

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

N268859892

FACILITY: Arbor Hills Landfill, Inc.		SRN / ID: N2688
LOCATION: 10690 W. SIX MILE RD, NORTHVILLE		DISTRICT: Jackson
CITY: NORTHVILLE		COUNTY: WASHTENAW
CONTACT: Eric Kataja , Senior Environmental Analyst		ACTIVITY DATE: 09/24/2021
STAFF: Diane Kavanaugh Vetort	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: FCE/PCE Major Source. Conducted complete compliance inspection of Arbor Hills Energy (Fortistar) Section 3. See also 9/14/21 inspection of Section 1 & 2.		
RESOLVED COMPLAINTS:		

Major / ROP Source. Full Compliance Evaluation (FCE) and Inspection of Arbor Hills Energy LLC portion (Section 3) of the Arbor Hills Landfill (Green for Life Environmental) and Arbor Hills Energy Stationary Source.

Facility Contacts

Craig Hicks-Plant Supervisor-Fortistar Methane Group, 248-305-7774 chicks@fortistar.com

Carlos Wilson-Plant Supervisor-Fortistar Methane Group, cwilson@fortistar.com

Facility Contacts not present during inspection

Suparna Chakladar-Vice President-Fortistar Methane Group, 951-833-4153

SChakladar@fortistar.com

Anthony Falbo, Senior Vice President-Fortistar Methane Group, Address: 5087 Junction Road, Lockport, New York 14094

Eric Kataja, Senior Environmental Analyst -Fortistar Methane Group, (716) 420-114,

ekataja@fortistar.com

Purpose

On September 24, 2021, Diane Kavanaugh Vetort (DKV), EGLE -AQD, conducted an announced compliance inspection of Fortistar Methane Group-Arbor Hills Energy LLC (AHE) facility located in Northville, Michigan (Washtenaw County) at 10611 West 5 Mile Road. The purpose of the inspection was to determine the facility's compliance status with applicable federal and state air pollution regulations, particularly Michigan Act 451, Part 55, Air Pollution Control Act and administrative rules, and the conditions of the Company's Renewable Operating Permit (ROP) number MI-ROP-N2688-2011a, issued on January 24, 2011. Arbor Hills Landfill (AHL, Section 1 & 2) underwent three change in ownership revisions since then. AHL and AHE constitute one Major Stationary Source under Part 70 Title V program. The ROP is structured into three (3) separate sections: Section 1 and 2 contain the Landfill and Active Gas Collection and supplemental control emission units owned and operated by now Green for Life Environmental (GFL); and Section 3 is for emission units owned/operated by AHE detailed in this report (Note: The renewal ROP is currently submitted and AHL and AHE are operating under the permit shield. Further technical review has been postponed due to numerous active compliance issues at both AHE and AHL)

Facility Location

AHE plant is located at 10611 West Five Mile Road which is directly adjacent to the landfill on its southside. There are no nearby homes.

Arrival & Facility Contacts

Upon my arrival in the morning, I noted several Steam plumes from the plant roof. I also noted the Utility Flare (EU5000CFMFLARE) at the AHL flare compound was operating with a visible large flame, that appeared clear. Upon my arrival I observed that a Condensate hauling tanker truck, larger size than I have seen in the past, was backed up to the condensate tank outside the plant building between it and the Treatment System building. From the parking lot I detected a light condensate / landfill gas like sulfur like odor. No other odors were observed. I proceeded to the facility office to request access for an inspection, provided my identification and met with Carlos Wilson (CW) and Craig Hicks (CH) who are plant supervisors for the facility. I informed them of my intent to conduct a facility inspection and to request additional records as necessary. It is noted a separate email request for records was sent to Eric Kataja, and Suparna Chakladar, Fortistar contacts on September 4, 2021. Records requested by September 17, and they were received timely.

Regulatory Applicability

The stationary source is in Washtenaw County, which is currently designated by the U.S. Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants except ozone. Washtenaw County is currently considered non-attainment for ozone.

The stationary source has emission units that were subject to R 336.1220 for Major Offset Sources. Now Part 19 Rules (i.e. Rule 1902) NSR for Major Sources Impacting Non-Attainment Areas applies.

Several emission units at the stationary source were subject to review under the Prevention of Significant Deterioration regulations of 40 CFR, Part 52.21. In particular, the potential to emit (PTE) of carbon monoxides exceeds 250 tons per years.

The stationary source is subject to 40 CFR Part 70 because the PTE of carbon monoxide, sulfur dioxide and nitrogen oxides exceed 100 tons per year.

