

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

N571940947

|   |                               |                           |
|---|-------------------------------|---------------------------|
| FACILITY: ORCHARD HILL SANITARY LANDFILL  |                               | SRN / ID: N5719           |
| LOCATION: 3290 HENNESEY RD, WATERVLIET    |                               | DISTRICT: Kalamazoo       |
| CITY: WATERVLIET                          |                               | COUNTY: BERRIEN           |
| CONTACT: Chip Shaw                        |                               | ACTIVITY DATE: 07/26/2017 |
| STAFF: Matthew Deskins                    | COMPLIANCE STATUS: Compliance | SOURCE CLASS: MAJOR       |
| SUBJECT: Unannounced Scheduled Inspection |                               |                           |
| RESOLVED COMPLAINTS:                      |                               |                           |

On July 26, 2017 AQD staff (Matt Deskins) went to conduct a scheduled unannounced inspection of the Orchard Hill Sanitary Landfill (OHSL) located in Watervliet, Berrien County. OHSL is a licensed Type II municipal solid waste (MSW) landfill and became subject to the federal New Source Performance Standard (NSPS), 40 CFR Part 60 Subpart WWW, on November 8, 2010 due to a previous agreement with AQD (See previous inspection reports and correspondence for information related to this). They previously were not subject to the National Emission Standard for Hazardous Air Pollutants (NESHAP), 40 CFR Part 63 Subpart AAAA for MSW Landfills because they had been doing Tier 2 testing (done every 5 years) prior to the promulgation of this regulation showing that their NMOC emissions were below 50 Mg/yr. However, in 2012, OHSL signed an agreement to lease a certain portion of their property to Granger Electric for the construction of a landfill gas to energy facility. Granger was issued a permit (PTI No. 98-12) to install two Caterpillar Model G3520C stationary reciprocating internal combustion engines (RICE) and an open flare that was later rolled into OHSL's ROP as Section 2. The installation of the engines and the emissions of Formaldehyde from them are above major source individual HAP thresholds and thus made the landfill subject to the NESHAP. The Granger Electric Plant engines are also subject to the NSPS JJJJ and NESHAP ZZZZ (RICE MACT). These and other applicable requirements are contained in OHSL's Renewable Operating Permit (ROP) No. MI-ROP-N5719-2016. The purpose of the inspection was to determine OHSL's and Granger Electric's compliance status with their pertinent sections of the ROP and any other state and/or federal air regulations. Staff departed for the facility at approximately 9:40 a.m.

NOTE: Staff inspected the Granger Electric plant first and OHSL after having lunch because the last time staff tried to inspect Granger, no one was around after the lunch hour and staff had to make a return trip back to conduct it.

## Granger Electric (Section 2)

Staff arrived at the Granger Electric Plant at approximately 10:45 a.m. Staff proceeded to enter the office area and ended up meeting with Jake Ripke (Regional Operations Support) and Scott Eastman (Plant Operator). Staff introduced them self, stated the purpose of the visit, and gave Scott their business card. Staff had met Jake previously at the plant during a stack test but Scott was hired as the new plant operator about 4 months ago. Staff then proceeded to ask them about plant operations and for records regarding their Section of the ROP. The following is a summary of staff's conversation with Jake and Scott which will be followed by the permit conditions pertaining to them along with staff's comments regarding them.

According to Jake, Granger still has the (2) Caterpillar 3520 internal combustion engines and that a compressor system supplies the vacuum to OHSL's wellfield to provide the landfill gas. Staff asked if they still had any intent on installing a 3<sup>rd</sup> engine. Jake replied it had been talked about in the past but there is just not enough gas to justify it right now. He said that the engines have been running pretty consistent lately and that the flare is also operational. Staff then proceeded with Jake and Scott out into the control room to look at some of the readings. Staff noted that the Serial Number for Engine #1 is still GZJ00541 and Engine #2 is still GZJ00540. Staff then noted that the flow to Engine #1 was approximately 525 scfm and to Engine #2 was 545 scfm. Flow to the flare was only 50 scfm and it was operating at 1240 degrees F. Together, the engines were putting out approximately 2930 KW of power. Staff noted the landfill gas quality was 52.4% methane (CH<sub>4</sub>) and 0.40% Oxygen (O<sub>2</sub>). Staff then went on a tour of the facility where they observed the two engines, the compressor system, condensate knock out, the gas chiller unit, and the gas dryer. These last several items help make up the pre-treatment system of the landfill gas prior it's combustion in the engines. The pre-treatment system is required by the NSPS for landfills if the electric generating plants want to opt out of certain requirements. Staff also went out behind the plant to check on the open flare. There didn't appear to be any issues noted so staff proceeded back into the plant office. Staff thanked Scott and Jake for their time and departed the facility at approximately 12:10 p.m. to go to lunch. The following are the Special Conditions contained in Section 2 of the ROP and will be followed by their compliance status with them. Staff deleted all conditions that were N/A to save some space. Also, Staff was able to get all the information needed while

at the plant except for the 12-month rolling landfill gas amount consumed by the engines. Staff had to follow up with Dan Zimmerman of Granger regarding that.

### EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

| Emission Unit ID  | Emission Unit Description<br>(Including Process Equipment &<br>Control Device(s))  | Installation<br>Date/<br>Modification<br>Date | Flexible Group<br>ID |
|-------------------|--|---|----------------------|
| EUICEENGINE1-S2   | Internal combustion engine (Caterpillar G3520C) for combusting treated landfill gas to produce electricity.  | 2012  | FGICEENGINES-S2      |
| EUICEENGINE2-S2   | Internal combustion engine (Caterpillar G3520C) for combusting treated landfill gas to produce electricity.  | 2012  | FGICEENGINES-S2      |
| EUTREATMENTSYS-S2 | This emission unit treats landfill gas before its subsequent use or sale. The treatment system removes particulate to at least the 10 micron level, compresses the landfill gas, and removes enough moisture to ensure good combustion of gas for subsequent use; therefore, guaranteeing that the intent of the destruction of the NMOC will be maintained. | 2012  | NA                   |
| EUOPENFLARE-GE-S2 | Open flare is an open combustor without enclosure or shroud. The design capacity of the flare is 1,350 standard cubic feet per minute (scfm). Landfill gas that is not combusted in FGICEENGINES-S2 is destroyed by this flare.  | 09-12<br>09-15                                | NA                   |

### EUOPENFLARE-GE-S2 EMISSION UNIT CONDITIONS

#### DESCRIPTION

Open flare is an open combustor without enclosure or shroud. The design capacity of the flare is 1,350 standard cubic feet per minute (scfm). Landfill gas that is not combusted in FGICEENGINES-S2 is destroyed by this flare.

#### IV. DESIGN/EQUIPMENT PARAMETER(S)

- The design capacity of EUOPENFLARE-GE-S2 shall not exceed 1,350 scfm.<sup>2</sup> (R 336.1225, R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d))

AQD Comment: Appears to be in Compliance.

#### VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213(3)(c)(ii))
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))

See Appendix 8-S2

AQD Comment: Appears to be in Compliance with all the Above. The facility has been submitting the required Semi-Annual/Annual Report Certifications.

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

| Stack & Vent ID      | Maximum Exhaust Dimensions (inches) | Minimum Height Above Ground (feet) | Underlying Applicable Requirements                               |
|----------------------|-------------------------------------|------------------------------------|--|
| 1. SVOPENFLARE-GE-S2 | 8 <sup>2</sup>                      | 28 <sup>2</sup>                    | R 336.1225<br>R 336.2803, R 336.2804,<br>40 CFR 52.21(c) and (d) |

AQD Comment: Appears to be in Compliance. The stack appears to meet the dimensions mentioned above.

**Footnotes:**

<sup>1</sup>This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**EUTREATMENTSYS-S2  
EMISSION UNIT CONDITIONS**

**DESCRIPTION**

This emission unit treats landfill gas before its subsequent use or sale. The treatment system removes particulate to at least the 10 micron level, compresses the landfill gas, and removes enough moisture to ensure good combustion of gas for subsequent use; therefore, guaranteeing that the intent of the destruction of the NMOC will be maintained.

**POLLUTION CONTROL EQUIPMENT**

Any emissions from any atmospheric vents or stacks associated with the treatments system shall be subject to §60.752(b)(2)(iii)(A) or (B).

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall operate the treatment system at all times when the collected gas is routed to the treatment system. (40 CFR 60.753(f))

AQD Comment: Appears to be in COMPLIANCE. The facility operates the system whenever landfill gas is routed to it.

2. The permittee shall operate the treatment system so that any emissions from any atmospheric vents or stacks associated with the treatment system shall be subject to §60.752(b)(2)(iii)(A) or (B). (40 CFR 60.752(b)(2)(iii)(C), 40 CFR 63.1955(a))

AQD Comment: Appears to be in COMPLIANCE. There are no stacks or vents associated with the treatment system.

3. The permittee shall operate the treatment system to comply with the provisions of 60.753(e) and (f), and 60.756 (d). (40 CFR 60.752(b)(2)(iv), 40 CFR 63.1955(a))

AQD Comment: Appears to be in COMPLIANCE. The system appears to comply with the requirements of Part 60 Subpart WWW.

#### IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The treatment system shall be designed as approved by AQD. (40 CFR 60.752(b)(2)(iii)(C), 40 CFR 60.752(b)(2)(i)(D), 40 CFR 63.1955(a))

AQD Comment: Appears to be in COMPLIANCE. The AQD uses the EPA guidance on the design of the system which it appears to meet.

#### VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of 5 years. (R 336.1213(3)(b)(ii))

1. The permittee shall keep up-to-date, readily accessible records of all control or treatment system exceedances of the operational standards in §60.753(e) and (f). (40 CFR 60.758(e), 40 CFR 63.1955(a))

AQD Comment: Appears to be in COMPLIANCE. There have been no exceedances to date with the system to staff's knowledge.

2. The permittee shall keep records of all preventative maintenance performed in accordance with the preventative maintenance plan (PMP) prepared pursuant to condition IX.3. of this permit. (40 CFR 60.756(d), R 336.1213(3))

AQD Comment: Appears to be in COMPLIANCE. The facility has a PMP and documents all maintenance done on equipment.

3. The permittee shall provide information to the AQD as provided in 40 CFR 60.752(b)(2)(i)(B) describing the operation of the control device, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The AQD shall review the information and either approve it, or request that additional information be submitted. The AQD may specify additional appropriate monitoring procedures. (40 CFR 60.756(d)).

AQD Comment: Appears to be in COMPLIANCE. The facility operates the treatment system following EPA guidance for a treatment system.

#### VII. REPORTING

AQD Comment: Items 1 through 5 below appear to be in COMPLIANCE. The facility is and/or has submitted the below reports.

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213(3)(c)(ii))
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. Report shall be postmarked or received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. Report shall be postmarked or received by appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))

4. A description of the operation of the treatment system, the operating parameters that indicate proper performance, and the appropriate monitoring procedures shall be submitted the appropriate AQD District Office for review within 30 days after the issuance of this permit. (40 CFR 60.752(b)(2)(i)(B), 40 CFR 63.1955(a))
5. The permittee shall submit to the appropriate AQD District Office semiannual reports for the landfill gas treatment system. The report shall be received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (40 CFR 60.757(f), 40 CFR 63.1980(a), 40 CFR 63.1955(a))

The report shall include:

- a. Value and length of time for exceedance of applicable parameters monitored under §60.756(d). (R 336.1213(3), 40 CFR 60.757(f)(1), 40 CFR 63.1980(a), 40 CFR 63.1955(a))
  - b. Description and duration of all periods when the gas stream is diverted from the treatment system through a bypass line or the indication of bypass flow. (R 336.1213(3))
  - c. Description and duration of all periods when the treatment system was not operating for a period exceeding 1 hour and length of time the control device was not operating. (40 CFR 60.757(f)(3), 40 CFR 63.1980(a), 40 CFR 63.1955(a))
  - d. Description and duration of all periods when the treatment system was not operated in accordance with the operating parameters and monitoring procedures that were part of the plan in condition number VII.4. (R 336.1213(3))
6. The permittee shall submit the startup, shutdown, and malfunction (SSM) report to the appropriate AQD District Office and it shall be delivered or postmarked by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (40 CFR 63.10(a)(5), 40 CFR 63.10(d)(5))

AQD Comment: Appears to be in COMPLIANCE. They have been submitting the SSM Report.

#### IX. OTHER REQUIREMENT(S)

1. The provisions of 40 CFR, Part 60, Subpart WWW apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 1 hour for the treatment system. (40 CFR 60.755(e), 40 CFR 63.1955(a))

AQD Comment: Appears to be in COMPLIANCE.

2. The permittee shall have developed and implemented a written SSM plan according to the provision in 40 CFR 63.6(e)(3) for EUTREATMENTSYS-S2. A copy of the SSM plan shall be maintained on site. (40 CFR 63.1960, (40 CFR 63.1965(c))

AQD Comment: Appears to be in COMPLIANCE. The facility has an SSM Plan on site that was developed according to the NESHAP.

3. The permittee shall have implemented a written preventative maintenance plan (PMP) for EUTREATMENTSYS. At a minimum, the plan shall include a schedule of maintenance activities consistent with manufacturer's recommendations, and the operating variables that will be monitored to detect a malfunction or failure. A copy of the PMP shall be maintained on site and available upon request. (40 CFR 60.756(d), R 336.1213(3), R 336.1911)

AQD Comment: Appears to be in COMPLIANCE. The facility has a PMP for all its equipment.

