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

N543264164

FACILITY: Southeast Berrien County Landfill Authority		**SRN / ID:** N5432
LOCATION: 3200 Chamberlain Rd., BUCHANAN		**DISTRICT:** Kalamazoo
CITY: BUCHANAN		**COUNTY:** BERRIEN
CONTACT: Tyler Ganus , Landfill Operations Manager - SEBCL		**ACTIVITY DATE:** 08/18/2022
STAFF: Matthew Deskins	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Unannounced Scheduled Inspection		
RESOLVED COMPLAINTS:		

Southeast Berrien County Landfill - FY 2022 Inspection

On August 18, 2022 AQD staff (Matt Deskins) went to conduct an unannounced scheduled inspection of the Southeast Berrien County Landfill (SEBCL) located in Buchanan, Berrien County. SEBCL is a licensed Type II municipal solid waste (MSW) landfill and is currently subject to the following Renewable Operating Permit (ROP) and federal regulations:

ROP No. MI-ROP-N5432-2016a (Note: An ROP Renewal Application was submitted on time and was determined to be Administratively Complete. Thus, the landfill has an Application and Permit Shield in Effect and the Draft ROP is currently out for 30-Day Public Comment). Also, the current ROP contains outdated federal NSPS WWW and/or MACT AAAA regulations which will be replaced by the following federal regulations and/or requirements that are now applicable.

Federal Plan Requirements for MSW Landfills promulgated under 40 CFR Part 62 Subpart OOO. The Federal Plan will apply until a State Plan is Approved or the AQD receives delegation for the Federal Plan. Subpart OOO took effect on June 21, 2021 and essentially replaces Subpart WWW requirements.

National Emission Standard for Hazardous Air Pollutants (NESHAP) for Municipal Solid Waste Landfills promulgated in 40 CFR Part 63 Subparts A and AAAA. This MACT was updated and had an effective date of September 27, 2021.

National Emission Standard for Hazardous Air Pollutants (NESHAP) for Asbestos promulgated in 40 CFR Part 61 Subparts A and M.

Also, back in 2008, SEBCL signed an agreement to lease a portion of their property to North American Natural Resources (NANR) for the construction of a landfill gas to energy facility. NANR was issued a permit (PTI No. 296-08) back then for four stationary 3520 Caterpillar reciprocating internal combustion engines (RICE) and this

permit/facility was incorporated as Section 2 in the SEBCL's ROP. Only three of the four 3520 engines were installed however.

The engines are also subject to 40 CFR Part 60 Subpart JJJJ. Also, the following things have transpired that resulted in SEBCL and/or NANR being subject to additional regulations noted below.

1) Back around 2013 it had come to light that the combustion of landfill gas in internal combustion engines and turbines produces formaldehyde as a by-product. At that time a statewide initiative was undertaken where staff were asked to request an updated PTE from all of their landfills that combust landfill gas with ICEs and/or turbines taking into account with this new information. The updated PTE submitted regarding NANR's engines indicated that they would be major for formaldehyde emissions and thus a major source of HAPs. This ultimately meant they would also be subject to 40 CFR Part 63 Subpart ZZZZ (RICE MACT) and it could also potentially affect the height of their stacks due to air modeling. Since this new information would impact a lot of previously permitted engines at a lot of landfills across the state, upper management made the following decision with regards to how the AQD would proceed with things:

"If a landfill gas to energy facility had internal combustion engines permitted prior to the HAPs issue (Formaldehyde) becoming known and are now major for HAPs, the AQD was not going to pursue any action against them nor re-open any permits. We were only going to recommend that they raise their current stack heights and we would treat them as a major source of HAPs for any future regulations/modifications/etc. moving forward. However, if the facility submits a PTI to modify anything for the previously permitted equipment, the AQD would then address any HAP requirements at that time and include them in their revised permit."

2) It had recently come to light (2019) that some landfills that were using default concentrations to calculate Hydrogen Sulfide (H2S) emissions were vastly under reporting them. Therefore, another statewide initiative was undertaken where AQD staff sent letters to landfills and/or any end user of their landfill gas that weren't using site specific or stack test data for calculating H2S emissions. The letter requested that they do site specific testing using various approved methods that were outlined in the letter and submit a PTE for H2S. Depending on their new PTE, a permit or permit revision may be required. Staff had to send this letter to both SEBCL and NANR. Due to the results of the H2S concentration in the landfill gas and subsequent PTE of H2S being above significance levels, both entities had to submit Permit Applications. SEBCL had to submit one for their Open Flare and NANR had to modify their original permit for their engines. SEBCL was issued PTI No. 182-19 with an effective date of April 10, 2020 and NANR's was issued PTI No. 1-20 with an effective date of June 17, 2020. However, since NANR had to modify their original permit it allowed the AQD to revisit the Formaldehyde issue which was mentioned earlier. The new permit now addresses Formaldehyde emissions and since they are now considered a major source of HAPs because of it, they are now subject to the

RICE MACT (ZZZZ) and those conditions are included as well. Both of these permits included "Source-Wide" SO2 limits and the permits were incorporated into the ROP as Minor Modifications in September of 2020.

3) Lastly, NANR was recently issued PTI No. 96-22 (Effective Date of 7-20-22) to install a fourth engine that was a smaller model (Caterpillar 3516) than the engines that were permitted back in 2008. Due to the PTE of CO now, the facility took a "Source- Wide" PSD Opt-Out limit for it of 244 tons per year. This permit will have to be rolled into the ROP at some point if the engine is installed.

The purpose of the inspection was to determine the landfill's compliance with the preceding federal air regulations as well as any regulations that are still applicable in the facilities Renewable Operating Permit (ROP) No. MI-ROP-N5432-2016a and the recently issued PTI No. 96-22. Staff departed the district office at approximately 9:35 a.m.

Section 2 - North American Natural Resources

Staff decided to inspect NANR first again to hopefully ensure that a plant operator would be present. In the past there wasn't always an operator present after lunch time when staff had inspected the landfill first. Staff arrived at the facility at approximately 10:55 a.m. Staff proceeded into the office area where they introduced them self to Justin Boone and Brandon Boone and stated the purpose of the visit. Staff started off by asking Justin and/or Brandon some general questions about their operations. The following is a summary of those discussions followed by their ROP and PTI requirements along with their compliance status with them.

According to both Justin and Brandon, they had just found out in the past week that all of NANR's facilities and operations had been sold to a company out of Texas called Kinder Morgan and the deal was made official on August 11th. According to Justin, Kinder Morgan is a Fortune 500 company with approximately 12,000 employees. Their main business is the operation of Distribution Pipelines for Oil and Natural Gas along with various Terminals. They said that as of now their jobs are secure and Justin's title is Operations Coordinator and Brandon's is Supervisor of Operations for a certain area here in Michigan. Staff then asked if the Caterpillar 3516 engine that was recently permitted had been installed. They said that it hasn't been and they would be surprised if gets installed. They said they've been told that Kinder Morgan plans to turn the facility into a Renewable Natural Gas (RNG) facility within 18 months. Staff then asked about current facility operations and the following is what staff was told.

As mentioned earlier, only three of the four Caterpillar 3520 internal combustion engines were installed under the original air permit. Staff then asked if they were still the same engines as when staff was there for the last inspection back in 2020. Justin mentioned that all three engines were the same and the following is some information pertaining to each one. Engine #1 has a serial number of GZJ00391 and currently has 93,108 hours on it, Engine #2 has still has a serial number of GZJ00392 and has 84,799 hours on it, and Engine #3 has a serial number of GZJ00393 and currently has 87,549 hours on it. Staff then asked if they still had the Caterpillar 3516 engine at the plant that previously was just being stored and if that was the one being proposed to be installed. Justin mentioned it was still there but wasn't sure if that was the exact engine that was going to be installed.

Staff then asked about current electrical output of the engines and if they can run all three engines at full load. Justin said that the plants current electrical output is averaging around 4.5 MW with each engine operating at almost full load. Each engine is rated at 1.6 MW or 1600 KW and each engine was set to operate at approximately 1545 KW. Staff then asked about vacuum on the hill and landfill gas flow to the plant. Justin said that they currently have 68 inches of vacuum on the landfill with a current flow, which has been pretty consistent, of around 1640 to 1650 scfm being combusted by the engines. He said the methane (CH4) quality of the landfill gas has been ranging around 50% to 51% and O2 around 0.4%.

