RAMBOLL

ENVIRONMENT
& HEALTH

Mr. Jacob Runge
Environmental Engineer
Materials Management Division
Department of Environment, Great Lakes, and Energy
PO Box 30473
Lansing, MI 48909-7973

RE: Comments on Vapor Intrusion Technical Memo – Letter Dated December 23, 2020
Coldwater Road Landfill
1245 East Coldwater Road, Flint, MI
MID 005 356 860
FILE: 15388/75178/Corres

Date January 14, 2021

Dear **Mr. Runge**:

On behalf of Revitalizing Auto Communities Environmental Response (RACER) Trust, Ramboll Americas Engineering Solutions, Inc. (Ramboll) is providing the following responses to your comments concerning the Vapor Intrusion Technical Memo provided in the Michigan Department of Environmental, Great Lakes, and Energy (EGLE) letter dated December 23, 2020. The responses follow the same order as presented in your letter.

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1. *The data from the November 2019 sampling event do not negate exceedances of Part 201 Site-specific Volatilization to Indoor Air criteria in previous sampling events. EGLE MMD needs to see at least four consecutive quarters of exceedance-free results before accepting the conclusion there is no apparent off-site risk. These sampling events account for seasonal variance; another winter sampling event in the period December through February is acceptable; however, EGLE MMD recommends additional sampling events in the spring and fall. The results from the additional sampling events must be provided in separate brief reports including a brief narrative of results, conclusions, and recommendations, tabular summary of data, copy of analytical data, a figure showing sampling locations, and field sampling forms. Also, please provide EGLE MMD advance notification of the sampling event so that we can make arrangements to be on-site if our schedule allows.*

RESPONSE:
Ramboll will conduct additional soil gas sampling events in the winter, spring, summer, and fall beginning in February 2021 from the onsite and offsite vapor probe locations. The vapor probe locations include shallow (S), middle (M) and deep (D) (VP-1S/D, VP-2S/D, VP-3S/M/D, VP-4S/M/D, VP-5S/M/D, VP-6S/M/D) locations along the western portion of the Site. See **Figure 1**.

Each event will be conducted on a date where there has been no precipitation approximately 24 hours prior to sampling. Grab soil gas sample will be collected from each vapor probe using the following procedure.

The following procedure is consistant with the EGLE's "Standard Operating Procedure: Sampling Utilizing USEPA Method TO-15 Via Bottle-Vac® to Support Vapor Intrusion Investigations" (EGLE, April 30, 2012) guidance document:

- Assemble the aboveground sampling equipment consisting of new connector tubing, the regulated flow meter assembly, including the pressure gauge for each sample, purging equipment, and Bottle-Vac®.
- Affix the sampling label on the Bottle-Vac®.
- Connect the aboveground sampling line to the vapor monitoring point.
- Connect the regulated flow meter assembly to sampling line.
- Connect the regulated vapor flow meter assembly to the helium sampling shroud, which will consist of a bucket outfitted with a helium inlet and outlet (for testing concentration of helium within the shroud prior to and after sample collection), and pass-through sampling line port.
- Calculate volume of air contained within the vapor point and sampling assembly up to the point where the sample will be collected and record on the field sampling form (Attachment B).
- Check all sampling system connections and fittings for tightness and/or obvious deterioration.
- Run all sampling lines through the helium shroud and seal the enclosure on the ground utilizing hydrated bentonite.
- Connect the sampling port line to the outside of shroud, making sure that the valve is closed.
- Calibrate the Mark helium detector model MGD-2002 or equivalent and zero for existing site conditions.
- Connect the helium cylinder to the tracer gas inlet port. Opening the valve on the line from helium to the shroud, begin the flow of helium into the enclosure.
- Confirm the helium concentration within the enclosure using a Mark helium detector model MGD-2002 or equivalent and record the concentration prior to sampling on the field sampling form.
- Connect a 50 cubic centimeter (cc) syringe, or a personal air-sampling pump (such as a Gilian GilAir Air Sampling Pump) that is pre-calibrated to extract soil vapor at a rate of 0.1 liters per minute to the sampling port line and purge at least three volumes of air from the sampling system.
- After purging is complete, close the valve to the sampling line, disconnect the syringe or personal air-sampling pump, and close valve to the helium cylinder.
- Connect the helium detector to the sampling port, collect, and record a reading.
- If helium is detected, return to the Check All Sampling System Connections step (highlighted in yellow) and repeat the process until no helium is detected. If a leak is unable to be resolved, the sampling point may need to be decommissioned and a new one installed.
- Recheck the concentration of helium within the shroud using the helium detector, and record the reading on the field form. If helium is not detected in the shroud, identify how the helium is leaving the enclosure and return to the Seal the Enclosure step and seal the enclosure as appropriate.
- Disconnect or remove the sampling lines from the sampling enclosure leaving the flow regulator assembly and the lines connecting it into the sampling point in place.
- Open the valve on sampling line.