#### Footnotes:

<sup>1</sup>This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

#### FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

| Flexible Group ID | Flexible Group Description  | Associated Emission Unit IDs        |
|-------------------|---|-------------------------------------|
| FGICEENGINES-S2   | Two internal combustion engines (Caterpillar G3520C) for combusting treated landfill gas to produce electricity.  | EUICEENGINE1-S2,<br>EUICEENGINE2-S2 |
| FG-RICEMACT-S2    | New and reconstructed non-emergency engines greater than 500 hp firing landfill/digester gas, located at a major source of HAP. Commenced construction or reconstruction on or after December 19, 2002. | EUICEENGINE1-S2,<br>EUICEENGINE2-S2 |

**FGICEENGINES-S2  
FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

Two reciprocating internal combustion engines (Caterpillar G3520C) for combusting treated landfill gas to produce electricity.

Emission Units: EUICEENGINE1-S2, EUICEENGINE2-S2

**I. EMISSION LIMIT(S)**

| Pollutant       | Limit                                  | Time Period/<br>Operating<br>Scenario | Equipment                           | Monitoring/<br>Testing<br>Method | Underlying<br>Applicable<br>Requirements                  |
|-----------------|--|---------------------------------------|-------------------------------------|----------------------------------|---|
| 1. CO           | 3.5 g/hp-hr<br>per engine <sup>2</sup> | Test Protocol*                        | EUICEENGINE1-S2,<br>EUICEENGINE2-S2 | SC V.1                           | 40 CFR<br>60.4233(e)                                      |
| 2. CO           | 17.3 pph<br>per engine <sup>2</sup>    | Test Protocol*                        | EUICEENGINE1-S2,<br>EUICEENGINE2-S2 | SC V.1,<br>SC VI.1,<br>SC VI.2   | R 336.2804,<br>40 CFR<br>52.21(d)                         |
| 3. NOx          | 1.0 g/hp-hr<br>per engine <sup>2</sup> | Test Protocol*                        | EUICEENGINE1-S2,<br>EUICEENGINE2-S2 | SC V.1                           | 40 CFR<br>60.4233(e)                                      |
| 4. NOx          | 4.94 pph<br>per engine <sup>2</sup>    | Test Protocol*                        | EUICEENGINE1-S2,<br>EUICEENGINE2-S2 | SC V.1,<br>SC VI.1,<br>SC VI.2   | R 336.2803,<br>R 336.2804,<br>40 CFR<br>52.21(c) &<br>(d) |
| 5. VOC          | 1.0 g/hp-hr<br>per engine <sup>2</sup> | Test Protocol*                        | EUICEENGINE1-S2,<br>EUICEENGINE2-S2 | SC V.1                           | 40 CFR<br>60.4233(e)                                      |
| 6. Formaldehyde | 2.08 pph<br>per engine <sup>2</sup>    | Test Protocol*                        | EUICEENGINE1-S2,<br>EUICEENGINE2-S2 | SC V.2                           | R 336.1225<br>(2)   |

\*Test Protocol shall determine the averaging time.

**AQD Comment: Appears to be in Compliance. All testing to date has demonstrated compliance with the above limits.**

**II. MATERIAL LIMIT(S)**

| <b>Material</b>            | <b>Limit</b>                                      | <b>Time Period/<br/>Operating<br/>Scenario</b>  | <b>Equipment</b>            | <b>Monitoring/<br/>Testing<br/>Method</b> | <b>Underlying<br/>Applicable<br/>Requirements</b> |
|----------------------------|---|---|-----------------------------|---|---|
| <b>1. Landfill<br/>Gas</b> | <b>568.699<br/>MMscf<br/>per year<sup>2</sup></b> | <b>12-month rolling<br/>time period as<br/>determined at the<br/>end of each<br/>calendar month</b> | <b>FGICEENGINES-<br/>S2</b> | <b>SC VI.1</b>                            | <b>R 336.1205<br/>(3)</b>                         |

**AQD Comment: Appears to be in Compliance. Staff reviewed 12-month rolling records from June 2016 through July 2017 and the facility has not exceeded the above amount.**

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

- 1. The permittee shall only burn treated landfill gas in FGICEENGINES-S2 except during times of start-up, shut-down or malfunction or during times of maintenance on the gas treatment system.<sup>2</sup> (40 CFR 60.752(b)(2)(iii)(c))**

**AQD Comment: Appears to be in Compliance. The plant only combusts treated landfill gas.**

- 2. No later than 60 days after issuance of this permit, the permittee shall submit to the AQD District Supervisor, for review and approval, a malfunction abatement/preventative maintenance plan for FGICEENGINES-S2. After approval of the malfunction abatement/preventative maintenance plan by the AQD District Supervisor, the permittee shall not operate FGICEENGINES-S2 unless the malfunction abatement/preventative maintenance plan, or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices. At a minimum the plan shall include:**
  - a. Identification of the equipment and, if applicable, air-cleaning device, and the supervisory personnel responsible for overseeing the inspection, maintenance, and repair.**
  - b. Description of the items or conditions to be inspected and frequency of the inspections or repairs.**
  - c. Identification of the equipment and, if applicable, air-cleaning device, operating parameters that shall be monitored to detect a malfunction or failure, the normal operating range of these parameters and a description of the method of monitoring or surveillance procedures.**
  - d. Identification of the major replacement parts that shall be maintained in inventory for quick replacement.**
  - e. 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.**

