

**DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection**

N599754726

FACILITY: Granger Wood Street Landfill		SRN / ID: N5997
LOCATION: 16980 Wood Road, LANSING		DISTRICT: Lansing
CITY: LANSING		COUNTY: CLINTON
CONTACT: Kimberly Smelker , Operations Manager		ACTIVITY DATE: 08/19/2020
STAFF: Michelle Luplow	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled, announced inspections of Granger Wood St Landfill, Granger Container Service, and EDL generating station to determine compliance with NSPS requirements as well as MI-ROP-N5997-2013		
RESOLVED COMPLAINTS:		

Inspected by: Michelle Luplow (author), Mike Kovalchick (AQD Jackson District), Mark Dzaidosz (AQD TPU, Warren District),

Wood Street Landfill Personnel Present:

Kim Smelker (ksmelker@grangernet.com), Operations Manager, Granger
Serenity Skillman (sskillman@grangernet.com), Environmental Compliance Specialist, Granger
Jeff, Consultant (Monitoring Control and Compliance)

EDL Personnel Present:

Dan Zimmerman (dan.zimmerman@edlenergy.com), Senior Compliance Manager
Phil Jaworsky, Operations Technician
Paul Jaworsky, Operations Technician
Adam, Site Manager

Purpose

Conduct announced, scheduled, partial compliance evaluation (PCE) inspections of the Wood Street Landfill and EDL Wood Street Generating Station. Compliance was determined using the ROP, MI-ROP-N5997-2013 and the NSPS Subpart WWW (although the NSPS Subpart WWW requirements are not in their current ROP), as well as PTI 177-19 for two new open flares. These activities were conducted as part of a full compliance evaluation (FCE). The renewal ROP is currently under EPA 45-day review and will contain 3 sections: Granger Wood St Landfill (Section 1), Granger Container Service (Section 2) and EDL Wood Street Generating Station (Section 3). NSPS Subpart WWW requirements will also be included in the renewal, although Granger is required to comply with the NSPS Subpart WWW as a standalone document.

Facility Background/Regulatory Overview

The Granger Wood Street Landfill (Granger) is a municipal solid waste landfill with an associated gas-to-energy plant that is owned and operated by Energy Developments (EDL). The primary activity of this source is accepting municipal solid waste, consisting mostly of construction and demolition waste, asbestos-containing materials (ACM) subject to the NESHAP for asbestos, 40 CFR, Part 61, Subpart M, municipal solid sludge, general refuse, and contaminated soils. Granger is considered a MSW Type II landfill. Due to past odor issues, Granger has stopped taking municipal solid sludge from a particular municipality, as it was identified by Granger staff that the sludge odors were particularly strong.

The landfill itself was installed July 16, 1984, which initially made the landfill subject to 40 CFR 62 Subpart GGG, as it commenced construction before May 30, 1991. The landfill then received an expansion permit from the Waste Management and Radiological Protection Division (WMRPD) after May 30, 1991 (specifically, according to Steve Blayer, WMRPD, Construction Permit # 0410 on April 21, 2002 and Construction Permit #4056 on January 30, 2004), thus making the landfill subject to 40 CFR Part 60, Subpart WWW.

The new NSPS Subpart XXX will apply to all landfills that are modified, new, or reconstructed after July 17, 2014. For landfills not subject to the NSPS Subpart XXX, there is a proposed Emission Guideline (EG) NSPS Subpart Cf that applies to landfills accepting waste between November 8, 1987 and constructed, modified or new before July 17, 2015. These two regulations will replace NSPS Subpart WWW and NSPS Subpart Cc. Once the NSPS Subpart Cf EG has been incorporated into an approved State Implementation Plan, Granger's compliance with the guideline will be required. Currently the NSPS Subpart WWW and NSPS Subpart Cc are still enforceable regulations.

Tier II testing was conducted on the landfill May 23 and May 24, 2016, the findings of which (69.14 Mg NMOC/year) indicated that Granger had exceeded the 50 Mg/year threshold for NMOC under NSPS Subpart WWW and therefore became required to submit a gas collection and control system (GCCS) plan by July 25, 2017. The initial (draft) GCCS plan was received by AQD on July 26, 2017. The final, approved draft, of the GCCS plan was received March 21, 2018. The AQD and WMRPD approved the GCCS plan on April 2, 2018. By January 25, 2019 Granger was required to have their GCCS installed and

operating according to the NSPS Subpart WWW and to begin monthly well monitoring, quarterly surface emission monitoring, and be in compliance with all other active collection system requirements under NSPS Subpart WWW.

Granger also owns and operates the Paulson Street Landfill (~51-acre site located south of the Wood Street Landfill, the gas from which is collected and sent to EDL's generating station), which is included in the GCCS plan. Granger purchased the site in 1973 and continued operations until 1986 when final cover was placed. The gas collection system for this site was installed in 1985. K. Smelker and I discussed the compliance options for the closed Paulson Street portion of the landfill. She stated that there are only vertical well systems in place, some of which are above grade, others below grade. K. Smelker said the wells above grade would be no problem to monitor for temperature, pressure and oxygen, under the requirements of the NSPS Subpart WWW, but it is the wells below grade that they will not be able to monitor for temperature. She said they have temporarily decommissioned these wells by turning the valve that shuts off flow to those wells. Decommissioned wells are not required to be monitored for oxygen, temperature and pressure.

