (ft)	5.36
		Gallons in Well			0.87
Purge Start	12:55	Pump Intake (ft-bmp)	7.89	Purge Method	Low-Flow
		Purge Equipment			Peristaltic
Purge End	13:20	Volumes Purged	1.52	Sample ID	MW-22-146_060122
		Sampled by			Austin Westhuis
Sample Time	13:15	Gallons Purged	1.32	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:00	0	0	200	5.11	0.26	7.35	0.74	2.48	6.19	11.6	3.1	--	--
13:05	5	5	200	5.11	0.53	7.17	0.75	2.19	5.79	11.8	8.8	--	--
13:10	5	10	200	5.11	0.79	7.23	0.74	1.94	5.79	11.9	8.9	--	--
13:15	5	15	200	5.11	1.06	7.25	0.74	1.24	5.65	12	9.1	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

Comments: Well locked with Arcadis 2035 Master Lock.

Well Casing Volume Conversion

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

Well Information

Well Location: See figure.	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>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



Project Number	30112892	Well ID	MW-22-147	Date	06/01/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	72.0 degrees F and Partly Cloudy. The wind is blowing at 3.4 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	8.98	Total Depth (ft-bmp)	12.25	Water Column (ft)	3.27
		Gallons in Well			0.53
Purge Start	13:40	Pump Intake (ft-bmp)	10.25	Purge Method	Low-Flow
		Purge Equipment			Peristaltic
Purge End	14:05	Volumes Purged	2.49	Sample ID	MW-22-147_060122
		Sampled by			Austin Westhuis
Sample Time	14:00	Gallons Purged	1.32	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:45	0	0	200	8.98	0.26	7.25	1.07	2.27	3.8	11.9	-72.9	--	--
13:50	5	5	200	9.25	0.53	7.17	1.04	2.01	3.46	11.7	-47.4	--	--
13:55	5	10	200	9.27	0.79	7.17	1.04	1.78	3.35	11.9	-51.4	--	--
14:00	5	15	200	9.27	1.06	7.2	1.06	1.7	3.41	11.8	-52.4	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

Comments: Well locked with Arcadis 2035 Master Lock.

Well Casing Volume Conversion

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

Well Information

Well Location: See figure.	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>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



Project Number	30112892	Well ID	MW-22-148	Date	06/01/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	72.0 degrees F and Partly Cloudy. The wind is blowing at 3.4 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	23.82	Total Depth (ft-bmp)	29.3	Water Column (ft)	5.48	Gallons in Well	0.89
Purge Start	14:10	Pump Intake (ft-bmp)	27.3	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	14:35	Volumes Purged	1.48	Sample ID	MW-22-148_060122	Sampled by	Austin Westhuis
Sample Time	14:30	Gallons Purged	1.32	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:15	0	0	200	24.02	0.26	7.43	1.1	3.63	3.57	13.8	-45.7	--	--
14:20	5	5	200	24.12	0.53	7.51	0.76	1.91	0.41	13.1	-179.3	--	--
14:25	5	10	200	24.19	0.79	7.5	0.76	1.58	0.39	13.2	-178.9	--	--
14:30	5	15	200	24.19	1.06	7.51	0.76	1.5	0.39	13.2	-173.1	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

Comments: Well locked with Arcadis 2035 Master Lock.

Well Casing Volume Conversion

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

Well Information

Well Location: See figure.	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>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

RACER Lansing GW Sampling

Project Number 30112892 **Well ID** MW-22-149 **Date** 6/1/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** Cloudy

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 9 **Total Depth (ft-bmp)** 10.5 **Water Column(ft)** 1.5 **Gallons in Well** 0.24

MP Elevation NA **Pump Intake (ft-bmp)** 9 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 13:40 **Gallons Purged** 1.32 **Replicate/ Code No.** NA **Evacuation Method** Peristaltic

Purge Start: 13:05

Purge End: 13:40

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
13:05	0	100	9	0.13	6.93	0.65	22	5.34	13.3	16.7	--	--
13:10	5	100	9	0.26	6.87	0.636	20	5.18	13.4	18.5	--	--
13:15	5	100	9	0.40	7.01	0.618	18	4.37	13.4	14.1	--	--
13:21	6	100	9	0.53	7.07	0.611	15	3.59	13.1	14.5	--	--
13:25	4	100	9	0.66	7.09	0.613	15	4.07	13.3	12.2	--	--
13:30	5	100	9	0.79	7.09	0.625	15	4.94	13	11.4	--	--
13:35	5	100	9	0.92	7.07	0.636	15	5.04	13.3	11.4	--	--
13:40	5	100	9	1.32	7.09	0.643	15	5.06	13.3	10.4	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: MW-22-149

Well Locked at Arrival: no

Condition of Well: Good

Well Locked at Departure: yes

Project Number 30112892 **Well ID** MW-22-150 **Date** 6/1/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** Cloudy

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 16.5 **Total Depth (ft-bmp)** 18 **Water Column(ft)** 1.5 **Gallons in Well** 0.24

MP Elevation NA **Pump Intake (ft-bmp)** 16 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 11:05 **Gallons Purged** 1.19 **Replicate/ Code No.** MS/MSD **Evacuation Method** Peristaltic