Staff then went over the requirements of their section of the ROP and those of PTI No. 96-22.

The following are the conditions of Section 2 of the ROP that are still applicable, an updated LFG Treatment System Table which has been included in the ROP Draft Renewal, and PTI No. 96-22.

NOTE: The new federal plan OOO and/or the updated MACT AAAA regulations included more monitoring requirements for the Treatment System than was previously required, so staff deleted that ROP Table and copied and pasted the conditions of the new Treatment System Table. Also, PTI No. 96-22 also updated the Source-Wide Emission Limit Table and the FGRICEMACT Table so I deleted those outdated tables below that are in the ROP.

SECTION 2 of MI-ROP-N5432-2016a

FGENGINES-S2

FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Reciprocating internal combustion engine(s) fueled with treated landfill/digester gas and used to produce electricity. This flexible group includes the emission units below and any subsequent replacements for those units as applicable under R 336.1285(a)(vi).

Landfill gas engines operated by North American Natural Resources, Inc. at the Southeast Berrien County Landfill (SEBCL).

Emission Unit: EUENGINE1-S2, EUENGINE2-S2, EUENGINE3-S2

POLLUTION CONTROL EQUIPMENT

Air-to-fuel ratio controller on each engine.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. NOx	3.0 pph (Limit applies to each engine)	Hourly	EUENGINE1-S2, EUENGINE2-S2, EUENGINE3-S2	SC V.1, SC VI.8	R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d)
2. CO	16.3 pph	Hourly	EUENGINE1-S2,	SC V.1,	R 336.1205(1)(a) & (3),

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
	(Limit applies to each engine)		EUENGINE2-S2, EUENGINE3-S2	SC VI.8	40 CFR 52.21(c) & (d)
3. CO	212.0 tpy (Total for the flexible group)	12-month rolling time period as determined at the end of each calendar month	FGENGINES-S2	SC V.1, SC VI.7, SC VI.8	R 336.1205(1)(a) & (3)
4. SO_2	9.05 pph (Limit applies to each engine)	Hourly	EUENGINE1-S2, EUENGINE2-S2, EUENGINE3-S2	SC V.2, SC VI.8	R 336.1205(1)(a) & (3), 40 CFR 52.21 (c) & (d)
5. SO_2	119.0 tpy (Total for the flexible group)	12-month rolling time period as determined at the end of each calendar month	FGENGINES-S2	SC V.2, SC V.4, SC VI.4, SC VI.8	R 336.1205(1)(a) & (3)
6. VOC (includes formaldehyde)	92.0 tpy (Total for the flexible group)	12-month rolling time period as determined at the end of each calendar month	FGENGINES-S2	SC VI.6, SC VI.8	R 336.1205(1)(a) & (3)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
7. Formaldehyde	**2.08 pph (Limit applies to each engine)**	**Hourly**	**EUENGINE1-S2, EUENGINE2-S2, EUENGINE3-S2**	**SC V.3, SC VI.8**	**R 336.1225(1)[1]**

AQD Comment: Appears to be in COMPLIANCE. Stack testing has indicated Compliance with the emission limits above where testing is the required "Monitoring/Testing Method". As for the 12-Month Rolling Emission Limits, the most recent 12-Month Rolling Time Period ending July of 2022 showed CO at 161.25 tons, SO2 at 49.30 tons, and VOC (including Formaldehyde) at 31.29 tons.

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall only burn treated landfill gas in FGENGINES-S2. (R 336.1225, R 336.1331, R 336.1702)

AQD Comment: Appears to be in COMPLIANCE. They only combust landfill gas.

2. No later than 60 days after permit issuance, the permittee shall submit to the AQD District Supervisor, for review and approval, an updated malfunction abatement/preventative maintenance plan for FGENGINES-S2. After approval of the malfunction abatement/preventative maintenance plan by the AQD District Supervisor, the permittee shall not operate FGENGINES-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. (R 336.1702(a), R 336.1910, R 336.1911, R 336.1912, 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in COMPLIANCE. The facility had submitted a Malfunction Abatement / Preventative Maintenance Plan previously and to staff's knowledge it hasn't needed updating.

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate each engine of FGENGINES-S2 unless an air-to-fuel ratio controller is installed, maintained and operated in a satisfactory manner. (R 336.1702, R 336.1910)

AQD Comment: Appears to be in COMPLIANCE. The engines are equipped with these.

2. The design capacity of each engine of FGENGINES-S2 shall not exceed 2,233 bhp, as specified by the equipment manufacturer. (R 336.1205(1)(a), R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in COMPLIANCE.

3. The permittee shall equip and maintain FGENGINES-S2 with a device to monitor and record the daily fuel usage. (R 336.1205, R 336.1225, R 336.1702)

AQD Comment: Appears to be in COMPLIANCE.

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. Within every 5 years from the date of completion of the most recent stack test, the permittee shall verify NOx and CO emission rates from each engine in FGENGINES-S2, by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in the table below:

Pollutant	Test Method Reference
NOx	40 CFR Part 60, Appendix A
CO	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. 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 AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. 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. (R 336.1205, R 336.1225, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in COMPLIANCE. The facility last conducted testing for CO and NOx on 12-1-21. They have also been conducting CO and NOx testing under the NSPS JJJJ requirements on an annual basis (every 8,760 hours) which would also show compliance with this condition. All test results have indicated compliance with emission limits.

2. Within 180 days of permit issuance and every 5 years thereafter, the permittee shall verify SO_2 emission rates from each engine in FGENGINES-S2, by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in the table below:

Pollutant	Test Method Reference
SO_2	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. 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 AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. 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. (R 336.1205, R 336.1225, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in COMPLIANCE. The last stack test for SO2 was done on 12-1-20 and the results indicated compliance with the emission limit.

3. Within 180 days of permit issuance and every 5 years thereafter, the permittee shall verify the formaldehyde emissions from each engine in FGENGINES-S2. The permittee shall verify formaldehyde emission rates from each engine in FGENGINES-S2, by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in the table below:

Pollutant	Test Method Reference
Formaldehyde	40 CFR Part 60, Appendix A; or Method 320 of Appendix A of 40 CFR Part 63

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. 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 AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. 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. (R 336.1225, R 336.2001, R 336.2003, R 336.2004)

AQD Comment: Appears to be in COMPLIANCE. The last stack test for formaldehyde was done on 12-1-20 and the results indicated compliance with the emission limit.

4. The permittee shall verify the hydrogen sulfide (H_2S) or total reduced sulfur (TRS) content of the landfill gas burned in FGENGINES-S2 monthly by gas sampling (e.g. Draeger Tubes, Tedlar Sampling Bags, etc.) and semi-annually by gas sampling using an EPA approved method and laboratory analysis, at the owner's expense, in accordance with Department requirements. If at any time, the H_2S (TRS equivalent) concentration of the landfill gas sample exceeds 1500 ppmv, the permittee shall sample and record the H_2S (TRS equivalent) concentration of the landfill gas weekly and shall review all operating and maintenance activities for the landfill gas collection and treatment system along with keeping records of corrective actions taken. Once the H_2S (TRS equivalent) concentration of the landfill gas (determined from 4 weekly samples) is maintained below 1500 ppmv for one month after an exceedance, the permittee may resume monthly monitoring and recordkeeping. No less than 30 days prior to the initial test for each type of gas sampling, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to the first test for each type of gas sampling. Thereafter, the permittee shall submit a test plan upon the request of the AQD District Supervisor or if any changes are made to the approved testing protocol. The permittee shall keep all records on file at the facility and make them available to the Department upon request. (R 336.1205(3), R 336.1225, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21 (c) & (d))

AQD Comment: Appears to be in COMPLIANCE. Draegar Tube samples has indicated concentrations between 625 and 1000 ppm. The last two Semi-Annual lab analysis (Suma Cannisters) had indicated concentrations of 1,000 ppm and 860 ppm.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar

month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205, R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))**

AQD Comment: Appears to be in COMPLIANCE.

2. The permittee shall continuously monitor and record, in a satisfactory manner, the landfill gas usage for FGENGINES-S2. **(40 CFR 52.21(c) & (d))**

AQD Comment: Appears to be in COMPLIANCE.

3. The permittee shall keep, in a satisfactory manner, records of gas sampling and analysis for H_2S or TRS concentration in the landfill gas routed to FGENGINES-S2. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), R 336.1224, R 336.1225, R 336.1901, 40 CFR 52.21 (c) & (d))**

AQD Comment: Appears to be in COMPLIANCE.