On March 27, 2020, Granger received PTI 177-19 for the installation and operation of 2 new open flares and removal of their current open flare, as part of a project with EDL, who was permitted for a Renewable Natural Gas Plant under 178-19 on March 27, 2020 as well. S. Skillman said the plan is to have the 2 new flares installed in November 2020 with a plan to test the flares by December 31, 2020.

EDL currently owns and operates four G3516 CAT engines (engines 1-4, FGICE) and three G3520 CAT engines (engines 5-7, FGICEENGINES). Engines 1-4, although subject to the (RICE) MACT Standard 40 CFR Part 63, Subparts A and ZZZZ, currently have no requirements for compliance. Engines 5-7 are subject to the NSPS, 40 CFR 60, Subpart JJJJ. PTI 178-19 will allow for EDL to remove all engines and install the RNG, with Granger's 2 new flares used as backup when the RNG plant is down. Currently EDL has no estimated time for when they believe construction will start on the RNG plant; however, PTI 178-19 requires that all engines be physically disconnected from any gas source on or before October 1, 2021.

Inspection

On August 17, 2020, I conducted a virtual records review and Q&A session with Granger staff, Serenity Skillman and Kim Smelker prior to the August 19, 2020 on-site inspection, in an effort to minimize time spent in-person, onsite. At approximately 8:30 a.m. on August 19, 2020, Mike Kovalchick (AQD Jackson District) and I met with Kim Smelker and Serenity Skillman, as well as Granger's SEM consultant, MCC, at the Wood St Landfill office for an announced, scheduled inspection of the landfill and in particular for AQD to conduct surface emission monitoring (SEM) (See August 19, 2020 Self-initiated Inspection report by M. Kovalchick). Granger Container Service was inspected after the SEM survey.

The EDL Wood Street Generating inspection was conducted on March 3, 2020, during the annual stack test on the engines. The report for the stack test observation is found under the March 3, 2020 Stack Test Observation Report.

Granger Wood Street Landfill Inspection

EULANDFILL

Granger has a gas collection and control system (GCCS) subject to the NSPS Subpart WWW that routes all collected landfill gas to the gas treatment system and subsequently to the EDL energy plant where the engines combust the landfill gas for electricity production. An open flare is available to burn excess gas when there is more gas than the generators can burn at any given time, or when the energy plant is down. The flare was not operating during the inspection.

The majority of the requirements contained in MI-ROP-N5997-2013 for this emission unit no longer apply because Tier II testing resulted demonstrated NMOC emission rates greater than 50 Mg per year and therefore Granger is required to comply with the NSPS Subpart WWW for EULANDFILL; Tier II testing is no longer required. For all intents and purposes, the pending ROP requirements will be used to determine compliance, but only for the NSPS Subpart WWW.

Granger has portable, diesel-fired generators to operate deodorizing misters surrounding the perimeter of the landfill to control landfill odors; however, K. Smelker clarified that they do not currently use the diesel-fired generators; these are only used when the misters are moved to strategic locations where electric hookup is not available. The generators would likely be exempt under Rule 285(2)(g) if Granger ever planned to install these (render them non-portable). In August 2017, Granger also installed 3 vaporizer systems, consisting of PVC-piping constructed along the upper portion of the landfill's perimeter. K. Smelker said the vaporizer is powered by electrical hookup to the pump station. She said smaller units, foggers, are portable and come in totes. These are also powered through electrical hookup.

Emission Limits, Testing/Sampling & Monitoring/Recordkeeping

Granger is required to conduct surface emission monitoring around the perimeter of the collection area and along a pattern that traverses the landfill at 30-meter (~100 ft) intervals in addition to where visual observations indicate elevated concentrations of landfill gas (such as distressed vegetation and cracks or seeps in the cover). This monitoring includes documenting the monitoring route on a topographical map of the landfill. Surface monitoring is required to be conducted quarterly to determine compliance with the methane concentration limit of 500 ppm above background level.

For each semi-annual report that Granger submits to AQD, quarterly reports for surface emission monitoring (SEM) are included. These reports include a map of the route that is planned to be traversed for surface monitoring and the areas that

are excluded from monitoring (non-NSPS areas/active face and inert materials areas). I am working with Granger to ensure that all SEM maps submitted in the future contain the actual route traversed and that all areas excluded from the SEM (including the non-NSPS, active and unsafe conditions) are marked and identified in the map's legend. The SEM is required to be conducted using an organic vapor analyzer, flame ionization detector, or other portable monitor. The quarterly reports identify an IRwin analyzer, which uses infrared technology.

All quarterly SEM reports are reviewed for compliance with the 500-ppm methane limit. The most recent semi-annual report (2nd semi-annual report for 2019) contained SEM reports for quarters 3 and 4 of 2019. The NSPS Subpart WWW requires that if exceedances are detected, the location should be documented, and cover maintenance or adjustments to vacuum be made prior to re-monitoring within 10 days of the initial exceedance. If the 10-day re-monitoring shows a second exceedance, corrective actions are required to be taken, and the location re-monitored within another 10 days. If a third exceedance is detected, a new well or other collection device is required to be installed within 120 calendar days of the first exceedance. If there is not a third exceedance, the location is required to be re-monitored at one month from the first exceedance, and if there is no exceedance at one month, quarterly monitoring can be resumed. There was 1 exceedance of the 500 ppm methane in the 3rd quarter and 3 exceedances in the 4th quarter. The appropriate re-monitoring was conducted and it was demonstrated that these areas came back into to compliance with the 500 ppm limit.