**If the plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan for approval to the AQD District Supervisor. Should the AQD determine the malfunction abatement/preventative maintenance plan to be inadequate, the AQD District Supervisor may request modification of the plan to address those inadequacies.<sup>2</sup> (R 336.1702(a), R 336.1910, R 336.1911, R 336.1912, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d), 40 CFR 60.4243(b)(2))**

**AQD Comment: Appears to be in Compliance with the Above. The facility submitted a MAP and it appears no updates to it have been required.**

- 3. Based on each engine's kilowatt output, the permittee shall adjust the engine's air/fuel ratio, as needed, to ensure that each engine in FGICEENGINES-S2 operates at its maximum design output based on the fuel available to burn.<sup>2</sup> (R 336.1702(a), R 336.1910, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

**AQD Comment:** Appears to be in Compliance. The engines automatically adjust this air/fuel ratio depending on landfill gas quality to ensure maximum kW output. Staff noted during the inspection that the ratio was 8.5 for Engine 1 and 8.1 for Engine 2.

4. The permittee shall operate and maintain each engine in FGICEENGINES-S2 such that it meets the emission limits in SC I.1, I.3, and I.5 over the entire life of the engine.<sup>2</sup> (40 CFR 60.4234, 40 CFR 60.4243(b))

**AQD Comment:** Appears to be in Compliance. The facility has standards in place when it comes to engine maintenance schedules.

5. If the permittee purchased a non-certified engine or operates a certified engine in a non-certified manner, the permittee shall keep a maintenance plan for FGICEENGINES-S2 and shall, to the extent practicable, maintain and operate each engine in a manner consistent with good air pollution control practice for minimizing emissions.<sup>2</sup> (40 CFR 60.4243(b))

**AQD Comment:** Appears to be in Compliance. The facility appears to do the above.

#### **IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall not operate any engine in FGICEENGINES-S2 unless the engines air/fuel ratio controller is installed, maintained and operated in a satisfactory manner.<sup>2</sup> (R 336.1702, R 336.1910)

**AQD Comment:** Appears to be in Compliance. The engines are equipped with this and staff assumes they are being operated and maintained properly.

2. The permittee shall equip and maintain each engine in FGICEENGINES-S2 with non-resettable hours meters to track the operating hours.<sup>2</sup> (R 336.1225, 40 CFR 60.4243)

**AQD Comment:** Appears to be in Compliance. Staff noted during the inspection that Engine #1 had been operated 37,229 hours and Engine #2 37,240 hours.

#### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall conduct an initial performance test for each engine in FGICEENGINES-S2, to verify NO<sub>x</sub>, CO, and VOC emission rates. The permittee shall conduct an initial performance test within 60 days after achieving the maximum production rate but not later than 180 days after initial startup of each engine in FGENGINE-S2 and subsequent performance testing every 8760 hours of operation or three years, whichever occurs first, to demonstrate compliance. The performance tests shall be conducted according to 40 CFR 60.4244. No less than 30 days prior to testing, a complete test plan shall be submitted to the AQD Technical Programs Unit and District Office. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.<sup>2</sup> (40 CFR 60.8, 40 CFR 60.4243, 40 CFR 60.4244, 40 CFR Part 60 Subpart JJJJ)

**AQD Comment:** Appears to be in Compliance. The facility did the initial test and has been conducting the NSPS JJJJ testing at the required intervals.

2. Once during the term of the ROP (testing was completed 07/16/2013), the permittee shall verify formaldehyde emission rates from one or more engine(s) in FGICEENGINES-S2 by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.<sup>2</sup> (R 336.1225, R 336.2001, R 336.2003, R 336.2004)

**AQD Comment:** Appears to be in Compliance. The testing has been completed as noted in the condition itself.

#### **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall continuously monitor and record, in a satisfactory manner, the landfill gas usage for the engines in FGICEENGINES-S2.<sup>2</sup> (R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in Compliance. The facility continuously monitors and records the landfill gas usage in both engines.

2. The permittee shall continuously monitor, in a satisfactory manner, the kilowatt output from each engine in FGICEENGINES-S2.<sup>2</sup> (R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in Compliance. The facility continuously monitors and records kW output for both engines.

3. The permittee shall continuously monitor, in a satisfactory manner, the hours of operation from each engine in FGICEENGINES.<sup>2</sup> (40 CFR 60.4243)

AQD Comment: Appears to be in Compliance. The facility continuously monitors the hours of operation for both engines.