4. The permittee shall calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling total SO_2 mass emissions for FGENGINES-S2. Calculations shall be performed according to Appendix A. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1) (a) & (3), 40 CFR 52.21 (c) & (d)))**

AQD Comment: Appears to be in COMPLIANCE and the following is Appendix A that is referenced.

APPENDIX A

Calculations for Criteria Pollutants

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The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in FGENGINES-S2.

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<u>SO_2 Mass Emissions</u>

The following calculation for SO_2 emissions shall utilize the actual gas usage, actual hours of operation, and the sulfur concentration from gas sampling and/or a gas chromatograph.

SO_2 = [(scf/month) x ($ppmv_{sulfur}$ *1E-06) x (MW_{SO2})] ÷ [(R x T)] = pounds/month

Where:

Scf/month = standard cubic feet per month gas flow

$ppmv_{sulfur}$ = parts per million by volume of Sulfur in the gas

MW_{SO2} = Molecular Weight of SO_2 = 64.066 lb/lb-mol

H = Actual Hours of Operation per month

R = Universal Gas Constant = 0.7302 atm-ft^3/lb-mol-R

T = Standard Temperature (absolute) = 519 R

5. The permittee shall calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling NO_X and CO mass emissions for FGENGINES-S2. Calculations shall be performed using the most recent stack test data for NOx and CO emissions. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), 40 CFR 52.21 (c) & (d))**

AQD Comment: Appears to be in COMPLIANCE.

6. The permittee shall calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling total VOC (including formaldehyde) mass emissions for FGENGINES-S2. Calculations shall be performed using the most recent stack test data for VOC and formaldehyde emissions. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1) (a) & (3), 40 CFR 52.21 (c) & (d))**

AQD Comment: Appears to be in COMPLIANCE.

7. The permittee shall maintain the following record for each engine in FGENGINES-S2. The following information shall be recorded and kept on file at the facility:

a) Engine manufacturer.

b) Date engine was manufactured.

c) Engine model number.

d) Engine horsepower.

e) Engine serial number.

f) Engine specification sheet.

g) Date of initial startup of the engine.

h) Date engine was removed from service at this stationary source.

All of the above information shall be stored in a format acceptable to the AQD District Supervisor. (R 336.1205, R 336.1225, R 336.1301, R 336.1331, R 336.1702, R 336.1910, R 336.1911, R 336.1912, 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in COMPLIANCE.

8. The permittee shall maintain records of all information necessary for all notifications and reports for FGENGINES-S2, as specified in these special conditions as well as that information necessary to demonstrate compliance with the emission limits of this permit. This information shall include, but shall not be limited to the following:

a. Compliance tests and any testing required under the special conditions of this permit.
b. Monitoring data for the hours of operation, volumetric flow rate and landfill gas usage.
c. Calculated amount of landfill gas combusted in each engine on a monthly and 12-month rolling basis.
d. Hours of operation on a monthly and 12-month rolling basis.
e. Monthly average Btu content of the landfill gas burned.
f. Manufacturer's data, specifications, and operating and maintenance procedures for each engine.
g. Maintenance activities conducted according to the PM/MAP for each engine.
h. All calculations necessary to show compliance with the limits contained in this permit.

All of the above information shall be stored in a format acceptable to the AQD District Supervisor. (R 336.1205, R 336.1225, R 336.1301, R 336.1331, R 336.1702 (a), R 336.1910, R 336.1911, R 336.1912, 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in COMPLIANCE with all the above.

VII. REPORTING

1. The permittee shall notify the AQD district office within 15 days of when the frequency of the gas sampling changes for any reason. **(R 336.1201(3))**

AQD Comment: Appears to be in COMPLIANCE and no change in sampling frequency has been needed todate.

2. The permittee shall notify the AQD District Supervisor of an engine change-out and submit a description of the engine and acceptable emissions data to show that the alternate engine is equivalent-emitting or lower-emitting. The data shall be submitted within 30-days of the engine change out. **(R 336.1205, R 336.1702(a), R 336.1911, 40 CFR 52.21 (c) & (d))**

AQD Comment: Appears to be in COMPLIANCE. This has been N/A to date.

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:

AQD Comment: Appears to be in COMPLIANCE with the above stack dimensions of a maximum exhaust daimeter of 16.1 inches and minimum height above ground level of 48.0 feet.

Footnotes:

[1] This condition is state only enforceable and was established pursuant to Rule 201 (1)(b).

FGRICENSPS-S2

FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Non-emergency engine(s) greater than 500 hp, fueled with landfill gas. Engine(s) ordered after June 12, 2006 and manufactured on or after July 1, 2007.

Emission Unit: EUENGINE1-S2, EUENGINE2-S2, EUENGINE3-S2

POLLUTION CONTROL EQUIPMENT

Air-to-fuel ratio controller on each engine.

I. EMISSION LIMIT

AQD Comment: Appears to be in COMPLIANCE with the NOx emission limit of 3.0 g/hp/hr, CO limit of 5.0 g/hp/hr and VOC limit of 1.0 g/hp/hr. The facility has been conducting this testing annually (every 8,760 hours) and has been in compliance with the limits.

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall operate and maintain each engine in FGRICENSPS-S2 such that it meets the emission limits established, over the entire life of the engine. **(40 CFR 60.4234, 40 CFR 60.4243(b))**

AQD Comment: Appears to be in COMPLIANCE. Staff has to assume that they operate and maintain the engine properly.

2. If the permittee purchased a non-certified engine or a certified engine operating in a non-certified manner, the permittee shall keep a maintenance plan for each engine in FGRICENSPS-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. **(40 CFR 60.4243(b))**

AQD Comment: Appears to be in COMPLIANCE. The facility has a maintenance plan for the engines.

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain each engine in FGRICENSPS-S2 with non-resettable hours meters to track the operating hours. (40 CFR 60.4243)

AQD Comment: Appears to be in COMPLIANCE.

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall conduct an initial performance test shall, except as provided in 40 CFR 60.4243(b), for each engine in FGRICENSPS-S2 within one year after startup of the engine and every 8760 hours of operation (as determined through the use of a non-resettable hour meter) or three years, whichever occurs first, to demonstrate compliance with the emission limits in 40 CFR 60.4233(e). If a performance test is required, the performance tests shall be conducted according to 40 CFR 60.4244. No less than 30 days prior to any testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan 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. **(40 CFR 60.8, 40 CFR 60.4243, 40 CFR 60.4244, 40 CFR 60.4245, 40 CFR Part 60 Subpart JJJJ)**

AQD Comment: Appears to be in COMPLIANCE. The facility has been conducting this testing annually (every 8,760 hours).

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. If the permittee purchased a non-certified engine or a certified engine operating in a non-certified manner, the permittee shall keep a maintenance plan and records of conducted maintenance for each engine in FGRICENSPS-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. **(40 CFR 60.4243(b))**

AQD Comment: Appears to be in COMPLIANCE.

VII. REPORTING

1. The permittee shall submit an initial notification as required by 40 CFR 60.7(a)(1) for each engine in FGRICENSPS-S2 if the engine(s) installed is/are not certified by an engine manufacturer to meet the emission standards in 40 CFR 60.4231. The notification shall include the information below, as specified in 40 CFR 60.4245 (c)(1) through (5):

   a) Name and address of the owner or operator. (40 CFR 60.4245(c)(1))

   b) The address of the affected source. (40 CFR 60.4245(c)(2))

   c) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement. (40 CFR 60.4245(c)(3))

   d) Emission control equipment. (40 CFR 60.4245(c)(4))

   e) Fuel used. (40 CFR 60.4245(c)(5))

The permittee shall submit the initial notification to the AQD District Supervisor in an acceptable format within 30 days of commencing construction of any engine in FGRICENSPS-S2. (40 CFR Part 60 Subpart JJJJ)

AQD Comment: Appears to be in COMPLIANCE.

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the New Source Performance Standards, as specified in 40 CFR Part 60, Subpart A and Subpart JJJJ, as they apply to each engine in FGRICENSPS-S2. **(40 CFR Part 60 Subparts A and JJJJ)**

AQD Comment: Appears to be in COMPLIANCE.

Footnotes:

[1] This condition is state only enforceable and was established pursuant to Rule 201 (1)(b).