The stationary source is considered a major source of Hazardous Air Pollutants (HAP) emissions because the potential to emit of a single HAP, hydrogen chloride, is greater than 10 tons per year.

The facility is also subject to the following federal requirements:

1. Federal Plan Requirements for Existing Municipal Solid Waste Landfills promulgated in 40 CFR Part 62, Subpart OOO. The Federal Plan will apply until a State Plan is approved or delegation of the Federal Plan approved. (This applies to EUTREATMENTSYS-S3. New replaces NSPS 40 CFR 60, Subpart WWW; Subpart OOO effective date June 2021)

2. The Maximum Achievable Control Technology Standards (MACT) for Municipal Solid Waste Landfills promulgated in 40 CFR Part 63, Subparts A and AAAA. Revised and effective date of September 27, 2021. (Note: This applies to EUTREATMENTSYS-S3.)

3. Federal New Source Performance Standards for Stationary Gas Fired Turbines, 40 CFR Part 60 (NSPS Subparts A & GG) (Note: This applies to FGTURBINES-S3.)

4. Federal New Standards of Performance for Stationary Combustion Turbines, 40 CFR Part 60 (NSPS Subparts A & KKKK) (Note: This applies to EUTURBINE4-S3)

5. National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Turbines, 40 CFR Part 63 (MACT YYYY) (Note: This applies to EUTURBINE1-S3, EUTURBINE2-S3, EUTURBINE3-S3, EUTURBINE4-S3 and FGDUCTBURNERS-S3.)

-One 250 HP diesel fired emergency generator is subject to 40 CFR Part 60, Subpart IIII New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines (Meeting NSPS requirements satisfies RICE MACT Subpart ZZZZ.)

The following table (copied from prior inspection report) highlights key specific federal requirements (NSPS WWW and MACT AAAA) that apply that may or may not already be outlined in the ROP.

Regulation	Emission Unit	Comments
WWW 60.753(f)	EUTREATMENTSYS-S3	Must be operated at all times when landfill gas is routed to it.
WWW 60.752(b)(2)(iii)(A) or (B)	EUTREATMENTSYS-S3	Any atmospheric vents or stacks that contain landfill gas must be controlled.
WWW 60.753(e) and (f)	EUTREATMENTSYS-S3	Collected gas needs to go to treatment system or flare. (Compressors part of treatment system, turbines not part.)
WWW 60.758(e)	EUTREATMENTSYS-S3	Records of all collection and control system exceedances of the operational standards in § 60.753
WWW 60.756(d)	EUTREATMENTSYS-S3	Records of preventative maintenance performed, complete description of treatment system, operating parameters that would indicate proper performance and appropriate monitoring procedures.
WWW 60.757(f)	EUTREATMENTSYS-S3	Semi Annual reporting of exceedances of monitored parameters in 60.756(d), diversions, bypass flow, when treatment system not operating. (AHE provides this via Subpart AAAA report.)
NESHAP General Provisions 63.10(a)(5) & (d)(5)	EUTREATMENTSYS-S3	Semi Annual startup, shutdown, and malfunction reports. (AHE provides this via Subpart AAAA report.)
WWW 60.755(e)	EUTREATMENTSYS-S3	Provisions of WWW 60.755(landfill gas collection system requirements) apply except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices.
NESHAP General Provisions 63.6(e)	EUTREATMENTSYS-S3	At all times, including periods of startup, shutdown, and malfunction, the owner or operator must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. During a period of startup, shutdown, or malfunction, this general duty to minimize emissions requires that the owner or

		operator reduce emissions from the affected source to the greatest extent which is consistent with safety and good air pollution control practices.
NESHAP General Provisions Subpart A 63.6(e)(iii)(3)(i)	EUTREATMENTSYS-S3	Requires written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction; and a program of corrective action for malfunctioning process, air pollution control, and monitoring equipment used to comply with the relevant standard.
KKKK 60.4330(a)(1)	EUTURBINE4-S3.)	Can't emit any gases containing SO2 in excess of 0.90 pounds per megawatt-hour (lb/MWh) gross output; (Constructed/modified after February 18, 2005.)
AAAA 63.1960-63.1985	EUTREATMENTSYS-S3	If you are required by 40 CFR 60.752(b)(2) of Subpart WWW, to install a collection and control system, you must comply with the requirements in §§ 63.1960 through 63.1985 and with the general provisions of this part specified in table 1 of this subpart. (Same as WWW.)
KKKK 60.4315	EUTURBINE4-S3	Applies to NOx and SO2 emissions
KKKK 60.4320	EUTURBINE4-S3	74 ppm at 15 percent O2 or 460 ng/J of useful output (3.6 lb/MWh) for new turbines firing other than natural gas greater than 50 MM Btu/hr in size.
KKKK 60.4333	EUTURBINE4-S3	Must operate and maintain, turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.
KKKK 60.4340	EUTURBINE4-S3	Must perform annual performance tests in accordance with § 60.4400 to demonstrate continuous compliance. If the NOX emission result from the performance test is less than or equal to 75 percent of the NOX emission limit for the turbine, you may reduce the frequency of subsequent performance tests to once every 2 years (no more than 26 calendar months following the previous performance test). If the results of any subsequent performance test exceed 75 percent of the NOX emission limit for the turbine, you must resume annual performance tests.
KKKK 60.4360	EUTURBINE4-S3	Must monitor the total sulfur content of the fuel being fired in the turbine, except as provided in §

