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

N268847567

FACILITY: Advanced DisposalServices Arbor Hills Landfill Inc		**SRN / ID:** N2688
LOCATION: 10690 W. SIX MILE RD, NORTHVILLE		**DISTRICT:** Jackson
CITY: NORTHVILLE		**COUNTY:** WASHTENAW
CONTACT: Craig Hicks , Plant Manager		**ACTIVITY DATE:** 01/08/2019
STAFF: Mike Kovalchick	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Inspection of Fortistar. Several new compliance issues such as diesel being used as a fuel for 3 of the turbines, 3 by-pass stacks associated with the same turbines, and 4 by-pass stacks associated with the landfill gas treatment system that are not controlled.		
RESOLVED COMPLAINTS:		

Major / ROP Source. Full Compliance Evaluation (FCE) and Partial Compliance Inspection (PCE) [Full Inspection of Arbor Hills Energy LLC portion of the Advanced Disposal Services Arbor Hills Landfill Stationary Source.]

Facility Contacts

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

Eric Kataja-Environmental Analyst-Fortistar Methane Group, 716-439-1004x104 ekataja@fortistar.com

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

Purpose

On January 8, 2019, I conducted an unannounced compliance inspection of Fortistar Methane Group-Arbor Hills Energy LLC (AHE) facilities located in Northville, Michigan (Washtenaw County) at 10611 West 5 Mile Road. Stephanie Weems (SW), Jackson District EQA, also joined me for this inspection. 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 with an ownership revision taking place on March 28, 2018. (Note: The renewal of this ROP is currently underway.)

Facility Location

It is located at 1611 West Five Mile Road which is directly adjacent to the landfill on its southside. There are no nearby homes. See attached aerial photo.

Arrival & Facility Contacts

No visible emissions or odors (directly attributed to AHE but intense odors were observed 1 mile to the North of the facility coming from Advanced Disposal Service's Arbor Hills landfill (ADS)) were observed upon our arrival and parking at the facility, at approximately 9:30 am. We proceeded to the facility office to request access for an inspection, provided our identification and meet with Craig Hicks (CH) who is the plant manager for the facility. I informed him of our intent to conduct a facility inspection and to review the various records as necessary. CH extended his full cooperation and fully addressed my questions.

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.

ADS and AHE constitute one Major Stationary Source under Part 70 Title V program. The Stationary Source operates under ROP MI-ROP-N2688-2011a.

The ROP is structured into three (3) separate sections: Section 1 is for emission units owned and operated by ADS; Section 2 was modified in 2018 to indicate ADS now has ownership (previously BFI); and Section 3 is for emission units owned/operated by AHE.

The facility is also subject to the following federal requirements:

- Federal New Source Performance Standards for Municipal Solid Waste Landfills, 40 CFR Part 60 (NSPS Subpart WWW) (Note: This applies to EUTREATMENTSYS-S3.)

-40 CFR Part 63, Subpart AAAA - National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills. (Note: This applies EUTREATMENTSYS-S3.)

-Federal New Source Performance Standards for Stationary Gas Fired Turbines, 40 CFR Part 60 (NSPS Subparts A & GG) (Note: This use to apply to FGTURBINES-S3. Due to an unpermitted modification starting in March, 2015, these turbines are subject to KKKK instead.)

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

-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.)

- 40 CFR Part 60, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (EUTURBINE1-S3, EUTURBINE2-S3, EUTURBINE3-S3.) does **NOT** apply since these turbines have been modified in the last couple of years so subject to 40 CFR Part 60 Subparts A & KKKK. Turbines recently modified due to use of diesel fuel and the increase in sulfur content in the fuel which is consider using a different fuel which is an operational change that meets the definition of modification under the NSPS. (See https://www.ecfr.gov/cgi-bin/text-idx?mc=true&node=se40.7.60_114&rgn=div8)

-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.)

Note: PSD PTI application Draft # 53-18 is currently under New Source Review. It includes requirements for EUTURBINE1 through 4-S3, FGNOX-S3 and FGTURBINES-S3. This application was submitted to address alleged S02 emission violations. AHE wants to operate its turbines with a maximum 408 ppmv H2S concentration in the landfill gas fuel.

The following table highlights key specific federal requirements 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 (Also applies to FGTURBINES-S3, FGDUCTBURNERS-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, (Also applies to FGTURBINES-S3, FGDUCTBURNERS-S3.)	Applies to NOx and SO2 emissions
KKKK 60.4320	EUTURBINE4-S3, (Also applies to FGTURBINES-S3, FGDUCTBURNERS-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, (Also applies to FGTURBINES-S3, FGDUCTBURNERS-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, ((Also applies to FGTURBINES-S3, FGDUCTBURNERS-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, (Also applies to FGTURBINES-S3, FGDUCTBURNERS-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, (Also applies to FGTURBINES-S3, FGDUCTBURNERS-S3.)	Allows for custom sulfur content schedules
KKKK 60.4375	EUTURBINE4-S3, (Also applies to FGTURBINES-S3, FGDUCTBURNERS-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. (Now process modified, subject to KKKK instead.) Subpart GG no longer applicable.
GG 60.333	FGTURBINES-S3	Sets SO2 limits. Also, total sulfur can't exceed 0.8% by weight. (Now process modified, subject to KKKK instead.) Subpart GG no longer applicable.
GG 60.334	FGTURBINES-S3	Requires sulfur/nitrogen content fuel monitoring. (Now process modified, subject to KKKK instead.) Subpart GG no longer applicable.
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.
Dc 60.40(c)(e)	FGDUCTBURNERS	Affected facilities (i.e. heat recovery steam generators and fuel heaters) that are associated with stationary combustion turbines and meet the applicability requirements of subpart KKKK of this part are not subject to this subpart.
KKKK	FGDUCTBURNERS	Now generally same requirements as outlined for EUTURBINE4-S3 since modified process.
IIII 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.

Active Consent Orders:

AQD Consent Order No. 16-2015 which went into effect on 5/21/2015. It was issued due to a CO emission exceedance from one of the gas fired turbine's and associated duct burner. It required that extensive emission testing be conducted between June 1, 2015 and June 1, 2018. See Attachment (1)

EPA Finding of Violation (FOV) was issued on September 29, 2016 to AHE. A second FOV dated September 29, 2018 was also issued. See Attachment (2). To date, a Consent Order has yet to result from the FOV.

Facility Background

AHE is a subsidiary of Fortistar Methane Group which is a subsidiary of Fortistar LLC. AHE uses landfill gas from the adjacent ADS Landfill to generate electricity through the operation of three Typhoon Turbines (EUTURBINE1-S3, EUTRUBINE2-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. (EUDUCTTURBINE1-S3, EUDUCTTURBINE2-S3 and EUDUCTTURBINE3-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. See Attachment (3) which is the original process flow diagram for the facility

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.

An AQD enforcement action was taken against AHE which culminated into Consent Order 16-2015 on May 5, 2015. It was issued due to a carbon monoxide (CO) emission exceedance from one of the gas fired turbine's and associated duct burner. It required that extensive emission testing be conducted between June 1, 2015 and June 1, 2018. The Consent Order is still active but the only remaining relevant paragraph is a requirement to stay in compliance with the ROP's CO limits for FGTURBINES-S3 and FGDUCTBURNERS-S3. (See Attachment (1))

Another AQD enforcement action was initiated against AHE with an AQD District referral package dated October 30, 2015 submitted to AQD Enforcement. (See Attachment (4)). It was due to S02 emission exceedances from the turbines/duct burners that was result of an overall increase of the hydrogen sulfide content of the gas coming from the ADS landfill. The U.S. EPA has assumed the lead in resolving these violations. Further, EPA issued an FOV related to these violations on June 4, 2018. It was also related to findings from an inspection conducted on May 4, 2016 and follow-up Section 114(a) request of information from AHE. (See Attachment (2)). To date, the EPA has yet to reach a settlement agreement with AHE.

On August 30, 2018, AQD issued a VN to AHE mostly related to emission stack testing results that was conducted by AHE between May 28 to June 1, 2018. (See Attachment (5)). AHE exceeded SO2 emission limits. During the test, 25 high sulfur content gas wells were not connected into the main landfill gas line that feeds into the AHE energy plant. Because of this, the test wasn't considered representative and a new test was required. The retest was conducted on October 16-19, 2018 and again AHE exceeded SO2 emission limits.