- Immediately connect the flow regulator assembly to the Bottle-Vac® using the quick connect adaptor and record the start time and vacuum gauge reading. The vacuum gauge should register about -28 millimeters mercury when it is first attached.
- Check every two minutes and record the time at which the vacuum gauge reaches 0 pounds per square inch.
- Calculate and confirm that the sampling rate is less than 200 ml/min. Record the flow regulator number on the field sampling form and note any sampling discrepancies in the field notes and sampling form.
- Disconnect the quick connect adaptor from the Bottle-Vac® and place paraffin on the top of the Bottle-Vac® valve.
- Confirm the container has the proper label with the sample identification information.
- Use the helium detector to take a final helium reading within the shroud, and record the reading on the sampling form.
- Remove the flow regulator from the tubing and record the regulator number on the sampling form.
- Complete the chain-of-custody paperwork.
- Return the Bottle-Vac®, adaptor, vacuum gauge, flow regulator assembly, and notes on equipment issues to the analytical laboratory for analysis, cleaning, and calibration.

If groundwater prevents the collection of soil gas at a probe location, a groundwater sample will be collected and analyzed for volatile organic compounds (VOCs) in leu of a soil gas sample.

If a grab soil gas sample cannot be collected due to the permeability of the subsurface material and a groundwater sample is also not able to be collected (i.e., the vapor probe is not flooded), then a soil gas sample will be collected using an 8-hour ("low flow") regulator to allow time for the subsurface material to provide soil gas for the collection of the sample. The above proceedure will be utilized starting with the step "Immeditately connect the flow regulator assembly to the Bottle-Vac® using the quick connect adaptor and record the start time and vacuum gauage reading" because the prior steps would have already been completed in the first attempt to collect a grab soil gas sample. Also, instead of checking every two minutes to record interim guage readings, these readings will be collected at about one hour intervals.

For quality control purposes, a field duplicate sample will be collected from one of the vapor probe locations during each event. The soil gas samples will be submitted to a National Environmental Laboratory Accreditation Conference (NELAC)-certified laboratory for analysis by USEPA Method TO-15 under routine chain-of-custody protocols utilizing standard turn-around times. A Level II data report will be requested from the laboratory.

Separate reports for each event will be prepared to summarize the sampling results. The reports will document the completed activities and will be submitted to EGLE in the form of a technical memorandum. Each of the technical memoranda will document the sampling activities completed at the Site and will include a summary of field activities, tables summarizing the analytical results, Site figures, field sampling forms, and laboratory report.

2. *If four consecutive exceedance-free sampling events are able to be demonstrated, the facility must submit a final report summarizing the investigation of the vapor intrusion pathway, including all vapor intrusion data collected and the conceptual site model developed from this data with consideration of site geology, potential preferential pathways, a visual definition of the vapor source in soil and*

groundwater, and other pertinent information to demonstrate there are no potential impacts to the off-site receptors.

RESPONSE:
Separate reports will be submitted for each event so we can assess conditions after each round of sampling. If four consecutive exceedance-free sampling events can be demonstrated, a final report summarizing the investigation and conceptual site model will be prepared and submitted to EGLE.

3. *The Memo indicates that the most stringent site-specific criteria are applied to all soil gas samples; this is acceptable to demonstrate there is no expected off-site impact. However knowledge of home construction at addresses that may be affected by volatilization to indoor air will be necessary to apply appropriate criteria should the pathway be demonstrated to exist, and may be desired to be implemented in future sampling events to more accurately compare detected soil gas concentrations to the appropriate soil gas criteria.*

RESPONSE:
If exceedances of the most stringent site-specific criteria are detected during any of the four consecutive quarterly sampling events, then available online public information sources will be searched to obtain building-specific information for applicable parcels in the vicinity of the western portion of the Site for more accurate comparison of detected soil gas concentrations to the appropriate site-specific criteria and the data will be presented in the quarterly report containing the exceedances.

4. *If moisture continues to present a problem in collecting soil gas samples at individual sample locations, EGLE MMD recommends a lower flow rate on vapor sample probes to allow tight soil to produce a sample without water. Lab-standard flow controllers for collection of soil vapor samples typically are set for a 200 mL/minute flow rate. Requesting flow controllers calibrated to a lower flow rate can help minimize moisture in the sample in clay heavy or tight soils.*

RESPONSE:
Per our discussions with Joseph (Joe) Rogers, in consultation with Matthew Williams, from EGLE, if a grab soil gas sample cannot be collected due the permeability of the subsurface material and a groundwater sample is also not able to be collected (i.e., the vapor probe is not flooded), then a soil gas sample will be collected using an 8-hour ("low flow") regulator to allow time for the subsurface material to provide soil gas for the collection of the sample. During our last sampling event only vapor probe VP-6D fell into this category; therefore, we plan on having a couple of these controllers on hand to utilize if needed for each of the future sampling events.