		60.4365. The sulfur content of the fuel must be determined using total sulfur methods described in § 60.4415
KKKK 60.4370	EUTURBINE4-S3	Allows for custom sulfur content schedules
KKKK 60.4375	EUTURBINE4-S3	Reporting-For each affected unit required to periodically determine the fuel sulfur content under this subpart, you must submit reports of excess emissions in accordance with § 60.7(c). Excess emissions must be reported for all periods of unit operation, including start-up, shutdown, and malfunction.
YYYY 63.6090	EUTURBINE4-S3	Considered new turbine under subpart. Only 63.6125 (c) and 63.6150 applies.
YYYY 63.6125(c)	EUTURBINE4-S3	This turbine does not burn distillate oil.
YYYY 63.6150	EUTURBINE4-S3	Requires Semi-Annual reporting-if deviations then include the total operating time of each stationary combustion turbine during the reporting period. (ii) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.
GG 60.332	FGTURBINES-S3	Sets NOx limit.
GG 60.333	FGTURBINES-S3	Sets SO2 limits. Also, total sulfur can't exceed 0.8% by weight.
GG 60.334	FGTURBINES-S3	Requires sulfur/nitrogen content fuel monitoring.
YYYY 63.6125(c)	FGTURBINES-S3	These turbines burn distillate oil(diesel) so this section applies. However, turbines don't meet definition of lean premix gas fired or diffusion flame gas fired so no requirements.
YYYY 63.6150	FGTURBINES-S3	Requires Semi-Annual reporting-if deviations then include the total operating time of each stationary combustion turbine during the reporting period.
III and RICE MACT	250 hp diesel emergency generator	Generally, requires facility to record hours of operation using an installed hours meter and conduct regular maintenance.

Facility Background

The facility last had a full compliance inspection conducted on November 14, 2019 and was found to be out of compliance with numerous federal and state requirements. AHE is a subsidiary of Fortistar Methane Group which is a subsidiary of Fortistar LLC. AHE uses landfill gas from the adjacent Arbor Hills Landfill to generate electricity through the operation of three Typhoon Turbines (EUTURBINE1-S3, EUTURBINE2-S3, and EUTURBINE3-S3) manufactured by European Gas Turbines (EGT) Ltd (each rated at 58.89 MMBtu/hr) that were first operated on June 12, 1996 and one newer Solar Taurus Turbine (EUTURBINE4-S3) rated at 68 MMBtu/hr that was first operated in December 2005. The 3 older turbines are each equipped with a duct burner (EUDUCTBURNER1-S3, EUDUCTBURNER2-S3 and EUDUCTBURNER3-S3). These duct burners are devices that combust landfill gas that are placed in the exhaust duct from their associated turbine to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter the heat recovery steam generating systems. Diesel fuel is used during start-up of the 3 older turbines. There is an exhaust stack associated with each turbine. There are also by-pass stacks associated with the 3 older turbines that are used during start-up or when the heat steam generating systems are down for repairs or maintenance.

The three (3) EGT Typhoon turbines typically produce 3.2 to 3.7 Megawatts (MW) of electricity each, while the Solar Taurus turbine can produce up to 5 MW. The three EGT Typhoon turbines are equipped with heat recovery steam generators (HRSG) units that supply steam to steam turbines for additional electricity generation. The four turbines and HRSG supplemental heat duct burners are fueled exclusively with LFG recovered from the adjacent landfill, transferred to AHE, and treated (compressed, dewatered and filtered) prior to its use as fuel. The fuel (treated LFG) consumption rate for each turbine is regulated automatically to maintain the required heat input rate to support the desired operating rate and is dependent on the fuel heat value (methane content). The turbines are not equipped with add-on emission control equipment. NOx emissions are suppressed using dry low -NOx combustors and CO emissions are limited by proper operation of the combustion units to completely combust (oxidize) the methane in the treated LFG fuel.