AHE reported the following air emissions for 2017 using MAERS provided emission factors as the basis for emission calculations: (NOTE MAERS reported SO2 emissions suggests exceedances of annual SO2 limits for all the emission units.)

Emission Unit	CO Tons	NOX Tons	PM10 Tons	SO2 Tons
EUDUCTBURNER1	1.8	2.8	0.5	3.8
EUDUCTBURNER2	2.2	3.4	0.6	4.7
EUDUCTBURNER3	1.8	3.9	0.7	0.58?*
EUTURBINE1	14.5	28.1	4.1	18.7
EUTURBINE2	42.3	15.3	4.3	9.1
EUTURBINE3	14.2	31.2	4.3	21.3
EUTURBINE4	34.2	21.4	5.0	28.1
Totals 2017	111	106	19.5	86.3

* Appears to have been an error in MAERS emission report for the amount of SO2 emissions reported.

Recent Stack Testing Summary AHE:

-May 29, 2018 through June 1, 2018

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

CO, NOx, VOC, SO2, HCL. Failed for S02. (Limit 2.9 lb/hour, Actual 3.9, 5.47, 5.68 for Turbine 1, 2, and 3) (This caused failure of annual limit as well.) Duct burners also failed for S02. Also failed for S02 for EUTURBINE4-S3 Limit 0.9 lb/MW hr, Actual 2.15. Note: Test considered invalid as 25 high sulfur content wells turned off during test.) Here is a summary of results for just the SO2 portion of the test. Bold type indicates emission limit exceedance.

Emission Unit	Test Result	Limit	Calculated	Limit
	SO2 (lb/hr)	SO2 (lb/hr)	(T/Yr) S02*	SO2 (T/Yr)
Turbine 1	3.9	2.9	17.1	12.5
Turbine 2	5.47	2.9	24.0	12.5
Turbine 3	5.68	2.9	24.9	12.5
Turbine 4	2.15 lb/MW hr	0.9 lb/MW hr		
Duct Burner 1	2.64	0.3	11.5	1.5
Duct Burner 2	2.24	0.3	9.8	1.5
Duct Burner 3	2.43	0.3	10.6	1.5

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

-October 16, 2018 through October 19, 2019.

Re-test for FGTURBINES-S3 (EGT Typhoon), FGDUCTUBURNERS-S3, EUTURBINE4-S3(Solar Taurus). Similar results to previous test. Again, S02 emissions exceeded permit limits. Hourly SO2 limits were as much as 159% over the emission limit for the turbines and as much as 533% over limit for the duct burners. Here is a summary of results for just the SO2 and NOx portion of the test. 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	Limit
	SO2 (lb/hr)	SO2 (lb/hr)	(T/Yr) S02**	SO2 (T/Yr)	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

*Note 8.2 lb/hr NOx stack test result vs 8.8 lb/hr emission limit.
** Annual ton per year values are based on continuous operation (8760 hrs/yr) at the measured lb/hr emission rate.

Pre-Inspection Meeting

We met with CH and were joined by Eric Kataja who is a corporate environmental analyst what happens to also have his office at this facility.

CH discussed current operations at that facility. He informed us that a significant malfunction was on-going that started at midnight. Inlet gas pressure draw on the well-field spiked in the middle of the night. As a result, they had to tune down all 4 turbines and turn off the 3 duct burners so were operating at about 2/3 capacity. Instead of the normal 70" H20 suction on the wellfield, it was only drawing in the 50s". He said he wasn't exactly sure what the problem was but related to condensate drain problem in the header pipe upstream from the facility at Advanced. He said it has been a long time since they have had this problem before. (More than a year I believe.) He further indicated that the water problem also filled up the new condensate knock-out tank just prior where the landfill gas enters the blower buildings for the 2 enclosed flares and the new 5000 cfm candle stick style flare. (The main landfill gas header line branches to both the flare building and to AHE's landfill gas treatment system. The landfill gas goes towards which feed line has draw being applied to from either the gas treatment system compressors or the blowers associated with the flares.) This made it impossible to operate any of the flares. All the flares including the North temp flare were not operating at the time of the inspection. It was also noted a separate problem with the new blowers over amping had yet to be fixed. 3 of the new blowers were in place with a 4th removed and replaced with an older one while diagnostics tests were being done.

(Note from June 2, 2011 AQD inspection report: "They claimed that the average gas flow from the landfill is 6200-7800 scfm,

whereas they would like to receive upwards of 9000 scfm if possible. They think that there are some significant blockages or impedances to vacuum at certain portions of the wellfield, such as the northwest end of the West Phase, and the area nearest the truck scale, where vacuum losses are in the range of 30". Normally, Fortisar is pulling an **average of 90" of vacuum** at the plant." Note from 7/26/2011 inspection report landfill vacuum was recorded at 84.2", From 2/9/2012 AQD inspection report "The Fortistar gas plant draws about 80" of vacuum on the south side of the railroad tracks bordering the south side of the West Phase of the landfill. On the north side of the railroad tracks, across from the gas plant, where the East and West gas loops begin, Republic only measures 50 or so inches of vacuum. This extreme loss over such a short distance is somewhat of a mystery. They have used a camera to visually see if there are obstructions in the line and found none. However, a major DTE-MichCon sweet natural gas pipeline, and an optical conduit are located under the railroad bed. The landfill gas piping is interwoven with these obstructions, and contribute to vacuum losses, along with several dead-90 degree turns at the gas plant.")

I gave Eric a list of records that I wanted copies of. (See Attachment (6)). He requested that I email this list instead directly to their corporate office in California which I did later in the day. I requested that the documents be provided by no later than Monday, January 14th.

During the meeting, I provided CH with a process flow diagram of the facility dated 1996. (See Attachment (3)). I asked him to discuss with the by-pass stacks on this diagram. As part of the discussion, he provided me with a more detailed process flow diagram that showed where the bypass stacks are in the process. (See Attachment (7)). There are 3 by-pass stacks, one associated with each of the 3 older turbines. The by-pass stacks are located just beyond the gas turbine exhaust but before the duct burner and the heat recovery steam system. They are used during start-up or when the heat recovery steam system is down for maintenance or repair. He estimated that the by-pass stack is used about 3% of the time.

CH then outlined that low sulfur diesel fuel is used to start each of the 3 older turbines. A 10,000-gallon underground storage tank is located onsite. He estimated that start-up takes about 5 minutes for each turbine and each turbine uses between 6 to 12 gallons per minute of diesel. He gave an explanation on why they use diesel and it was related to saving money on electricity costs and related to the cold start of the steam system. He also outlined that they have a 250 hp emergency generator onsite that also uses diesel. The generator is used to provide office lighting and to power an air compressor for their maintenance related tools.

I asked CH about what if any effect the higher sulfur content in the fuel is having on equipment at the facility. CH noted that in general all the equipment/piping that is in contact with the landfill gas is stainless steel, so the effect so far has not been significant.

CH mentioned there is no real shutoff value of gas into facility. Rather, draw from the landfill gas wells into the facility is stopped by simply turning off the compressors. The landfill gas will be drawn to the pull produced by the associated blowers of the nearby 2 enclosed flares & new candle stick flare or the temporary North flare. CH also stated that the landfill has been generating enough landfill gas since about the Spring of 2018 that AHE can operate at full capacity.

Onsite Inspection

Below is an evaluation of the compliance requirements for each regulated emission unit evaluated as observed/investigated during and after the onsite inspection.

EUTREATMENTSYS-S3: **Non-Compliant**

This emission unit treats landfill gas as it first enters the facility before it is used for subsequent use or sale. The landfill gas is directed from the well field through the following stages; 1) suction scrubber; 2) first stage compression; 3) gas cooler; 4) liquid knockout vessel; 5) second stage compression; 6) gas cooler; 7) refrigerant chiller; 8) liquid knockout vessel; 9) third stage compression; 10) final filtration and coalescing (removes oil and water); and 11) transport to turbine plant gas header. During the cooling stages the temperature of the landfill gas drops resulting in generation of condensate. Thus, the chilling stages serve to cool, dehumidify, and to reheat the gas. The treatment system removes particulate to at least the 10-micron level and removes enough moisture to ensure good combustion of gas for subsequent use; therefore, guaranteeing that the intent of the destruction of the non-methane organic compounds (NMOC) will be maintained. An estimated 3000 to 4000 gallons of odorous condensate is removed from the landfill gas every day and stored in an 10,000 above ground storage tank. The condensate is shipped off-site every other day. A u-shaped vent pipe is located on top of the tank. See attached photos which shows one of the compressors inside the treatment system build, some of the process control screens, a process control diagram for one of compressors and the condensate tank. (Minor amounts of odors were noted standing next to the tank.) There are 4 main compressors for the turbines and 3 smaller compressors (referred to as auxiliary compressors) for the duct burners. 3 of 4 of the main compressors were operating while all 3 smaller compressors were off line during the inspection. The compressors are all fired by electricity. The equipment inside the treatment/compressor building appeared to be maintained with only minor amounts of odor detected.