Purge Start: 10:20

Purge End: 11:00

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
10:20	0	100	16	0.13	7.1	5.71	45	0.46	12.5	-6.3	--	--
10:25	5	100	16	0.26	7.13	5.44	42	0.52	12.5	-9.3	--	--
10:30	5	100	16	0.40	7.15	5.38	36	0.73	12.9	-9.2	--	--
10:35	5	100	16	0.53	7.16	5.38	24	0.73	12.6	-8.9	--	--
10:40	5	100	16	0.66	7.16	5.37	20	0.7	12.6	-7.9	--	--
10:45	5	100	16	0.79	7.16	5.36	18	0.68	12.5	-7.2	--	--
10:50	5	100	16	0.92	7.16	5.35	18	0.64	12.7	-6.5	--	--
10:55	5	100	16	1.06	7.17	5.37	18	0.62	13	-6.4	--	--
11:00	5	100	16	1.19	7.19	5.36	18	0.63	13	-6.4	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	6	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: MW-22-150

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes

RACER Lansing GW Sampling

Project Number	30112892	Well ID	MW-22-151	Date	6/1/2022		
Project Name/Location	RACER Lansing, MI			Weather(°F)	Cloudy		
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	NR	Casing Diameter (in.)	2	Well Material	NR
Static Water Level (ft-bmp)	15	Total Depth (ft-bmp)	18	Water Column(ft)	3	Gallons in Well	0.49
MP Elevation	NA	Pump Intake (ft-bmp)	15	Purge Method:	Low-Flow	Sample Method	Low-Flow
Sample Time:	12:25	Gallons Purged	1.72	Replicate/ Code No.	NA	Evacuation Method	Peristaltic
Purge Start:	11:35						
Purge End:	12:25						

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
11:35	0	100	15	0.13	6.91	2.19	22	0.16	13.2	-5.1	--	--
11:40	5	100	15	0.26	6.64	2.14	19	0.45	13.5	5.5	--	--
11:45	5	100	15	0.40	6.7	2.14	15	0.09	13.6	2.6	--	--
11:50	5	100	15	0.53	6.73	2.13	15	0.07	13.8	1.4	--	--
11:55	5	100	15	0.66	6.76	2.13	15	0.06	13.5	0.4	--	--
12:00	5	100	15	0.79	6.76	2.12	15	0.04	13.7	-0.1	--	--
12:05	5	100	15	0.92	6.78	2.12	15	0.08	13.7	-1.2	--	--
12:10	5	100	15	1.06	6.79	2.12	15	0.08	13.7	-3	--	--
12:15	5	100	15	1.19	6.78	2.11	15	0.12	13.7	-2.4	--	--
12:20	5	100	15	1.45	6.79	2.11	15	0.12	13.6	-3.4	--	--
12:25	5	100	15	1.59	6.79	2.11	15	0.12	13.4	-3	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: MW-22-151

Well Locked at Arrival: no

Condition of Well: Good

Well Locked at Departure: yes

RACER Lansing GW Sampling

Project Number	30112892	Well ID	MW-22-152	Date	6/1/2022		
Project Name/Location	RACER Lansing, MI			Weather(°F)	Cloudy		
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	NR	Casing Diameter (in.)	2	Well Material	NR
Static Water Level (ft-bmp)	14	Total Depth (ft-bmp)	15	Water Column(ft)	1	Gallons in Well	0.16
MP Elevation	NA	Pump Intake (ft-bmp)	14	Purge Method:	Low-Flow	Sample Method	Low-Flow
Sample Time:	14:40	Gallons Purged	1.19	Replicate/ Code No.	NA	Evacuation Method	Peristaltic
Purge Start:	14:00						
Purge End:	14:40						

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
14:00	0	100	14	0.13	6.86	0.93	24	0.53	12.6	7.9	--	--
14:05	5	100	14	0.26	6.8	0.88	21	0.16	12.5	9.8	--	--
14:10	5	100	14	0.40	6.8	0.87	18	0.07	12.4	8.2	--	--
14:15	5	100	14	0.53	6.83	0.87	15	0.07	12.4	5.9	--	--
14:20	5	100	14	0.66	6.87	0.87	15	0.06	12.3	3.7	--	--
14:25	5	100	14	0.79	6.89	0.87	15	0.07	12.5	1.9	--	--
14:30	5	100	14	0.92	6.91	0.87	15	0.07	12.4	0.3	--	--
14:35	5	100	14	1.06	6.91	0.87	15	0.13	12.1	0.5	--	--
14:40	5	100	14	1.19	6.88	0.87	15	0.16	12.1	0.5	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: MW-22-152

Well Locked at Arrival: no

Condition of Well: Good

Well Locked at Departure: yes

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-22-153	Date	04/06/2022		
Project Name/Location	RACER Lansing GWS		Weather(°F)	51.1 degrees F and Mostly Clear. The wind is blowing E at 8.1 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	9.58	Total Depth (ft-bmp)	31.2	Water Column (ft)	21.62	Gallons in Well	3.51
Purge Start	11:15	Pump Intake (ft-bmp)	29.2	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	11:50	Volumes Purged	0.53	Sample ID	MW-22-153_040622	Sampled by	Austin Westhuis
Sample Time	11:45	Gallons Purged	1.85	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:35	0	0	200	9.58	1.06	7.09	1.56	1.77	1.26	12	-43.6	--	--
11:40	5	5	200	9.58	1.32	7.08	1.562	1.43	1.24	12.1	-46.6	--	--
11:45	5	10	200	9.58	1.59	7.08	1.557	1.21	1.22	12.1	-48.9	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs 8260 and 1,4-Dioxane 8260	40 mL Glass	3	HCL

Comments: Lost first three sets of parameter readings after tablet malfunctioned.