AHE reported the following air emissions for calendar year 2020 Michigan Air Emissions Reporting System (MAERS): NOX 99.2 tons; CO 83.7 tons; VOC 1.6 tons; SO2 123.6 tons.

AHE submitted ROP Certification and Deviation Reports during this time period timely and is reporting the ongoing deviations of Sulfur Dioxide emission limits exceedances.

MOST RECENT STACK TEST SUMMARIES:

TEST DATE: October 16, 2018 through October 19, 2018.

FGTURBINES-S3 (EGT Typhoon), FGDUCTUBURNERS-S3, EUTURBINE4-S3 (Solar Taurus)

This was a re-test for CO, NOx, VOC, SO2, HCL pollutants. Similar results to previous test in May-June 2018. AQD rejected that test as it was considered unrepresentative due to the LF then operator Advanced Disposal Services notifying AQD that numerous LFG collection wells had been shut off. by Fortistar Again, test results found SO2 emissions exceeded permit limits (has been the case since 2015). Below is a summary of results for just the SO2 and NOx portion of the test (copied from prior inspection report). Bold type indicates emission limit exceedance. NOx emission results were included since the stack test for NOx on Turbine 3 was close to the emission limit.

Emission Unit	Test Result	Limit	Calculated		Limit		Test Result	
	SO2 (lb/hr)	SO2 (lb/hr)	(T/Yr)	SO2**	SO2 (T/Yr)	NOx (lb/hr)	NOx (lb/hr)	NOx (lb/hr)
Turbine 1	4.4	2.9	19.2	12.5	5.6	8.8		
Turbine 2	6.3	2.9	27.6	12.5	6.9	8.8		
Turbine 3	7.5	2.9	32.85	12.5	8.2*	8.8		

Turbine 4	1.4 lb/MW hr	0.9 lb/MW hr		7.4	9.02	
Duct Burner 1	1.9	0.3	8.3	1.5	0.3	1.6
Duct Burner 2	1.6	0.3	7	1.5	0.3	1.6
Duct Burner 3	1.9	0.3	8.3	1.5	0.4	1.6

*o** Annual ton per year values are based on continuous operation (8760 hrs/yr) at the measured lb/hr emission rate.

EUTURBINE4-S3 (Solar Taurus) requires annual testing per the ROP. The September 25, 2020 Test Results included SO₂, CO, VOC and HCl. Turbine #4 results found the SO₂ limits were exceeded during all test runs. SO₂ Average of three runs = 2.0 lb/MW-hr (Limit 0.9) or 0.16 lb/MMBtu (Limit 0.15).

The Turbine #4 protocol has been submitted (9/8/21) and testing for SO₂ and NO_x is scheduled for November 10, 2021.

Pre-Inspection Meeting

I met with CW and CH and asked several general operations questions. During my inspection of the Arbor Hills LF Sections of the Stationary Source on September 14, I observed the Utility Flare operating at @ 2200 scfm and heard some persistent loud whining noise coming from the plant. Anthony Testa, GFL called Craig at the time and was told the "Steam Plant" was down and the Utility flare was handling the excess gas. CW CH explained that the steam turbine, was down and still is today, and this impacts the turbine boilers and ductburners, heat recovery generating system (HRSG). The turbines are operating without the EGT's ductburners or HRSG. Per CW the Steam plant is scheduled to be back online on October 4, 2021.

Per Carlos, they are also working on addressing the uncontrolled vents on the Treatment System compressors by ducting them back into the treatment process. This NSPS non-compliant condition was identified during the prior AQD compliance inspection and is part of the EGLE/EPA enforcement action. He indicated this project is in process and they understand it needs to be done expeditiously.

CW informed me that there is a planned maintenance plant wide outage scheduled for October 18 -19, 2021. Then there will be a rolling Turbine outage; one turbine at a time is taken off-line for maintenance.

SIGNIFICANT CHANGE SINCE LAST INSPECTION:

In June 2021, AHL-GFL assumed Fortistar's role as operator of the well field for the Elevated Temperature Landfill portion of the site. AHL is operating approximately 22 wells under a Higher Operating Temperature (HOV) waiver status and other wells of interest within 250 foot radius of the HOV waiver wells. GFL has additional monitoring and bi-monthly reporting as a result of this situation.

