



GRETCHEN WHITMER
GOVERNOR

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



LIESL EICHLER CLARK
DIRECTOR

May 11, 2021

Ms. Emily Stoler Environmental Compliance Manager
Southeast Berrien County Landfill Authority
1540 Mayflower Road
Niles, Michigan 49120

Dear Ms. Stoler:

SUBJECT: SRN: N5432, Southeast Berrien County Landfill, Berrien County

On May 6, 2021, the Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD) conducted an announced inspection of the Southeast Berrien County Landfill (SEBCL) owned and operated by Southeast Berrien County Landfill Authority (Landfill Authority) located at 3200 Chamberlain Road, Buchanan, Michigan. The purpose of this inspection was to determine if this landfill was in compliance with 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-N5432-2016; National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills 40 CFR Subpart AAAA; and the Federal New Source Performance Standard (NSPS) for Municipal Solid Waste Landfills 40 CFR Part 60, Subpart WWW.

During the inspection, AQD performed an abbreviated surface emission monitoring (SEM) survey according to the standard and found **17** areas with surface methane concentrations greater than 500 ppm. Pursuant to 40 CFR 60.753(d), 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 SEM 5000 methane detector device equipped with a NSPS Subpart XXX compliant sampling wand. 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 Landfill Authority via email. Attachment (2) provides an aerial image of the landfill showing the path followed during the survey and the locations of methane concentrations above 500 ppm.

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	Secondary-4C	41.812248	-86.3333015	1487
AQD 2	Secondary riser-3B	41.81226683	-86.3332015	892
AQD 3	Leachate clean out-4C	41.8121135	-86.33289217	2671
AQD 4	4C P-Trap	41.81214883	-86.3326615	1422
AQD 5	GW-IOH3 (Watered in well)	41.8121195	-86.33234533	1459
AQD 6	GW-30	41.81145117	-86.33197883	145,226
AQD 7	GW-51	41.81173017	-86.33160767	662

AQD 8	GW-52 (Cracks noted in ground around wellhead.)	41.81208617	-86.33129817	9128
AQD 9	HGP-6	41.8118795	-86.33048483	3385
AQD 10	HGP-8	41.810917	-86.33015233	2276
AQD 11	HGP-9 (Watered in horizontal well.)	41.81043667	-86.3301175	1578
AQD 12	HGP-10	41.80996783	-86.33017017	20,735
AQD 13	GW-38	41.808744	-86.33123783	1780
AQD 14	GW-46	41.80965733	-86.3327785	854
AQD 15	Forced main marker between GW-45 and GW-46	41.80975583	-86.33287033	36,634
AQD 16	Forced main marker between GW-45 and GW-46	41.80986733	-86.33293567	3393
AQD 17	GW-45	41.81001883	-86.33300317	5578

*All methane concentrations above 500 ppm were marked with an orange flag. Attachments 1 and 2 provide more detailed information on the SEM survey that was performed. Monitoring was conducted between 10:30 AM and 12:15 PM on May 6, 2021.

General SEM Survey Comments:

This SEM survey was conducted at the same time with representatives of US EPA Region V who used their own instrumentation to also conduct a SEM. (Note: EPA will report the results of their SEM separately.) Representatives with the Landfill Authority were also present.

Prior to the SEM, a Landfill Authority representative presented the device they use to conduct the required NSPS quarterly SEMs. It was an older SEM - 500 device which is a brand/model that was manufactured more than 20 years ago. The operator indicated he was having various issues with the functionality of the SEM -500. It is strongly recommended that the Landfill Authority acquire a newer/fully functional device to conduct future SEM surveys.

Downwind methane reading as measured on Chamberlain road prior to the SEM survey was 9 ppm which is notable. Cover integrity observed during the AQD SEM survey appeared to be good with most areas besides the active working face covered in thick grass. Very few erosion features noted. Soil conditions were moist to occasionally muddy along the entire survey route due to rain showers falling during the SEM.

Low intensity H2S odors were observed at several locations around the landfill. Moderate to strong sewage sludge odors were noted near/downwind of the active face.

Observed gas collection well heads were in fair to good condition and were notably not numbered. Landfill has had an exceptionally low number of well redrills. Several wells were located at the base of significant surface depressions. Power cords were seen on the ground to some of the wellheads which were recently installed to power water pumps in the wells. HOV waiver requests are also a rarity at this landfill for some reason.

All SEM hits detected by AQD were found at or near surface penetrations some of which were noted in wells that had low well screen perforation availability due to liquid in the wells. It appears that the Landfill Authority is not following a suitable method for sealing around wellheads and

Ms. Emily Stoler, Environmental Compliance Manager
Southeast Berrien County Landfill Authority

Page | 3

May 11, 2021

other surface penetrations to prevent methane leaks. The Landfill Authority should consider investigating the use of PMDI polyurethane type foams in conjunction with synthetic liners and clay to permanently seal surface penetrations.

Pursuant to the federal National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills Subpart AAAA 40 CFR 63.1980(a), in order to comply with SEM reporting requirements in 40 CFR 60.757(f), a semi-annual report is required to be filed with AQD that includes results of the required quarterly SEM.

As a response to this letter, please provide a copy of the Company's 2nd quarterly NSPS SEM report to the Jackson District office no later than 4 weeks after the end of the quarter. 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 60.755(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 us during my inspection of your landfill.

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,



Mike Kovalchick
Senior Environmental Engineer
Air Quality Division
517-416-5025

Attachments: two

cc: Mr. Scott Miller, EGLE
Mr. Chris Ethridge, EGLE
Mr. Jeff Benya, EGLE
Mr. Rex Lane, EGLE
Mr. Matthew Deskins, EGLE
Mr. Daniel Heins, US EPA Region V

Attachment (1)

Pursuant to 40 CFR 60.753(d), 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.

To determine and demonstrate compliance with the surface methane concentration standard, 40 CFR 60.753(d) 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.

AQD used a SEM 5000 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 NSPS Subpart WWW. The instrument was calibrated using calibration gas of zero and 500 ppm of methane. All monitoring and calibration were done between 9:00 am and 12:15 pm. Monitoring was observed by Landfill Authority representatives.

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	50° F.	50° F.
Relative Humidity	46 %	58 %
Wind Speed mph	8 mph	mph
Wind Direction	South	South
Pressure/Trend	30.13" S	30.10" F
Sky Conditions	Cloudy	Light rain
Soil Conditions	Moist	Moist
Background methane upwind	3 ppm	
Background methane downwind	9 ppm	

Attachment (2)

Pursuant to 40 CFR 60.755(c), 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 (i) 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 60.753(d).

- (i) The location of each monitored exceedance shall be marked, and the location recorded.
- (ii) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of the exceedance being detected.
- (iii) If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken, and the location shall 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 60.755 (c)(4)(v) shall be taken, and no further monitoring of that location is required until the action specified in paragraph (c)(4)(v) has been taken.
- (iv) Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in 40 CFR 60.755 (c)(4) (ii) or (iii) shall 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 paragraph (c)(4) (iii) or (v) shall 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 shall 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, **17** locations were found to have exceeded the 500 ppm above background threshold during the inspection. The attached aerial image of the landfill shows the path followed during the survey and the locations of methane concentrations above 500 ppm.

SEM survey path and locations of SEM Hits.

