

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N268869076

FACILITY: Arbor Hills Landfill, Inc.		SRN / ID: N2688
LOCATION: 10690 W. SIX MILE RD, NORTHVILLE		DISTRICT: Jackson
CITY: NORTHVILLE		COUNTY: WASHTENAW
CONTACT: Anthony Testa , Landfill Site Engineer		ACTIVITY DATE: 09/21/2023
STAFF: Diane Kavanaugh Vetort	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Complete compliance inspection Major Source.		
RESOLVED COMPLAINTS:		

N2688 Arbor Hills Landfill (AHL) and Arbor Hills Energy LLC (AHE), Stationary Source, Northville, Washtenaw County.

Major / ROP Source. Full Compliance Evaluation (FCE) and Partial Compliance Inspection (PCE) Which Consisted of an Abbreviated Methane SEM Survey

Several additional PCE were conducted during the FY23 to investigate sources of LF methane, the perimeter monitoring system, and evaluate leaks at the Arbor Hills Energy plant and new RNG plant.

Facility Contacts

Anthony Testa, GFL Landfill Site Engineer Anthony.Testa@gfenv.com (AT)

Dave Seegert, GFL Landfill Manager davidseegert@gfenv.com (Dave)

**John Collins, GFL Regional Environmental Compliance Manager
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Ben Adams, GFL, benjamin.adams@gfenv.com

AQD STAFF

Diane Kavanaugh Vetort, AQD Jackson (DKV)

Mike Kovalchick, AQD Jackson (MK)

Brian Merle, AQD Jackson (Brian)

Jeff Benya, AQD Detroit Office (Jeff)

Purpose

On September 21, 2023, AQD conducted an announced compliance inspection of the Arbor Hills Landfill (AHL) owned and operated by Green for Life Environmental (GFL or Company) located at 10690 West Six Mile Road, Northville, Michigan. The purpose of this inspection was to determine the facility's 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; the conditions of Renewable Operating Permit (ROP) Permit Number MI-ROP-N2688-2011a (This includes a separate Permit to Install (PTI) No. 79-17 issued for the AHL operated Flare compound. An Administrative Amendment and Minor Modification application were submitted but have not yet been incorporated into the ROP); National Emission Standards for Hazardous Air Pollutants (NESHAP), Title 40 of the Code of Federal Regulations (40 CFR), Part 63, Subpart AAAA (LF MACT AAAA) 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).

Mike Kovalchick (MK) and Jeff Benya (Jeff) each performed an abbreviated methane surface emission monitoring (SEM) survey on this date. DKV and Brian assisted in this effort. Tetra Tech staff accompanied us during this part of the inspection. MK sent all results and follow up communication to AT and Dave following the inspection.

Reference: 9/21/23 email and Final Hit List Arbor Hills 9-21-23.csv

Reference: 9/22/23 email and (8) photos and Arbor Hills Final Results Map 9-21-2023.jpg

Permit History

The current ROP is structured into three (3) separate sections: Sections 1 and 2 contain the Landfill and Active Gas Collection and flare supplemental control emission units owned and operated by **Green for Life Environmental (GFL)**; and Section 3 contains the NSPS required LFG Treatment System (TS), and turbine emission units owned/operated by **Opal Fuels, Arbor Hills Energy, LLC**.

The AHL and Arbor Hills Energy (AHE) companies submitted an ROP renewal application to AQD and are operating under the permit shield. However due to permit non-compliance and enforcement actions initially with Arbor Hills Energy, and subsequent EGLE-AQD (and at times EPA) enforcement actions with both companies, it has not been processed. The enforcement actions were resolved upon issuance of Consent Judgement (CJ) No. 2020-0593-CE with GFL (AHL) and Consent Decree (CD) No. 5:21-cv-12098-SDD-EAS with Opal Fuels (AHE). In addition, during the past year AQD issued PTI Nos. 67-23 and 68-23 on May 31, 2023, for Emerald RNG, LLC and Arbor Hills RNG, LLC, and Arbor Hills Energy, LLC respectively. The ROP renewal application required significant updating and the submittal of a Minor Modification and Administrative Amendment.