Onsite Inspection

Below is a brief summary of the inspection followed by evaluation of the compliance requirements for each regulated emission unit evaluated as observed/investigated during and after the onsite inspection. Both CW And CH accompanied me during the inspection and extended their full cooperation and fully addressed my questions.

[TURBINE PLANT]

During the inspection I observed the plant control room. Per Carlos a technician is on site today calibrating the flow meters of each Turbine. Currently EGT#1 is being worked on, causing the control panel to not read correctly (see SCFM in photo #1, #2). Later, during the walk through of the plant I observed the technician working. From the control screens I observed the vacuum read 80 inches. I took three photos of control panel screens (ATTACHED). All turbines were operational today, no ductburners were operating and the steam turbine is down.

In the plant it is loud and hearing protection is required. I obtained photos of the Solar Turbine name plates (2 attached). All four turbines appeared to be in the same or similar operating condition as I have observed in the past and there was nothing unusual or obvious observed.

I observed the location of the 10,000 gallon underground diesel fuel tank and the Emergency Generator. Diesel fuel is used for the EGTs start-up and the diesel emergency generator.

[TREATMENT SYSTEM (TS) BUILDING]

During the inspection I walked through the TS building and conducted a roof inspection. It is also loud in this building and hearing protection is required. It appeared to be operating the same as I have observed in past inspections. Again there was nothing unusual or obvious observed. CW pointed out the compressor uncontrolled vents mentioned earlier that will be changed to controlled. I observed a general overall odor of landfill gas inside the building today. In the past when building doors are open I have observed the odor outside near the building also.

From the AHE ROP in the TS process, landfill gas captured from the field is sent into the four compressor stations. The gas passes through a knockout tank that contains a demister pad to remove any condensed liquid and then through a filter section to remove particulates. The filtered gas then goes through a compressor to compress the gas to typically 260 psig which will raise the gas temperature a minimum of 20 degrees F above the dew point by compression. The gas is then cooled to condense water vapor through an air-to-gas heat exchanger and a gas to gas heat exchanger. A refrigeration based chiller is installed and can also operate intermittently to further reduce the water vapor if necessary. Particulates and water are removed by a minimum of a 10-micron coalescing filter. After removal, the LFG passes through a final gas to gas heat exchanger. This reheats the LFG to approximately 20 degrees F above its dew point. This prevents condensation of the remaining water vapor in the LFG in the piping or turbine fuel handling systems.

Treated gas is metered, analyzed, and transported to the Turbine building. All operating conditions including, gas flow, temperatures, and pressures are monitored using a computer monitoring system. Condensate from the entire system is collected to one 10,000 gallon Condensate Tank located outside the Turbine Building. This material is regularly hauled out by tanker truck.

I conducted an inspection of the TS roof. I observed several air intake, building ventilation stacks, along with other process vent stacks. I observed the four uncontrolled compressor vent stacks. I observed a mild to moderate landfill gas odor the entire time I was on the roof. I did not see any visible emissions other than the steam plumes (seen upon arrival) from several exhausts on the adjacent Turbine building. CS and CW explained these are due mainly to the HSRG being offline.

RECORDS REVIEW

On September 2, 2021 AQD sent an email with an attached records request to Fortistar contacts, Eric and Suparna. The records were to be submitted electronically by September 17. The list is attached to this report to file. AHE's response was received timely and included the following Zip File Attachments (11):

1 - Total Daily LFG Flow to Turbines (Sept20 thru Aug21)

AQD Review: Daily plant data indicates consistent operation of (SCF) each Turbine (GT1-4) and Ductburner (DB1-3) and documents individual Turbine downtimes. Methane content generally ranged

around 45%. Weekly Heat Value (Btu/cf) range 445 to 470 until June/July 2021 when range was higher 470 -490 and August was 458 to 479. (Note Turbine 4 was offline from 7-17 to 8-16. DB3 was offline 8-9 to 8-31). Vacuum is consistent around 80 inches H2O. Record shows Entire plant started going offline April 17, was offline 18th, and slowly came back online on the 19th. Also, August 13-14 entire plant was offline.

2 - Total Daily LFG flow to DBs (CONTAINED IN ATTACHMENT 1)

3 - Weekly BTU Content (CONTAINED IN ATTACHMENT 1)

4 - Rolling Emission Tables (Sept20 thru Aug21)

AQD Review: Emissions from GT 1-4 and DB1-3 MONTHLY EMISSION SUMMARY LBS/MONTH, TONS/MONTH and 12 MONTH ROLLING AVERAGE TPY.