The inlet landfill gas temperature was at 57 degrees F. The outlet pressure from Compressor #4 was 269" H20 with a temp of 225 degrees F. The fuel gas header outlet was at 72 degrees F. and a pressure of 263" H20. AHE monitors a variety of parameters from this treatment process including inlet/out landfill gas temperature, temperature & pressure drop across heat exchangers and a coalescing particulate filtering system. These parameters are outlined in a preventative maintenance plan.

Note that the 10-micron filter in the landfill gas treatment system is purportedly changed out annually during normal maintenance. There are 4 of these; one for each of the main compressors.

-Emission Limits N/A

-Process/Operational Restrictions

AHE appears to be out of compliance with these conditions. In particular, "the permittee shall operate the treatment system so that any emissions from any atmospheric vents or stacks associated with the treatment system be subject to Paragraph 60.752(b)(2)(iii)(A) or (B)." Essentially, NSPS WWW requires that these vents/stacks must be sent to a flare. It was noted in the process flow diagram for Compressor #4 that there is a "package vent" that appears to vent to atmosphere. (See attached photo.) The vent is located just prior to the gas exiting the treatment building but before it enters the turbine building. This discovery prompted follow-up questions to AHE. CH indicated that there are four stacks; one associated with each of the main compressors. They are used whenever the compressor(s) is turned off. They vent the residual landfall gas in the system. The stacks exit about 6 feet above the roof line with pipe diameters estimated at 4". The 3 auxiliary compressors have simple safety vents that are triggered if there is an exceedance of a set point pressure drop.

-Monitoring/Recordkeeping

AHE appears to be in compliance with these conditions.

Attachment (8) is copy of treatment system operating parameter data for 2018. I wasn't able to verify that the treatment system operating parameters were operating within range since the normal operating ranges were not well spelled out in the preventative maintenance plan.

Attachment (9) shows all preventative maintenance activities performed in 2018 and also noted various upstream problems at ADS.

-Reporting

Requires Semi-annual reporting including a start-up, shutdown, and malfunction (SSM) report. The report is supposed to contain the following: "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". Bypass flow is occurring on a regular basis whenever one of the 4 main compressors goes through a shutdown.

-Other Requirements

Attachment (10) is the last copy of the SSM plan. It appears that AHE has implemented and is following the plan. However, the plan does not describe landfill gas venting from the compressors that occurs when each compressor is shutdown. Attachment (11) is the latest copy of the preventative maintenance plan (PMP). It appears that AHE has implemented and is following the plan although the plan is out of date. It is dated September 2009. The description of the treatment system is significantly different than what is described in the SSM.

EUTURBINE4-S3: **Non-Compliant**

EUTURBINE4-S3 is a stationary gas turbine as defined in 40 CFR 60.331 that has an enclosed firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air. Solar Taurus Turbine (EUTURBINE4-S3) rated at 68 MMBtu/hr was first operated in December 2005. See attached photo of this turbine.

-Emission Limit

0.9 lbs S02/MW hr heat input. Stack test conducted on 10/19/2018 resulted in a value of 1.4 lb/MW hr. This is a violation of the ROP limit, a PSD violation and a violation of Subpart KKKK. See Attachment (12) which includes the test results and the review of the results conducted by AQD's Technical Programs Unit.

-Design/Equipment

Requires continuous monitor/record landfill gas flow to this turbine. Attachment (13) shows this information for 2018.

Requires monitor/record weekly BTU content of the landfill gas. Attachment (14) shows this information for 2018. It varied between 398 to 507 Btu/cubic foot.

-Monitoring/Recordkeeping

Requires a sulfur content monitoring program for the landfill gas. Attachment (15) shows the results for tests done in October 2018. It showed results around 350,000 ppBV or 480,000 micrograms per cubic meter.

-Other Requirement(s)

Requires compliance with NSPS Subpart KKKK. Due to the SO2 emission test failure, AHE is out of compliance with KKKK.

Requires compliance with NESHAP YYYY. Mostly reporting requirements. (Note: Stack testing conducted in October 2018 for hazardous air pollutant HCL which is the principal HAP emitted from this facility showed compliance with emission limits with actual test values much lower than permitted values.)

FGNOX-S3: **Non-Compliant**

This flexible group applies to the NOx emission limit associated with the following specific emission units: EUTURBINE1-S3, EUTURBINE2-S3, EUTURBINE3-S3, EUTURBINE4-S3, EUDUCTBURNER1-S3, EUDUCTBURNER2-S3, EUDUCTBURNER3-S3, EUENCLOSEDFIARE1-S2, and EUENCLOSEDFLARE2-S2; and to all other process equipment at the source, including equipment covered by other new source review permits, R336.1201 grand-fathered equipment and R336.1201 exempt equipment. See attached photo of one of the turbines.

-Emission Limit

NOx limit of 205 tons per year of which 165.6 tons is for the turbines/duct burners. Stack testing conducted in October 2018 showed compliance with hourly emission limitations which leads to compliance with calendar year limit. Attachment (16) shows 12-Month Rolling Averages for NOx. Note that for EUTURBINE 3-S3, a value of 32.9 TPY was calculated for the July 2018 versus a permit limit of 33.0 TPY.

-Monitoring/Recordkeeping

Requires landfill gas usage for all 4 turbines. See Attachment (13) that was mentioned earlier in the report.

Requires monitoring heat content of the landfill gas. See Attachment (14) that was mentioned earlier in the report.

Requires monthly NOx emission rate calculations. See Attachment (15) which shows compliance with this requirement in 2018.

-Other Requirement(s)

Requires compliance with NSPS Subpart GG and NESHAP. AHE is out of compliance with Subpart GG. See FGTURBINES-S3.

FGTURBINES-S3: **Non-Compliant**

This flexible group only contains requirements for the three (3) EGT turbines that have come from NSR, the turbine NSPS, or the turbine MACT. Since there is a treatment system before the turbines, there are no applicable NSPS WWW requirements for the turbines.

-Emission Limits

2.9 lbs SO/hr, 12.5 tpy for FGTURBINES-S3. (Note: Limit applies to each individual turbine-not the combined total as erroneously outlined in ROP.) October 2018 stack test showed exceedances of all SO2 emissions limits for all the turbines by as much as 100% for the turbines and several hundred % for the duct burners. Refer to Attachment (12) for table of results as previously provided in the report.

-Process/Operational Restrictions

Requires sulfur content of the landfill gas shall not exceed 0.8% by weights. MAERS reports showed 0.1% by weight sulfur content of the gas which converts to around 300 to 400 ppm.

-Monitoring/Recordkeeping

Requires sulfur content and nitrogen content monitoring of the landfill gas. AHE is out of compliance with Subpart GG for the following reasons:

Diesel fuel is being used to startup the 3 older turbines. AHE failed to notify AQD that diesel fuel is being used as an alternate fuel as required by Subpart GG. Furthermore, AHE has been operating under a waiver issued by U.S. EPA on January 19, 1996 that waived the requirement for daily fuel sampling for sulfur and nitrogen as long as only landfill gas was being fired in the turbines. Attachment (17) is the associated documentation for this.

-Other Requirement(s)

Requires compliance with NSPS Subpart GG and NESHAP Subpart YYYY. AHE is out of compliance NSPS Subpart GG as already stated. Due to unpermitted modifications of the turbines, Subpart GG is no longer applicable. Subpart KKKK has

been applicable since the turbines were modified. AHE is out of compliance NSPS Subpart KKKK.

FGDUCTBURNERS-S3: **Non-Compliant**

Three (3) 20 MM Btu/hr duct burners associated with three (3) EGT-Typhoon turbines used for heat recovery enhancement to operate a common steam turbine generator. 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.