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: <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



Project Number	30112892	Well ID	MW-22-153	Date	06/04/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Clear. The wind is blowing SE at 5.8 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	10.4	Total Depth (ft-bmp)	31.18	Water Column (ft)	20.78	Gallons in Well	3.38
Purge Start	09:30	Pump Intake (ft-bmp)	28.68	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	10:05	Volumes Purged	0.55	Sample ID	MW-22-153_060422	Sampled by	Austin Westhuis
Sample Time	10:00	Gallons Purged	1.85	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:35	0	0	200	10.42	0.26	6.83	1.65	3.39	0.29	13.6	-28	--	--
09:40	5	5	200	10.42	0.53	6.89	1.57	1.94	0.21	13.8	-44.3	--	--
09:45	5	10	200	10.42	0.79	6.89	1.58	1.51	0.13	13.9	-48.9	--	--
09:50	5	15	200	10.42	1.06	6.91	1.56	1.4	0.11	13.8	-54.4	--	--
09:55	5	20	200	10.42	1.32	6.91	1.55	1.34	0.1	13.8	-57	--	--
10:00	5	25	200	10.42	1.59	6.91	1.54	1.21	0.1	13.8	-58.2	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane	40 mL Glass	3	HCL
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

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

Well Information

Well Location: 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



Project Number	30112892	Well ID	MW-23	Date	06/08/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	71.1 degrees F and Partly Cloudy. The wind is blowing E at 5.8 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	48.12	Total Depth (ft-bmp)	65.59	Water Column (ft)	17.47
				Gallons in Well	2.84
Purge Start	14:10	Pump Intake (ft-bmp)	63.1	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	14:45	Volumes Purged	0.65	Sample ID	MW-23_060822
				Sampled by	Austin Westhuis
Sample Time	14:40	Gallons Purged	1.85	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:15	0	0	200	48.12	0.26	9.08	0.86	8.08	0.1	13.9	20.9	--	--
14:20	5	5	200	48.12	0.53	8.62	0.92	4.14	0.09	14	22.7	--	--
14:25	5	10	200	48.12	0.79	8.48	0.94	1.99	0.09	13.9	22.7	--	--
14:30	5	15	200	48.12	1.06	8.13	0.98	1.43	0.09	13.9	10.7	--	--
14:35	5	20	200	48.12	1.32	8.07	1	1.33	0.09	14	6.7	--	--
14:40	5	25	200	48.12	1.59	8.05	1	1.3	0.09	14.1	4.1	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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



Project Number	30112892	Well ID	MW-91-2R	Date	06/09/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Partly Cloudy. The wind is blowing W at 10.3 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	56.61	Total Depth (ft-bmp)	84.15	Water Column (ft)	27.54
				Gallons in Well	4.48
Purge Start	13:05	Pump Intake (ft-bmp)	81.5	Purge Method	Low-Flow
				Purge Equipment	Bladder
Purge End	13:40	Volumes Purged	0.21	Sample ID	MW-91-2R
				Sampled by	Billy Cobern
Sample Time	13:40	Gallons Purged	0.92	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:10	0	0	100	56.75	0.13	7.15	1.54	18.3	5.76	18.1	-100.4	--	--
13:15	5	5	100	56.75	0.26	7.14	1.56	8.79	4.93	18	-115.9	--	--
13:20	5	10	100	56.75	0.40	7.15	1.58	4.61	4.73	18.6	-121.4	--	--
13:25	5	15	100	56.75	0.53	7.15	1.59	5.94	4.47	19	-123.4	--	--
13:30	5	20	100	56.75	0.66	7.14	1.6	4.92	4.3	18.9	-124.9	--	--
13:35	5	25	100	56.75	0.79	7.14	1.6	4.71	4.29	18.9	-125.1	--	--
13:40	5	30	100	56.75	0.92	7.14	1.6	4.8	4.35	18.9	-125.2	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	40 mL Glass	3	HCL
Hexavalent Chromium SW-846 719	125 mL Plastic	1	None
Metals	125 mL Plastic	1	HNO3
PFAS	250 mL HDPE Plastic	2	None