NOX

GT1-3 LIMIT 33.0 TPY EACH. 12 month ending August 2021: 17.0 GT1; 23.4 GT2; 28.1 GT3

GT4 LIMIT 39.5 TPY. GT4 21.2

DB1-3 LIMIT 7.1 TPY EACH. DB1 1.4; DB2 1.2; DB3 1.8

FACILITY TOTAL: 94 TPY LIMIT 205 TPY

CO

GT1-3 LIMIT 57.2 TPY EACH. 12 month ending August 2021: 8.4 GT1; 29.6 GT2; 12 GT3

GT4 LIMIT 57.8 TPY. GT4 24.3

DB1-3 LIMIT 9.7 TPY EACH. DB1 4.0; DB2 0.5; DB3 0.5

FACILITY TOTAL (NOT A LIMIT) = 79.3 TPY for period ending August 2021

SO2 [NOTE ALL EU HAVE ONGOING EMISSION LIMIT EXCEEDANCE FOR THIS POLLUTANT]

GT1-3 LIMIT 12.5 TPY EACH. 12 month ending August 2021: 13.5 GT1; 21.2 GT2; 25.7 GT3

GT4 31.2 TPY (NO TPY LIMIT) ROP limits are 0.9 lbs/MW hr or 0.15 lbs/MMBTU heat input (see stack test summaries section)

DB1-3 LIMIT 1.5 TPY EACH. DB1 8.6; DB2 8.1 DB3 8.9

FACILITY TOTAL (NOT A LIMIT): 117.2 TPY

VOC

GT1-3 LIMIT 10.4 TPY EACH. 12 month ending August 2021: 0.2 GT1; 0.4 GT2; 0.1 GT3

GT4 LIMIT 3.5 TPY. GT4 0.4

DB1-3 LIMIT 4.0 TPY EACH. DB1 0.1; DB2 0.5; DB3 0.0

FACILITY TOTAL (NOT A LIMIT) = 1.7 TPY

HCL

GT1-3 LIMIT 8.2 TPY EACH. 12 month ending August 2021: 0.7 GT1; 1.0 GT2; 1.2 GT3

GT4 LIMIT 2.5 TPY. GT4 1.1

DB1-3 LIMIT 3.3 TPY EACH. DB1 0.2; DB2 0.2; DB3 0.6

FACILITY TOTAL (NOT A LIMIT) = 4.9 TPY

5 - Daily Vacuum Records (CONTAINED IN ATTACHMENT 1)

6 - Emergency Generator MACT Records

AQD Review: NSPS/MACT DIESEL GEN: Report EMERGENCY OPERATIONS 7:35 HRS; TESTING 4:50 HRS; FUEL USAGE 397.20 GALLONS. Includes MONTHLY MAINTENANCE WORK ORDERS

7 - H2S Draeger Records

AQD Review: H2S RECORDS THRU AUGUST 2021, USUALLY TAKEN WEEKLY @ 4 X PER MONTH PPM RANGE 280 – 410 (MOSTLY IN 300'S) DETECTION RANGE 50-600

8 - Daily Methane Content (CONTAINED IN ATTACHMENT 1)

9 - Monthly Shipped Condensate

AQD Review: Report shows Monthly Condensate hauled for Totals of: 2020 YTD 1,083,894 GALLONS AND 2021 YTD 599,847 GALLONS. Note it appears leachate generation has increased as compared to recent prior years.

10 - Monthly Diesel Combusted in Turbines

AQD Review: Report DIESEL FUEL USAGE GTs: COMBINED ALL GT1-3 15,447 GALLONS; GT1 2,813 GT2 8,549 GT3 4,085

11 - Preventative Maintenance Records

AQD Review: Submittal has 7 ATTACHMENTS

PM Records for the period list: UNIT | REASON | DOWN TIME/ONLINE TIME | HRS DOWN | COMMENTS DOWN/ONLINE. Many reasons indicate Compressor down -Generation not Impacted (ARBOR HILLS ONLY). Other Reasons: UNPLANNED OUTAGE, UNSCHEDULED MAINTENANCE and UTILITY FORCED OUTAGE

AUX2 Record is 13 PGS showing monitor multiple times per day. Entries: DAILY FOR PARAMETER CHECKS OF COMPRESSOR, SEPARATOR PSI, DISCH TEMP, OIL PSI, OIL TEMP, CHILL OUT TEMP (F). OPERATOR NOTES ISSUES / PARAMETERS OUT OF RANGE.