During the August 19, 2020 AQD abbreviated SEM survey (similar to abbreviated surveys conducted by EPA), M. Kovalchick detected 51 hits greater than 500 ppm surface methane using a SEM 5000 methane detector. The hits are listed in Table 1. M. Kovalchick sent a letter to Granger with AQD's findings and requested a SEM report in response to these findings by October 19, 2020. Granger is required to respond to each of these hits in accordance with the NSPS Subpart WWW monitoring and re-monitoring requirements.

Table 1. August 19, 2020 AQD SEM survey

ID*	Description	Location*		Methane (ppm)
		Lat (N)	Long (W)	
AQD 1	Erosion ditch, ~100' south of GW157	42.77162033	-84.52576633	2,501
AQD 2	Erosion ditch, ~20' south of GW 157	42.77179767	-84.52575117	1,036
AQD 3	Erosion ditch, ~10' west of GW157	42.77186433	-84.5258055	1,590
AQD 4	Erosion ditch, ~15' southeast of GW156	42.77221	-84.5258515	6,194
AQD 5	Erosion ditch, ~50' east of GW156	42.77223783	-84.52574133	6,489
AQD 6	3' southeast of GW 156	42.77228183	-84.52592283	1,001
AQD 7	Erosion ditch, 100' NE of GW 155	42.7726695	-84.5261735	787
AQD 8	Erosion ditch, ~15' NE of GW 155	42.7726165	-84.52642883	2,001
AQD 9	Dead vegetation, ~200-250' NW of GW155	42.77266583	-84.52655233	1,024
AQD 10	Dead vegetation, ~20' SE of GW 191	42.7726905	-84.52666133	2,553
AQD 11	Erosion crack, ~60' SW of GW 191	42.77266033	-84.5268795	3,429
AQD 12	Erosion crack, ~50' east of GW 154	42.77258283	-84.52691167	8,632
AQD 13	Erosion crack, ~50' NE of GW 154	42.77260467	-84.52703283	841
AQD 14	Bare dirt, 100' WNW of GW 154	42.77259317	-84.52727767	850
AQD 15	Erosion crack, ~10' SE of GW 192	42.77270117	-84.5274455	1,824
AQD 16	Dead vegetation, 2' S of GW 153	42.77254533	-84.52782933	2,499
AQD 17	Bare ground, ~35-40' ESE from GW 178	42.772634	-84.52827567	932
AQD 18	Area of at least 10' across surrounding GW 178	42.77269517	-84.52842783	1,873
AQD 19	Bare ground, ~150' WSW from GW 178	42.77265067	-84.5286545	743
AQD 20	Bare ground, ~200' SW from GW 178	42.772638	-84.52879767	735

AQD 21	West of active face at the vacuum line of unidentified well	42.77205617	-84.53064167	5,107
AQD 22	20' SE of DD6	42.7720145	-84.5311455	935
AQD 23	Crack near erosion, ~200-300' WSW from DD6	42.7721335	-84.53125667	738
AQD 24	Erosion ditch, ~700' SW from DD6	42.772073	-84.5313315	1,176
AQD 25	Erosion ditch, ~ 50' N of unidentified riser	42.77209033	-84.53152733	2,473
AQD 26	AQD 26 – erosion ditch	42.77204533	-84.5316725	2,277
AQD 27	AQD 27 – crack at GCW 1	42.7717665	-84.5319645	1696
AQD 28	AQD 28 – 6' east of GCW 4	42.77176683	-84.5325705	770
AQD 29	AQD 29 – at GCW 4	42.77176967	-84.532619	5,429
AQD 30	AQD 30 – bare ground, ~50' west of GCW 4	42.77178233	-84.5328235	8,75
AQD 31	AQD 31 – small crack	42.77173567	-84.5331925	3,661
AQD 32	Small crack	42.77175033	-84.53327383	1,586
AQD 33	Tiny erosion feature	42.77129	-84.53325017	1,619
AQD 34	At GW 0166	42.77099033	-84.53246067	1,294
AQD 35	Dead vegetation at Y17	42.7711365	-84.53234867	6,873
AQD 36	Vegetated area	42.7713175	-84.53193417	3,023
AQD 37	At unidentified well, ~500' NW of BB1 (H2S hit of 0.31 ppm w/ Jerome)	42.77121017	-84.5317895	3,227
AQD 38	At BB1 well	42.77067917	-84.531338	1,401
AQD 39	Dead vegetation, ~100' SE of BB1	42.77092467	-84.53111217	1,120
AQD 40	Bare ground, 50' SE of Z17	42.770966	-84.53104633	2,565
AQD 41	Bare ground at Z18	42.77141	-84.53111633	2,074
AQD 42	~100' NE of Z18	42.771493	-84.5308555	635
AQD 43	Bare ground, ~20' east of Z18	42.77145917	-84.53076667	4,284
AQD 44	Bare ground, at Z16C	42.77141483	-84.530388	2,177
AQD 45	Bare ground at unidentified well, ~50' NW of Z16A	42.77121117	-84.530356	2,072
AQD 46	At GCD103	42.77124967	-84.52961767	4,221
AQD 47	Bare ground, at Z13	42.77125267	-84.52916433	5,172
AQD 48	Bare ground at Z14	42.77123933	-84.52915117	7,112
AQD 49	Small crack	42.7706185	-84.52819917	15,760
AQD 50	At Well 12	42.77006083	-84.52954483	1,516
AQD 51	At BB7	42.76977783	-84.52945683	2,614