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



Project Number	30112892	Well ID	MW-91-5	Date	06/08/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(*F)	66.0 degrees F and Clear. The wind is blowing E at 5.8 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	61.3	Total Depth (ft-bmp)	127.7	Water Column (ft)	66.4
		Gallons in Well			10.79
Purge Start	10:15	Pump Intake (ft-bmp)	125	Purge Method	Low-Flow
		Purge Equipment			Bladder
Purge End	11:00	Volumes Purged	0.11	Sample ID	MW-91-5
		Sampled by			Billy Cobern
Sample Time	11:00	Gallons Purged	1.19	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:20	0	0	100	61.35	0.13	7.07	0.201	33.7	3.01	14.8	64.8	--	--
10:25	5	5	100	61.35	0.26	6.87	0.196	31	1.55	15.9	61.6	--	--
10:30	5	10	100	61.35	0.40	6.89	0.198	26.3	1.46	16.3	56.8	--	--
10:35	5	15	100	61.35	0.53	6.86	0.199	20.2	1.39	16.4	52.2	--	--
10:40	5	20	100	61.35	0.66	6.88	0.198	15.6	1.37	17.1	47	--	--
10:45	5	25	100	61.35	0.79	6.87	0.199	14.2	1.36	17.4	44.4	--	--
10:50	5	30	100	61.35	0.92	6.85	0.199	13.3	1.29	17.3	42.9	--	--
10:55	5	35	100	61.35	1.06	6.85	0.2	13.1	1.21	17.4	42.1	--	--
11:00	5	40	100	61.35	1.19	6.85	0.2	12.8	1.2	17.5	42.1	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 522	250 mL Amber	1	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>no</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>no</u>
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

Groundwater Sampling Form



Project Number	30112892	Well ID	MW-91-6	Date	06/07/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Mostly Cloudy. The wind is blowing NW at 8.1 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	59.71	Total Depth (ft-bmp)	96.15	Water Column (ft)	36.44
				Gallons in Well	5.92
Purge Start	12:40	Pump Intake (ft-bmp)	93.5	Purge Method	Low-Flow
				Purge Equipment	Bladder
Purge End	13:25	Volumes Purged	0.20	Sample ID	MW-91-6_060722
				Sampled by	Billy Cobern
Sample Time	13:25	Gallons Purged	1.19	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:45	0	0	100	59.82	0.13	7.59	1.46	19	3.8	19.8	-105.4	--	--
12:50	5	5	100	59.8	0.26	7.52	1.6	16.3	0.78	18.7	-134.4	--	--
12:55	5	10	100	59.8	0.40	7.54	1.6	13.3	0.64	19.1	-147.7	--	--
13:00	5	15	100	59.8	0.53	7.57	1.59	10.3	0.47	18.9	-162.8	--	--
13:05	5	20	100	59.8	0.66	7.58	1.57	9.71	0.44	19.1	-170.3	--	--
13:10	5	25	100	59.8	0.79	7.59	1.56	9.31	0.37	19.2	-174.1	--	--
13:15	5	30	100	59.8	0.92	7.57	1.56	9.02	0.33	18.7	-176	--	--
13:20	5	35	100	59.8	1.06	7.56	1.56	8.94	0.33	18.7	-176.7	--	--
13:25	5	40	100	59.8	1.19	7.56	1.57	8.7	0.34	18.7	-177.7	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 522	250 mL Amber	1	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>no</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>no</u>
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

Groundwater Sampling Form



Project Number	30112892	Well ID	MWBP-10-UST5-6	Date	06/03/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	78.1 degrees F and Clear.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
Static Water Level (ft-bmp)	29.04	Total Depth (ft-bmp)	36.8	Water Column (ft)	7.76
Purge Start	14:45	Pump Intake (ft-bmp)	34.8	Purge Method	Low-Flow
Purge End	15:15	Volumes Purged	1.26	Sample ID	MWBP-10-UST5-6_060322
Sample Time	15:10	Gallons Purged	1.59	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	1.26
				Purge Equipment	Peristaltic
				Sampled by	Austin Westhuis
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:50	0	0	200	29.04	0.26	7.03	2.67	2.19	0.7	13.1	-16.6	--	--
14:55	5	5	200	29.04	0.53	7.07	2.67	1.79	0.72	13.2	-48.3	--	--
15:00	5	10	200	29.04	0.79	7.07	2.62	1.7	0.74	13.1	-52.2	--	--
15:05	5	15	200	29.04	1.06	7.09	2.63	1.54	0.75	13.1	-55.5	--	--
15:10	5	20	200	29.04	1.32	7.08	2.6	1.5	0.75	13.2	-58.1	Clear	None

Constituent Sampled	Container	Number	Preservative
Total Select Metals (As, Ni, P)	125 mL Plastic	1	HNO3
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

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

Well Information

Well Location: See figure.	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute
 mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter
 mV = milliv

Groundwater Sampling Form



Project Number	30112892	Well ID	MWBP-11-UST1-4	Date	06/03/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	77.0 degrees F and Clear.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	1.52	Total Depth (ft-bmp)	11.24	Water Column (ft)	9.72	Gallons in Well	1.58
Purge Start	13:40	Pump Intake (ft-bmp)	9.24	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	14:10	Volumes Purged	1.00	Sample ID	MWBP-11-UST1-4_060322	Sampled by	Austin Westhuis
Sample Time	14:05	Gallons Purged	1.59	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:45	0	0	200	1.92	0.26	8.92	0.76	2.28	0.21	15	42.3	--	--
13:50	5	5	200	1.99	0.53	8.92	0.76	2.01	0.11	15.2	38.8	--	--
13:55	5	10	200	1.99	0.79	8.92	0.75	1.78	0.1	15	33.9	--	--
14:00	5	15	200	1.99	1.06	8.9	0.76	1.33	0.1	15	31.2	--	--
14:05	5	20	200	1.99	1.32	8.9	0.76	1.22	0.1	15.1	30.3	Clear	None

Constituent Sampled	Container	Number	Preservative
Total Select Metals (As, Ni, P)	125 mL Plastic	1	HNO3
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