AUX3 Record same as above.

MGC1 Record Entries: OPERATOR, DATE, @ 2 X PER DAY DAILY CHECK LIST: ONLINE/OFFLINE VARIOUS PSI, TEMPS, SCRUBBER FILTER DP INCH H2O. NOTES AND EXPLANATION COLUMNS.

MGC2 Record same as above

MGC3 Record same as above

MGC4 Record same as above

COMPLIANCE SUMMARY

AQD has determined, based on this inspection and the records received that AHE is in compliance with the state and federal regulations and requirements of their ROP MI-ROP-N2688-2011a with the exception of the ongoing non-compliance with the SO2 permit emission limits for all FGTURBINES-S3 and FGDUCTBURNERS-S3, and EUTURBINE4-S3. Regarding this noncompliance, and other previously identified non compliance items, the following formal update has been posted on the EGLE/AQD website:

September 2021 Update: The USEPA has opened public comment on a joint enforcement action against Arbor Hills Energy until October 15, 2021. Find out more information about the draft consent decree and how to submit comments from the USEPA's ["Notice of Lodging of Proposed Consent Decree Under the Clean Air Act."](#)

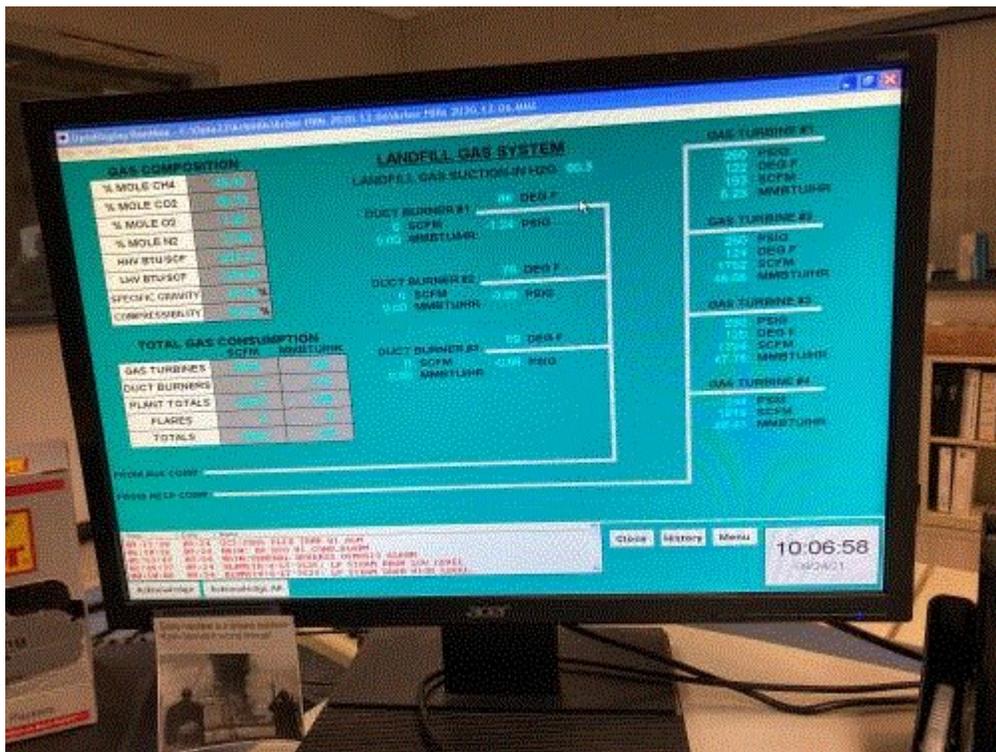


Image 1(AHE CR 9-24-21 1) : FCE inspection control room screen 1

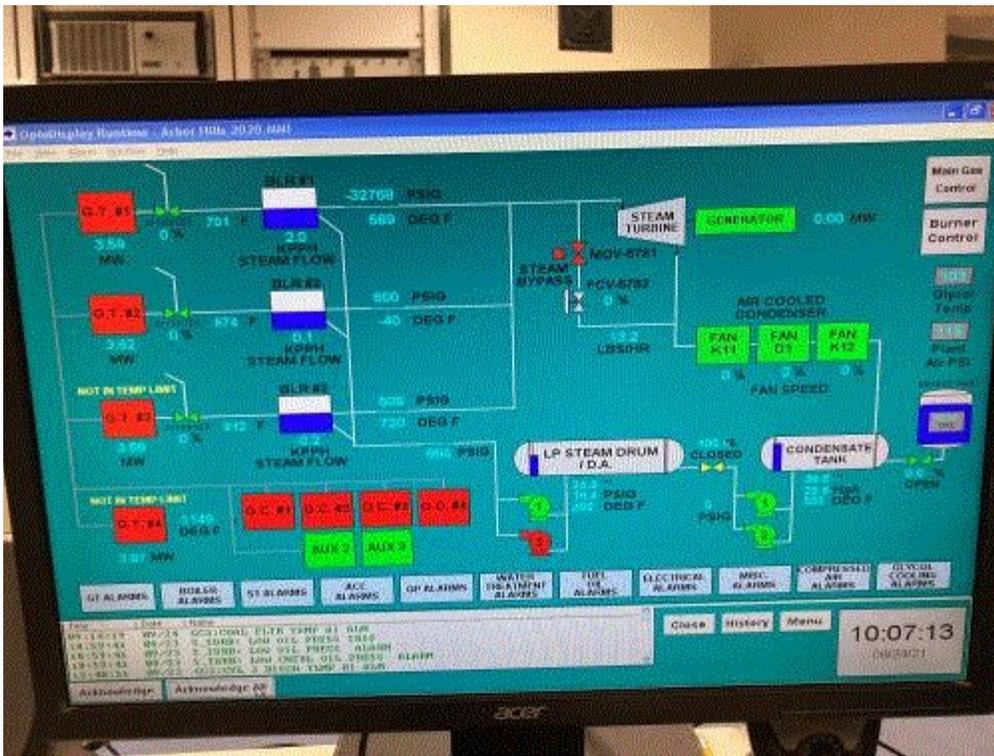


Image 2(AHE CR 9-24-21 2) : FCE inspection control room screen 2



Image 3(AHE CR 9-24-21 4) : FCE inspection control room screen 4



Image 4(AHE T4 NAME PLATE 1) : FCE inspection T4 name plate 1

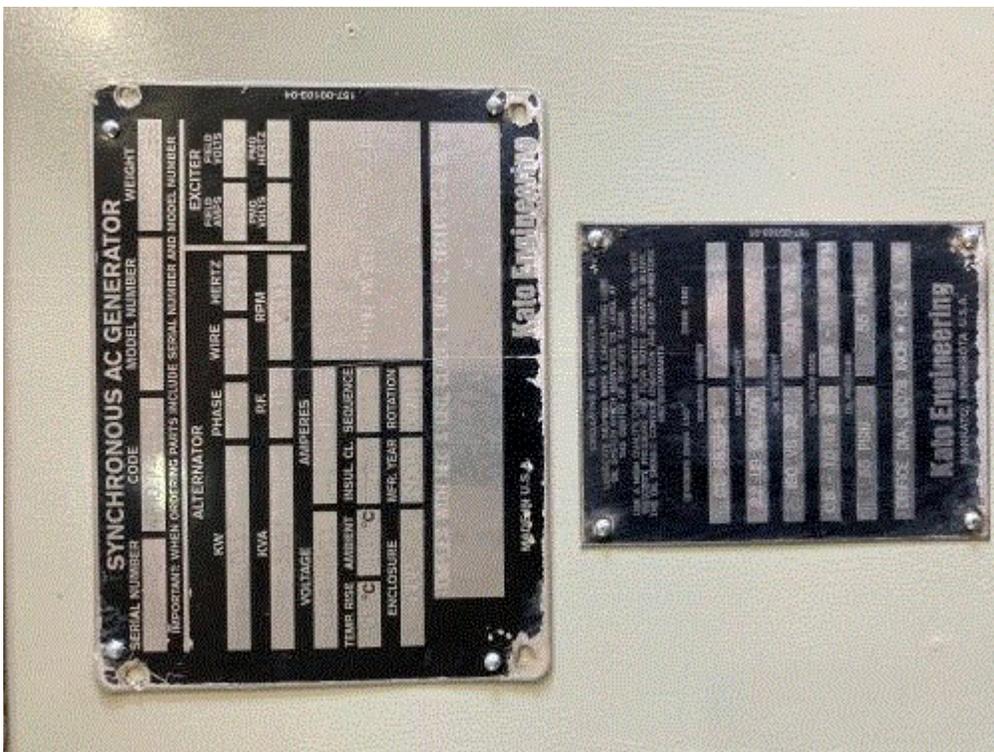


Image 5(AHE T4 NAME PLATE 3) : FCE inspection T4 name plate 3

NAME *Micane Kavanaugh Vetter*

DATE 9/24/21

SUPERVISOR 