*All methane concentrations above 500 ppm were marked with a red or green flag. Attachments 1 and 2 provide more detailed information on the SEM survey that was performed. Monitoring was conducted between 9:00 AM and 12:15 PM on August 19, 2020.

M. Kovalchick identified that nearly all SEM hits had wells near them with percent methane higher than 55%, an indicator that suggests liquid in the wells may be contributing to the increased methane concentrations and 500-ppm exceedances. Landfill gas is ideally composed of approximately 50% CO₂ and 50% methane. Liquid in the wells will dissolve the CO₂ in the gas, driving the methane concentration in the gas to increased levels. It is AQD's recommendation that Granger focus their efforts on improving cover thickness in eroded areas, giving more attention to examining surface penetrations for methane leaks since they are now a known source of methane leaks, and reviewing the landfill's well dewatering program and making improvements as needed to ensure pumps are installed and operating properly. This will ensure compliance with 40 CFR 60.753(d) which requires that the GCCS be operated so that methane concentrations are less than 500 ppm. Follow up with the company will be enacted to determine corrective actions the company took, once a SEM report is received from Granger.

SEM Survey Odors

During the SEM survey, I detected the strongest odors (garbage-related only) on the north side of the landfill at the active face. Landfill gas odors were minimal throughout the remainder of the survey. At times I could detect the landfill gas, which quickly dissipated; however, M. Kovalchick did detect slight H₂S odors at a well located approximately 500' NW of well BB1. I could not detect the H₂S odors M. Kovalchick detected; however, we used the Jerome H₂S meter at this location and detected an H₂S concentration of 0.31 ppm. Odors were minimal to none the further south on the landfill we moved, which has thicker vegetative cover.

All odor complaints associated with landfill gas odors are addressed by the Materials Management Division (MMD), as the lead division. AQD is brought into the odor complaint discussion when MMD believes they cannot find resolution for the odors under their rules and regulations. MMD has received and responded to all landfill odor complaints received in the last several years.

Monitoring/Recordkeeping

MI-ROP-N5997-2013 requires that Granger keep a record of the design capacity report for the facility, in addition to monitoring and recording the current amount of solid waste in-place and the year-by-year waste acceptance rate. S. Skillman provided me with the current amount of solid waste in place for 2019 for both the Paulson Street Landfill and Wood Street Landfill, in Mg (see attachment). The waste acceptance rate for 2019, including ash and contaminated soil, was 522,738 Mg.

The year-by-year acceptance rates are also reported to WMRPD under the WDS database. These records are accessible to the public. The following link is for OWMRP's Annual Report year-by-year waste acceptance rate:

<http://www.deq.state.mi.us/wdsp/SolidWaste/AnnualLandfillReports.aspx?w=470523>. Wood St's Facility number is 470523.

K. Smelker confirmed that Granger does not and has not recirculated leachate in the waste mass for over 7 years and also confirmed that Granger does not add liquids to the waste mass.

A program to monitor the cover integrity and to implement cover repairs as necessary is required to be implemented on a monthly basis. K. Smelker described Granger's cover integrity monitoring plan as follows: During monthly gas well measurements (pressure, oxygen, temperature) those conducting the well monitoring will also look at cover integrity, and inform Granger of any issues they spot. K. Smelker said she also walks the landfill to look for cover issues. During quarterly SEM testing, K. Smelker said MCC will also inform Granger of any cover issues they see.

Reporting

All required semi-annual and annual reports have been submitted in a timely manner.

EUACTIVECOLL (EU as defined in Proposed MI-ROP-N5997-20XX)

This emission unit encompasses the landfill gas collection system with its associated "control equipment": EUOPENFLARE and EUTREATMENTSYS (EU's defined in Proposed MI-ROP-N5997-20XX). EUTREATMENTSYS is owned and operated by EDL and will be discussed later in the inspection report.

Each wellhead is required to be operated under negative pressure, with an interior temperature less than 131°F, and at oxygen levels less than 5%. The wells are required to be monitored on a monthly basis for these parameters. Negative pressures are not required if there is a fire or increased well temperature, if a geo-membrane or synthetic cover are used, or if the well is decommissioned. Higher operating values (HOVs) for temperature and oxygen can be established for wells if Granger can demonstrate with supporting data that the elevated temperature or oxygen value does not cause fires or significantly inhibit anaerobic decomposition (via killing of methanogens).