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

Well Information

Well Location: See figure.	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute
 mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = milliv

Groundwater Sampling Form



Project Number	30112892	Well ID	MWBP-12-UST1-4	Date	06/03/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	75.9 degrees F and Clear. The wind is blowing W at 16.1 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	2.29	Total Depth (ft-bmp)	11.3	Water Column (ft)	9.01
				Gallons in Well	1.46
Purge Start	12:40	Pump Intake (ft-bmp)	9.3	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	13:10	Volumes Purged	1.09	Sample ID	MWBP-12-UST1-4_060322
				Sampled by	Austin Westhuis
Sample Time	13:05	Gallons Purged	1.59	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:45	0	0	200	2.35	0.26	7.6	0.341	4.03	0.01	13.9	63.8	--	--
12:50	5	5	200	2.35	0.53	7.6	0.341	3.41	0.01	14	64.9	--	--
12:55	5	10	200	2.35	0.79	7.62	0.341	3.11	0.01	14.1	63.7	--	--
13:00	5	15	200	2.37	1.06	7.65	0.339	2.69	0.01	13.9	61.9	--	--
13:05	5	20	200	2.37	1.32	7.65	0.34	2.51	0.01	14	61.7	Clear	None

Constituent Sampled	Container	Number	Preservative
Total Select Metals (As, Ni, P)	125 mL Plastic	1	HNO3
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

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

Well Information

Well Location: See figure.	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute
 mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = milliv

Groundwater Sampling Form



Project Number	30112892	Well ID	P2-MW-04	Date	06/04/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Clear. The wind is blowing E/SE at 3.4 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	11.77	Total Depth (ft-bmp)	39.52	Water Column (ft)	27.75	Gallons in Well	4.51
Purge Start	08:25	Pump Intake (ft-bmp)	37.02	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	09:10	Volumes Purged	0.53	Sample ID	P2-MW-04_060422	Sampled by	Austin Westhuis
Sample Time	09:05	Gallons Purged	2.38	Replicate/ Code No.	Dup-02_060422	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
08:30	0	0	200	12.01	0.26	6.91	0.97	6.53	0.37	12	73	--	--
08:35	5	5	200	12.01	0.53	7.03	0.97	3.09	0.25	12	46	--	--
08:40	5	10	200	12.01	0.79	7.07	0.97	2.27	0.2	12.1	34.3	--	--
08:45	5	15	200	12.01	1.06	7.09	0.97	1.7	0.18	12.1	15.2	--	--
08:50	5	20	200	12.02	1.32	7.11	0.97	1.43	0.17	12.2	5.5	--	--
08:55	5	25	200	12.02	1.59	7.12	0.97	1.31	0.16	12.2	-16.9	--	--
09:00	5	30	200	12.02	1.85	7.13	0.97	1.26	0.16	12.2	-24.8	--	--
09:05	5	35	200	12.02	2.11	7.14	0.98	1.16	0.15	12.2	-26.9	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane	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: 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



Project Number	30112892	Well ID	P6-SB-07	Date	06/03/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	73.0 degrees F and Clear. The wind is blowing W/SW at 15.0 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
		Well Casing Material			PVC
Static Water Level (ft-bmp)	6.35	Total Depth (ft-bmp)	23.65	Water Column (ft)	17.3
		Gallons in Well			2.81
Purge Start	11:35	Pump Intake (ft-bmp)	21.15	Purge Method	Low-Flow
		Purge Equipment			Peristaltic
Purge End	12:05	Volumes Purged	0.56	Sample ID	P6-SB-07_060322
		Sampled by			Austin Westhuis
Sample Time	12:00	Gallons Purged	1.59	Replicate/ Code No.	NA
		Sample Type			Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:40	0	0	200	6.55	0.26	7.23	0.62	3.3	0.26	13.2	39	--	--
11:45	5	5	200	6.59	0.53	7.15	0.64	1.99	0.15	13	35	--	--
11:50	5	10	200	6.59	0.79	7.19	0.66	1.81	0.1	13	25.4	--	--
11:55	5	15	200	6.59	1.06	7.18	0.65	1.57	0.1	12.8	22.8	--	--
12:00	5	20	200	6.6	1.32	7.18	0.66	1.45	0.1	12.9	20.9	Clear	None

Constituent Sampled	Container	Number	Preservative
PFAS	250mL HDPE Plastic	2	None

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



Project Number	30112892	Well ID	PW-14-01	Date	06/07/2022		
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	It is Mostly Cloudy. The wind is blowing NW at 8.1 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	62.75	Total Depth (ft-bmp)	81.84	Water Column (ft)	19.09	Gallons in Well	3.1
Purge Start	13:45	Pump Intake (ft-bmp)	79.34	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	14:40	Volumes Purged	0.94	Sample ID	PW-14-01_060722	Sampled by	Austin Westhuis
Sample Time	14:35	Gallons Purged	2.91	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:50	0	0	200	62.98	0.26	5.88	3.66	738	3.49	15.2	-14	--	--
13:55	5	5	200	62.98	0.53	6.16	3.55	433	3.49	15.1	-24.8	--	--
14:00	5	10	200	62.98	0.79	6.57	3.38	271	5.57	15	-32.2	--	--
14:05	5	15	200	62.98	1.06	6.62	3.37	122	5.69	15	-32.3	--	--
14:10	5	20	200	62.98	1.32	6.79	3.33	52.3	5.73	14.9	-24.4	--	--
14:15	5	25	200	62.98	1.59	6.85	3.32	31.1	5.75	14.9	-23.4	--	--
14:20	5	30	200	62.98	1.85	6.91	3.31	26.8	5.75	14.9	-19.5	--	--
14:25	5	35	200	62.98	2.11	6.96	3.29	21.1	5.75	14.9	-14.7	--	--
14:30	5	40	200	62.98	2.38	6.98	3.27	20.2	5.76	14.9	-10.1	--	--
14:35	5	45	200	62.98	2.64	6.99	3.27	22.3	5.76	14.8	-9.2	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8260B SIMS	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