4. The permittee shall keep, in a satisfactory manner, records of all maintenance activities conducted according to the malfunction abatement/preventative maintenance plan (pursuant to SC III.2). The permittee shall keep all records on file at the facility for a period of at least five years and make them available to the Department upon request.<sup>2</sup> (R 336.1702(a), R 336.1911, R 336.1912, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in Compliance. The facility has records of maintenance.

5. The permittee shall keep, in a satisfactory manner, records of the landfill gas usage for the engines in FGICEENGINES-S2 on a monthly and 12-month rolling time period basis as determined at the end of each calendar month, as required by SC VI.1. The permittee shall keep all records on file at the facility for a period of at least five years and make them available to the Department upon request.<sup>2</sup> (R 336.1225, R 336.1702, R 336.1910, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in Compliance. The facility is doing the above.

6. The permittee shall record the kilowatt output from each engine in FGICEENGINES-S2, a minimum of once per day, excluding holidays and weekends when an engine operator is not scheduled, or called in, to be on site, as required by SC VI.2. A list of excluded holidays shall be maintained on site and made available to the Air Quality Division upon request. The permittee shall keep all records on file at the facility for a period of at least five years and make them available to the Department upon request.<sup>2</sup> (R 336.1702(a), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in Compliance. The facility continuously records kW output and also records it once per day on a spreadsheet when an operator is scheduled to be there.

7. The permittee shall keep, in a satisfactory manner, records of the hours of operation from each engine in FGICEENGINES-S2, on a monthly and 12-month rolling time period basis as determined at the end of each calendar month, as required by SC VI.3. The permittee shall keep all records on file at the facility for a period of at least five years and make them available to the Department upon request.<sup>2</sup> (R 336.1225, R 336.1702, R 336.1910, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d), 40 CFR 60.4243)

AQD Comment: Appears to be in Compliance. The facility is doing the above.

8. The permittee shall keep records of the following information for each engine included in FGICEENGINES-S2:
  - a. All notifications submitted to comply with 40 CFR Part 60 Subpart JJJJ and all documentation supporting any notification.
  - b. Maintenance conducted on any engine in FGICEENGINES-S2.
  - c. If any engine in FGICEENGINES-S2 is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR Parts 90, 1048, 1054, and 1060, as applicable.

- d. If any engine in FGICEENGINES-S2 is not a certified engine or is a certified engine operating in a non-certified manner and subject to 40 CFR 60.4243(a)(2), documentation that any engine in FGICEENGINES-S2 meets the emission standards.<sup>2</sup> (40 CFR 60.4245(a))

AQD Comment: Appears to be in Compliance with items a) through b) above. The engines are non-certified and NSPS JJJJ testing has been demonstrating compliance.

**VII. REPORTING**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213(3)(c)(ii))
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))

See Appendix 8-S2

AQD Comment: Appears to be in Compliance with items 1 through 3 above. The facility is doing the reporting as required.

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

| Stack & Vent ID    | Maximum Exhaust Dimensions (inches) | Minimum Height Above Ground (feet) | Underlying Applicable Requirements                         |
|--------------------|-------------------------------------|------------------------------------|--|
| 1. SVICEENGINE1-S2 | 14.0 <sup>2</sup>                   | 65.0 <sup>2</sup>                  | R 336.1225, R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d) |
| 2. SVICEENGINE2-S2 | 14.0 <sup>2</sup>                   | 65.0 <sup>2</sup>                  | R 336.1225, R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d) |

AQD Comment: Appears to be in Compliance. The stacks appear to meet the above size and height requirements.

**IX. OTHER REQUIREMENT(S)**

1. The permittee shall comply with the provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subpart A and Subpart JJJJ, as they apply to each engine in FGICEENGINES-S2.<sup>2</sup> (40 CFR Part 60, Subpart A and JJJJ)
2. The permittee shall comply with the provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR, Part 63, Subpart A and Subpart ZZZZ, as they apply to each engine in FGICEENGINES-S2.<sup>2</sup> (40 CFR Part 63, Subparts A and ZZZZ)

AQD Comment: Appears to be in Compliance. The facility to date appears to be complying with federal regulations mentioned in #1 and #2 above.

**Footnotes:**

<sup>1</sup>This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

|   |
|---|
| <b>FG-RICEMACT-S2<br/>FLEXIBLE GROUP CONDITIONS</b> |
|---|

**DESCRIPTION**

New and reconstructed engines located at a Major Source >500 hp, non-emergency firing landfill/digester gas. Commenced construction or reconstruction on or after December 19, 2002. Compliance date is upon start-up.

Emission Unit: FGICEENGINES-S2

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. Each engine in FG-RICEMACT-S2 shall operate in a manner which reasonably minimizes HAP emissions.<sup>2</sup> (40 CFR 63.6625(c))

AQD Comment: Appears to be in Compliance.

