MEMO

ARCADIS Design & Consultancy for natural and built assets

To:

Christine Matlock, EGLE

Copies:

Joe Rogers, EGLE

John McCabe, EGLE

Al Taylor, EGLE

Dave Favero, RACER Trust

Arcadis of Michigan, LLC
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248 994 2240
Fax 248 994 2241

From:

Patrick Curry, Arcadis

Date:

June 18, 2019

Arcadis Project No.:

B0064479.2019

Subject:

Southeastern Plant 2 PFAS Investigation

RACER Trust, Lansing, Michigan

This scope of work has been prepared by Arcadis on behalf of the Revitalizing Auto Communities Environmental Response (RACER) Trust for Plant 2 located in Lansing, Michigan (Site). This scope of work describes the delineation of poly and per-fluorinated alkyl substances (PFAS) detected in storm sewers located in the southeastern portion of the of Plant 2 (study area). In March 2019, as part of a sitewide evaluation of PFAS impact to storm sewers, concentrations of Perfluorooctanesulfonic acid (PFOS) were identified at concentrations above the Part 201 Groundwater-Surface Water Interface (GSI) criteria of 12 nanograms per liter (ng/L) (EGLE, 2018) at manhole P2-MH-96 and P2-MH-97 (1,160 ng/L and 394 ng/L, respectively). These results are elevated relative to the downgradient sample locations and may indicate an area of the Site that is a primary contributor of PFAS to storm sewers. The location of P2-MH-96 and P2-MH-97 are shown on **Figure 1**.

There are several areas of interest (AOIs) associated with this part of Plant 2 including:

- AOI 2-15 – Included eight 10,000-gallon undergrounds storage tanks located in the Building 225 Tank Farm Area that held waste process oil, quench oil, cutting oil, and lubrication oil.

- AOI-6-19 – A tunnel between Plants 2 and 6 that transferred process waste from Plant 6 to the wastewater treatment plant located on southern Plant 2, including waste from the wash water/phosphoric acid process waste cistern known to be a source area for PFAS on Plant 6.
- AOI 2-4 - Nonhazardous used oil and oily wastewater generated from equipment maintenance and cleaning at Plant 2.
- Other AOIs in the area include Bonderite storage roll-off boxes associated with painting operations to the south and east on Plant 6 (AOI 6-9), hazardous waste storage at Plant 6 (AOI 6-2), the wash water and phosphoric acid holding tanks on Plant 6 (AOI 6-7) and the former Plant 2 wastewater treatment facility.

The location of the AOIs in the vicinity of the study area shown on **Figure 1**. Details regarding the AOIs are included in the Current Conditions Report (Arcadis 2008).

SCOPE OF WORK

The proposed scope of work includes twelve (12) prescriptive vertical aquifer profile (VAP) borings spaced throughout the study area to evaluate if PFAS may be present in soil and groundwater within the area contributing to the impacted manhole structures (i.e. P2-MH-96 and P2-MH-97). The proposed soil borings are shown on **Figure 1**.

Vertical Aquifer Profile Borings

The method of investigation will be similar to the approach employed for other PFAS impacted areas at Plants 3 and 6. A direct push drilling rig will be used to advanced soil borings and collect groundwater samples. Continuous soil cores will be collected at each location a described by an Arcadis geologist. The groundwater sampling will target the most permeable intervals encountered at each borehole. Specifically:

- The borings will be completed to a depth of up to 40 feet below grade or to the top of the dense glacial till.
- At each boring, up to two (2) soil samples will be collected; near surface from within the fill material, and from the phreatic zone above first groundwater. If the perched zone is confined, a sample from the phreatic zone would not be practical, therefore a second sample can be collected from the vadose zone based on the field observation of potential impacts.
- Below the water table, up to two (2) vertical aquifer profile (VAP) samples will be collected from permeable zones encountered within the predominantly clay matrix.

Laboratory Analysis

Samples will be sent to SGS Accutest Laboratory (SGS) located in Orlando, Florida and analyzed for the 24 PFAS outlined in the Michigan Department of Environment, Great Lakes, and Energy (EGLE) PFAS Minimum Laboratory Analyte List (EGLE 2018) using modified USEPA Method 537 with isotope dilution.

The following field QA/QC samples will be collected and submitted to SGS for analysis:

- Field Duplicates – One (1) field duplicate will be submitted blind for every ten (10) samples collected.
- Matrix Spikes/Matrix Spike Duplicates (MS/MSD) – One (1) sample for every twenty (20) samples will be collected in triplicate and submitted for MS/MSD analysis.

- Equipment Blanks – One (1) equipment blank will be collected per sampling device per week. Equipment blanks will be collected by pouring PFAS free water over the decontaminated sampling device and collecting the rinsate in a laboratory provided container.

The results of the investigation will be presented to EGLE. RACER will work with EGLE to determine if further investigation is required to characterize potential sources of PFAS in the study area.

The anticipated starting date for the Plant 2 work is July 2019, pending EGLE approval, and is expected to take approximately 4 to 5 business days to complete. Evaluation of the data and presentation of results to EGLE is expected to occur approximately six to eight weeks after completion of field work.

If you have any questions regarding the scope of work described above, please contact Patrick Curry (Arcadis) at 810-225-1926 or Dave Favero (RACER Trust) at 734-879-9525.

REFERENCES

Arcadis. 2008. Current Conditions Report (CCR) for GM Lansing Plants 2, 3 and 6. Lansing, Michigan. August 1.

EGLE. 2018. Part 201 Generic Cleanup Criteria and Screening Levels. GSI Criteria Updated June 25, 2018.

Figure 1
Plant 2 Southeast PFAS Investigation Area

RACER Trust
Lansing, Michigan