NOTE REGARDING TREATMENT SYSTEM CONDITIONS BELOW: The Treatment System equipment at the landfill and/or NANR is not what you typically see at most engines plant. Whereas most engine plants have their own compressors, filters, etc., this one is set-up where the open flare skid has the equipment that technically meets the requirements of a treatment system with filtering, dewatering (condensate knock-out), blower (vacuum on one end and compression on the other), etc. There is also a "Gas Chiller" located after this equipment for cooling the gas. Also, staff deleted anything that was listed as N/A.

FGTREATMENTSYS-AAAA

FLEXIBLE GROUP CONDITIONS

DESCRIPTION

A treatment system that filters, de-waters, and compresses landfill gas for subsequent sale or beneficial use. This flexible group contains 40 CFR Part 63, Subpart AAAA requirements.

Emission Unit: EUTREATMENTSYS

POLLUTION CONTROL EQUIPMENT

Any emissions from any atmospheric vents or stacks associated with the treatment system subject to 40 CFR 63.1959(b)(2)(iii)(A) or (B).

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee must operate the treatment system at all times when the collected gas is routed to the treatment system. **(40 CFR 63.1958(f))**

AQD Comment: Appears to be in COMPLIANCE. Staff was told that the facility operates the system whenever landfill gas is routed to it and it was in operation during the inspection

2. The permittee must operate the treatment system so that any emissions from any atmospheric vents or stacks associated with the treatment system must comply with 40 CFR 63.1959(b)(2)(iii)(A) or (B). **(40 CFR 63.1959(b)(2)(iii)(C) and (D))**

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

3. The permittee must develop a site-specific treatment system monitoring plan as required in 40 CFR 63.1983(b)(5)(ii). The plan must at a minimum contain the following: (40 CFR 63.1961(g))

a. Monitoring of filtration, de-watering, and compression parameters that ensure the treatment system is operating properly for each intended end use of the treated landfill gas. **(40 CFR 63.1983(b)(5)(ii)(A))**
b. Monitoring methods, frequencies, and operating ranges for each monitored operating parameter based on manufacturer's recommendations or engineering analysis for each intended end use of the treated landfill gas. **(40 CFR 63.1983 (b)(5)(ii)(B))**
c. Documentation of the monitoring methods and ranges, along with justification for their use. **(40 CFR 63.1983(b)(5)(ii)(C))**
d. List of responsible staff (by job title) for data collection. **(40 CFR 63.1983(b)(5) (ii)(D))**
e. Processes and methods used to collect the necessary data. **(40 CFR 63.1983 (b)(5)(ii)(E))**
f. Description of the procedures and methods that are used for quality assurance, maintenance, and repair of all continuous monitoring systems (CMS). **(40 CFR 63.1983(b)(5)(ii)(F))**

AQD Comment: Appears to be in COMPLIANCE with above. The facility has a plan and monitors all the items that it can. As was mentioned earlier, the "Treatment System" at this facility technically meets the three requirements as set forth by the EPA regulation but it is not the equipment that is typically used at most energy plants.

4. The monitoring requirements apply at all times the treatment system is operating except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities. The permittee must complete monitoring system repairs in

response to monitoring system malfunctions and to return the monitoring system to operation as expeditiously as practicable. **(40 CFR 63.1961(h))**

AQD Comment: Will assume to be in COMPLIANCE.

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee must install and properly operate a treatment system in accordance with 40 CFR 63.1981(d)(2). **(40 CFR 63.1961(d))**

AQD Comment: Appears to be in COMPLIANCE.

2. The permittee must install, calibrate, and maintain a gas flow rate measuring device that records the flow to the treatment system at least every 15 minutes; and secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. **(40 CFR 63.1961(g))**

AQD Comment: Appears to be in COMPLIANCE.

VI. MONITORING/RECORDKEEPING

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

1. The permittee must keep monthly records of all treatment system operating parameters specified to be monitored according to 40 CFR 63.1961. The records must include:
   a. Continuous records of the indication of flow and gas flow rate to the treatment system. **(40 CFR 63.1983(c)(2))**
   b. The indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines. **(40 CFR 63.1983(c)(2))**
   c. Maintenance and repair of the monitoring system. **(40 CFR 63.1961(h))**

AQD Comment: Appears to be in COMPLIANCE

VII. REPORTING

AQD Comment: Appears to be in COMPLIANCE with all the Reporting Conditions Below.

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 must submit to the appropriate AQD District Office semiannual reports for the landfill gas treatment system. The reports must be 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. The reports must include the following:

a. The number of times the parameters for the treatment system under 40 CFR 63.1961 (g) were exceeded. **(40 CFR 63.1981(h)(1)(iii)**
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. **(40 CFR 63.1981(h)(2))**
c. Description and duration of all periods when the treatment system was not operating and length of time the treatment system was not operating. **(40 CFR 63.1981(h)(3))**

5. The permittee must submit reports electronically according to the following:
    a. Within 60 days after the date of completing each performance test required, submit the results of the performance test with data collected using test methods supported by the USEPA's Electronic Reporting Tool (ERT) as listed on the USEPA's ERT website (https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert). Submit the results of the performance test to the USEPA via the Compliance and Emissions Data Reporting Interface (CEDRI), which can be accessed through the USEPA's CDX (https://cdx.epa.gov/). The data must be submitted in a file format generated through the use of the USEPA's ERT. Alternatively, submit an electronic file consistent with the extensible markup language (XML) schema listed on the USEPA's ERT website. **(40 CFR 63.1981(l)(1)(i)**

b. For data collected using test methods that are not supported by the USEPA's ERT as listed on the USEPA's ERT website, the results of the performance test must be included as an attachment in the ERT or an alternate electronic file consistent with the XML schema listed on the USEPA's ERT website. Submit the ERT generated package or alternative file to the USEPA via CEDRI. **(40 CFR 63.1981(l)(1)(ii)**

c. Each permittee must submit reports to the USEPA via CEDRI. CEDRI can be accessed through the USEPA's CDX. The permittee must use the appropriate electronic report in CEDRI for this subpart or an alternate electronic file format consistent with the XML schema listed on the CEDRI website (https://www.epa.gov/chief). Once the spreadsheet template upload/forms for the reports have been available in CEDRI for 90 days, the permittee must begin submitting all subsequent reports via CEDRI. The reports must be submitted by the deadlines specified in this subpart, regardless of the method in which the reports are submitted. The semiannual reports should be electronically reported as a spreadsheet template upload/form to CEDRI. If the reporting forms specific to this subpart are not available in CEDRI at the time that the reports are due, the permittee must submit the reports to the USEPA at the appropriate address listed in 40 CFR 63.13. **(40 CFR 63.1981(l)(2))**

6. The permittee shall submit any performance test reports and all other reports required by 40 CFR Part 63, Subpart AAAA to the appropriate AQD District Office, in a format approved by the appropriate AQD District Supervisor. **(R 336.1213(3)(c), R 336.2001 (5))**

IX. OTHER REQUIREMENT(S)

1. The permittee must comply with all applicable provisions of the National Emissions Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills as specified in 40 CFR Part 63, Subparts A and AAAA. **(40 CFR Part 63, Subparts A and AAAA)**

AQD Comment: Appears to be in COMPLIANCE

Footnotes:

[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).

[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

The following are the Conditions of PTI No. 96-22 that are currently applicable. The conditions pertaining to the Caterpillar 3516 engine (Engine 4) are not included since the engine has not been installed to date. Also, staff deleted any conditions listed as N/A.

FGRICEMACT-S2

FLEXIBLE GROUP CONDITIONS

DESCRIPTION

New, existing, and reconstructed non-emergency engines greater than 500 hp fueled with landfill/digester gas, located at a major source of HAPs. Construction or reconstruction commenced on or after December 19, 2002.

Emission Unit: EUENGINE1-S2, EUENGINE2-S2, EUENGINE3-S2, EUENGINE4-S2

POLLUTION CONTROL EQUIPMENT

Air-to-fuel ratio controller on each engine.

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Each engine in FGRICEMACT-S2 shall operate in a manner which reasonably minimizes HAP emissions.**(40 CFR 63.6625(c))**

AQD Comment: Appears to be in COMPLIANCE. Staff assumes this is being done.

2. Each engine in FGRICEMACT-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. **(40 CFR 63.6625(h))**

AQD Comment: Appears to be in COMPLIANCE. Staff assumes this is being done.