The Working Draft Renewal now proposes Section 1 will be AHL-GFL, Section 2 will be Arbor Hills Energy, LLC, and Section 3 will be Emerald RNG, LLC and Arbor Hills RNG, LLC. It is currently undergoing technical review. The Sulfur Treatment System (STS) commenced operation in July 2023, as required by the CD, and all landfill gas

is now treated to reduce sulfur (H₂S) content. The RNG plant has a requirement in the CD to commence full operation by October 30, 2023.

Odor Complaint Situation:

There is an ongoing odor complaint situation involving AHL and the surrounding community (local citizen organization The Conservancy Initiative) and regular odor complaint reporting by email. AQD and EGLE, Materials Management Division (MMD) have been working together and with the various owner/operators of the AHL facility to address significant odors and emissions from the landfill operations since approximately 2015. Odors are generally in four categories; garbage (includes special wastes and sewage sludge), landfill gas (including H₂S), liquids (leachate/condensate), and compost. Numerous corrective actions have been implemented. Enforcement actions included related compliance requirements. The detailed comprehensive historic and ongoing documentation is contained in the AQD and MMD databases and facility files.

AHL's CJ requires the installation, operation, monitoring and reporting of a Perimeter Monitoring System for emissions of CH₄ and H₂S. This includes a public facing website, with real time data to the extent it was possible. The CJ contains requirements for corrective action of exceedance alarms and required reporting.

The Stationary Source is subject to the following federal requirements:

1. Federal Plan Requirements for Existing Municipal Solid Waste Landfills promulgated in 40 CFR Part 62, Subpart OOO. The Federal Plan will apply until a State Plan is approved or delegation of the Federal Plan approved. Subpart OOO effective date was June 2021.
2. The Maximum Achievable Control Technology Standards (MACT) for Municipal Solid Waste Landfills promulgated in 40 CFR Part 63, Subparts A and AAAA. Revised and effective date of September 27, 2021. (Note: This applies to PTI 79-17 FGPROJECT, and EUTREATMENTSYS-S3 in the current ROP.)
3. The National Emission Standard for Hazardous Air Pollutants (NESHAP) for Asbestos promulgated in 40 CFR Part 61, Subparts A and M.
4. Federal New Source Performance Standards for Stationary Gas Fired Turbines, 40 CFR Part 60 (NSPS Subparts A & GG) (Note: This applies to PTI 68-23 FGTURBINES and FGTURBINES-S3 in current ROP.)
5. Federal New Standards of Performance for Stationary Combustion Turbines, 40 CFR Part 60 (NSPS Subparts A & KKKK) (Note: This applies to PTI 68-23 EUTURBINE4 and EUTURBINE4-S3 in current ROP.)
6. National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Turbines, 40 CFR Part 63 (MACT YYYY) (Note: This applies to EUTURBINE1-S3, EUTURBINE2-S3, EUTURBINE3-S3, EUTURBINE4-S3 and FGDUCTBURNERS-S3.)
7. One 250 HP diesel fired emergency generator is subject to 40 CFR Part 60, Subpart IIII New Source Performance Standards for Stationary Compression Ignition Internal

Combustion Engines (Meeting NSPS requirements satisfies RICE MACT Subpart ZZZZ.)

Onsite Inspection

I arrived at the facility office located at 10599 W. 5 Mile Road, at approximately 9:30 AM. AQD staff Mike, and Jeff were conducting instrument calibration pre-SEMs. Brian, AT, and Tetra Tech Manager were in the parking lot. Following pre-inspection discussions, we all departed to conduct the SEM survey starting on the southeast side of the landfill as part of the inspection. AT remained at the office. AQD inspection plan was to return to the office and met him after lunch to conduct the remainder of the inspection.

Before, during, and following the inspection, Anthony and Dave, and their representatives, extended their full cooperation and addressed our questions and requests for information.

This morning, AQD staff conducted two simultaneous SEM events. The map of the route(s) walked, GPS recorded locations of methane exceedances, and methane emission readings are detailed in a separate documents attached to this report. The route that was followed generally started just to the NE of the storm water retention pond, then went NW to the top of the landfill, then downhill to the western, northern, and eastern edge of Cell 6 then south along the perimeter monitor network to the starting location.

Immediately following the inspection, MK prepared and sent the resulting data to GFL. The following week MK issued a summary letter to AT and Dave documenting the SEMs conducted, the results, significant observations, and the requested corrective action in accordance with the MACT AAAA. The letter states that 31 SEM hits were recorded. Most of the hits were at erosion rills and surface penetrations and spots of dead grass in the final cover area of Arbor Hills East.

Following the SEM event there was a break for lunch. After returning from lunch, Brian and I met with AT in the GFL office. We went over a variety of compliance areas where AQD needed clarification, additional information, or had questions. There were also some records that were reviewed on-site on AT's computer. AQD requested additional electronic records be submitted following the inspection. Some highlights are below based on AQD questions put to AT and Dave primarily.

1. Dave and AT conduct the CJ required waste acceptance for odorous wastes. They said they are taking this very seriously and have rejected numerous wastes. They said they are currently taking two sludges, YCUA has a long term contract with them related to YCUA acceptance of the landfill leachate. AQD is aware that YCUA lime treats sludge pre-landfilling. Another WWTP sludge they have accepted for @ 1 year is Commerce (or Commerce Twp.). Dave explained they went to the facility and reviewed the waste, and it does not smell bad. He is not sure how they are treating it.
2. AHL is maintaining the same Fugitive Dust Control equipment: wet sweeper, dry sweeper and two watering trucks. Per AT no Calcium Chloride has been used. He indicated concerns for what it contains and how that may impact their discharges.

3. Ambient Odor Control system is still in place per Dave and AT. Use portable sprayer with Fans and move around the site. Believe same odor suppressant agent but could not confirm what it is. They also have Vacuum Boxes for trenching, digging, drilling.
4. 2023 Quarters 1 & 2 SEMs record: DKV identified two unidentified column headings in the SEM Tables GFL submitted as part of their CJ 1st Semi-annual Report. AT clarified that columns DTB and DTW are for Depth to Bottom and Depth to Water. All entries in these columns show NA so it is not clear if these are useful. DKV identified a missing data set, **H2S readings at SEM hits**. This is required to be monitored and reported at SEM CH4 hits per the CJ. AT acknowledged having missed this and said they do have the data. Later during the inspection, he told me that he contacted their consultant to have H2S readings added to the Table and asked him to revise the Q1 and Q2 report. AT said he will submit this to me when completed. This report was received 10/4/23. COMPLIANT
5. AHL's current SEM Contractor is Tetra Tech. They also conduct the Well head monitoring required by the CJ. The required Well field monthly readings is contracted to MCC. Sniffer Robots continues to do Drone SEMs.
6. AT stated the LF maximum design capacity is 63,560,000 cubic yards, and the estimate is 6 years of fill life remaining.

Questions ROP Related:

- Keep Cold Cleaner exempt Table. Still have at least one.
- Have diesel portable generator = exempt for LFs if truly portable.
- NEW: Gasoline Dispensing Facility (GDF MACT) AT and Dave said they do have a gasoline tank dispensing to on-site vehicles. They are sure they use less than 10,000 gallons throughput per year. Dana O, EIL, is their consultant handling ROP related items. THIS WILL NEED TO BE ADDED TO ROP.

Near the end of the meeting GFL's Ben Adams and John Collins joined us. Following this meeting, we drove in 2 vehicles to observe the leachate area where Ben conducted a process tour.

Leachate storage and handling:

Ben Adams oversees this area. He met with us in AT's office and accompanied us during the inspection of this area. Some significant changes have occurred and are planned. Namely, the two 50K bullet tanks are being removed (empty). GFL said the older Green 330,000 gallon tank is being replace. GFL is planning to build an actual structure for the leachate treatment plant equipment / materials currently housed in a Tent. Ben said it will be located where the bullet tanks are now.

AQD observed an empty red Frac Tank and a tote of Hydrogen Peroxide near the front entrance & scales. Per Ben this should have been delivered to the leachate

area. There are Frac tanks sitting here also. This is part of the changes to treatment, etc. they are making.

It appeared GFL may not have been keeping records to demonstrate the carbon /filtration controls on the leachate tanks and sumps (identified in the CJ) are installed and operating properly as indicated. GFL was advised to review how they have been monitoring/ maintaining / replacing the carbon filters. Ben said he is doing checks and maintenance work but hadn't kept in a set record but will do so now. AQD requested records (to best of their ability) for the past 12 month period (this inspection period). On October 3, 2023, Ben submitted a comprehensive record with carbon outlet readings, and maintenance and replacements documented for each of the subject tanks and sumps. This is acceptable and should be continued.

COMPLIANT

Ben walked us through an overview of the leachate storage tanks and handling system. We observed the location of the carbon filtration controls. We then left Ben and drove to inspect the Flare compound with AT and DS.

GFL Flare compound

DKV, Brian, AT and Dave conducted an inspection of the Flare blower compound and the associated three Flares. The overall condition of the blowers, piping, and flare structures appeared to be good. Only the EU5000CFMFLARE (Open /Utility Flare) was operational during the inspection. There are two buildings here, one for the blowers, and a small, shed housing the electric panels and flare control panel. The primary panel has digital diagram of flares, blowers, piping, and monitoring readout screens. I observed the panel indicated the Utility Flare landfill gas flowrate was approximately 1300 scfm.

SITE-WIDE FUGITIVE DUST

Overall fugitive dust control of the landfill interior roads, driveways/entrances, and perimeter roads was very good. I did not observe significant fugitive dust at any time. I did observe the Water Truck operating. **COMPLIANT**

COMPOST AREA

I was able to observe an overview of the Compost area from the landfill hill during a portion of the inspection. It appeared to be in good condition with rows and piles well maintained with no standing water. No dust or odors were observed during inspection. Dave and AT confirmed that they have a new Windssock at the site and the operators are trained to not conduct odorous activities, such as turning the rows when the wind direction and/or weather conditions are conducive to odors impacting downwind to the East residential subdivisions. This has been a repeat odor causing activity in the past. Compost is a part of the CJ regular reporting. **COMPLIANT**

RECORDS REVIEW

AHLF and AHE currently submit to AQD comprehensive regular compliance recordkeeping. Both facilities submitted timely reports as required during the past 12 months, includes Michigan Air Emissions Report (MAERS), ROP Semi-annual and Annual Certification and Deviation Reports, including associated Federal Subpart OOO, and LF MACT Subpart AAAA required reports.

In addition, AQD receives GFL's Higher Operating Value Wells of Interest (HOV-WOI) bi-monthly reports; the CJ (GFL) quarterly and semi-annual reports; the CD (AHE) monthly schedule updates and various required notices, and new PTI required notices/submittals. All records obtained throughout the past year are reviewed and placed in AQD plant files.

Therefore prior to the inspection AQD requested only records less often reviewed or normally not submitted as part of the above. Some records were received electronically prior to the inspection and some hard copies were obtained on site. Other records were submitted electronically on the day of or days following the inspection. All records were reviewed and placed in the plant files.

AQD requested an up to date As-Built (Plot Map). AT said one was submitted in January 2023 and he provided it to me. He said the next one will be submitted in January 2024. This appears to be the process going forward (believe the new Part 115 regulations require it). I indicated that this is acceptable.

AQD requested the Lat / Long for all LFG Wells, and this was submitted electronically and by hard copy.

AQD requested Monthly Cover Reports, and they were submitted both electronically and by hard copy.

AQD verified that the requirement to conduct Wellhead inspection with photo documentation is being met. Well Photos were partially reviewed by AQD on site in AT's office. (CJ requirement)

AQD requested more detailed PTI 79-17 Flare records of emissions and monitoring, these were submitted electronically and by hard copy. See detail discussion of record details below.

FLARES: EUENCLOSEDFLARE1-S2 (also #392 Zink), EUENCLOSEDFLARE2-S2 (also #391 McGill), and EU5000CFMFLARE (also #393 Utility)

PTI No. 79-17 includes EU5000CFMFLARE (an Open Flare), FGENCLOSEDFLARES, and FGPROJECT.

EU5000CFMFLARE Emissions

Visible Emissions 0 percent opacity. I did not observe any VE during the inspection from this flare.

NOx limit is 0.068 lb./MMBtu per hour. This limit was determined compliant based on parameters determined during performance testing.

CO limit is 0.31 lb./MMBtu per hour. This limit was determined compliant based on parameters determined during performance testing.

FGENCLOSEDFLARES Emissions

NMOC limit applies to each flare. Flare must reduce emissions by 98 weight percent or outlet concentration to less than 20 ppmv at 3% O₂. This limit was determined compliant based on parameters determined during performance testing.

NO_x limit is 0.060 lb./MMBtu per hour. This limit was determined compliant based on parameters determined during performance testing.

CO limit is 0.20 lb./MMBtu per hour. This limit was determined compliant based on parameters determined during performance testing.

During testing average minimum temperatures were set for each enclosed flare and these are monitored and recorded. Deviations are reported in semi-annual ROP reports. Flare #392 Zink's compliant temperature is 1396 deg F. and Flare #391 McGill's is 1520 deg F.

FGPROJECT Emissions for the 12 month period ending August 2023:

NO_x 27.44 tons (Limit 70.1); SO_x 33.78 tons (Limit 142.9); CO 104.56 tons (Limit 289.1); PM 7.13 tons; VOC 1.61 tons.

LFG Throughput Limit: 4,257 million cubic feet per year, 12 month rolling time period. GFL records show: 1,703,159,641.80 SCF, 12 month rolling as of August 2023. December 2022 had the highest 12 month rolling throughput at 2,584 million cubic feet. COMPLIANT

The PTI requires a Malfunction Abatement /Preventative Maintenance Plan for the flares and AQD has previously received this. Zink is still conducting semi-annual PMs/tune-ups per AT, and they are scheduled to be on-site next week for this. AT said no significant changes or events. He showed us numerous parts maintained on site.

Hydrogen Sulfide (H₂S) sampling of LFG at the Flares: AT showed us their records on his computer, and it shows LFG sampling did exceed the 326 ppm limit (allows monthly sampling if 80% percent of 408 ppm permit limit) and they had to revert to weekly sampling numerous times. I reviewed hard copies of these records, and it confirmed weekly sampling was required during the past 12 months. Once the STS commenced operation on 5/5/23 the ppm readings indicated "0" H₂S. I requested AT send me the 2 canister sampling results reports required over the past 12 month period. This record was received on September 29th and indicates compliance with the condition.

MISCELLANEOUS COMPLIANCE ITEMS

LANDFILL GAS WELLS

The CJ required GFL conduct a third party thorough review of all of their Wells related to liquid level and pump status. A report with recommendations and corrective action as applicable was required and submitted. The Well Liquid

Minimization report /Corrective Action Extension Request update last received stated there were 5 Wells listed to be corrected by 9/26/2023. AT said they have completed all but 2 and they should be done on time.

HOV

AHL continues to identify and submit regular reports of all high temperature wells and wells of interest (WOI) surrounding these wells. Monitoring continues and no significant issues or worsening high temperature has occurred. Three Wells became subject to Enhanced monitoring under the MACT AAAA during the period. GFL submitted these to AQD to add them to their existing list of HOV-WOI for temperature (>145 degrees F). These are: AHW0313, AHW0287, and AHW01.

CELL 6 GCCS

MMD issued final new cell approval and AHL commenced waste filling on 7/7/2023. Within 6 months AHL must have installed GCCS infrastructure and within 18 months must commence operation of it. This is a requirement of their CJ. Due to recent (3rd Quarter) regular exceedances of Methane and H₂S at the perimeter monitors (CJ requirement) GFL will be pursuing the operation of the GCCS in Cell 6 in January 2024 (recently proposed). Corrective actions of exceedances are required by the CJ and GFL has recently identified Cell 6A as the likely cause of recent exceedances.

It is also important to note that during the SEMS today AQD verified surface emission exceedances at/around the newest leachate riser piping (are penetrations) along the very east side of the landfill and berm of Cell 6A. AQD and GFL agreed that the alarms at perimeter monitor MS-2 are likely caused by emissions from this area.

COMPLIANCE SUMMARY

AQD has determined that Arbor Hills Landfill is in substantial compliance with the conditions of their ROP, PTI 79-17, and the applicable federal standards, currently. Additional FCE/PCE will be conducted during fiscal year 2024. AHLF is required to address the SEM exceedances identified by AQD with results provided to them, in their current and upcoming Quarterly SEM applicable requirements.

NAME *Alicia Kavanaugh Vertert*

DATE 10/10/2023

SUPERVISOR 