Granger was also informed, prior to becoming subject to the NSPS Subpart WWW in January 2019, of the following information concerning alternative timeline requests for oxygen and temperature exceedances, positive pressures, decommissioning of wells, and other requests:

The NSPS WWW, 60.755(a) (5), allows a facility to request an alternative timeline for correcting exceedances of GCCS well operating parameters. I am writing to inform you that the deadline for submitting an alternative request is 15 days from the exceedance. In the past, MDEQ-AQD staff has considered alternative timeline requests, regardless of whether the facility submitted the request within 15 days.

Recent discussions with EPA reconfirmed the 15-day NSPS requirement for requesting an alternative timeline. As a result of this discussion, in order to be compliant with the NSPS companies are required to submit alternative timeline requests within the 15-day deadline or MDEQ-AQD may deny these requests, as specified under NSPS WWW. In addition, facilities should include any denied requests in their semi-annual deviation reports.

Each situation and request is unique and it is difficult to prescribe what information must be included in a specific request; however, it is expected that, at a minimum, a request shall include:

- the operating parameter that has exceeded the regulatory limit;
- the date that the exceedance was initially detected;
- a detailed narrative discussion of all steps taken by the landfill owner or operator to correct the exceedance within the 15-day period;
- an explanation of why, despite the best efforts of the landfill owner or operator, the corrective action/repair work selected by the landfill owner or operator could not be implemented within 15 days and why exceedance could not otherwise be corrected within 15 calendar days;

- a summary of the historical data for the well in question (should include a minimum of 6 months of past data, construction specifications for the well, description of the cover in the area, the age and type of waste, and any other information pertinent to the well);
- the following data collected at the well head:
 - temperature of the landfill gas,
 - percentage of the gas that is methane, oxygen, and CO2
 - gauge pressure;
- a detailed narrative discussion of the intended corrective measure and the amount of time the owner or operator estimates it will take to accomplish the correction;
- a detailed justification of why the proposed alternative timeline represents the amount of time necessary to implement the proposed corrective action/repair;
- a detailed justification of why an expansion of the gas collection system is unwarranted (if applicable);
- a detailed narrative describing why complying with the timeframes provided for in the rule would result in (1) unreasonable cost of control resulting from plant age, location, or basic process design; (2) physical impossibility of installing necessary control equipment; or (3) other factors specific to the facility that make application of a less stringent compliance time significantly more reasonable.

This information was provided to all NSPS-subject landfills to ensure that facilities understood that corrective actions should be taken within 15 days for pressure, temperature, and oxygen exceedances. If they are not corrected in 15 days, a request for an alternative compliance timeline (ACT) must be placed within that 15-day timeframe, otherwise a deviation is required to be reported for failure to request within the 15-day timeframe. This was not always enforced consistently throughout the State of Michigan.

Granger submits semi-annual summary tables of all wells that experienced positive pressure and exceedances in temperature and oxygen during each semi-annual period. When positive pressures cannot be corrected within 15 days of the first measurement, Granger is required to contact AQD to obtain approval for an alternative timeline (or gas collection system should be expanded) to correct the positive pressure on the well-head. The 15-day notification had not always been met, but was reported in the semi-annual reports that the 15-day notifications were not met. Granger does not yet have to submit deviation reports, as the requirements to do so are not in their current ROP, MI-ROP-N5997-2013. I have reminded Granger that 15-day notifications need to be met going forward. There are currently several alternative timeline requests in-house pending AQD approval.

The collection pipes are required to be made of PVC, HDPE, fiberglass, stainless steel or other nonporous, corrosion-resistant materials. K. Smelker said the pipes are predominantly HDPE, PVC valves on the wells, and the header control valves/shutoff valves are PVC.

EUOPENFLARE (as defined in proposed ROP, MI-ROP-N5997-20XX)

This flare was not operating during the inspection. The open flare was installed in 1994 and was incorporated into the proposed ROP, MI-ROP-N5997-20XX. As provided in Granger's Gas Collection and Control System Design Plan, the flare is non-assisted and is capable of handling 1300 scfm of landfill gas.

Visible emissions from the flare are limited to 0% opacity. A performance test is required per 40 CFR 60.18 to determine both visible emissions, the net heating value of the gas combusted in the flare, and the exit velocity from the flare. Granger has 180 days from the date of issuance of MI-ROP-N5997-20XX to conduct this performance test, which likely will be sometime in March 2021. Records of this data as well as the calculations to determine each of the 3 parameters are required to be kept once testing has been completed.

EUASBESTOS

During the 2018 inspection, Jeremy Brown (Asbestos TPU) and I conducted a joint inspection of Granger for compliance with the NESHAP Subpart M, laid out under EUASBESTOS of MI-ROP-N5997-2013. We had determined, based on this inspection, that Granger Wood Street does not need to submit asbestos notifications through AQD's Asbestos Notification System (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 not), and AQD finds asbestos cuttings, Granger runs the risk of violating the requirement to notify 45 days before drilling.

K. Smelker said that asbestos-containing material (ACM) is deposited into the trenches at the landfill and that the majority of non-friable ACM is also deposited into the ACM trenches. She said they also will put dusty materials (saw dust, for example) into the trenches to prevent fugitive dust issues, as well as medical waste, and animal remains.

There are currently no Emission Limits, Material Limits, Testing/Sampling, or Stack/Vent Restrictions requirements for EUASBESTOS.