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. FGRICEMACT-S2 shall equip and maintain a fuel meter to monitor and record the daily fuel usage and volumetric flow rate of the landfill gas used. **(40 CFR 63.6625(c)**

AQD Comment: Appears to be in COMPLIANCE.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The engines in FGRICEMACT-S2, which fire 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. **(40 CFR 63.6625(c))**

AQD Comment: Appears to be in COMPLIANCE. The engines only consume landfill gas.

VII. REPORTING

1. The permittee shall submit an annual report for FGRICEMACT-S2 in accordance with Table 7 of 40 CFR Part 63, Subpart ZZZZ to the appropriate AQD district office by no later than January 31. The following information shall be included in this annual report: (40 CFR 63.6650(g))

a. The fuel flow rate and the heating values that were used in the permittee's calculations. 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. **(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. **(40 CFR 63.6650(g)(3), 40 CFR 63.6650(g), 40 CFR 63.6650(b)(5))**

AQD Comment: Appears to be in COMPLIANCE.

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 FGRICEMACT-S2. **(40 CFR Part 63 Subparts A and ZZZZ)**

AQD Comment: Appears to be in COMPLIANCE.

Footnotes:

[1] This condition is state only enforceable and was established pursuant to Rule 201 (1)(b).

FGFACILITY CONDITIONS

DESCRIPTION

The following conditions apply source-wide to all process equipment including equipment covered by other permits, grand-fathered equipment, and exempt equipment.

I. EMISSION LIMIT(S)

Iutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
SO_2	144.0 tpy (based on Flare max capacity	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	SC VI.2	R 336.1205(1) (a) & (b)

lutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
	and 1500 ppm Sulfur)				
CO	244.0 tpy (based on RICE max capacity)	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	SC VI.3	R 336.1205(1) (a) & (b)

AQD Comment: Appears to be in COMPLIANCE. 12-Month Rolling SO2 emissions ending July of 2022 indicated them at 49.98 tons for both the flare and engines. CO emissions for the same time frame were at 161.76 tons.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Landfill gas combusted	2,200 scfm	Continuously	EUOPENFLARE-S1	SC VI.4	R 336.1205 (1)(a) & (b),
2. Landfill gas combusted	2,070 scfm	Continuously	EUENGINE1-S2, EUENGINE2-S2, EUENGINE3-S2, EUENGINE4-S2, (combined)	SC VI.4	R 336.1205 (1)(a) & (b)

AQD Comment: Appears to be in COMPLIANCE with the above. Current flow coming from the landfill has been consistently around 1650 scfm whether it is going to the flare or the engines. The flare of course is a back-up control device should the engine plant go down.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 30th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. (R 336.1205(1)(a) & (b), 40 CFR 52.21 (c) & (d))

AQD Comment: Appears to be in COMPLIANCE.

2. The permittee shall calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling total SO_2 mass emissions for FGFACILITY. Calculations shall be performed according to Appendix A. The permittee shall keep all records on file and make them available to the Department upon request. (R 336.1205(1)(a) & (b), 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in COMPLIANCE and the following is Appendix A that is referenced.

APPENDIX A

Calculations for Criteria Pollutants

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in FGENGINES-S2.

SO_2 Mass Emissions

The following calculation for SO_2 emissions shall utilize the actual gas usage, actual hours of operation, and the sulfur concentration from gas sampling and/or a gas chromatograph.

$$SO_2 = [(scf/month) \times (ppmv_{sulfur} * 1E\text{-}06) \times (MW_{SO2})] \div [(R \times T)] = pounds/month$$

Where:

Scf/month = standard cubic feet per month gas flow

$ppmv_{sulfur}$ = parts per million by volume of Sulfur in the gas

MW_{SO2} = Molecular Weight of SO_2 = 64.066 lb/lb-mol

H = Actual Hours of Operation per month

R = Universal Gas Constant = 0.7302 atm-ft^3/lb-mol-R

T = Standard Temperature (absolute) = 519 R

3. The permittee shall calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling total CO mass emissions for FGFACILITY. Calculations shall be performed using the most recent operating parameters and tested emission factors. The permittee shall keep all records on file and make them available to the Department upon request. (R 336.1205(1)(a) & (b), 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in COMPLIANCE.

4. The permittee shall continuously monitor and record, in a satisfactory manner, the landfill gas combusted in EUOPENFLARE-S1 and the combined amount in EUENGINE1-S2, EUENGINE2-S2, EUENGINE3-S2, EUENGINE4-S2. (40 CFR 52.21 (c) & (d))

AQD Comment: Appears to be in COMPLIANCE.

After reviewing all the records, Staff and Justin went out into the engine room and staff verified the engines were still the same and that the 3516 was just being stored. Staff then proceeded outside the plant to look at the "landfill gas chiller" that makes up part of the landfill gas treatment system. It was operating and staff also looked at the open flare while they were there since it is located right adjacent to the plant. It was not operating since the engine plant was on-line. Staff thanked Justin and Brandon for their time and departed at approximately 12:30 p.m.

NANR INSPECTION CONCLUSION: The facility appears to be in COMPLIANCE with Section 2 of MI-ROP-N5432-2016a, the applicable Federal Plan OOO and MACT AAAA

requirements for operation of the Treatment System, and PTI No. 96-22 at the present time.

Section 1 - Southeast Berrien County Landfill

Staff arrived at the SEBCL at approximately 1:00 p.m. after the NANR inspection and having lunch. Staff met with Jacob Cress (Environmental Compliance Manager) and stated the purpose of the visit. In an effort to save time on site, staff asked that Jacob e-mail him the various records they needed to review and he did so the following morning of August 19th.

The following is a summary of staff's discussion with Jacob while as well as comments staff had regarding their ROP and/or the new federal regulations that apply to them.

According to Jacob, SEBCL takes in 800 to 1000 tons of waste per day on average. The landfill still operates Monday through Friday from 7 a.m. until 5 p.m. and works one Saturday per month from 8:00 until noon during the months of June through September. The landfill also includes a Recycling Center next door to the landfill office that's intended to be used by residents of area municipalities. Staff then asked Jacob if they've received any odor complaints from nearby residents because we haven't received any in years. Jacob said that they did get one in the past year and they seem to have taken care of the issue by increasing vacuum on portions of the north slope. Staff went on to ask about any scheduled GCCS work for this year and Jacob stated that they plan to install some additional header piping and re-drill some of the wells in October. Staff then asked if they do any leachate recirculation to which Jacob said they did not. He said that all leachate still goes to the POTW whether by truck or their sewer discharge, although they haven't had to truck any off in quite a while. Staff then asked how the SBR (Sequencing Batch Reactor) leachate treatment system was working. Jacob said that it's been working good and that they treat about 20,000 gallons a day. Staff then asked some more operational type questions that will be covered below under the various emission units. Staff also went on a tour of the landfill prior to departing.

The following is a summary of the facilities emission groups, flexible groups, the inspection staff conducted, and the facilities compliance status.

EULANDFILL: Appears to be in COMPLIANCE

As mentioned previously, SEBCL is currently taking in, on average, 800 to1000 tons of waste per day. They are keeping track of the waste acceptance rates and that is also a requirement of Part 115 that the Materials Management Division (MMD) administers. As mentioned previously, they do not re-circulate any leachate and it all ends up going to the POTW in Buchanan after it has gone through a nitrification treatment process (SBR) due to it having excessive ammonia in it. The facility has an approved active gas collection system and control device (Open Flare). The flare is used as a back-up control device should NANR's engines go down. The landfill has been conducting quarterly surface emissions monitoring and they appear to be keeping the appropriate records as required. An employee named Josh Eagleson conducts the surface emissions monitoring with a Landtec SEM 500. Staff later reviewed all the records for the last 4 quarters which included instrument calibration data, the route traversed while conducting the monitoring, and if any exceedences were documented. Staff noted that any exceedences that were documented were taken care of in the appropriate timeframes. They are also conducting cover integrity checks once a month as required and they typically conduct these either during the monthly well monitoring or when doing the quarterly surface emissions monitoring. The facility has been submitting the required Semi-Annual and/or Annual ROP Certification Reports as required and SSM Reporting is no longer applicable.