-Emission Limits

0.3 lbs SO/hr, 1.5 tpy for each duct burner. October 2018 stack test showed exceedances of all SO2 limits by several hundred %. Refer to Attachment (12) for table of results as previously provided in the report.

-Monitoring/Recordkeeping

Requires the amount of landfill gas combusted daily. AHE is in compliance with this requirement.

-Other Requirement(s)

Requires compliance with NSPS Dc. AHE is in compliance with this section as the only substantive requirement is to record the amount of landfill gas combusted daily. Since the 3 associated turbines have been modified, NSPS Dc no longer applies. AHE is out of compliance with NSPS Subpart KKKK.

AQD Consent Order No. 16-2015: **Non-Compliant**

This Consent Order requires compliance with CO emission limits for the turbines and to conduct an additional round of emission testing by for CO, S02, NOx, VOC's and HCL for all the turbines when the duct burners were on and off.

Paragraph 9.B.2 reads as follows:

"In addition to emission testing required by the Company's ROP, between June 1, 2015 and June 1, 2018, the Company shall complete emission testing for carbon monoxide, sulfur dioxide, nitrogen oxide, volatile organic compounds, and hydrogen chloride from FGTURBINES-S3 and FGDUCTBUNERS-S3 in accordance with methods and procedures approved by the AQD Technical Programs Unit Supervisor. The testing shall occur during two operating conditions when the duct burner is in operation and when the duct burner is not in operation."

Paragraph 13 reads as follows:

"...On and after the effective date of this Consent Order, if the Company fails to comply with paragraph 9.B.1, 9.B.2, 9.B.3, or 9.B.4 of this Consent Order, the Company is subject to a stipulated fine of up to $5,000.00 per violation. The amount of the stipulated fines imposed pursuant to this paragraph shall be within the desecration of the MDEQ."

This testing was to be completed by no later than June 1, 2018. Due to problems during the test related to shutting off 25 high sulfur content gas wells, a valid test was not conducted till October 2018. This Violation was noted in AQD VN dated August 30, 2018. See Attachment (5). This violation has not been formally resolved.

Blower Building for 2 enclosed flares and 1 open candle stick style flare owned/operated by ADS but located directly adjacent to ADE:

We visited the blower building for the flares since they were located within a few feet of AHE's property.

A new knock out tank has been installed on the inlet side of the landfill gas as it enters the blower building. It purportedly was filled with water preventing the flare system from operating. See attached photo. On-going construction was occurring in and around the knock-out tank. Inside the blower building, there was 3 new compressors and another existing compressor. Purportedly, the new compressors were not operational even before the problem with the knockout tank due to an overamping issue whenever attempts are made to start them. One of the new blowers had been sent away for diagnostic testing. These blowers/compressors act as a back-up draw on the landfill gas collection system in the event there is reduced draw from AHE's facility. See attached photo. Since the flares were not operational despite the reduced draw from the AHE's facility, an email request for information was made ADS:

"Bob,

As you know, I am one of the assigned air quality inspectors for the Arbor Hills stationary source. Yesterday, I conducted a compliance inspection of Fortistar. It was brought to my attention that there was an on-going significant issue with condensate in the landfill gas line feeding into the Fortistar plant that forced a reduction in the energy plant production and draw to the well field. It started around midnight early Tuesday morning. Furthermore, it appeared that none of the 4 flares were operational possibly due to the same problem. (It was also noted that the new knockout tank to the blower building was

water logged and ongoing issue with new blowers over amping was still unresolved.) Please also note that intense odors were observed along 6 mile road Tuesday morning with a light South wind. Numerous odor complaints were also received from the public as well with some coming from several miles downwind. As a result, please provide the following information/records via email as soon as possible by no later than Monday, January 14, 2019:

A complete description of the incident that occurred on January 8th including when it started and when(if) it has been resolved. Please include hours each flare operated (if any) and landfill gas usage (if any) for each flare for January 8th. Please also fully describe the ongoing issue with the blowers related to 3 flares adjacent to the Fortistar plant.

In addition, please provide for all of 2018, the daily landfill gas usage for each of the 4 flares. Let me know if you have any questions. Thanks! "

Here is the reply:

"During the morning of Tuesday January 8th ADS was contacted by Fortistar regarding a liquid issue in the wellfield that was affecting the conveyance of landfill gas to the plant. Upon investigating the condition immediately it was discovered that the contractor installing the permanent sump in the area behind the blower building had hit the forcemain and pinched the pipe. This occurred on Monday January 7th resulting in condensate backing up in the conveyance system of the wellfield. The contractor had not notified ADS or Fortistar that the forcemain had been hit. The forcemain was repaired and back in service by midday Tuesday. Condensate that had backed up within the gas conveyance system during this period was released resulting in increased flow to the sump located at the northwest corner of the landfill gas to energy plant/blower flare compound. While the vast conveyance infrastructure provides significant capacity for liquid without creating more compromised conditions associated with landfill gas flow, the limited infrastructure at the LFGTE plant and blower/flare compound is not sized to manage the amount of liquid that had backed up during this period. This resulted in excess liquid as the liquid drained to the compound. This significant amount of liquid overwhelmed the knockout pot (KOP) for the flares which completely filled and cut off all gas flow resulting in a controlled shut down of the flare. ADS and Fortistar were able to avoid a similar phenomenon at the plant by reducing the vacuum being applied to the wellfield to prevent pulling liquid into the condensate management system upstream of the compressors. The measures taken were successful in avoiding liquid from entering the plant and causing a complete shutdown of the extraction system. The removal of the excess liquid within the system at the sump was completed on Wednesday morning when liquid flow returned to steady state. Once the liquid in the system was removed, Fortistar increased the vacuum to the wellfield and the liquid in the KOP was evacuated into holding containers for disposal and the flare was back to operational status at approximately 3:30 PM on Wednesday January 9, 2019.

The sump that connects to the KOP is currently being replaced, wet conditions and fill soils has delayed completion of this installation. We anticipate that the sump for the KOP will be installed within a month, weather depending. In the interim, ADS has holding tanks and piping installed to drain the KOP in the event the need to remove excess liquid occurs. The excess liquid encountered at the KOP and the sump did not have an effect on the northwest temporary flare which is operational.

On December 17, 2018 ADS sent an email describing the blower related issues. The email stated:

"When we were in the process of commissioning the control system and when we tried to bring the 5,000 SCFM blowers online, the blowers would over-amp. They simply could not run and supply the required flow to the system. On December 6, 2018, the company that constructed the blowers (Lonestar), had a technician come on-site to see if he could diagnose the problem. The Lonestar technician could not determine why the blowers were over-amping and his initial thought was that the motors were under-sized. The Lonestar engineers went back and re-calculated their numbers to see of that truly was the issue and they deemed that the way the blowers were designed should be sufficient for our needs. On December 13, 2018, Lonestar requested that we send back one of the blowers so that can take a closer look at the blower and the motor separately to assure there is not an issue."

Lonestar initiated diagnostic testing on January 7th. As of the date of this response, Lonestar still has not definitively determined the cause of the over-amping and has requesting assistance from the motor vendor for the blowers. They are also evaluating options for reconfiguring the blower assembly to reduce the electric startup requirements causing the over-amping without compromising blower performance. Once their assessment is complete and provided to ADS we will update DEQ on their status.

Appended please find the flare and plant data as you requested in your January 9, 2019 email as well as a completed SSM Report for this event."

Attachment (18) are the attachments associated with this email. This information will be fully reviewed and discussed in separate future MACES report complied under ADS.

Roof Inspection:

A roof inspection was conducted on the building containing all the turbines exhaust stacks. See attached photos. No opacity was noted coming from any stacks on the roof. Overall, ventilation equipment appeared to be fair shape. Some minor sulfur

odors were noted. Three by-pass stacks associated with the 3 older turbines were observed. They appeared to have identical dimensions to the turbine exhaust stacks. A roof inspection was not conducted of the treatment/compressor building, but that roof is also readily accessible by stairs.

Control Room Visit:

We visited the control room and took photos of some of the control screens. See attached photos.

CH indicated that the process information coming from the 2 enclosed flares was not currently operational and would be reading zero even if the flares were operating. CH didn't know when it was going to be repaired. CH expects process information from the new candlestick flare will be added to their control screens at some future date. CH also explained how power generation is significantly increased during the Winter time as power efficiency increases with lower ambient temperatures. (Note: Because of this, it is easier to meet a lbs S02/MW hr limit in the Winter than it would be in the Summer.)