2. Each engine in FG-RICEMACT-S2 shall operate in a manner which minimizes time spent at idle during startup and minimize the startup time to a period needed for appropriate and safe loading of each engine, not to exceed 30 minutes.<sup>2</sup> (40 CFR 63.6625(h))

AQD Comment: Appears to be in Compliance.

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The engines in FG-RICEMACT-S2 shall equip and maintain separate fuel meters to monitor and record the daily fuel usage and volumetric flow rate of each fuel used.<sup>2</sup> (40 CFR 63.6625(c))

AQD Comment: Appears to be in Compliance. The engines have separate fuel meters and they only combust landfill gas.

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. Each engine in FG-RICEMACT-S2, which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, must monitor and record the daily fuel usage with separate fuel meters to measure the volumetric flow rate of each fuel.<sup>2</sup> (40 CFR 63.6625(c))

AQD Comment: Appears to be in Compliance. The monitor and record fuel usage and the only fuel combusted is landfill gas.

**VII. REPORTING**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213(3)(c)(ii))
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))
4. The permittee shall submit an annual report in accordance with Table 7 of 40 CFR Part 63, Subpart ZZZZ to the appropriate AQD district office by March 15th for the reporting period from January 1 to December 31.<sup>2</sup> (40 CFR

63.6650(g), 40 CFR 63.6650(b)(5)) The following information shall be included in this annual report:

- a. The fuel flow rate and the heating values that were used in the permittee's calculations to determine the gross heat input on an annual basis. Also, the permittee must demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis.<sup>2</sup> (40 CFR 63.6650(g)(1))
- b. The operating limits provided in the permittee's federally enforceable permit, and any deviations from these limits. (40 CFR 63.6650(g)(2))
- c. Any problems or errors suspected from the fuel flow rate meters.<sup>2</sup> (40 CFR 63.6650(g)(3))

See Appendix 8-S2

AQD Comment: Appears to be in Compliance with #1 through #4 above. They are submitting the required semi-annual/annual ROP Reports and SSM Reports. The requirements of #4 are met by submittal of the annual MAERs Report and the ROP Certification/Deviation Reports.

#### IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR, Part 63, Subpart A and Subpart ZZZZ, as they apply to each engine in FG-RICEMACT-S2.<sup>2</sup> (40 CFR Part 63, Subparts A and ZZZZ)

AQD Comment: Appears to be in Compliance.

#### Footnotes:

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup> This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**Granger Inspection Conclusion: The facility appears to be in COMPLIANCE with Section 2 of ROP No. MI-ROP-N5719-2016 at the present time.**

### **Orchard Hill Sanitary Landfill (Section 1)**

Staff arrived in the vicinity of OHSL at approximately 12:50 p.m. after having lunch. Staff took some time to monitor for potential odors and made a couple of circuits around the perimeter roads surrounding the landfill. Winds were out of the SW and staff did not detect any odors. Staff then proceeded to the offices of OHSL and once there they asked Cindy Foerster (office employee) if Chip Shaw (Site Manager) was available. She said that he was and went to try to locate him. A few minutes later, Chip and Chris Phillips (Compliance Manager) showed up a few minutes later. Chip and Chris greeted staff and asked the purpose of the visit. Staff then informed him that OHSL was on their list for inspection this year and we then proceeded back into an office. The following is a summary of staff's discussion with Chip and Chris which will be followed by their ROP's emission units and OHSL's compliance status with them.

Staff asked Chip and Chris if they've been receiving any odor complaints because staff has not received any nor heard about anything if the DEQ WMRPD has been getting them. Chris said that they haven't been having any odor issues and that they have also been doing a lot of community outreach such as letting businesses now when they have wellfield construction going on. Staff then asked about the amount of waste that they are taking in and Chip said that they are averaging about 700 to 1,000 tons per day. Staff then asked about the gas well pump system that was being installed previously and if it was operational. Chip said that it is and that they are capable of pumping up to 15 wells at a time if needed. He said that each new well they install now is being equipped with air and discharge lines should they need to pump condensate out of them in the future. Staff then asked since they use the 2 Reverse Osmosis Systems (R.O) if they have to haul any leachate off site. He said that they still haul a couple of loads off site here and there but the majority of it is treated through the R.O.s. Staff then asked if they recirculate any leachate and Chip said that they don't do it anymore although the residual/concentrate from the R.O. systems is taken back up to the landfill. Staff then began to look over the requirements of their ROP and the following is a summary of the facilities emission groups, flexible groups, the inspection staff conducted, and the facilities compliance status.

**EULANDFILL-S1: Appears to be in COMPLIANCE**

The facility has an approved active gas collection system and the plan is on file with the AQD district office. OHSL currently has an open flare to combust landfill gas but it currently only used as a back-up control device should the Granger Electric plant go down. OHSL has been conducting quarterly surface emissions monitoring and it appears that the appropriate records are being kept. Staff reviewed the records for the first 3 quarters of 2017. The records reviewed included instrument calibration data, a map showing the route traversed while doing the monitoring, meteorological data, etc. No documented exceedences of the 500 ppm methane limit were noted. Golder and Associates does their surface emissions monitoring using a Thermo TVA-1000 gas meter. As mentioned in the opening paragraph, OHSL became subject to the NESHAP 40 CFR Part 63 Subpart AAAA for MSW Landfills when the Granger Electric Plant was constructed. That required them to develop a Start-Up, Shutdown, and Malfunction (SSM) Plan which they have. The facility has been submitting the SSM Reports as well as the required semi-annual and annual ROP Certifications to the district office on time. They also submit an annual NMOC generation report although that isn't required now that they are subject to the NSPS and the NESHAP. The ROP certification reports have included any deviations and/or operational issues as required. The facility regularly conducts cover integrity checks when sampling the wellfield or out doing other things. They have records of the amount of solid waste in place as well as the year by year acceptance rates.

**EUACTIVECOLL-S1: Appears to be in COMPLIANCE**

The facility has an approved active gas collection system as required and the materials used in the gas collection system appear to be either HDPE or PVC as required. The facility has an ASBUILT drawing showing the existing collection system and proposed expansion areas although they are waiting on an updated one to show the most recent expansion. The landfill currently has 240 landfill gas monitoring points for NSPS purposes. Some wells have Landtec wellheads but the majority were fabricated by OHSL. Chip mentioned that a lot of new wells being installed are the Caisson style which allows for easier extension of the well as the landfill cell gets filled. OHSL does their own monthly or more frequent wellhead sampling using an Elkins gas analyzer. They are recording static pressure (vacuum), oxygen, and temperature with the Elkins meter as required. If any of these parameters exceed NSPS standards, the facility appears to be taking corrective actions in the required time frames or asking for alternate compliance timelines and/or alternate operating scenarios. Staff then looked at the most recent 6 months of wellfield data and did not note any issues. Some gas wells have been in quite long time so information on installation is not available, but OHSL does maintain well logs for the newly installed wells along with the dates of installation. As mentioned under EULANDFILL, they have been submitting all the required reports.

**EUOPENFLARE-S1: Appears to be in COMPLIANCE**

As mentioned under EULANDFILL, the facility has an open flare but is now a back-up control device for times when the Granger Electric Plant totally shuts down. The flare is equipped with digital instrumentation (data logger) that records operating parameters and is equipped with a thermocouple to monitor the continuous presence of a flame. Records of its operation can be pulled up on the computer. Near the open flare skid are bypass valves so they can route the gas to the Granger Electric facility, but if the open flare is in use and should shutdown, a pneumatic valve (operated by a nitrogen tank) automatically closes preventing emissions from venting to the atmosphere. Since the Granger Energy Plant is running, the flare wasn't in operation.

**EUGENERATOR-S1: Appears to be in COMPLIANCE**

OHSL operates a 27 kW natural gas emergency backup generator as needed that is subject to the RICE MACT ZZZZ. The generator is programmed to exercise on a weekly basis for the purpose of readiness testing. The hours are recorded on a factory installed control panel with a non-resettable hour meter, logged and reported to the MDEQ-AQD through the Annual MAERS Report. Since January 1<sup>st</sup>, 2017 the generator has operated a total of less than 10 hours. It appears that the generator is meeting the applicable requirements of the MACT.

**EUASBESTOS-S1: Appears to be in COMPLIANCE**

The facility has warning signs, fencing, and/or natural features surrounding the property which should adequately deter access by the general public as required. The facility is keeping all the required records pertaining to asbestos which include the shipping records (waste manifests) of the generator, transporter, and quantity of asbestos accepted. The facility also is maintaining a map that shows the depth and location of the buried asbestos as required.

**FGCOLDCLEANERS-S1: Appears to be in COMPLIANCE**

The facility still uses Safety Kleen to service the cold cleaner and it is located in their maintenance garage and is not a heated unit. It has operational instructions posted on it. Staff has looked at the MSDS sheet during previous inspections and the solvent used does not contain any of the compounds listed under the material limits above 5%.

**OHSL INSPECTION CONCLUSION:** The facility appears to be in **COMPLIANCE** with Section 1 of ROP No. MI-ROP-N5719-2016 at the present time. Staff thanked Chip and Chris for their time and departed the facility at approximately 3:10 p.m.

NAME Matt Desker

DATE 8-3-17

SUPERVISOR MD 8/4/2017