EUACTIVECOLL: 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 which meets requirements. The header pipe and lateral lines are HDPE and the well casings are PVC schedule 80. The facility keeps an ASBUILT drawing showing the existing collection system and proposed expansion areas. The facility currently has 118 gas wells, including horizontals, and the monthly monitoring is done using an Elkins Envision gas analyzer. The wells are all equipped with either Landtech, QED, or Elkins wellheads. Josh Eagleson also does the wellfield monitoring and they are recording static pressure (vacuum), oxygen, and temperature as required. Under the new federal regulations, landfills still have to monitor for either oxygen or nitrogen, but there is no longer a limit associated with them. Staff then asked how many wells had condensate pumps in them and Jacob mentioned that about 20 currently do. Staff later reviewed the previous six months of data and the facility has also been taking corrective action in the required time frames. The facility has been submitting the required Semi-Annual and/or Annual ROP Certification Reports as required and SSM Reporting is no longer applicable.

EUOPENFLARE: Appears to be in COMPLIANCE

The facility has an open flare that is used for back-up purposes should the NANR facility shut down. The flare is a skid mounted unit and the manufacturer is Calidus with a flow rating capacity of 200 to 2200 scfm. The control panel of the flare has been retrofitted with John Zink instrumentation. The open flare is equipped with a

Yokogawa electronic data logger that records flow and temperature. The information gets downloaded weekly to their computer if it has been operating. The flare is also equipped with a thermocouple to monitor the continuous presence of a flame. The flare is not equipped with any type of bypass and should the flare shut down while in use, a pneumatic valve (operated by a nitrogen tank) automatically closes preventing emissions from venting to the atmosphere. They have two blowers now that act as the vacuum source on the wellfield with one being a back-up unit as well as allowing the landfill to alternate operations between the two. The following are the Special Conditions for the Open Flare along with the associated Appendices that have since been rolled into the ROP following a Minor Modification. These conditions have been updated in the Draft ROP Renewal to change and/or delete the outdated NSPS and/or MACT UARs.

EUOPENFLARE-S1

EMISSION UNIT CONDITIONS

DESCRIPTION

One landfill gas open utility flare with a rated design capacity of 2,200 scfm, used to control excess landfill gas or when the landfill gas to energy plant is down.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. SO_2	33.4 pph	Hourly	EUOPENFLARE-S1	SV.3, SC VI.2 SC VI.7	40 CFR 52.21 (c) & (d)
2. SO_2	144.0 tpy			SV.3,	

AQD

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
		12-month rolling time period as determined at the end of each calendar month	EUOPENFLARE-S1	SC VI.2, SVI.7	R 336.1205(1)(a) & (3)
3. CO	0.37 lb/MMBTU	Hourly	EUOPENFLARE-S1	SC V.1, SC VI.2, SC VI.3	40 CFR 52.21 (d)
4. CO	113.0 tpy	12-month rolling time period as determined at the end of each calendar month	EUOPENFLARE-S1	SC V.1, SC VI.2, SC VI.3, SC VI.8	R 336.1205(1)(a) & (3)

Comment: Appears to be in COMPLIANCE. 12-Month Rolling Records reviewed by staff ending July of 2022 indicated SO2 emissions at 0.47 tons and CO at 0.68 tons. The flare is only used as a back-up control device as mentioned earlier.

II. MATERIAL LIMIT(S)

AQD Comment: Appears to be in COMPLIANCE with the landfill gas having a btu content equal to or greater than 200. The facility did an initial performance test on the flare years ago and met this value. Since landfill gas has approximately ½ the btu content of natural gas, an average landfill gas concentration of 50% methane would have about 500 btus.

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. No later than 60 days after issuance of EUOPENFLARE-S1, the permittee shall submit to the AQD District Supervisor, for review and approval, a preventative

maintenance / malfunction abatement plan (PM / MAP) for EUOPENFLARE-S1. After approval of the PM / MAP by the AQD District Supervisor, the permittee shall not operate EUOPENFLARE-S1 unless the PM / MAP, 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 at any time the PM / MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the PM / MAP within 45 days after such an event occurs. The permittee shall also amend the PM / MAP within 45 days, if new equipment is installed or upon request from the AQD District Supervisor. The permittee shall submit the PM / MAP and any amendments to the PM / MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the PM / MAP or amended PM / MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. (R 336.1205(1)(a) & (3), R 336.1224, R 336.1225, R 336.1910, R 336.1911, R 336.1912)

AQD Comment: Appears to be in COMPLIANCE. The landfill submitted a PM/MAP for their open flare.

2. The permittee shall operate the landfill gas collection system such that all collected gases are vented to a control system designed and operated in compliance with 40 CFR 60.752(b)(2)(iii). In event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within one hour. (40 CFR 60.752(b)(2)(ii), 40 CFR 60.753(e), 40 CFR 63.1955(a))

AQD Comment: Appears to be in COMPLIANCE.

3. The permittee shall operate EUOPENFLARE-S1 at all times when the collected gas is routed to it. **(40 CFR 60.752(b)(2)(iii)(A), 40 CFR 60.753(f), 40 CFR 63.1955(a))**

AQD Comment: Appears to be in COMPLIANCE.

4. The permittee shall operate EUOPENFLARE-S1 with no visible emissions, as determined by the methods specified in 40 CFR 60.18(f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. **(40 CFR 60.18(c)(1))**

AQD Comment: Appears to be in COMPLIANCE. The flare hardly runs and when it does, VEs haven't been an issue to AQD knowledge.

5. The permittee shall operate EUOPENFLARE-S1 with a pilot flame present at all times, as determined by the methods specified in 40 CFR 60.18(f). **(40 CFR 60.18(c)(2))**

AQD Comment: Appears to be in COMPLIANCE.

6. Non-assisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), less than 18.3 m/sec (60 ft/sec), except as provided in 40 CFR 60.18(c)(4)(ii) and (iii). **(40 CFR 60.18(c)(4)(i))**
   a. Non-assisted flares designed for and operated with an exit velocity, equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 BTU/scf). **(40 CFR 60.18(c)(4)(ii))**
   b. Non-assisted flares designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4) less than the velocity, Vmax, as determined by the method specified in 40 CFR 60.18(f)(5), and less than 122 m/sec (400 ft/sec) are allowed. **(40 CFR 60.18(c)(4)(iii))**

AQD Comment: Appears to be in COMPLIANCE.

7. The permittee shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a heat sensing device for EUOPENFLARE-S1, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame for EUOPENFLARE-S1. (40 CFR 60.756(c)(1), 40 CFR 63.1955(a))

AQD Comment: Appears to be in COMPLIANCE. The open flare is equipped with a thermocouple.

8. The permittee shall install, calibrate, maintain, and operate according to the manufacturer's specifications, a landfill gas flow rate measuring device for EUOPENFLARE-S1 to record the flow to or bypass of the flare at least every 15 minutes. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.1702, 40 CFR 60.756(c)(2))**

AQD Comment: Appears to be in COMPLIANCE.

9. The provisions of NSPS 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 EUOPENFLARE-S1. **(40 CFR 60.755(e), 30 CFR 63.1955(a))**

AQD Comment: Appears to be in COMPLIANCE.

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The nameplate capacity of EUOPENFLARE-S1 shall not exceed 2,200 scfm, as specified by the equipment manufacturer. (R 336.1205(1)(a) & (3), R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in COMPLIANCE.

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall verify the net heating value of the combusted landfill gas, as required in 40 CFR 60.752(b)(2)(iii)(A) for EUOPENFLARE-S1. The net heating value of the combusted landfill gas determined in 40 CFR 60.18(f)(3) is calculated from the concentration of methane in the landfill gas as measured by Method 3C and the calculation in Appendix 7-S1. A minimum of three 30-minute Method 3C samples are determined. The measurement of other organic components, hydrogen, and carbon monoxide is not applicable. After initial compliance, the permittee may use an alternative method and frequency for determining the net heating value, as approved by the AQD Supervisor and described in Appendix B. (R 336.1205(1)(a) & (3), 40 CFR 60.752(b)(2)(iii)(A), 40 CFR 60.754(e))

AQD Comment: Appears to be in COMPLIANCE. The facility conducted this testing years ago during the initial performance test and the landfill gas met the net heating value.

2. The permittee shall evaluate visible emissions from EUOPENFLARE-S1, as required by federal Standards of Performance for New Stationary Sources, at owner's expense, in accordance 40 CFR Part 60, Subparts A and WWW. Visible emission observation procedures must have prior approval by the AQD. After initial compliance, the permittee may use an alternative method and frequency for determining the visible emissions, as approved by the AQD Supervisor. (40 CFR 60.18(f)(1), 40 CFR 60.752(b)(2)(iii)(A))

AQD Comment: Appears to be in COMPLIANCE. VEs had been evaluated years ago during the initial performance test. VEs haven't been an issue with the flare when it's been operational to AQD knowledge.