Turbine	MW	SCFM
GT1	3.75	1558
GT2	3.93	1663
GT3	3.69	1572
GT4	4.49	1853
Totals	15.9	6648

Other process parameters of note include 51.7% mole fraction of methane in the gas, a landfill suction pressure of 54.6" H20 versus a normal value of 70", 185.18 MM Btu/hr total gas consumption rate, condensate tank reading of 5750 gallons, and the Main Compressor #3 plus the 3 auxiliary compressors were not operating. CH noted that ADS dictates to AHE on what set point to maintain on the draw on the well field. It set to optimize the well parameters in the collection system. The current set point of 70" was determined to be the new proper set point earlier in 2018 when the 24" header pipe was completed which improved/lowered the pressure drop across the system. CH noted that the new candlestick flare is designed (when fully operational) to automatically kick on when any drop in landfill gas collection draw is detected. The enclosed flares are/will be upgraded to be able to do the same.

Emergency generator:

A 250 HP diesel fired emergency generator was inspected. See attached photo. It has not previously been noted in the inspection files. It is used to power office lighting and maintenance tools in the event of a power failure. A meter that showed the total operating hours of the generator wasn't visible but might have been inside a closed panel. Onsite records or further specifics were not available but required compliance documents were requested. Attachment (19) is the information submitted by AHE to demonstrate compliance with the RICE MACT and/or NSPS IIII.

10,000-gallon diesel storage tank: **Non-Compliant**

See attached photo was marked the location of the underground storage tank. This tank was not previously noted in the files. The use of diesel fuel from this tank into the turbines is not covered by any existing PTI and is therefore an unpermitted process and in violation of Rule 201-No permit to Install. Attachment (20) outlines the monthly amount of low sulfur diesel fuel that was used in 2018. About 9859 gallons were used with almost all of it related to use in the turbines.

EUCRSCOLDCLEANERS-S3: Not evaluated.

EUGRSRULE 290-S3: Not evaluated. AHE indicated that there are currently no emission units at the facility that fall under Rule 290 applicability.

Post-Inspection Meeting

We held a brief post-inspection meeting with CH. I indicated that I had concerns with the 3 by-pass stacks and use of diesel during start-up of the turbines. I further indicated that I would be reviewing the records that AHE would be forwarding me for compliance. I also indicated that a VN would be forthcoming that documented SO2 stack testing emission exceedances that occurred in October 2018. We thanked CH for his time and cooperation, and we departed the facility at approximately 11:55 am.

Compliance Summary

The Company is out of the compliance as outlined in the following table and will be sent a Violation Notice (VN). They will have 21 days to respond.

Process Description	Rule/Permit Condition Violated	Comments

FGTURBINES-S3 consisting of EUTURBINE1-S3, EUTURBINE2-S3, EUTURBINE3-S3.	ROP, FGTURBINES-S3, Condition I. S02 limits.	October 16-18, 2018 stack testing results indicated that SO2 pounds per hour (lbs/hr) exceeded permit limits of 2.9 lbs/hr and 12.5 tons per year (tpy) limit for each turbine.
FGDUCTBURNERS-S3 consisting of EUDUCTBURNER1-S3, EUDUCTBURNER2-S3, EUDUCTBURNER3-S3.	ROP, FGDUCTBURNERS-S3, Condition I.	October 16-18, 2018 stack testing results indicated that SO2 lbs/hr exceeded permit limits of 0.3 lbs/hr and 1.5 tpy limit for each duct burner.
EUTURBINE4-S3	ROP, EUTURBINE4-S3 Condition I. 6. SO2 limit.	October 16-18, 2018 stack testing results indicated that SO2 lbs/hr exceeded permit limits of 0.3 lbs/hr and 1.5 tpy limit for each duct burner.
FGTURBINES-S3 and FGDUCTBURNERS-S3	Consent Order 16-2015, Paragraph 9.B.2 Testing, Paragraph 13 Stipulated penalties.	Failed to complete acceptable performance testing between June 1, 2015 and June 1, 2018 as required by CO. Acceptable testing did not occur until October 16-18, 2018.
FGTURBINES-S3, FGDUCTBURNERS-S3 and EUTURBINE4-S3.	Part 18. Prevention of Significant Deterioration (PSD) of Air Quality. 40 CFR 52.21 and R 336.2802 (Rule 1802), Rule 201.	Unpermitted PSD major modification that has resulted in a significant emissions increase and a significant net emissions increase (Rule 1802(4)(a)) of SO2 greater than 40 tons per year. This also triggers a requirement for a PTI permit.
FGTURBINES-S3, FGDUCTBURNERS-S3, 10,000-gallon underground diesel storage tank and 3 bypass stacks using during start-up and when heat steam recovery systems are undergoing maintenance.	Rule 201-No Permit to Install.	3 turbines are using diesel fuel as an alternate fuel to landfill gas during start-up. This represents reconstructing an emission unit and a meaningful change in the quality and nature to emissions compared to the original permit application for these turbines which failed to describe this process.
FGTURBINES-S3	ROP, FGTURBINES-S3 Condition VII.1., 40 CFR, Part 60, Subpart GG Standards of Performance for Stationary Gas Turbines.	Diesel fuel is being used to start-up the 3 turbines. AHE failed to notify AQD that diesel fuel is being used as an alternate fuel as required by Subpart GG. Furthermore, AHE has been operating under a waiver issued by U.S. EPA on January 19, 1996 that waived the requirement for daily fuel sampling for sulfur and nitrogen as long as only landfill gas was being fired in the turbines.
FGTURBINES-S3, FGDUCTBURNERS-S3.	40 CFR Part 60, Subpart KKKK Standards of Performance for Stationary Combustion Turbines.	Unpermitted modifications to this emission unit triggered Subpart KKKK applicability which is not being complied with.
EUTREATMENTSYS-S3	ROP, EUTREATMENTSYS-S3, Condition IX- OTHER REQUIREMENTS.	The Preventative Maintenance Plan (PMP) is out of date. Process description does not match Start-up, Shutdown Malfunction Abatement Plan (SSM). It isn't clear what operating parameters are being measured, what the acceptable range is for each operating parameter or specifically what piece of process equipment it pertains to. The PMP needs to be updated/revised including current process flow diagrams added for clarity.
EUTREATMENTSYS-S3	ROP, EUTREATMENTSYS-S3, Condition IX.2., 40 CFR Part 63, Subpart AAAA National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills	SSM plan does not describe landfill gas venting events that occur when each of the main compressors goes through a shutdown sequence.
EUTREATMENTSYS-S3	ROP, EUTREATMENTSYS-S3, Condition III.2., 40 CFR Part 60, Subpart WWW Subpart WWW - Standards of Performance for Municipal Solid Waste Landfills	Treatment system contains 4 stacks; one each associated with the 4 main compressors that vent to atmosphere generally whenever one of the compressors is turned off to vent residual landfill gas. These vents are not controlled by a flare or other control device.