Project Number	30112892	Well ID	PW-14-02			Date	06/01/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	73.9 degrees F and Mostly Cloudy. The wind is blowing W at 4.7 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	6	Well Casing Material	PVC
Static Water Level (ft-bmp)	63.17	Total Depth (ft-bmp)	85.17	Water Column (ft)	22	Gallons in Well	32.17
Purge Start	14:50	Pump Intake (ft-bmp)	83	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	15:45	Volumes Purged	0.05	Sample ID	PW-14-02_060122	Sampled by	Billy Cobern
Sample Time	15:45	Gallons Purged	1.45	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:55	0	0	100	63.29	0.13	7.66	1.2	420	7.03	24.6	104.8	--	--
15:00	5	5	100	63.39	0.26	7.41	2.34	283	6.7	24.4	-13.5	--	--
15:05	5	10	100	63.49	0.40	7.24	2.38	156	6.31	23.5	-12.2	--	--
15:10	5	15	100	63.58	0.53	7.22	2.37	52.7	5.46	23.6	-8.2	--	--
15:15	5	20	100	63.67	0.66	7.23	2.38	51.3	5.41	23.3	-1.5	--	--
15:20	5	25	100	63.76	0.79	7.23	2.38	20.2	5.55	22.8	1.3	--	--
15:25	5	30	100	63.84	0.92	7.23	2.38	14.7	5.54	22.6	3.1	--	--
15:30	5	35	100	63.92	1.06	7.23	2.37	12.4	5.56	22.4	3.8	--	--
15:35	5	40	100	63.99	1.19	7.23	2.37	9.87	5.5	22.6	5.8	--	--
15:40	5	45	100	64.05	1.32	7.23	2.36	9.41	5.56	22.5	6.3	--	--
15:45	5	50	100	64.09	1.45	7.23	2.37	9.23	5.46	22.5	7.1	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM,VOCS	40 mL Glass	3	HCL
Nitrate	125 mL Plastic	1	None
Total Phosphorus TKN	250 mL Plastic	1	H2SO4

Comments: 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



Project Number	30112892	Well ID	PW-14-03	Date	06/06/2022		
Project Name/Location	RACER Lansing GWS 2022	Weather(°F)	NR				
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	69.3	Total Depth (ft-bmp)	94.3	Water Column (ft)	25	Gallons in Well	4.06
Purge Start	10:55	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	11:25	Volumes Purged	NA	Sample ID	PW-14-03_060622	Sampled by	Donald Richmond
Sample Time	11:25	Gallons Purged	NA	Replicate/ Code No.	DUP-12_060622	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:10	0	0	200	69.3	--	7.06	3.37	0.02	11.59	20.5	67.9	--	--
11:15	5	5	200	69.3	--	7.09	3.44	0.02	11.93	21	66.7	--	--
11:20	5	10	200	69.3	--	7.09	3.46	0.02	12.18	21.1	66.3	Clear	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM	40 mL Glass	6	HCL

Comments: Dup-12 taken

Well Casing Volume Conversion

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

Well Information

Well Location: _____	Well Locked at Arrival: <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



Project Number	30112892	Well ID	TW-14-02		Date	06/01/2022	
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	75.0 degrees F and Clear. The wind is blowing W/NW at 10.3 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	62.82	Total Depth (ft-bmp)	70.51	Water Column (ft)	7.69	Gallons in Well	1.25
Purge Start	09:15	Pump Intake (ft-bmp)	68	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	09:40	Volumes Purged	0.53	Sample ID	TW-14-02	Sampled by	Billy Cobern
Sample Time	09:40	Gallons Purged	0.66	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:20	0	0	100	63.04	0.13	7.64	5	313	8.09	20.8	171.5	--	--
09:25	5	5	100	63.04	0.26	7.64	5	297	8.07	20.9	169.8	--	--
09:30	5	10	100	63.04	0.40	7.65	5	289	8.07	21	168.6	--	--
09:35	5	15	100	63.04	0.53	7.65	4.99	280	8.05	21.1	167.1	--	--
09:40	5	20	100	63.04	0.66	7.66	4.99	273	8.07	21.2	165.4	Gray	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM, VOCs	40 mL Glass	3	HCL
Nitrate	125 mL Plastic	1	None
Total Phosphorus, TKN	250 mL Plastic	1	H2SO4

