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Subject: Revised Interim Monitoring Work Plan – 2025
RACER Trust, Plants 2, 3, & 6, Lansing, Michigan

Dear Mr. Rogers,

On behalf of the Revitalizing Auto Communities Environmental Response Trust (RACER), Arcadis of Michigan, LLC (Arcadis) has prepared this 2025 Revised Interim Monitoring Work Plan (IMP) as follow-up to the Resource Conservation and Recovery Act (RCRA) Facility Investigation and Corrective Measures Study. The IMP, a revision of the approved *Revised Interim Groundwater Monitoring Work Plan – 2023* (IGMP, Arcadis 2023a), outlines continued groundwater, stormwater and performance monitoring activities for the RACER Lansing Industrial Land Plants 2, 3, and 6 located in Lansing, Michigan (Site, **Figure 1**).

The overall goal of the interim groundwater monitoring is to evaluate for potential changes to groundwater conditions and plume stability at the Site, monitor the lower 1,4-dioxane biosparge system performance, and verify stable concentrations of per- and polyfluoroalkyl substances (PFAS) in storm sewer outfalls. In general, monitoring will be completed to verify the results of the *Preliminary Geochemical and Plume Stability Assessment Report* (Arcadis 2014b) and the updated plume stability evaluations included as part of the Annual Groundwater Monitoring Reports (Arcadis 2015, 2016, 2017, 2018, 2019, 2020b, 2021, 2022, 2023b, 2024).

The primary revisions to 2023 IGMP (Arcadis 2023a) include:

- All monitoring wells will be gauged for groundwater elevation annually. In addition, semi-annual gauging will be completed for wells included in the semi-annual sampling event, perched monitoring wells, as well as bedrock and weathered bedrock wells required to evaluate vertical gradient and calculate the bedrock groundwater elevation contours.
 - Discontinue LNAPL thickness monitoring. Monitoring wells near to LNAPL areas will continue to be gauged annually as part of the site-wide annual gauging event.
- Change sampling frequency to annual for all monitoring wells and parameters with the following exceptions:
 - Monitoring wells historically sampled for metals, VOCs, SVOCs and/or 1,4-dioxane at previously approved biennial or quadrennial frequency will remain biennial or quadrennial.

- Lower 1,4-d monitoring wells required to assess the biosparge system performance will be sampled semi-annually. This includes wells up and downgradient of the biosparge transects. Other peripheral 1,4-dioxane monitoring wells will be sampled annually.
- Specific wells in the Plant 2 MW-14-58R area, located at the western Plant 2 perimeter, will be sampled semi-annually for 1,4-dioxane and/or VOCs.
- Monitoring well MW-22-154 near the Plant 6 entry way will be sampled for VOCs semi-annually to continue monitoring related to off-site VI concerns. Other Plant 6 entry area wells will be sampled annually.
- Stormwater sampling will be reduced to semi-annual frequency at previously approved outfall locations.

The overall objectives of the IMP are to evaluate:

- 1,4-Dioxane plume stability and performance monitoring associated with the weathered bedrock biosparge system (lower 1,4-dioxane plume).
- Plume stability and sentinel monitoring of site related PFAS impacts at Plants 2, 3, and 6.
- Biennial sampling of select perched and weathered bedrock monitoring wells for volatile organic compounds (VOCs) to verify VOC plume stability.
- Sampling of perched groundwater in areas identified with semi-volatile organic compounds (SVOCs) in soil to verify SVOCs are not leaching to groundwater above EGLE Part 201 Criteria.
- Sampling of select perched monitoring wells for metals including areas with higher concentrations in perched groundwater near the site boundary (RFI Areas 6, 7, 5-8, and 16) and areas with metals known to be site-related (Plant 3, Area 14).
- Monitor the Lansing Township municipal wells (TWP-90-03, TWP-90-04, and TWP-90-05), located west of Plants 2 and 3, annually for low-level 1,4-dioxane.
- Monitor PFAS in storm sewer outfalls at Plants 2, 3, and 6.