Image 1(Aerial Photo) : Aerial Photo

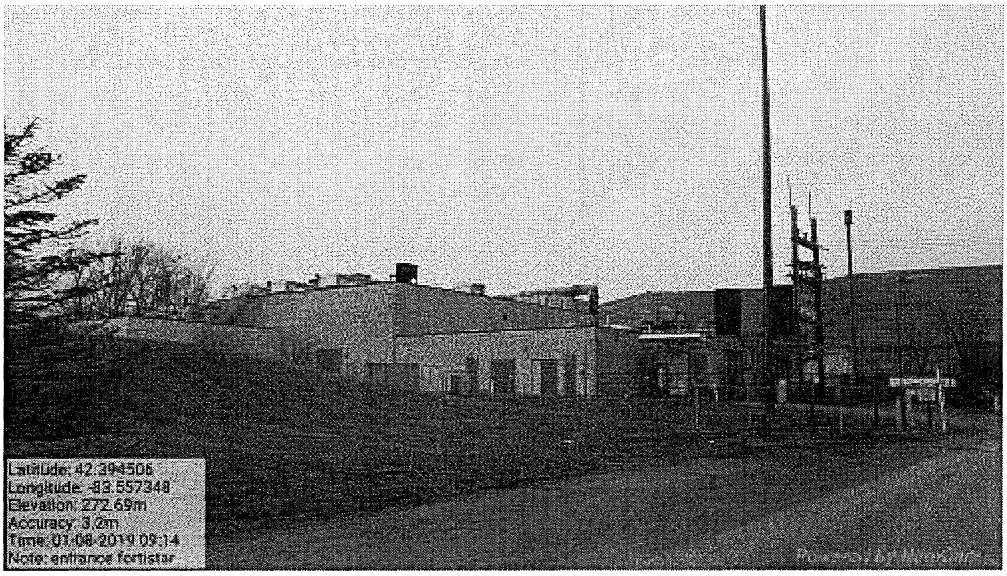
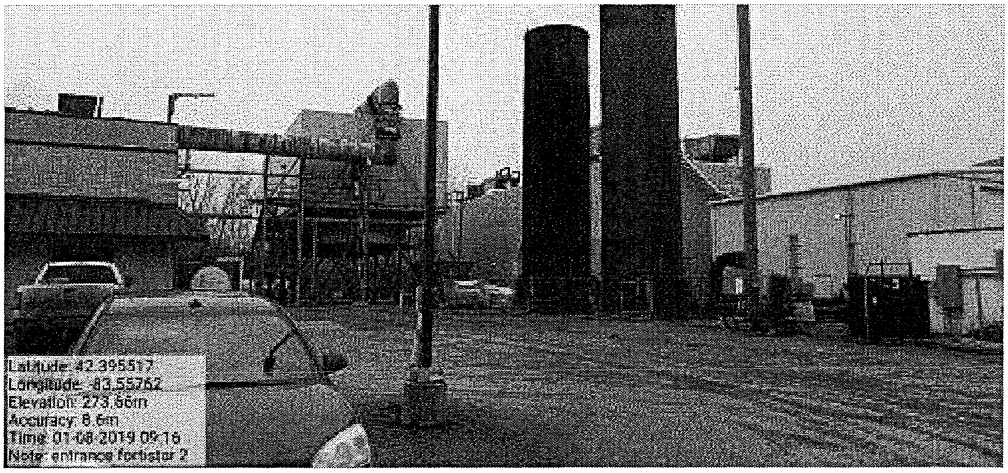
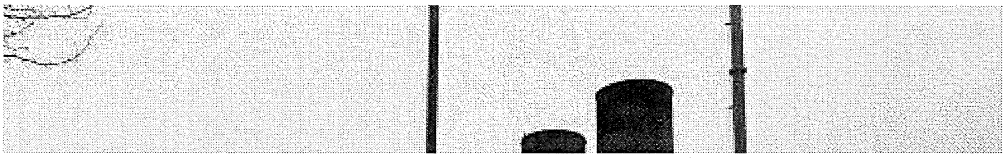


Image 2(Entrance) : Entrance to facility





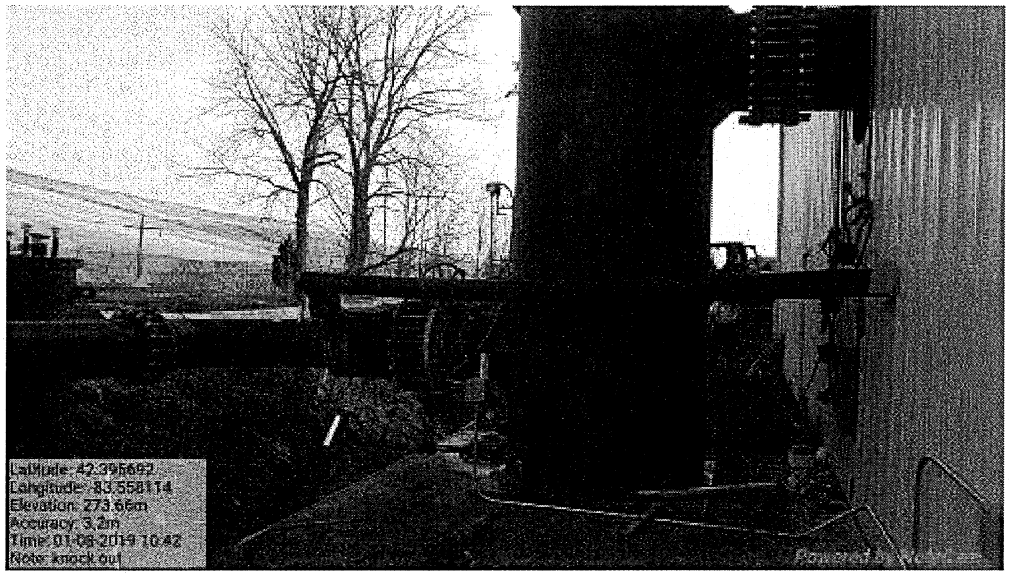


Image 4(Knock-out tank) : Knock-out tank just prior to landfill gas entering flare blower building.

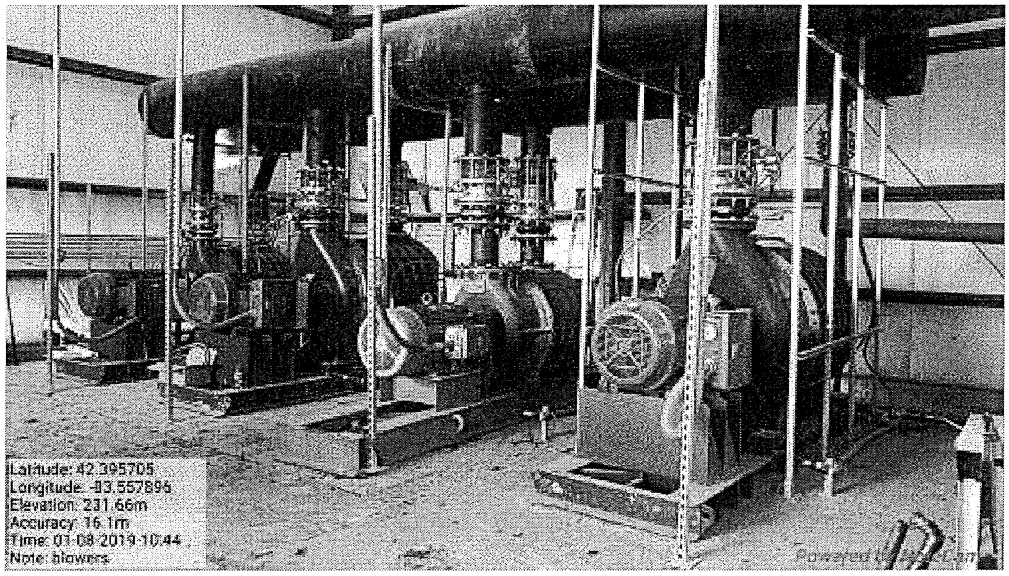


Image 5(Flare Blowers) : Blowers for 2 enclosed flares and new flare.

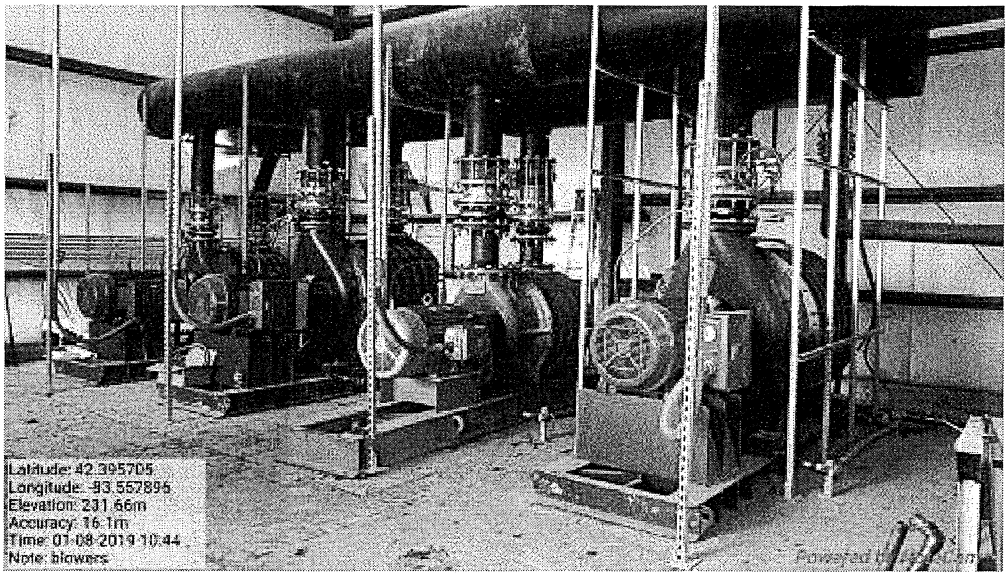


Image 6(Blowers) : Blowers for pressurizing the gas pipelines going to the flares.