Process/Operational Restrictions

Instead of ensuring that there are no visible emissions from the asbestos active disposal site and ensuring that either a

natural barrier or warning signs and fencing are posted, Granger has opted to cover the ACM at the end of each operating day. K. Smelker said that a spray-on cover (ground newspaper with tackifier) is used at the end of each day. K. Smelker said this tackifier is approved by EGLE MMD. Dirt is used at the top once the ACM cell is full. The tackifier also has odorants; however, if the trench is causing odors even with tackifier, they will spread additional dirt cover.

Design/Equipment Parameters & Monitoring/Recordkeeping

Under the NSPS Subpart WWW, the gas collection devices are required to control all gas-producing areas except segregated areas of asbestos or non-degradable materials, and records of the nature, date of deposition, amount and location of asbestos-containing waste excluded from collection is required to be maintained. All ACM trenches are excluded from gas collection. K. Smelker explained that the trenches are lined up in rows and asbestos cells are stacked on top of each other. They will not dig through these areas to add gas collectors (horizontal/verticals); therefore, gas collection is not occurring throughout these areas. She said that they also keep a perimeter surrounding the trenches of about 20' of waste to segregate the trenches from the rest of the landfill. Records of nature, date of deposition and amount is also required by the Subpart M NESHAP, which also includes the requirement to keep record of the depth and area and quantity in cubic meters (or cubic yards) of asbestos-containing waste material within the disposal site on a map or diagram of the disposal area. K. Smelker provided me with asbestos trench maps for some of the most recent asbestos loads, each containing the depth of the trench ("Top of Trench" minus "Bottom of Trench"), the trench area, the date of deposition, the location (northing and easting coordinates), and the quantity (cubic yards). See attached.

Granger is required to keep waste shipment records containing the date of receipt; the name, address, and phone number of the waste generator and transporter(s); and the quantity of asbestos-containing waste material in cubic yards. K. Smelker provided me with asbestos waste manifests for the 5 most recent asbestos loads received, which I reviewed. Each document contains all the required information, see attached.

K. Smelker said that Granger is the transport of the asbestos waste at times, and the staff have been trained to handle asbestos appropriately. They ensure that all bags are sealed prior to transportation. She also said that Granger has cameras set up at each of the gates to view what is in each of the loads entering the landfill. If the ACM quantity reported in the waste manifest does not appear to match the quantity of ACM in the manifest, she said they turn the trucks away. K. Smelker said they will tape measure the incoming truck to gauge the volume of ACM coming in to verify reported quantity is the quantity being brought in. All transporters take the ACM waste directly to the ACM trench upon entering Granger. K. Smelker said they will also inspect loads once per week by pulling a random load of the truck to check for asbestos.

K. Smelker said the green copy of the signed waste manifests are sent back to the ACM generators at least once per month. The ROP requires that these be returned to the generator within 30 days of receipt, and therefore Granger would meet the 30-day requirement based on frequency of waste manifests sent back to the generators.

PTI 177-19

PTI 177-19 was issued to Granger for the installation of two new open utility flares with rated design capacities of 4,000 scfm and 2,000 scfm (EUUF1 and EUUF2, respectively). As previously mentioned, Granger has tentative plans of installing these units by end of December 2020. Prior to installation and operation, PTI 177-19 requires that 180 days prior to initial startup of either flare, Granger verify the H₂S or TRS concentrations in the landfill gas on a daily basis using Draeger tube testing (5 days per week, excluding weekends and holidays) for 12 consecutive weeks and weekly using a USEPA approved method and laboratory analysis. This data collection is required in order for AQD to determine variability in gas sulfur concentration as well as ensure that sulfur concentrations do not exceed 600 ppm.

The test plan for determining sulfur concentrations was submitted on June 4, 2020. Granger began their daily and weekly testing on July 14, 2020. I requested records from test start date through the end of July 2020. Records indicate that Granger conducts daily sampling and weekly lab analysis. All data suggests total sulfur concentrations are below 600 ppm at this time. Records will be requested again for the entire 12-week period in October 2020 (proposed end date for 12-week sulfur monitoring). See attached records.

Compliance Statement: Granger Wood Street Landfill is currently in compliance with Section 1 of MI-ROP-N5997-2013 and applicable NSPS regulations.

GRANGER CONTAINER SERVICE

FGPAINTBOOTH

This FG is used for all surface coating equipment exempt under Rule 287(2)(c). Granger has 1 paint booth that they use to repaint roll-off trash canisters or to repaint garbage truck parts. Table 2 contains a list of monthly coating usage in 2018, 2019 and 2020. Actual records from K. Smelker are attached. The exemption allows up to 200 gallons of coating per month, minus water. The largest monthly quantity was 184 gallons in July 2018.