If you have any questions, feel free to contact me at (313) 333-0211.

Yours sincerely,
RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

Clifford Yantz
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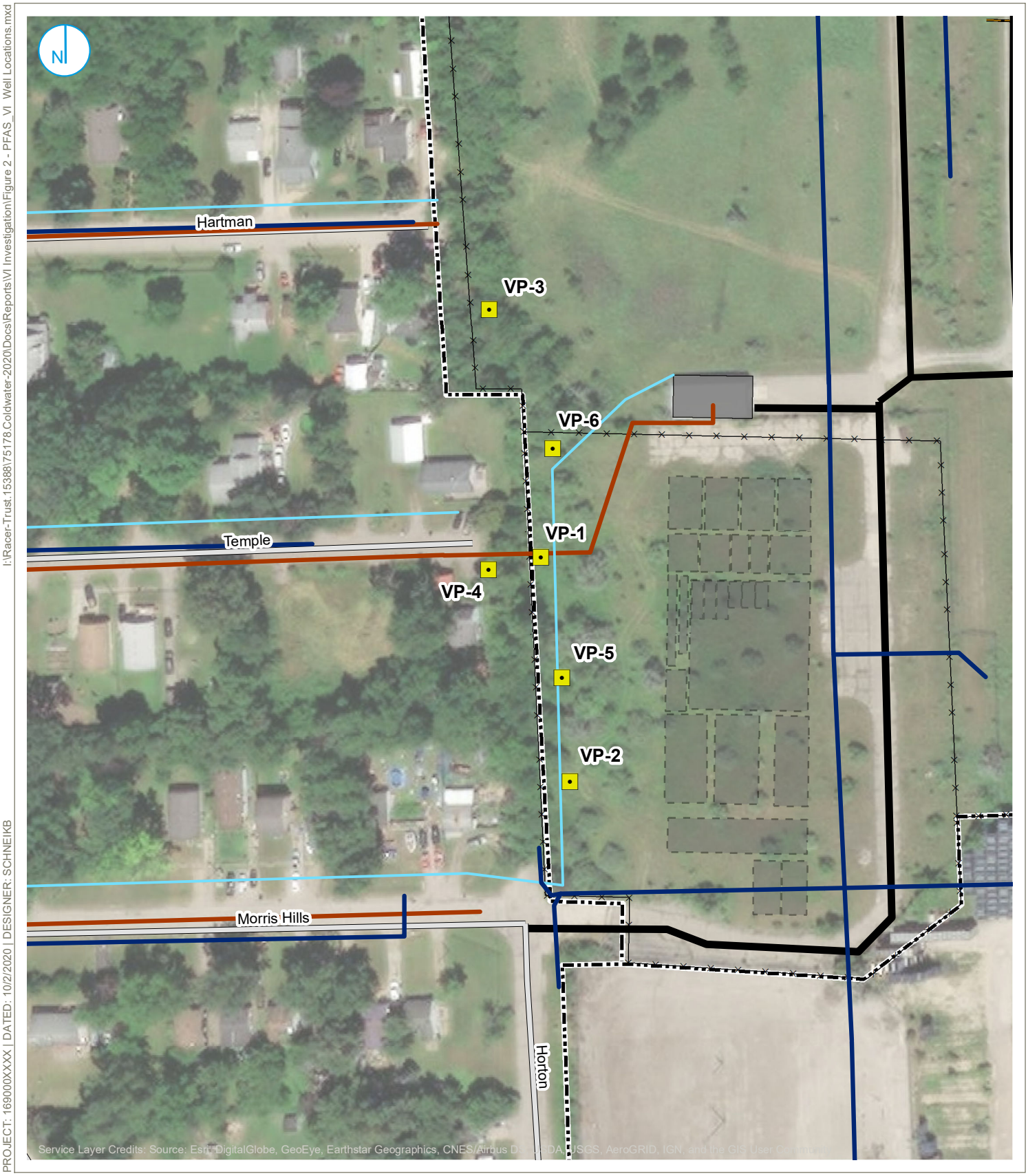
Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

On Behalf of RACER Trust

Clifford S. Yantz
Managing Hydrogeologist – Ramboll Americas Engineering Solutions, Inc.
Agent for RACER Trust

Date: January 14, 2021
cc: file



I:\Racer-Trust.15388\75178.Coldwater-2020\Docs\Reports\VI Investigation\Figure 2 - PFAS_VI Well Locations.mxd

PROJECT: 169000XXXX | DATED: 10/2/2020 | DESIGNER: SCHNEIKB

LEGEND

- VAPOR POINT LOCATION
- FORMER BUILDING
- WATER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- PROPERTY BOUNDARY

0 50 100 Feet

VAPOR POINT LOCATIONS

RACER TRUST
COLDWATER ROAD
FLINT, MICHIGAN

FIGURE 01

RAMBOLL US CORPORATION
A RAMBOLL COMPANY

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