



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
JACKSON DISTRICT OFFICE



LIESL EICHLER CLARK
DIRECTOR

July 27, 2022

Anthony Testa
GFL Environmental, Inc.
10599 W. Five Mile Road
Northville, Michigan 48168

Dear Anthony Testa:

SUBJECT: SRN: N2688, Arbor Hills Landfill, Washtenaw County

On July 26, 2022, the Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD) conducted an announced inspection of the Arbor Hills Landfill, a landfill that is owned and operated by GFL Environmental Inc., (Company) located at 10599 W. Five Mile Road, Northville Michigan. The purpose of this inspection was to evaluate surface methane concentrations at this facility within the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the conditions of Renewable Operating Permit (ROP) number MI-ROP-N2688-2011a; National Emission Standards for Hazardous Air Pollutants 40 CFR Part 63 Subpart AAAA (NESHAP); and the Federal Plan requirements for Municipal Solid Waste Landfills that Commenced Construction On or Before July 17, 2014, and have not been modified or reconstructed since July 17, 2014, 40 CFR Part 62 Subpart OOO (Subpart OOO).

During the inspection, AQD performed an abbreviated surface emission monitoring (SEM) inspection and found **22** areas with surface methane concentrations greater than 500 ppm above background.

Pursuant to 40 CFR 62.16716(d) and the NESHAP, owners and operators of landfills are required to operate the gas collection and control system (GCCS) so that surface methane concentrations are less than 500 ppm. AQD staff used a SEM5000 methane detector device. Instrument specifications and calibration information are available in Attachment (1) while detailed spreadsheets/reports of the data collected have already been provided electronically to the Company via email. Attachment (2) provides an aerial image of the landfill showing the path followed during the survey and the locations of methane concentrations 500 ppm above background.

The following table shows the results of the SEM survey conducted during the visit:

ID*	Description	Location*		Methane (ppm)
		Lat (N)	Long (W)	
AQD 1	Cell 6B liner seam. 2 flags placed in total near corner that show extent of exceedances.	42.4019975	-83.5553575	2000
AQD 2	Penetration at remote well head TR25	42.40211833	-83.55516083	540
AQD 3	Buried trench apparently containing as gas line 50 feet NE of WW 281R.	42.40219033	-83.55508367	557
AQD 4	Same buried trench NE of AQD 3	42.40219283	-83.5549395	780
AQD 5	Same buried trench 50' further NE	42.4022795	-83.55485617	574
AQD 6	Same buried trench	42.40237	-83.553841	15,900
AQD 7	Same buried trench	42.40238783	-83.55405017	669
AQD 8	Cell 6B liner edge/seam	42.4023585	-83.55412867	3500
AQD 9	Cell 6B liner edge/seam near corner	42.402404	-83.55416983	2400
AQD 10	Cell 6B liner edge/seam at corner-4 feet above	42.4024915	-83.55422283	1000
AQD 11	Cell 6B liner edge/seam -western edge-4 feet above	42.40259117	-83.554248	593
AQD 12	Cell 6B liner edge/seam -western edge	42.4026575	-83.5542965	25,000
AQD 13	Cell 6B liner edge/seam -western edge	42.402716	-83.55425167	1127
AQD 14	Penetration header access riser	42.40376433	-83.55537617	1054
AQD 15	Liner seam	42.40428417	-83.55561033	606
AQD 16	Cell 6B end near bottom seam	42.40467067	-83.5555155	3046
AQD 17	Cell 6 west corner near excavation	42.40527833	-83.55538683	6200
AQD 18	Penetration of black lateral line.	42.405338	-83.555371	4680
AQD 19	At tear in temporary flap liner	42.40557333	-83.55541483	1979
AQD 20	At flap over liner west end of Cell 6. 345 ppb H2S also detected.	42.40320883	-83.5589225	817
AQD 21	Side of hill above over liner	42.4019975	-83.5553575	2000
AQD 22	Subsidence crack near well WW-16R6	42.40211833	-83.55516083	540

All methane concentrations above 500 ppm were marked with a numbered red flag. Attachments 1 and 2 provide more detailed information on the SEM survey that was performed. Monitoring was conducted between 9:00 AM and 12:00 PM on 7/26/2022.

General SEM Survey Comments:

This was a targeted SEM survey to investigate the perimeter of new Cell 6 due to suspected methane emissions coming from this area. The area around well AHWW16R6 was also

visited due to the recent NESHAP excess temperature reports that had been sent to EGLE by the Company.

A clockwise SEM survey path was followed around the edge of new Cell 6. In particular, Cell 6B was targeted. Due to a very high level of truck traffic, construction activity and dangerous areas, it was not always possible to fully walk right at the perimeter. The walking path covered 1.3 miles. Most significant of the survey's findings included the following:

- Methane emissions detected along a buried trench apparently containing a gas line running SW to NE just above and to the SW of Cell 6.
- Methane emissions detected along the edge of Cell 6 liner seam/overlap area along the north and west sides of Cell 6.
- A very active subsidence area surrounding well AHWW16R6 (185 degrees F with 7000+ ppm CO, 2 to 3% hydrogen) was identified. Surface cracks were observed in a conical shape that outlined a bowl like depression around the well. The bowl area was about 50 yards across. Very strong ash tray like smell was coming from this area. Methane and some H₂S were detected coming out of the cracks. The well itself was tilted on its side which purportedly happened just in the last few days.