3. Within 45 days of permit issuance, the permittee shall verify the hydrogen sulfide (H_2S) or total reduced sulfur (TRS) content of the landfill gas burned in EUOPENFLARE-S1 weekly by gas sampling (e.g., Draeger Tubes, Tedlar Sampling Bags, etc.) and semi-annually by gas sampling using an EPA approved method and laboratory analysis, at the owner's expense, in accordance with Department requirements. If at any time, the H_2S (TRS equivalent) concentration of the landfill gas sample exceeds 1500 ppmv, the permittee shall sample and record the H_2S (TRS equivalent) concentration of the landfill gas daily and shall review all operating and maintenance activities for the landfill gas collection and treatment system along with keeping records of corrective actions taken. Once the H_2S (TRS equivalent) concentration of the landfill gas (determined from five consecutive daily samples) is maintained below 1500 ppmv the permittee may resume monthly/weekly monitoring and recordkeeping. Permittee may use H_2S (TRS equivalent) testing conducted at the gas to energy plant to comply with the above testing requirement when the flare is down but the plant is operating.

No less than 30 days prior to the initial test for each type of gas sampling, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to the first test for each type of gas sampling. Thereafter, the permittee shall submit a test plan upon the request of the AQD District Supervisor or if any changes are made to the approved testing protocol. The permittee shall keep all records on file at the facility and make them available to the Department upon request. (R 336.1205(3), R 336.1225, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21 (c) & (d))

AQD Comment: Appears to be in COMPLIANCE. The facility has been conducting the weekly readings with a Draegar Tube and they have averaged around 700 ppm. They've also been doing semi-annual suma-cannister samples and the results have been below 1,000 ppm.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 30th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(1)(a) & (3), R 336.1224, R 336.1225, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(c) & (d), 40 CFR 60.756, 40 CFR 60.758)**

AQD Comment: Appears to be in COMPLIANCE.

2. The permittee shall continuously monitor and record the gas flow rate for EUOPENFLARE-S1 as specified in 40 CFR 60.756(c) and SC III.2. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), R 336.1224, R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, 40 CFR 52.21(c) & (d), 40 CFR 60.756(b)(1) & (2), 40 CFR 63.1955(a))**

AQD Comment: Appears to be in COMPLIANCE.

3. The permittee shall maintain a record the following information for EUOPENFLARE-S1:
    a. The maximum annual expected landfill gas generation flow rate. **(40 CFR 60.758(b)(1)(i))**
    b. All visible emission readings, heat content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in 40 CFR 60.18, continuous records of the flare

pilot flame or flare flame monitoring, and records of all periods of operations during which the pilot flame of the flare flame is absent. **(40 CFR 60.758(b)(4))**

The permittee shall keep all records on file at the facility and make them available to the Department upon request. (R 336.1205(1)(a) & (3), R 336.1224, R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, 40 CFR 52.21(c) & (d), 40 CFR 60.758, 40 CFR 63.1955(a))

AQD Comment: Appears to be in COMPLIANCE.

4. The permittee shall keep up-to-date, readily accessible records of all control system exceedances of the operational standards in 40 CFR 60.753. **(40 CFR 60.758(e), 40 CFR 63.1955(a))**

AQD Comment: Appears to be in COMPLIANCE.

5. The permittee shall keep, in a satisfactory manner, all records related to, or as required by, the PM / MAP for EUOPENFLARE-S1. **(R 336.1205(1)(a) & (3), R 336.1224, R 336.1225, R 336.1702(a), R 336.1910, R 336.1911, R 336.1912, 40 CFR 52.21(c) & (d))**

AQD Comment: Appears to be in COMPLIANCE.

6. The permittee shall keep, in a satisfactory manner, records of gas sampling and analysis for H_2S or TRS concentration in the landfill gas routed to EUOPENFLARE-S1. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), R 336.1224, R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d))**

AQD Comment: Appears to be in COMPLIANCE.

7. The permittee shall calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling total SO_2 mass emissions for EUOPENFLARE-S1. Calculations shall be performed according to Appendix A. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

AQD Comment: Appears to be in COMPLIANCE.

8. The permittee shall calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling
CO mass emissions for EUOPENFLARE-S1. Calculations shall be performed according to Appendix A. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

AQD Comment: Appears to be in COMPLIANCE.

9. The permittee shall keep, in a satisfactory manner, records of the monthly hours of operation for EUOPENFLARE-S1. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), R 336.1224, R 336.1225, 40 CFR 52.21(c) & (d))**

AQD Comment: Appears to be in COMPLIANCE.

VII. REPORTING

1. The permittee shall submit to the appropriate AQD District Office semiannual reports for the gas collection system. Reports 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. The semiannual report shall contain: (40 CFR 60.757(f), 40 CFR 63.1980(a), 40 CFR 63.1955(a))

a) Value and length of time for exceedance of applicable parameters monitored under 40 CFR 60.756(c). (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 control device through a bypass line or the indication of bypass flow as specified under 40 CFR 60.756(b). (40 CFR 60.757(f)(2), 40 CFR 63.1955(a))

c) Description and duration of all periods when the control device 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 63.1955(a))

d) All periods when the collection system was not operating in excess of 5 days. (40 CFR 60.757(f)(4),
40 CFR 63.1955(a))

AQD Comment: Appears to be in COMPLIANCE. The landfill has been submitting this report.

2. The permittee shall submit an equipment removal report to the AQD 30 days prior to removal or cessation of operation of the open flare **(40 CFR 60.757(e))**:

a) The equipment removal report shall contain all of the following items:

i. A copy of the closure report submitted in accordance with §60.757 **(40 CFR 60.757 (e)(1)(i), 40 CFR 63.1955(a))**
ii. A copy of the initial performance test report demonstrating that the 15-year minimum control period has expired **(40 CFR 60.757(e)(1)(ii), 40 CFR 63.1955(a))**
iii. Dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year. **(40 CFR 60.757(e)(1)(iii), 40 CFR 63.1955(a))**
iv. Additional information may be requested as may be necessary to verify that all of the conditions for removal in §60.752(b)(2)(v) have been met. **(40 CFR 60.757(e)(2), 40 CFR 63.1955(a))**

AQD Comment: Currently N/A since it is still an operating landfill.

3. 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. The landfill has been submitting this report and it is no longer required by the updated MACT AAAA.

VIII. STACK/VENT RESTRICTION(S)

AQD Comment: Appears to be in COMPLIANCE with the stack dimensions of a maximum of 12 inches in diameter and a minimum height of 23.33 feet above ground level.

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources for Municipal Solid Waste Landfills as specified in 40 CFR Part 60 Subparts A and WWW, as they apply to EUOPENFLARE-S1. (40 CFR Part 60 Subparts A & WWW)

AQD Comment: Appears to be in COMPLIANCE.

2. Compliance with 40 CFR Part 63, Subpart AAAA is determined in the same way it is determined for
40 CFR Part 60, Subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring, and other credible evidence. In addition, continuous parameter monitoring data collected under 40 CFR 60.756(c)(2), as specified in SC VI.2, are used to demonstrate compliance with the operating conditions for the open flare. The permittee shall have developed and implemented a written PM / MAP plan according to the provision in 40 CFR 63.6(e)(3) for EUOPENFLARE-S1. A copy of the
SSM plan shall be maintained on site. **(40 CFR 63.1960)**

AQD Comment: Appears to be in COMPLIANCE.

NOTE: The following facility wide conditions are the ones that were included in the PTI No. 96-22 that was recently issued to NANR.

FGFACILITY CONDITIONS

DESCRIPTION

The following conditions apply source-wide to all process equipment including equipment covered by other permits, grand-fathered equipment, and exempt equipment.