Data collected as part of the IMP will be evaluated after each event and reported annually. Sampling data will be reviewed semi-annually during RACER-Michigan Department of Environment, Great Lakes and Energy (EGLE) update meetings or EGLE will otherwise be provided with any anomalous or significant results following each event. A review of the interim monitoring activities will be completed annually and changes to the IMP may be proposed as part of the Annual Monitoring Report to be submitted in the second quarter of each following year.

Interim Monitoring Plan Scope of Work

The constituents of concern and gauging/sampling frequency for all monitoring wells are outlined on the revised groundwater sampling matrix included as **Table 1**. **Table 1** includes highlighted changes to the IMP matrix showing the change from the 2023 approved sampling frequency to the frequency proposed beginning in 2025.

Groundwater Elevation Gauging

Groundwater elevation monitoring is being completed as outlined in **Table 1** and shown on **Figure 2**. Site-wide groundwater elevation monitoring will be completed annually. A reduced semi-annual gauging event will

be completed that includes wells sampled semi-annually, perched monitoring wells, and bedrock and weathered bedrock wells required to evaluate groundwater elevation in the bedrock aquifer. Monitoring wells will be gauged using an electronic water level meter accurate to 0.01-feet. The annual gauging events will be completed within 24 hours with exceptions for access or other issues.

Groundwater & Stormwater Sampling

Monitoring wells will be sampled as outlined in **Table 1** and shown on **Figures 3 through 8**. Groundwater sampling includes semi-annual, annual, biennial, and quadrennial frequencies determined by factors such as constituents of concern (COC), location relative to site impacts, demonstrated plume stability, and performance monitoring objectives. Sampling frequency at monitoring wells noted as biennial or quadrennial were previously approved as part of the *2023 Interim Revised Groundwater Monitoring Work Plan* (Arcadis 2023). The comprehensive site-wide sampling event (including the Lansing Township municipal wells) will be conducted on an annual basis with additions of the biennial and quadrennial sampling during appropriate years (biennial beginning in 2026, quadrennial beginning in 2028). The semi-annual event completed during the second quarter and annual sampling events will be completed during the fourth quarter. The semi-annual sampling event includes monitoring wells that are key to assessing the biosparge system performance and perimeter locations with potential off-site exposure pathways (i.e., Plant 6 entrance, MW-14-58R area, stormwater sampling).

Field sampling and gauging methods as well as quality assurance/quality control procedures will be consistent with the Field Sampling Plan (Arcadis 2011a) and Quality Assurance Project Plan (QAPP) (Arcadis 2011b). Groundwater samples will be collected in a manner consistent with the low-flow sampling techniques in the Arcadis technical guidance instruction (TGI) for low-flow sample collection, and generally consistent with EGLE's Remediation and Redevelopment Division (RRD) Op Memo 2, Attachment 5 (EGLE 2004). Low flow sampling protocols and PFAS specific considerations are described further in TGIs included as **Attachment 1**. Samples will be collected using a peristaltic pump or submersible bladder pump, as appropriate, and submitted under chain of custody protocol to the analytical laboratory. An emphasis will be placed on collecting low-turbidity samples (less than 10 nephelometric turbidity units [NTUs]) for metals analysis. Field parameters, including dissolved oxygen, oxidation-reduction potential, turbidity, and specific conductivity will be monitored for stability during sampling and recorded as a field data summary. Groundwater samples will be submitted for one or more of the following analyses to the following laboratories:

- *1,4-Dioxane* – on-site monitoring wells will be analyzed using United States Environmental Protection Agency (USEPA) Method 8260B selected-ion method (SIM). The Lansing Township municipal wells and select bedrock monitoring wells will be collected semi-annually, annually or biennially and analyzed using USEPA Drinking Water Method 522. Wells selected for 1,4-dioxane analysis are shown on **Figure 3**. Samples to be analyzed for 1,4-Dioxane analysis will be sent to Merit Laboratories (Merit) located in East Lansing, Michigan.
- *Target Compound List (TCL) VOCs* – defined in **Table 2** of the QAPP (Arcadis 2011b), samples will be collected, semi-annually, annually or biennially and analyzed by USEPA Method SW8260B, Revision 2 or SW8260C, Revision 3. Wells selected for VOC analysis are shown on **Figure 4**. Samples to be analyzed for VOCs analysis will be sent to Merit Laboratories (Merit) located in East Lansing, Michigan.