Table 2. Paint Usage

Month	2018 Gallons	2019 Gallons	2020 Gallons
	37.9	37.5	66.7

January			
February	32.6	100	71.7
March	24.1	100	66.7
April	120.6	100	66.7
May	100	50	66.7
June	100	50	166.7
July	184	100	100
August	166	100	NA
September	58.5	100	NA
October	58.5	100	NA
November	58.5	100	NA
December	75	100	NA

Filters are also required to be installed properly. During the 2016 inspection, there were 2-3 filters that did not completely cover the vents. I mentioned this to K. Smelker at the time that filters must be installed properly in the future. During the 2018 inspection there were 2 entire filter panels removed, although no painting operations were being conducted. K. Smelker and S. Skillman reinstalled the filter panels while I was there. I informed them that it is important to ensure that these panels are installed and installed properly, especially during paint booth use. During this inspection, S. Skillman and I observed that the panel filters, although installed, were not installed properly – notable gaps around several of the panel filters were observed. Because this appears to be a consistent, ongoing issue at Granger, I informed S. Skillman of this deficiency and its history and I am currently working with Granger to develop a plan to ensure that filters are installed properly by Granger staff. One suggestion S. Skillman had involves posting a sign at the paintbooth door with a photo of the appropriate way to install filters. I may also suggest Granger conduct weekly checks to ensure filters are installed properly when the equipment is in operation. To-date, AQD has not received complaints of particulate from Granger.

Sand Blasting Operations

S. Skillman took me to the bay garage where the sandblasting equipment is housed. I noted that the area is currently being used as storage space, although the sandblaster equipment was present. This is similar to what we found during the 2018 inspection. There appears to be no exhaust to the outside air. K. Smelker said in the past they used this to clean the garbage containers prior to welding, but now they ship out this work. In the event Granger makes this unit operational, it would likely be exempt under Rule 285(2)(l)(vi)(B).

Compliance Statement: Granger Container Service is currently in compliance with Section 2 of MI-ROP-N5997-2013.

EDL Generating Station Inspection

The Generating Station inspection was conducted on March 3, 2020 during the annual stack testing on the engines. Upon entry to EDL’s plant yard for the stack test, I saw no signs of opacity being emitted from any of the engines’ stacks. All visitors are required to back in to their parking spots and sign in.

EUTREATMENTSYS (as defined in Proposed MI-ROP-N5997-20XX)

This emission unit treats the landfill gas coming into the electric plant by removing moisture and particulate, making it suitable for combustion in the landfill gas engines. The compressor within the treatment system limits how much of the gas can be treated at a time.

Dan Zimmerman explained that in the event of a treatment system malfunction, the entire engine plant is shut down. All landfill gas is then sent to Granger’s open flare for combustion. He said that the capacity of the treatment system can be determined by the plant capacity (Plant 1 is 1,208 scfm, Plant 2 is 1,614 scfm) or by the capacity of the blowers that feed the system.

FGICEENGINES: EUICEENGINE1-3 (Engines 5-7)

FGICEENGINES consists of three 3520C stationary non-emergency landfill gas, spark ignition, 4-stroke lean burn reciprocating internal combustion engines, each rated at 2,233 hp, 1600 kW. Table 3 contains a list of these engines with some of their specifications and operating parameters recorded during the inspection. Operational data was pulled from the continuous monitor for each engine

Table 3. Engines 5-7 operating conditions during inspection

	Total Plant	Engine 5	Engine 6	Engine 7

Serial Number		GZJ00429	GZJ00692	GZJ00550
Manufacture Date		2/17/2010	11/22/2014	11/27/2011
Installation Date		4/28/2015	12/17/2015	4/17/2019
Kilowatts (kW)		1612	1620	1623
Flow rate (lb/hr)		2318	2270	2283
CH4% (total entering the plant for engines 1-4)	51.3			
O2% (total entering the plant for engines 1-4)	0.78			

Emission Limits, Testing/Sampling & Monitoring/Recordkeeping

All 3 engines within this flexible group have CO and NOx limits under both the NSPS Subpart JJJJ and state Rule 336.2804. All 3 engines also have VOC limits under the NSPS Subpart JJJJ, and formaldehyde limits under Rule 336.1225(2).

Each engine is required to be tested to verify NOx, CO and VOC emission rates under the NSPS Subpart JJJJ every 8760 hours of operation or 3 years, whichever occurs first. EDL has opted to test their engines once a year. The last test conducted on these engines for NOx, CO, and VOC was March 3, 2020, and the test report indicated compliance with all NOx, CO and VOC emission limits for each engine.

The current testing language for formaldehyde requires at least one of the engines in FGICEENGINES be tested within 180 days after issuance of the permit. This language was pulled directly from a PTI; however, the Lansing District Office (LDO) AQD acknowledges that this is not the typical language we would insert as a requirement for formaldehyde emissions testing in an ROP. The proposed formaldehyde testing language will now require formaldehyde testing once every 5 years from the date of the last test.

Material Limits & Monitoring/Recordkeeping

Engines 5-7 have a collective landfill gas throughput limit of 848.82 MMscf per 12-month rolling period, as determined at the end of each calendar month. D. Zimmerman provided me with the 12-month rolling landfill gas usage for Engines 5-7 combined (see attached). The highest total 12-month rolling usage from July 2019 – June 2020 was 778.65 MMscf as determined at the end of April 2020.