I. EMISSION LIMIT(S)

lutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
SO_2	144.0 tpy (based on Flare max capacity and 1500 ppm Sulfur)	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	SC VI.2	R 336.1205(1) (a) & (b)
CO	244.0 tpy (based on RICE max capacity)	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	SC VI.3	R 336.1205(1) (a) & (b)

AQD Comment: Appears to be in COMPLIANCE. 12-Month Rolling SO2 emissions ending July of 2022 indicated them at 49.98 tons for both the flare and engines. CO emissions for the same time frame were at 161.76 tons.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Landfill gas combusted	2,200 scfm	Continuously	EUOPENFLARE-S1	SC VI.4	R 336.1205 (1)(a) & (b),
2. Landfill gas combusted	2,070 scfm	Continuously	EUENGINE1-S2, EUENGINE2-S2, EUENGINE3-S2, EUENGINE4-S2, (combined)	SC VI.4	R 336.1205 (1)(a) & (b)

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements

AQD Comment: Appears to be in COMPLIANCE with the above. Current flow coming from the landfill has been consistently around 1650 scfm whether it is going to the flare or the engines. The flare of course is a back-up control device should the engine plant go down.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 30th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. (R 336.1205(1)(a) & (b), 40 CFR 52.21 (c) & (d))

AQD Comment: Appears to be in COMPLIANCE.

2. The permittee shall calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling total SO_2 mass emissions for FGFACILITY. Calculations shall be performed according to Appendix A. The permittee shall keep all records on file and make them available to the Department upon request. (R 336.1205(1)(a) & (b), 40 CFR 52.21(c) & (d))

APPENDIX A

Calculations for Criteria Pollutants

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The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in EUACTIVECOLL-S1 and EUOPENFLARE-S1.

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SO_2 Mass Emissions

The following calculation for SO_2 emissions shall utilize the actual gas usage, actual hours of operation, and the sulfur concentration from gas sampling and/or a gas chromatograph.

SO_2 = [(scfm) x (60 min/hr) x ($ppmv_{sulfur}$ *1E-06) x (MW_{SO2})] ÷ [(R x T)] = pph x (H) = pounds/month

Where:

scfm = standard cubic feet per minute gas flow

$ppmv_{sulfur}$ = parts per million by volume of Sulfur in the gas

MW_{SO2} = Molecular Weight of SO_2 = 64.066 lb/lb-mol

H = Actual Hours of Operation per month

R = Universal Gas Constant = 0.7302 atm-ft^3/lb-mol-R

T = Standard Temperature (absolute) = 519 R

CO Mass Emissions

The following calculation for CO emissions shall utilize the actual HHV of the gas, gas flow rate, and hours of operation.

CO = [(HI) x (EF)] = pph x (H) = pounds/month

HI = (HHV) x (scfm) x (1/1.0E+06) x 60 min/hr

Where:

EF_{CO} = 0.37 lb/MMBTU (open flare)

scfm = standard cubic feet per minute gas flow

H = Actual Hours of Operation per month

HI = Heat Input (MMBTU/hr)

HHV = Average Hourly LFG Higher Heating Value (BTU/ft^3)

APPENDIX B

Methane Monitoring

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Methane Monitoring

The permittee shall calibrate, maintain, and operate in a satisfactory manner, a device to monitor and record the methane (CH_4) content of the landfill gas once a month when the flare is in operation. Using the methane content permittee shall calculate net heating value (BTU/scf) flared on a monthly basis. Permittee may use a portable analyzer GEM 2000 or equivalent.

Landfill Gas Higher Heating Value (HHV) Calculation

The following calculation for HHV determination shall utilize the methane content.

HHV = Methane Heating Value x Landfill Gas Methane Content = Btu/ Standard Cubic Feet (scf)

Where:

Methane Heating Value = 1,050 Btu/scf*

Landfill Gas Methane Content = Measured Methane Content (%)

***Natural gas heating value, AP-42, Appendix A, Page A-5 (Ver 1/95)**

APPENDIX 7-S1

Emission Calculations

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in EUOPENFLARE-S1.

Calculation Used to Determine NMOC Emissions From any Nonproductive Area

The following shall be used to determine if any nonproductive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the District Supervisor upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill. Emissions from each section shall be computed using the following equation: (40 CFR 60.759(a)(3)(ii), 40 CFR 63.1955(a))

$Q_i = 2 k L_o M_i (e^{-kt_i}) (C_{NMOC}) (3.6 \times 10^{-9})$ where,

Q_i = NMOC emission rate from the i^{th} section, megagrams per year

k = methane generation rate constant, year−1

Lo = methane generation potential, cubic meters per megagram solid waste

Mi = mass of the degradable solid waste in the i^{th} section, megagram

ti = age of the solid waste in the i^{th} section, years

CNMOC = concentration of non-methane organic compounds, parts per million by volume

3.6×10−9 = conversion factor

The values for k and CNMOC determined in field testing shall be used if field testing has been performed in determining the NMOC emission rate or the radii of influence (this distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for k, LO and CNMOC provided in §60.754(a)(1) or the alternative values from §60.754(a)(5) shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted

from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in §60.759(a)(3)(i).
(40 CFR 60.759(a)(3)(iii), 40 CFR 63.1955(a))

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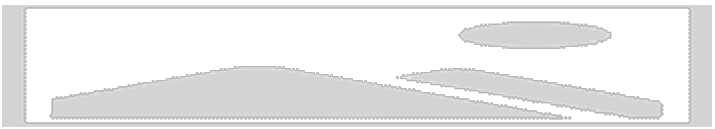
Net Heating Value of the Gas Being Combusted in the Flare

The net heating value of the gas being combusted in the flare shall be calculated and recorded using the equation provided in 40 CFR 60.18(f)(3). (40 CFR 60.18(f)(3))

WHERE:

HT=Net heating value of the sample,

MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C;



Ci=Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946–77 or 90 (Reapproved 1994) (Incorporated by reference as specified in §60.17); and

Hi=Net heat of combustion of sample component i, kcal/g mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382–76 or 88 or D4809–95 (incorporated by reference as specified in §60.17) if published values are not available or cannot be calculated.

Calculation for Vmax Steam-assisted and Non-assisted Flares

The maximum permitted velocity, Vmax, for flares complying with 40 CFR 60.18(c)(4)(iii) shall be calculated and recorded using the equation provided in 40 CFR 60.18(f)(5). (40 CFR 60.18(f)(5))

Log10 (Vmax)=(HT+28.8)/31.7

Vmax=Maximum permitted velocity, M/sec 28.8=Constant 31.7=Constant HT=The net heating value as determined above.

Calculation for Vmax for Air-assisted Flares

The maximum permitted velocity, Vmax, for air-assisted flares shall be calculated and recorded using the equation provided in 40 CFR 60.18(f)(6). (40 CFR 60.18(f)(6))

Vmax=8.706+0.7084 (HT)

Vmax=Maximum permitted velocity, m/sec 8.706=Constant 0.7084=Constant HT=The net heating value as determined above.

EUASBESTOS: Appears to be in COMPLIANCE

Although the facility stopped accepting this type of waste back in 2000 to satisfy a MMD violation, the asbestos requirements still need to be included in the ROP since they had at one time accepted asbestos. They have been submitting notifications as required and the facility has warning signs, fencing, and/or natural features surrounding the property which should adequately deter access by the general public.

FGRULE290: Appears to be in COMPLIANCE

The facility currently only operates the groundwater treatment system under this permit exemption rule and haven't installed anything new using it. The groundwater treatment system is a tray type air stripper the facility installed quite a few years ago. The system is still operating around the clock and consists of 30 pumping wells. The groundwater is pumped into the treatment building where it enters the top tray and continues to drop down through a number of trays as air is blown up through it from below. This treatment process tends to lower the pH and the landfill has to adjust the pH back to 7.4 to 7.5 using sulfuric acid to meet NPDES discharge requirements to the creek nearby. The facility is conducting monthly sampling of the influent and effluent for the appropriate contaminants that are required by their NPDES permit and ROP for their groundwater treatment system. Records reviewed by staff indicate total VOC emissions were typically less than 1 pound per month.

FGCOLDCLEANERS: Appears to be in COMPLIANCE

The coldcleaner is located in their maintenance garage and is not a heated unit. Staff has reviewed the MSDS sheet on previous occasions and it didn't indicate that the solvent contained any of the listed halogenated compounds that were over 5 percent

by weight. Safety Kleen services it for them as needed. Staff did not look at it during this inspection but in the past the unit had operational instructions posted on it and the lid has always been closed.

SEBCL INSPECTION CONCLUSION: The facility appears to be in COMPLIANCE with Section 1 of ROP No. MI-ROP-N5432-2016a, the applicable Federal Plan OOO and MACT AAAA requirements, along with the Facility Wide Emission Limits of PTI No. 96 -22 at the present time. Staff thanked Jacob for his time and departed at approximately 2:55 p.m.

NAME Matt Deskins DATE 8-24-22 SUPERVISOR 8/24/22