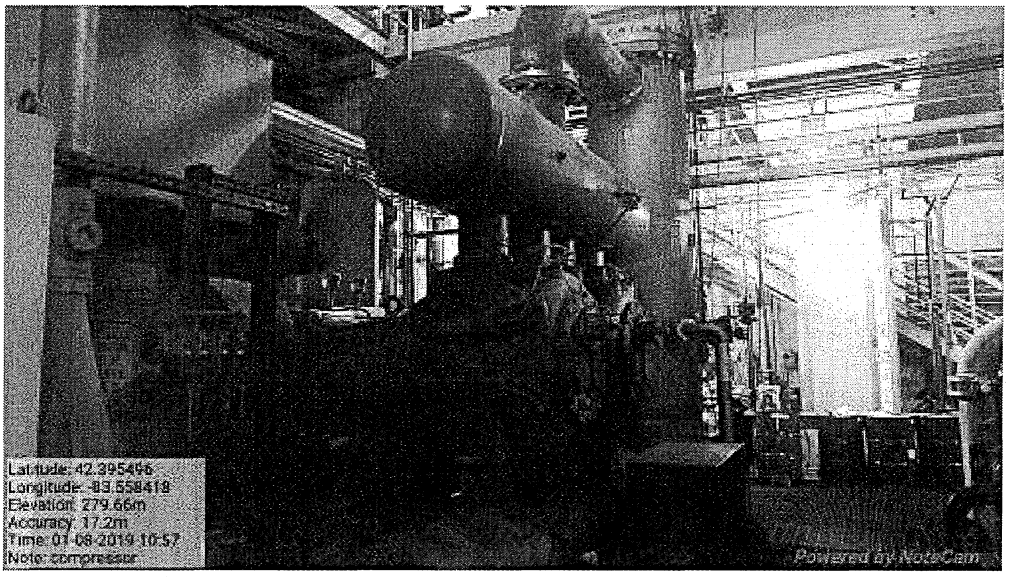


Image 7(Compressors) : One of the compressors inside the landfill gas treatment system.

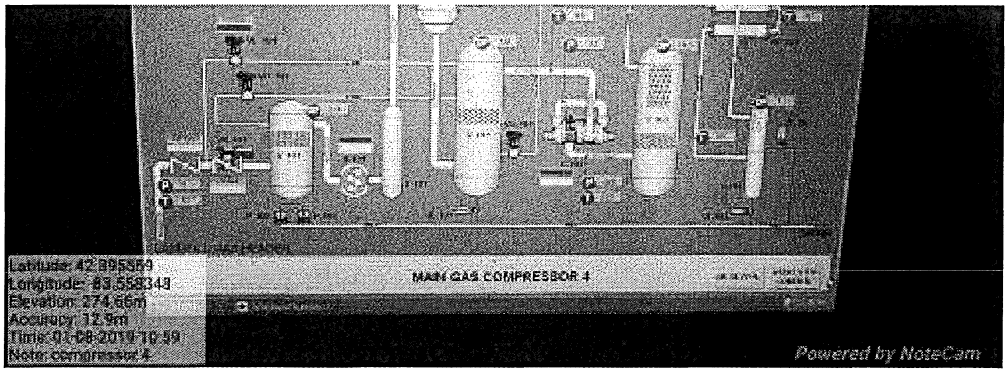


Image 8(Pro stem building.

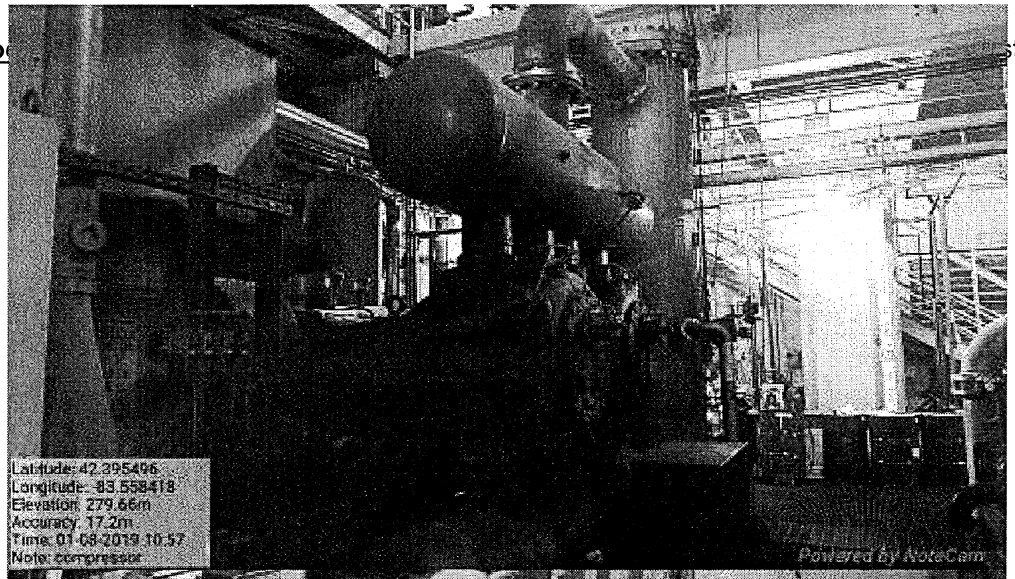


Image 8(Compressors) : One of the compressors inside the landfill gas treatment system.

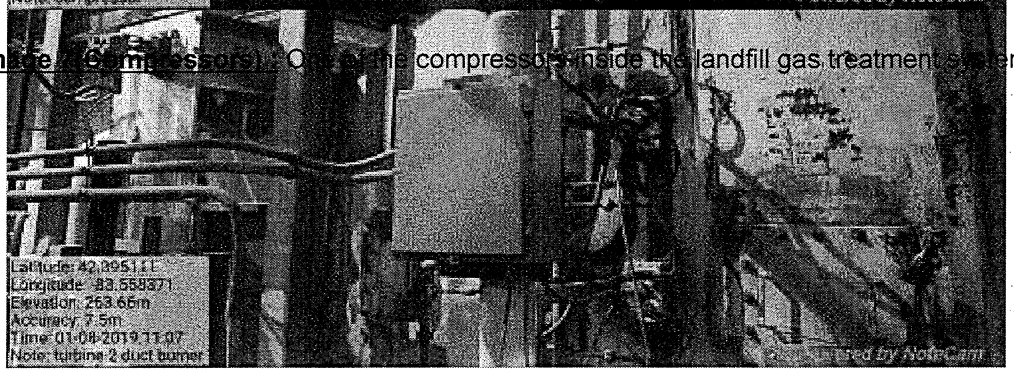


Image 9(Duct Burner) : Outside of duct burner where it is located in the process just past exhaust from turbine.

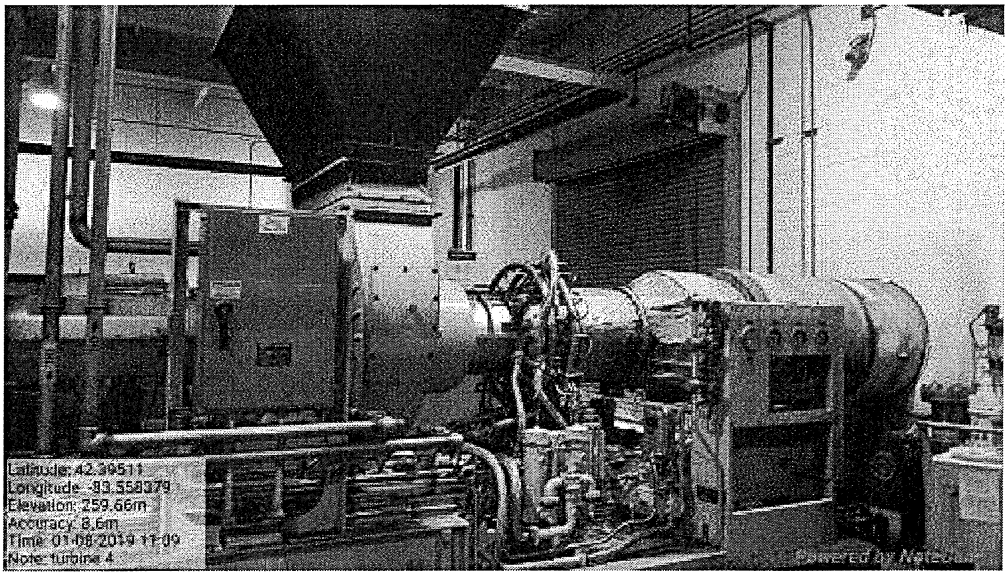


Image 10(Turbine 4) : Turbine 4.