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



Project Number	30112892	Well ID	TW-14-06	Date	06/06/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	NR	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
Static Water Level (ft-bmp)	52.3	Total Depth (ft-bmp)	88.39	Water Column (ft)	36.09
Purge Start	09:10	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
Purge End	10:10	Volumes Purged	NA	Sample ID	TW-14-06_060622
Sample Time	10:10	Gallons Purged	NA	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	5.86
				Purge Equipment	Bladder
				Sampled by	Donald Richmond
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:35	0	0	200	52.3	--	7.5	2.95	--	15.23	15.9	59.1	--	--
09:40	5	5	200	52.3	--	7.51	2.97	--	14.02	16.3	60.3	--	--
09:45	5	10	200	52.3	--	7.53	2.96	--	14.02	16.2	61	--	--
09:50	5	15	200	52.3	--	7.55	2.99	--	14.22	16.5	61.2	--	--
09:55	5	20	200	52.3	--	7.55	2.96	--	15.52	15.8	62.3	--	--
10:00	5	25	200	52.3	--	7.54	2.95	--	14.77	16	62.6	--	--
10:05	5	30	200	52.3	--	7.55	2.98	--	15.97	15.9	63.7	--	--
10:10	5	35	200	52.3	--	7.55	2.99	--	15.09	16.6	64.1	Brown	None

Constituent Sampled	Container	Number	Preservative
1,4 D, Nutrients	40 ml voa, 150ml plastic, 250	5	H2SO4, 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: _____	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



Project Number	30112892	Well ID	TW-15-11	Date	06/06/2022
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	NR	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	2
Static Water Level (ft-bmp)	63.9	Total Depth (ft-bmp)	86.9	Water Column (ft)	23
Purge Start	12:05	Pump Intake (ft-bmp)	NA	Purge Method	Low-Flow
Purge End	12:35	Volumes Purged	NA	Sample ID	TW-15-11_060622
Sample Time	12:35	Gallons Purged	NA	Replicate/ Code No.	NA
				Well Casing Material	PVC
				Gallons in Well	3.74
				Purge Equipment	Bladder
				Sampled by	Donald Richmond
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:15	0	0	200	63.9	--	7.1	3.23	290	14.08	18.1	77.9	--	--
12:20	5	5	200	63.9	--	7.15	3.21	256	13.18	18	74.3	--	--
12:25	5	10	200	63.9	--	7.14	3.21	248	13.51	17.9	74.3	--	--
12:30	5	15	200	63.9	--	7.16	3.2	248	13.66	17.6	74.1	Orange	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: _____	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



Project Number	30112892	Well ID	TW-15-12		Date	06/01/2022	
Project Name/Location	RACER Lansing GWS 2022		Weather(°F)	72.0 degrees F and Partly Cloudy. The wind is blowing at 3.4 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	NA	Casing Diameter (in)	4	Well Casing Material	PVC
Static Water Level (ft-bmp)	59.6	Total Depth (ft-bmp)	76.8	Water Column (ft)	17.2	Gallons in Well	11.18
Purge Start	13:20	Pump Intake (ft-bmp)	74	Purge Method	Low-Flow	Purge Equipment	Bladder
Purge End	13:55	Volumes Purged	0.08	Sample ID	TW-15-12	Sampled by	Billy Cobern
Sample Time	13:55	Gallons Purged	0.92	Replicate/ Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:25	0	0	100	59.1	0.13	7.84	2.39	823	7.7	22.9	87.9	--	--
13:30	5	5	100	59.1	0.26	7.7	2.34	823	7.75	23.2	95.5	--	--
13:35	5	10	100	59.1	0.40	7.69	2.34	769	7.29	23.1	96.1	--	--
13:40	5	15	100	59.1	0.53	7.69	2.34	931	7.78	22.9	96.6	--	--
13:45	5	20	100	59.1	0.66	7.68	2.34	808	7.51	22.8	97.6	--	--
13:50	5	25	100	59.1	0.79	7.63	2.34	868	7.45	22.3	101.2	--	--
13:55	5	30	100	59.1	0.92	7.63	2.32	819	7.33	22.4	101.9	Brown	None

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane 8270D SIM, VOCs	40 mL Glass	3	HCL
Nitrate	125 mL Plastic	1	None
Total Phosphorus TKN	250 mL Plastic	1	H2SO4

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>no</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>no</u>
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

RACER Lansing GW Sampling

Project Number	30112892	Well ID	UNK-10	Date	6/8/2022		
Project Name/Location	RACER Lansing, MI			Weather(°F)	Sunny		
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	NR	Casing Diameter (in.)	4	Well Material	NR
Static Water Level (ft-bmp)	1	Total Depth (ft-bmp)	16	Water Column(ft)	15	Gallons in Well	9.75
MP Elevation	NA	Pump Intake (ft-bmp)	15	Purge Method:	Low-Flow	Sample Method	Low-Flow
Sample Time:	10:35	Gallons Purged	1.06	Replicate/ Code No.	NA	Evacuation Method	Peristaltic
Purge Start:	10:00						
Purge End:	10:35						