Minimal odors were noted outside the fence line prior to the SEM visit. Strong sewage like odors were noted coming from trucks hauling old waste from the bottom of Cell 6B. Moderate to locally strong H₂S odors were noted coming from the liner seam areas of Cell 6 but not at levels likely to cause impacts offsite. Very strong ash tray like odors noted in the vicinity of well AHWW16R6.

It is recommended that the landfill:

- Address/fix all 22 SEM hits per federal requirements.
- Minimize landfill gas emissions/odors as much as possible along the perimeter of Cell 6 during the remaining excavation/construction phase of this cell.
- Conduct daily monitoring around the area of well AHWW16R6 until the situation stabilizes. This should include taking well head gas readings and conducting visual inspections to note any adverse changes and take further actions, as necessary.
- Conduct all required enhanced NESHAP monitoring now required for well AHWW16R6 and associated reporting requirements. Pursuant to the federal National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills 40 CFR Part 63 Subpart AAAA, §63.1981(h) a semi-annual report is required to be filed with AQD that includes results of the required quarterly SEM pursuant to the operational standards in §63.1958(d)(1).


As a response to this letter, please provide a copy of the Arbor Hills Landfill Semi-Annual NESHAP report to the Jackson Office as required. That report should include the methane exceedances detected by the AQD during this SEM inspection and at a minimum, the results of the required re-monitoring completed pursuant to 40 CFR 63.1960(c) and the actions taken to clear the identified exceedances.

Thank you for your attention to addressing the results of the SEM survey above and for the cooperation that was extended to me during my inspection of your landfill.

Anthony Testa
GFL Environmental, Inc.
July 27, 2022
Page 4

If you have any questions regarding this letter or the actions necessary to address the referenced exceedances, please contact me at the number listed below.

Sincerely,



Senior Environmental Engineer
Air Quality Division
517-416-5025

Attachments: two

cc/enc: Dave Seegert, GFL
Brad Myott, EGLE
Scott Miller, EGLE
Diane Kavanaugh Vetort, EGLE
Brent Coulter, EGLE
Gary Schwerin, EGLE

Attachment (1)

Pursuant to 40 CFR 62.16716(d) and the NESHAP, owners and operators of landfills are required to operate the gas collection and control system (GCCS) so that surface methane concentrations are less than 500 ppm above background.

To determine and demonstrate compliance with the surface methane concentration standard, 40 CFR 62.16716(d) and the NESHAP requires owners and operators to monitor surface methane concentrations around the perimeter of the collection area and along a pattern that traverses the landfill at 30-meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover and all cover penetrations.

AQD used a SEM5000 methane detector device equipped with tunable diode laser absorption spectroscopy and has GPS location accuracy of 2 to 4 meters. Monitoring was performed on a representative section of the landfill in accordance with EPA Method 21 and Subpart OOO/NESHAP. The instrument was calibrated using calibration gas of zero and 500 ppm of methane. All monitoring and calibration were done between 7:30 AM and 12:00 PM. Monitoring was observed by a landfill representative during the survey.

Weather conditions with upwind and downwind methane concentrations at the start and end of the SEM provided in table below:

Weather Conditions	Start Time	End Time
Temperature	63° F.	75° F.
Relative Humidity	82%	50%
Wind Speed mph	1 mph	4 mph
Wind Direction	N	SW
Background methane upwind	3 ppm	
Background methane downwind	3 ppm	

Attachment (2)

Pursuant to 40 CFR 62.16720(c) and the NESHAP, any reading of 500 ppm or more above background at any location shall be recorded as a monitored exceedance and the actions specified in paragraphs through (v) below shall be taken. If the specified actions are taken, the exceedance is not a violation of the operational requirements of 40 CFR 62.16716(d) and the NESHAP.

(i) The location of each monitored exceedance must be marked, and the location and concentration recorded. For location, you must determine the latitude and longitude coordinates using an instrument with an accuracy of at least 4 meters. The coordinates must be in decimal degrees with at least five decimal places.

(ii) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance must be made and the location must be re-monitored within 10 calendar days of detecting the exceedance.

(iii) If the re-monitoring of the location shows a second exceedance, additional corrective action must be taken, and the location must be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in 40 CFR 62.16720(c)(4)(v)/NESHAP must be taken, and no further monitoring of that location is required until the action specified in 40 CFR 72.16720(c)(4)(v)/NESHAP has been taken.

(iv) Any location that initially showed an exceedance but has a methane concentration less than 500 parts-per-million methane above background at the 10-day re-monitoring specified in NESHAP/40 CFR 62.16720(c)(4)(ii) or (iii) of this section must be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration less than 500 parts-per-million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month re-monitoring shows an exceedance, the actions specified in NESHAP/ 40 CFR Part 62.16720(c)(4)(iii) or (v) must be taken.

(v) For any location where monitored methane concentration equals or exceeds 500 parts-per-million above background three times within a quarterly period, a new well or other collection device must be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the AQD for approval.

As provided in a previous table, **22** locations were found to have exceeded the 500 ppm above background threshold during the inspection. The attached aerial image of the Arbor Hills Landfill shows the path followed during the survey and the locations of methane concentrations above 500 ppm.

SEM survey path and locations of SEM exceedances:

