

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

N599656091

FACILITY: Granger Grand River Avenue Landfill		SRN / ID: N5996
LOCATION: 8550 West Grand River Avenue, GRAND LEDGE		DISTRICT: Lansing
CITY: GRAND LEDGE		COUNTY: CLINTON
CONTACT: Kimberly Smelker , Operations Manager		ACTIVITY DATE: 11/10/2020
STAFF: Michelle Luplow	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Virtual, scheduled compliance inspection of the landfill and EDL generating station to determine compliance with MI-ROP-N5996-2018		
RESOLVED COMPLAINTS:		

Inspected by: Michelle Luplow

Personnel Present: Kim Smelker (ksmelker@grangernet.com), Operations Manager, Granger
Serenity Skillman (sskillman@grangernet.com), Environmental Compliance Specialist,
Granger
Dan Zimmerman (dan.zimmerman@edlenergy.com), EDL Director of NA HSE &
Compliance

Purpose

Conduct an announced, scheduled, partial compliance evaluation (PCE) inspection by determining compliance with the sectioned ROP, MI-ROP-N5996-2018, for Granger Grand River Landfill (Section 1) and the EDL Generating Station (Section 2). This activity was conducted as part of a full compliance evaluation (FCE). The facility was last inspected February 2019.

Due to COVID-19 safety concerns, the inspection for both EDL and Granger Grand River was conducted virtually via Microsoft Teams with Dan Zimmerman on November 10, 2020. Prior to the virtual onsite investigation, I had a question and answer Teams Meeting with Serenity Skillman and Kim Smelker to discuss items related to compliance but that were not necessary to “see” during the inspection.

Facility Background/Regulatory Overview

The Granger Grand River Landfill (GGRL) is a municipal solid waste landfill with an associated gas-to-energy plant owned by EDL, both located in Grand Ledge, Clinton County, ½ mile south of I-96. The primary activity of this source is accepting municipal solid waste, consisting mostly of construction waste materials and contaminated soil, but also accepts asbestos-containing materials (ACM), which are subject to the NESHAP for asbestos, 40 CFR, Part 61, Subpart M.

The landfill itself was installed November 6, 1981 (it’s “construction” date, as this is the date EGLE’s Materials Management Division (MMD) issued the construction permit # 0059), making it subject to 40 CFR Part 62, Subpart GGG, as it has not been reconstructed or modified since before May 30, 1991. There are currently new New Source Performance Standards (NSPS) for landfills established by the EPA: NSPS Subpart XXX and NSPS Subpart Cf. NSPS Subpart XXX is for those landfills that have accepted waste after November 8, 1987 and commenced construction, reconstruction, or modification after July 17, 2014; the GGRL site has not constructed, modified or reconstructed after July 17, 2014 and is therefore subject to the new NSPS Subpart Cf guideline (40 CFR Part 62, Subpart GGG will remain in place as a regulation until the AQD incorporates the NSPS Subpart Cf into its SIP). Under the new NSPS guidelines, the nonmethane organic compounds (NMOCs) emission rate

threshold is 34 Mg/year (compared to the 50 Mg threshold contained in the NSPS Subpart WWW) at which point a gas collection and control system (GCCS) is required. Per Granger's LandGEM 2019 Tier II NMOC projections (per the July 2016 sampling event), GGRL is currently at 22.08 Mg NMOC/year. Gas sampling for Tier II NMOC 5-year projections (calendar years 2021 -2025) is due in May 2021.

The current design capacity is 8.6 million Mg, which is the maximum permitted capacity of the landfill through their current construction permit with MMD. Steve Blayer, current MMD inspector for GGRL, said that the 1981 construction permit covers virtually all of the land that the GGRL is sited on. Based on this information, no new MMD construction permits will be issued at this site (now or in the future); therefore, a modification would not ensue and there is no likelihood of GGRL becoming subject to the NSPS Subpart XXX now or in the future, under current federal regulations.

S. Blayer said that construction permits delineate the cells that the landfill can construct, but they cannot put waste into the cell until they get an operating license. GGRL's most recent operating license was obtained from MMD in October 2015. S. Blayer said that these operating licenses are good for 5 years and the facility can apply for a renewal of the license. This is the case for GGRL. Not all cells specified in the 2015 operating license have been used and they have applied for a 5-year renewal. In the event that additional cells not covered in the existing operating license are planned to be used, the company will need to apply for a new operating license, which will cover the new cells and well as the existing cells.

Although the GGRL has an uncontrolled emission rate below the 34 Mg NMOC per year threshold, an active landfill gas collection and control system (GCCS) has been installed to collect the landfill gas. The collection system includes a series of gas wells, a network of collection piping and headers, condensate drains and an open 1362 scfm, "candlestick" flare, which is used when the electric plant is down, or when there is excess landfill gas being sent to the plant. The flare is owned by GGRL.

The EDL gas-to-energy plant operates three G3516 engines that are subject to the reciprocating internal combustion engine (RICE) MACT Standard 40 CFR Part 63, Subpart ZZZZ, and have 3 associated exhaust stacks.

Inspection

At 10:30 a.m. on November 10, 2020 a Microsoft Teams meeting with Kim Smelker and Serenity Skillman was conducted and at 3:00 p.m. on November 10, 2020, the virtual inspection commenced with Dan Zimmerman.

Section 1 – Granger Grand River Landfill

EULANDFILL

K. Smelker said that the Grand River Avenue Landfill (GGRL) only accepts waste by appointment; it is generally not open. Only by appointment can a contractor bring waste in, and this is on a project basis. K. Smelker said that the last time GGRL received waste was in April 2019 in large part because there have been no special projects within the vicinity of this landfill. K. Smelker said they usually take in all waste at the Granger Wood St Landfill instead.

Landfill leachate is pumped to the Southern Clinton County Municipal Utilities Authority (SCUMA) located in DeWitt. K. Smelker said they received permission from SCUMA to hook up the leachate system to SCUMA's wastewater treatment plant system in order to dispose of the leachate. K. Smelker said they have the ability and

are allowed to recycle leachate throughout their waste mass (pull leachate from the bottom and dump back through the top of the cell) per their construction permit issued by MMD, but said GGRL hasn't done so in approximately 10 years. She said they do not take any liquids into the landfill.

GGRL is permitted for 4 more cells that are available for waste disposal. Based on LandGEM calculations, it would take over 60 years at their current rate of waste receipt to fill one cell, compared to Wood Street rates of disposal where it takes ~ 2 years to fill one cell.

The candlestick flare is used to burn off any excess landfill gas that isn't combusted in the landfill gas engines owned by EDL. K. Smelker said the flare ran for 3.5 hours in 2019 and does not believe that the flare has operated at all during calendar year 2020. During the virtual inspection with Dan Zimmerman, he showed me the candlestick flare and it was not operating while onsite (no opacity, no heat signature waves, no flame).

There are no Emission Limits, Material Limits, Design/Equipment Parameters, or Stack Vent Restrictions for EULANDFILL at this time.

Process/Operational Restrictions, Testing/Sampling, & Reporting Requirements

GGRL is required to calculate their annual NMOC emission rates using the methods established in Appendix 7-1 of the ROP, or using the most recent version of the EPA's Landfill Gas Emissions Model (LandGEM), and compare the calculated rate to the standard of 50 Mg/year (NSPS Subpart WWW).

GGRL conducted their most recent Tier 2 testing in May 2016. The data generated from this test was used to calculate 5-year's worth of NMOC projections. GGRL has opted to provide a 5-year estimate in one report in lieu of submitting annual NMOC reports. This is allowed under 60.757(b)(1)(ii), unless there is a significant change in waste received. All projections are below the 50 Mg/year threshold specified in NSPS Subpart WWW and the 34 Mg/year threshold specified in Subpart Cf Emission Guidelines. The 2016 5-year estimates, based on an average waste inflow of 35,000 Mg, submitted in July 2016 are as follows:

- 2016: 24.27 Mg/year
- 2017: 23/51 Mg/year
- 2018: 22.78 Mg/year
- 2019: 22.08 Mg/year
- 2020: 21.42 Mg/year

GGRL is required to conduct their NMOC mass emission rate testing by May 2021 and are required to submit a complete test plan no less than 30 days prior to testing.

Monitoring/Recordkeeping Requirements

GGRL must keep records of the current amount of solid waste in place and the year-by-year waste acceptance rate and make them available upon request. Ash/Contaminated soil within the open landfill is considered inert and not part of the combined landfill totals; the current ash/contaminated soil total is 1,352,710 Mg compared to the 2016 quantity of 1,345,193 Mg. The total amount of waste in place for the open section of the landfill through December 2019 is 6,083,706 Mg (see attached "Waste Acceptance Rate" document). The EGLE Granger Grand River Landfill Annual Landfill Reports, which show how much waste is accepted on an annual basis in yd³ (from

October 1 through September 30), can be found at the following address, a portion of which is found in Table 1:
<https://www.eagle.state.mi.us/wdsp/SolidWaste/AnnualLandfillReports.aspx?w=397449>

Table 1. Year-by-Year Waste Acceptance Rates

Year	Waste Accepted (yd ³)	Waste Accepted (Mg)	Ash/Contam. Soil (Mg)
2012	370,451	51,774	119,574
2013	111,699	12,304	10,842
2014	19,574	923	9,390
2015	25,062	5,823	7,609
2016	21,959	3,750	7,623
2017	8,217	1,744	253
2018	6,327	1,738	0
2019	3,876	713	0

To note is that GGRL does not have a scale at the landfill. GGRL has stated that they received approval from EPA to use periodic weights from different classes of materials to estimate the actual weight of incoming waste.

EUASBESTOS

K. Smelker said that the asbestos trenches are created with dimensions of 20' x 100', depth varies. All asbestos trenches are stacked, one on top of the other, in column-like form within the waste mass. She said that they only open pits when they know that an asbestos load is scheduled to be unloaded for that day. Typically, Granger knows by 2:00 or 3:00 p.m. on any given day whether they will be receiving any additional asbestos loads. As of November 2020, GGRL has not received asbestos waste since April 2019. S. Skillman also stated that because they have not received asbestos waste since 2019, they currently do not have an active/open asbestos trench for me to view, and therefore I did not request a virtual nor an onsite investigation of the asbestos trench. During the previous inspection, I noted that GGRL posts asbestos warning signs at their asbestos trenches.

There are no Emission Limits, Material Limits, or Testing/Sampling requirements for EUASBESTOS at this time.

Process/Operational Restrictions

Rather than comply with the requirement to ensure that there be no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, and rather than comply with the requirement to install warning signs around the perimeter where asbestos-containing waste material is deposited, GGRL has chosen to comply by covering the asbestos-containing material with at least 6 inches of non-asbestos-containing material at the end of each operating day. K. Smelker said GGRL is currently covering the waste with at least 6 inches of an “alternative daily cover” approved by MMD or clean soil. The alternative daily cover is used when there is no rain in the forecast. It is a tacky substance that allows GGRL to cover the sides of the trench as well. Soil is used during rainy days.

Design/Equipment Parameters & Monitoring/Recordkeeping

GGRL is required to maintain readily accessible records showing the location, depth and area, and quantity in cubic meters or cubic yards of the asbestos-containing material within the disposal site on a map or diagram, the records of which will also allow the landfill to keep segregated areas of asbestos excluded from gas collection. GGRL is also required to keep documentation of the nature, date of deposition, amount and location for all ACM waste deposited.

S. Skillman provided me with electronic copies of the “2-19” asbestos trench diagram (see attached), which contains the location (GPS coordinates for each corner of the trench), depth, area and quantity (cubic yards) of ACM contained in the trench and a table (see Table 2) of the date of deposition, trench, nature of ACM and quantity of ACM deposited for the last 5 loads of ACM received. The label “2-19” indicates that it is the 2nd trench built in 2019.

Table 2. Deposition Records

Manifest #	Date of Deposition	Yards	Nature	Trench
96633	4/26/19	40	100% friable	2-19
93428	4/25/19	2	100% non-friable	2-19
93426	4/25/19	2	100% friable	2-19
93427	4/25/19	15	100% friable	2-19
93430	4/25/19	1	100% friable	2-19

GGRL is required to maintain waste shipment records that include waste generator and transporter name, address, and phone numbers, the quantity of ACM in cubic yards or cubic meters, and the date of receipt. Any improperly enclosed or uncovered waste, or any ACM not sealed in leak-tight containers needs to be reported to the EGLE AQD asbestos unit by the following working day.

Waste shipment records are kept at the Granger Wood Street Landfill office. S. Skillman sent me electronic copies (attached) of the 5 most recent ACM loads received (received on 4/25/19 and 4/26/19). The Granger forms provide space for the waste generator and transporter name, address, and phone number, the destination and date received, and the quantity in cubic yards. K. Smelker said any load with asbestos that enters the facility has to have a manifest and that companies call to make an appointment to bring in the asbestos loads and an onsite employee is responsible for ensuring the asbestos is contained properly. The trucks will then dump directly into the asbestos trench. I have provided these forms to asbestos unit inspector, Craig Dechy, for review and verification that these projects have been reported in the AQD Asbestos Notification System (ANS).

Reporting

Granger is required to notify the AQD Technical Programs Unit at least 45 days prior to excavating or disturbing any asbestos-containing waste material. Granger’s policy is that all manifested ACM is located within a trench or specified area, which is surveyed and recorded electronically and that these trenches are never drilled through. The asbestos areas are strategically placed to limit the areas of the landfill that are off-limits to gas collection. Jeremy Brown, AQD asbestos inspector, explained that GGRL does not need to submit asbestos notifications through AQD’s ANS for landfill drilling activities because they keep all asbestos trenches logged and in one location and do not drill through these locations. J. Brown did say, however, that if Granger is drilling and they happen to drill through asbestos waste (unknowingly or knowingly), and AQD finds asbestos cuttings, Granger runs the risk of violating the requirement to notify 45 days before drilling.

Compliance Statement: Granger Grand River Landfill is currently in compliance with MI-ROP-N5996-2018.

Section 2 – EDL Generating Station

FGICE (EUICE1, EUICE3, EUICE5)

The current ROP contains 3 G3516 RICEs; all are 4 stroke lean burn, greater than 500 hp, non-emergency, spark ignition engines at a major source of HAPs, and were constructed on or before December 19, 2002. As of 8/19/2015 there are no requirements currently under the RICE MACT Subpart ZZZZ for these engines. A total of 5 engines had historically been operating at this site, but due to the decrease in landfill gas generation, 2 of the engines were removed. During a previous inspection, K. Smelker said engines need at least 300 scfm to run optimally. EUICE3 was not operating during the inspection. Observations were conducted via a Microsoft Teams meeting with Dan Zimmerman and via photographs that were taken by Dan Zimmerman just prior to our scheduled inspection time.

The following table lists all engines, which are specifically designed for biogas combustion at the Grand River facility. The serial numbers were verified virtually via the livestream between Dan Zimmerman and I. Dan Zimmerman confirmed via email that the manufacture dates and date online (installation date) are correct.

Table 1. Engine Summary

Engine	Serial No.	Manufacture Date	Date Online	Comments
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1	3RC00275	10/15/1990	8/2/2013	The engine with serial no. 3RC00274 that was online 4/10/1991 and manufactured 11/15/1990 was swapped out for engine serial no. 3RC00275 on 6/1/2013.
3	4EK00132	12/16/1993	3/01/1994	Not operating during inspection
5	4EK00479	4/18/1995	9/23/1997	NA

There are no Emission Limits, Material Limits, Design/Equipment Parameters, Testing Sampling, or Stack/Vent Restriction requirements at this time for FGICE.

Process/Operational Restrictions & Monitoring/Recordkeeping

EDL is required to submit within 30 days of ROP issuance (August 1, 2018) a Malfunction Abatement/Preventative Maintenance Plan (MAP/PMP) for FGICE that identifies the equipment and supervisory personnel responsible for overseeing the inspection, maintenance, and repair; a description of the items to be inspected and frequency of inspection; identification of the equipment's operating parameters and a description of the method of monitoring/surveillance procedures; and identification of the major replacement parts. A MAP/PMP was received by AQD on 9/17/18, with corrections made to the MAP/PMP (per AQD request) to create the September 2018 copy. Attached is the September 2018 MAP.

Courtney Truett, EDL Environmental Compliance Advisor, provided me with electronic copies of the maintenance logs from January 2019 through early November 2020. (attached). Based on these records it appears that EDL is regularly maintaining EUICE1, EUICE3, and EUICE5 according to their 12/11/18 MAP/PMP.

D. Zimmerman explained to me during the 2013 inspection that "top-ends" are considered routine maintenance, such as replacing spark plugs, changing the oil, or replacing the turbos and heads. He explained that "major overhauls" occur after so many hours of operation and involve replacing pistons, the drive shaft, resurfacing and cleaning the block, etc., which are all contained within the block. He said that the serial numbers stay the same, it's the same unit; the block stays the same. He said that the reason why they take the engines out for major overhauls is because they don't have the ability to perform the overhauls onsite.

K. Smelker and D. Zimmerman said the engines have to operate at a minimum of at least 65% of their rated capacity; otherwise, unnecessary wear and tear is being put on the engine. They also mentioned that the O₂ content of the gas must be kept at a bare minimum: the engines bring in their own oxygen, and additional oxygen could cause the engines to shut down. The same goes for a sudden drastic increase (10%) in methane content. C. Lehnert, previous plant operator, said that if the O₂% reaches 4%, the plant will shut down.

I observed the meters/controller displaying the % methane, % O₂, and the scfm of the landfill gas being delivered to the engines via the video software. The following table is a historical comparison of these parameters, including the snapshot taken during this inspection:

Table 2. Incoming gas parameters

Date	Mainline fuel temperature (° F)	Mainline fuel pressure (psi)	Mainline fuel flow (scfm)	Mainline fuel methane (%)	Mainline fuel oxygen (%)
11/10/20	NA	NA	453	51.1	0.88
2/19/19	77	6.5	593	47	1.15
12/1/2016	75	6.7	730	52.4	0.47
7/27/15	NA	NA	NA	54.3	0.44
1/17/2013	87	6.5	923	55.9	0.33
12/6/2011	91	6.5	1138	55.7	0.13
11/30/2010	86	6.3	1205	52.6	0.21
11/24/2009	84	6.3	937	52.9	0.22

The variability that is seen in the methane and oxygen contents is common because of fluctuations in the landfill gas production itself.

Dan Zimmerman virtually showed me the stacks for all of the engines. I did not observe any visible emission from any of the engines' exhaust stacks. EUENGINE1 and EUENGINE5 were operating during the virtual inspection.

Exempt Emission Units (per ROP Staff Report)

The table below is from the most recent ROP Staff Report. C. Lehnert, at the 2019 inspection, stated that EUPROPHEAT, EUCOMPRESSOR, and EUPROPTANKS are no longer at the site. The 275-gallon gasoline tank is located out on the landfill for refueling equipment.

EU	Description	Exemption

EUUNLEADGAS	One 275-gallon unleaded gasoline tank	Rule 284(2)(g)
EUPROPHEAT	Two propane space heaters (125,000 BTU and 75,000 BTU)	Rule 282(2)(b)(i)
EUCOMPRESSOR	51,000 BTU Portable compressor	Rule 285(2)(g)
EUPROPTANKS	Three 500-gallon propane storage tanks	Rule 284(2)(b)

Compliance Statement: EDL is in compliance with MI-ROP-N5996-2018 at this time.



Image 1(Landfill flare) : Note not operating. Photo Credit: Dan Zimmerman, EDL



Image 2(EUICE1 Serial #) : Serial # for Engine 1. Photo Credit: Dan Zimmerman, EDL



Image 3(EUICE1) : Photo Credit: Dan Zimmerman, EDL



Image 4(EUICE3 Serial #) : Photo Credit: Dan Zimmerman, EDL

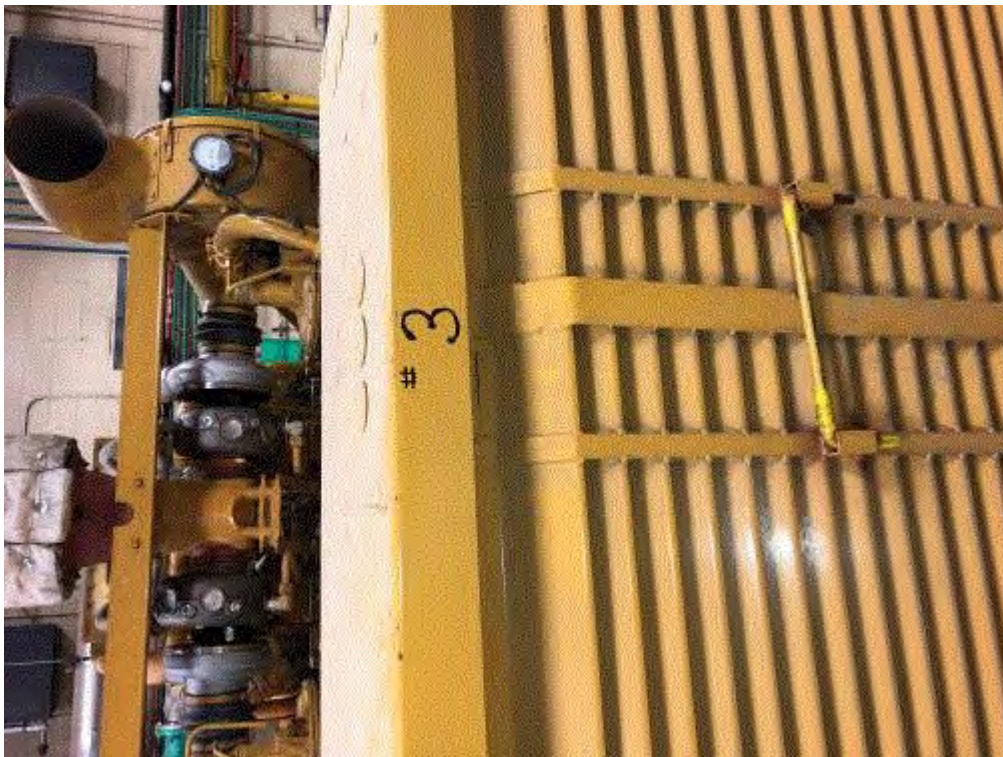


Image 5(EUICE3) : Photo Credit: Dan Zimmerman, EDL



Image 6(EUICE5 Serial #) : Photo Credit: Dan Zimmerman, EDL



Image 7(EUICE5) : Photo Credit: Dan Zimmerman, EDL

NAME Michelle Lupton

DATE 12/4/20

SUPERVISOR B.M.