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
10:00	0	100	5.5	0.13	7.32	0.396	25	0.88	15.6	-23.9	--	--
10:05	5	100	5.5	0.26	7.02	0.4	20	0.09	15.5	-12.9	--	--
10:10	5	100	5.5	0.40	6.92	0.398	20	0.04	15.5	-9.1	--	--
10:15	5	100	5.5	0.53	6.91	0.397	18	0.03	15.5	-10.1	--	--
10:20	5	100	5.5	0.66	6.94	0.396	15	0.01	15.4	-12.4	--	--
10:25	5	100	5.5	0.79	6.96	0.396	15	0.01	15.3	-14.1	--	--
10:30	5	100	5.5	0.92	6.96	0.395	15	0.01	15.1	-14.1	--	--
10:35	5	100	5.5	1.06	6.97	0.395	15	0.01	14.8	-14	--	--
Constituent Sampled	Container		Number		Preservative							
VOCs	40 mL Vial		3		HCL							

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: no

Condition of Well: Poor

Well Locked at Departure: no



RACER Lansing GW Sampling

Project Number 30112892 **Well ID** UNK-11 **Date** 6/8/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** NR

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 2 **Well Material** NR

Static Water Level (ft-bmp) 1 **Total Depth (ft-bmp)** 11.5 **Water Column(ft)** 10.5 **Gallons in Well** 1.71

MP Elevation NA **Pump Intake (ft-bmp)** 11 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 11:50 **Gallons Purged** 1.72 **Replicate/ Code No.** NA **Evacuation Method** Peristaltic

Purge Start: 10:50

Purge End: 11:50

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
10:50	0	100	1	0.13	9.82	0.256	16	3.15	17.3	-8.8	--	--
10:55	5	100	1	0.26	9.83	0.256	15	3.08	18.1	-6.4	--	--
11:00	5	100	2.5	0.40	9.84	0.259	12	3.08	17.6	-4.5	--	--
11:05	5	100	3	0.53	9.73	0.26	10	2.96	17.1	0.6	--	--
11:10	5	100	5.5	0.66	9.56	0.262	10	2.77	17.1	6	--	--
11:15	5	100	5.5	0.79	9.45	0.265	8	2.8	16.7	10.2	--	--
11:20	5	100	5.5	0.92	9.27	0.269	8	2.55	16.6	14.9	--	--
11:25	5	100	5.5	1.06	9.07	0.278	8	2.07	15.6	16.7	--	--
11:30	5	100	5.5	1.19	8.84	0.283	8	1.99	15.8	25.2	--	--
11:35	5	100	3	1.32	8.82	0.286	8	2.08	15.8	25.6	--	--
11:40	5	100	3	1.45	8.75	0.293	8	1.83	15.5	23.8	--	--
11:45	5	100	3	1.59	8.69	0.301	8	1.67	15.2	-23.6	--	--
11:50	5	100	3	1.72	8.52	0.317	8	1.01	14.5	22.9	--	--

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Vial	3	HCL

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: no

Condition of Well: Good

Well Locked at Departure: no

ft-bmp = feet below measuring point
in. = inches

mS/cm = milliSiemens per centimeter
NTU = N

mV = millivolts

RACER Lansing GW Sampling

Project Number 30112892 **Well ID** UNK-15 **Date** 6/9/2022

Project Name/Location RACER Lansing, MI **Weather(°F)** Sunny

Measuring Pt. Description Top of Casing **Screen Setting (ft-bmp)** NR **Casing Diameter (in.)** 4 **Well Material** NR

Static Water Level (ft-bmp) 1 **Total Depth (ft-bmp)** 16 **Water Column(ft)** 15 **Gallons in Well** 9.75

MP Elevation NA **Pump Intake (ft-bmp)** 15 **Purge Method:** Low-Flow **Sample Method** Low-Flow

Sample Time: 10:35 **Gallons Purged** 1.72 **Replicate/ Code No.** NA **Evacuation Method** Peristaltic

Purge Start: 09:35

Purge End: 10:35

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
09:35	0	100	1	0.13	7.6	0.69	23	0.24	14.7	10.4	--	--
09:40	5	100	3	0.26	7.44	0.69	18	0.12	14.7	16.5	--	--
09:45	5	100	3	0.40	7.45	0.69	10	0.08	14.6	15.4	--	--
09:50	5	100	3	0.53	7.48	0.69	10	0.06	14.6	14.2	--	--
09:55	5	100	3	0.66	7.51	0.69	10	0.03	14.5	12.8	--	--
10:00	5	100	3	0.79	7.54	0.69	10	0.04	14.5	11.8	--	--
10:05	5	100	3	0.92	7.56	0.69	10	0.04	14.4	10.6	--	--
10:10	5	100	3	1.06	7.58	0.68	10	0.04	14.4	9.9	--	--
10:15	5	100	3	1.19	7.6	0.68	10	0.02	14.4	8.8	--	--
10:20	5	100	3	1.32	7.62	0.68	10	0.03	14.1	7.9	--	--
10:25	5	100	3	1.45	7.6	0.68	10	0.23	14.4	7.8	--	--
10:30	5	100	3	1.59	7.64	0.68	10	0.06	14.4	6.3	--	--
10:35	5	100	3	1.72	7.65	0.68	10	0.02	14.4	5.7	--	--

Constituent Sampled	Container	Number	Preservative
PFAS	250 mL HDPE Plastic	2	None

Sampling By Monica Dostert

Comments:

Well Casing Volume Conversion

Well diameter(inc)=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: Reference map

Well Locked at Arrival: yes

Condition of Well: Good

Well Locked at Departure: yes