Process/Operational Restrictions & Monitoring/Recordkeeping

A written Malfunction Abatement/Preventative Maintenance Plan (MAP/PMP) for the engines is required to be implemented and maintained, and include:

- identification of the equipment and supervisory personnel responsible for overseeing the inspection, maintenance, and repair;
- a description of the item or conditions to be inspected and frequency of the inspections or repairs;
- identification of the equipment operating parameters that shall be monitored to detect a malfunction of failure, the normal operating range of these parameters, and a description of the method of monitoring or surveillance procedures;
- identification of the major replacement parts maintained in inventory for quick replacement;
- and a description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

All maintenance activities conducted according to the MAP/PMP are required to be recorded. The MAP provides various items that are checked and the frequency with which they are checked. It also briefly summarizes the types of maintenance activities that are conducted on the engines, including replacement of spark plugs, oil, and lubrication. D. Zimmerman provided me with January – June 2020 maintenance logs which demonstrate preventative and downtime maintenance but does not specify which engines of the 7 that EDL owns were being maintained (only generally as “3516” or “3520”). I am requesting from D. Zimmerman that the records be corrected for future compliance purposes.

Each engine's air:fuel ratio is required to be adjusted based on each engine's kilowatt output to ensure each engine operates at its maximum design output based on the fuel available to burn, and the air:fuel ratio control is required to be installed, maintained and operated in a satisfactory manner. The air:fuel ratio for each engine automatically adjusts itself for each engine depending on the quality of the gas coming into the plant. During the inspection all 3 engines were operating at their maximum design output.

Design/Equipment Parameters

EDL is required to equip and maintain a non-resettable hours meter on each engine to track operated hours, in addition to fuel meters to monitor and record the daily fuel usage and volumetric flow rate of the fuel used. I verified during the previous inspection that each engine has its own resettable hours meter. Additionally, they have continuous monitoring and recordkeeping for the daily fuel usage and volumetric flow rate entering the facility.

Monitoring/Recordkeeping

The kilowatt output is required to be recorded a minimum of once per day, excluding holidays and weekends, and continuously monitored. I requested kW output records for the 3 engines for mid-July through mid-August 2020, which D. Zimmerman provided via excel spreadsheet, with the first 3 days of this period attached for reference. Each data point is logged every 5 minutes. Kilowatt output for the 3 engines stays within 1400 to 1600+ kW, which is within the range the engines run at during stack tests, demonstrating routine operating conditions.

EDL is also required to record the monthly and 12-month rolling hours of operation from each engine. EDL tracks operation hours per engine within the same spreadsheet that is used to record monthly and 12-month rolling landfill gas usage records. For engines 5, 6 and 7 the 12-month rolling hours from July 2019 – June 2020, as determined at the end June 2020, were 6,623; 6,774; and 6,812 hours, respectively.

FGICE: EUICE1-4 (Engines 1-4)

The engines in FGICE consist of four 3516 CAT engines subject to the RICE MACT ZZZZ. Granger has numbered these as Engines 1-4. Each engine is rated at 800 kW, 1138 hp. Table 3 contains the specifications for each engine. Engines 1-3 have been replaced since the last stack test. Their new serial numbers, installation dates, and manufacture dates are included in Table 3.

Table 4. FGICE engine specifications

	Engine 1	Engine 2	Engine 3	Engine 4
Serial Number	4EK00131	4EK00496	3RC00640	4EK00655
Installation Date	7/25/2017	9/9/1997	11/20/2017	1998
Manufacture Date	11/16/1993	6/9/2017	9/1/1992	10/9/1995

To use the 285(a)(vi) exemption for routine replacement of engines, facilities must include the swapping and replacement of engines as part of their PMP. EDL will be required within their new ROP to have a MAP/PMP. I will inform D. Zimmerman that there needs to be a statement included within their PMP explaining that overhauls are part of their maintenance routine. By conducting routine overhauls and maintenance on these engines EDL can ensure that the engines are meeting their permitted emission limits for NOx, CO, and VOC. The replacement engine will have a different serial number and/or manufacture date.

There are no Material Limits, Process/Operational Restrictions, or Monitoring/Recordkeeping requirements for FGICE at this time.

Emission Limits & Testing/Sampling

EDL is limited to 0.75 lb/hr formaldehyde for all 4 engines in FGICE. EDL was required, per the ROP, to conduct formaldehyde emission rate testing on at least one of the engines in FGICE within 180 days after issuance of the ROP. This condition was rolled into the ROP directly from PTI 357-07A issued in August 2012. Granger (at the time) tested the formaldehyde emissions in September 2012, which fell within the 180-day time period required in the PTI to test at least one of the 3516 engines. Granger was in compliance with their formaldehyde emissions at that time. Typically, the requirement to conduct emissions testing is not written in this way for ROP's, and AQD would require testing to be done within each ROP renewal cycle. The LDO AQD has made the determination to allow Granger to test at least one engine from FGICEENGINES before the expiration date of their current ROP, May 2, 2018. The formaldehyde test was conducted on March 16, 2018. The proposed ROP includes language that requires formaldehyde testing from one or more engines in this flexible group every 5 years from the date of the last test.

Compliance Statement: EDL is currently in compliance with Section 1 of MI-ROP-N5997-2013 and applicable NSPS regulations at this time.



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Image 2(Asbestos Trench) : asbestos trench with warning sign posted



Image 3(Asbestos Close-up) : Close-up view of items disposed in asbestos trench



Image 4(Trench items) : Note the non-asbestos materials that are disposed in asbestos trench

NAME _____

DATE _____

SUPERVISOR B.M.