- *Select Total Metals* – samples will be collected quadrennially (i.e., once every four years) for select wells in areas of the Site identified with metals impacts in soil. Metals identified with consistent drinking water criteria exceedances (arsenic, chromium, copper, lead, nickel, and vanadium) will be analyzed by USEPA Method 6020. Hexavalent chromium in Plant 3, Area 14 will be analyzed by USEPA Standard Method 3500 Cr B 2011. Wells selected for metals analysis are shown on **Figure 5**. If turbidity below 10 nephelometric turbidity units (NTU) cannot be achieved during metals sampling, the sample will be field filtered and submitted for both dissolved and totals metals analysis, using USEPA Method 6020. Samples to be analyzed for metals analysis will be sent to Merit Laboratories (Merit) located in East Lansing, Michigan.
- *SVOCs* – samples will be collected quadrennially for select wells in areas of the Site identified having SVOC impacts in soil. Wells selected for SVOC analysis are shown on **Figure 6**. Samples to be analyzed for SVOCs analysis will be sent to Merit Laboratories (Merit) located in East Lansing, Michigan.
- *PFAS* – samples will be collected and evaluated on an annual basis. Currently samples for PFAS will be analyzed for the 28 PFAS contained in the draft Michigan Department of Environment, Great Lakes, and Energy (EGLE) PFAS Minimum Laboratory Analyte List (EGLE, updated 2019) using modified USEPA Method 537 with isotope dilution (DoD QSM 5.1). The PFAS analyte list is provided as **Table 3**. Wells selected for PFAS analysis are shown on **Figure 7**. Samples to be analyzed for PFAS analysis will be sent to ALS Laboratory located in Holland, Michigan.

Storm Sewer Sampling

Storm sewer PFAS sampling will be completed semi-annually at key outfalls at Plants 2, 3 and 6. Storm sewer sampling locations are shown on **Figure 8**. At each outfall a grab sample will be collected using a peristaltic pump using weighted tubing lowered into the flowing water. Sampling will only occur if there is flowing water within the sewer and after a minimum period of 3-days with no more than 0.1-inch of cumulative precipitation. All sampling equipment and materials will be PFAS free and be collected in accordance with the attached PFAS sampling TGI (**Attachment 1**). Samples will be sent to ALS Laboratory for analysis of PFAS.

Quality Control/Quality Assurance

As discussed in Sections 12.2 and 12.3 of the QAPP (Arcadis 2011b), quality control (QC) samples will be collected during the sampling events at the following frequencies:

- One duplicate (DUP) per every ten samples.
- One matrix spike and matrix spike duplicate (MS/MSD) per every 20 samples.
- One field blank per sampler per sampling event.
- One equipment blank (rinse blank) per pump per sampling event, as well as additional equipment blanks from the water level meters used for PFAS sampling.

Additionally, trip blanks will be included with each cooler containing samples for VOC analysis. One groundwater sample delivery group per plant from each event will undergo complete Tier II validation. The data review will evaluate the final analytical results, holding time compliance, equipment blank sample data, field duplicate sample data, method blank data, LCS data, laboratory duplicate data, surrogate compound

spike data, and MS/MSD sample data. Data will be reviewed in accordance with the USEPA National Functional Guidelines for Organic Superfund Methods Data Review, EPA 540-R-20-005, November 2020 (with reference to the historical USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, OSWER 9240.1-05A-P, October 1999 as appropriate), USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, EPA 542-R-20-006, November 2020, and Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537, EPA 910-R-18-001, November 2018; and Department of Defense (DoD) Quality Systems Manual (QSM) 5.3, DoD Final General Data Validation Guidelines, November 2019. Validation reports will be included in the Annual Monitoring Report along with laboratory analytical reports.

Reporting

As described above, data collected as part of the IMP will be evaluated after each event and reported semi-annually. Semi-annual reporting will be simplified and include the following:

- Cover letter with brief introduction and dates of sampling.
- A table of groundwater analytical criteria exceedances,
- A table summarizing stormwater analytical results,
- A table summarizing Plant 6 entrance SVMP analytical results, and
- A table summarizing the groundwater elevation measurements.
- A figure summarizing the Lower 1,4-dioxane / biosparge performance monitoring results, and
- A figure summarizing MW-15-58R Area monitoring results.
- Analytical will be provided in a digital format for incorporation into EGLE's database.

The annual report will provide a narrative documenting any changes observed at the Site over the course of the year. The annual report will include the following:

- A table summarizing analytical data for the semi-annual and annual monitoring events (and will include biennial or quadrennial data, if collected),
- A table summarizing groundwater elevations,
- Groundwater concentration trend graphs with Mann-Kendall analysis completed for all monitoring wells that exceed criteria (or have in the past) and have at least seven samples available for analysis, with the following requirements:
 - at least 50% detections,
 - of the detections, at least 25% exceed relevant criteria in the last 6 samples,
- Figures summarizing COC criteria exceedances for the semi-annual and annual events,
- Figures summarizing groundwater elevation contours for each water bearing unit, a narrative discussion of current groundwater flow at the Site and any potential changes to groundwater flow based on recent data.
- Groundwater elevation trend graphs and narrative discussing any trends in groundwater elevation or changes observed over the course of the year.
- Low-flow groundwater sampling field logs and a summary of the field parameters recorded at each well during low-flow sampling, and

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- Copies of the laboratory analytical reports for the year (including QA/QC results).
- Analytical will be provided in a digital format for incorporation into EGLE's database.

A review of the interim monitoring activities will be completed annually and changes to the IMP may be proposed as part of the Annual Monitoring Report to be submitted in the second quarter of each following year. Any proposed changes to the IMP must be approved by EGLE before they are implemented. Should you have any questions or need further information, please contact Brendan Mullen of RACER Trust at (201) 247-4890 (bmullen@racertrust.org), or Patrick Curry at (810) 225-1926 (patrick.curry@arcadis.com).

Sincerely,
Arcadis of Michigan, LLC



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Copies:

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Project File

Enclosures:

Tables

- 1 Revised Interim Monitoring Summary
- 2 Volatile Organic Compound Target Analyte List
- 3 PFAS Target Analyte List

Figures

- 1 Site Location
- 2 Groundwater and LNAPL Gauging Plan
- 3 1,4-Dioxane Monitoring Plan
- 4 VOCs Monitoring Plan

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- 5 Metals Monitoring Plan
- 6 SVOCs Monitoring Plan
- 7 PFAS Monitoring Plan
- 8 Storm Sewer Monitoring Plan

Attachments

- 1 Technical Guidance Instruction

References

- Arcadis. 2011a. Field Sampling Plan. RACER Trust, Lansing, Michigan Plants 2, 3, and 6 Industrial Land. August 26.
- Arcadis. 2011b. Quality Assurance Project Plan. RACER Trust, Lansing, Michigan Plants 2, 3, and 6 Industrial Land. August 26.
- Arcadis. 2014a. RCRA Facility Investigation Supplemental Phase 2 Activities Summary Report, RACER Trust, Plants 2, 3 & 6, Lansing, Michigan, February 26.
- Arcadis. 2014b. Preliminary Groundwater Geochemical and Plume Stability Assessment. Plants 2, 3, and 6, Industrial Land, Lansing, Michigan. April 24 (as amended).
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- Arcadis. 2024. 2023 Annual Groundwater Monitoring Report. RACER Trust Industrial Land, Lansing, Michigan. June 20.
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