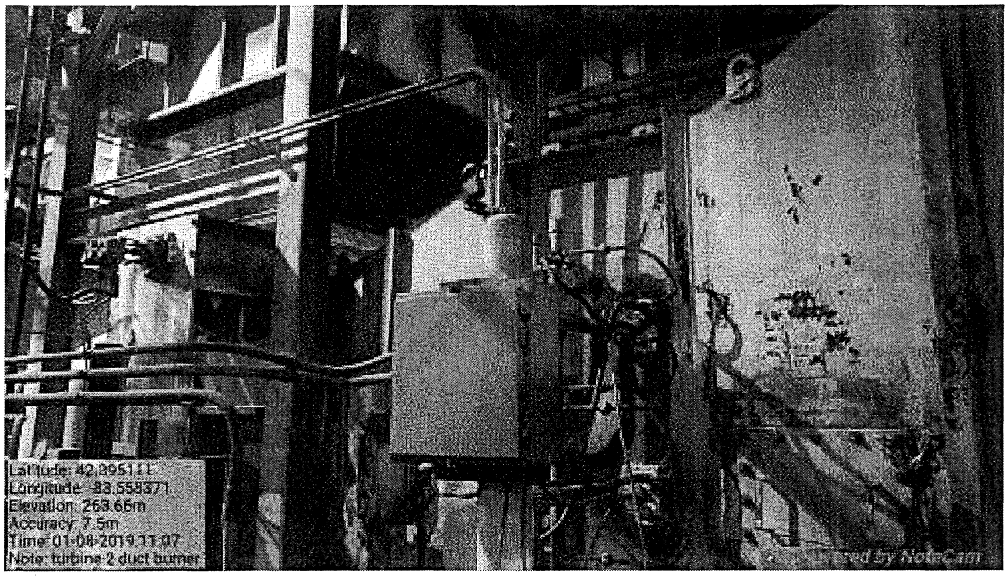


Image 9(Duct Burner): Image 10(End of generator) … exhaust from turbine.

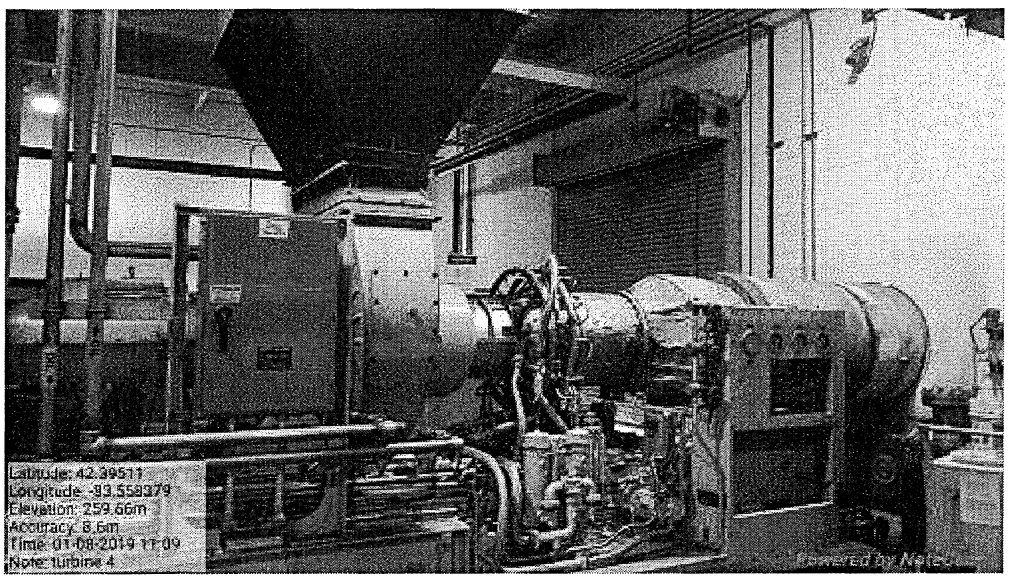
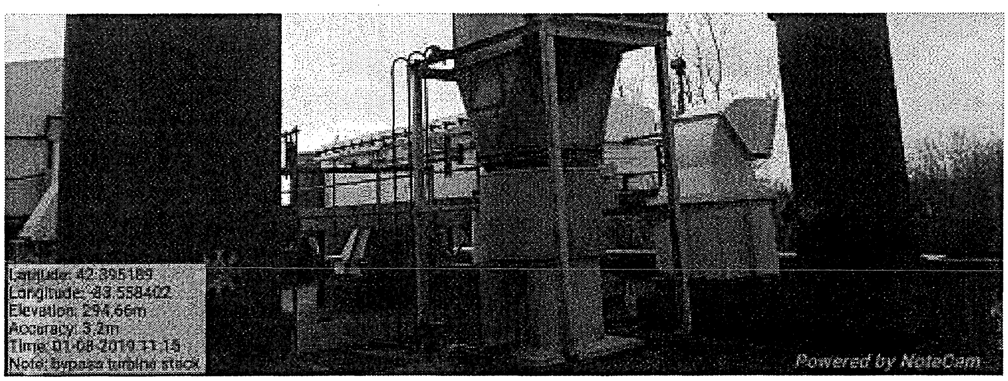


Image 12(Turbine Stacks): Image 10(Turbine 4) … turbine stacks.



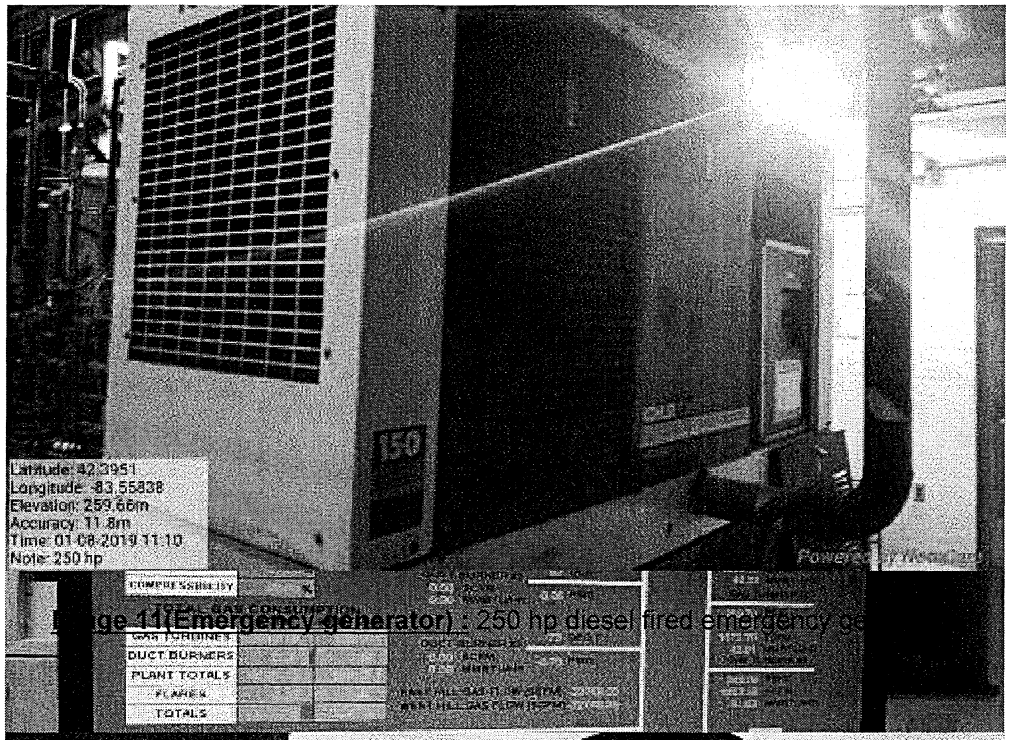


Image 11(Emergency generator) : 250 hp diesel fired emergency ge

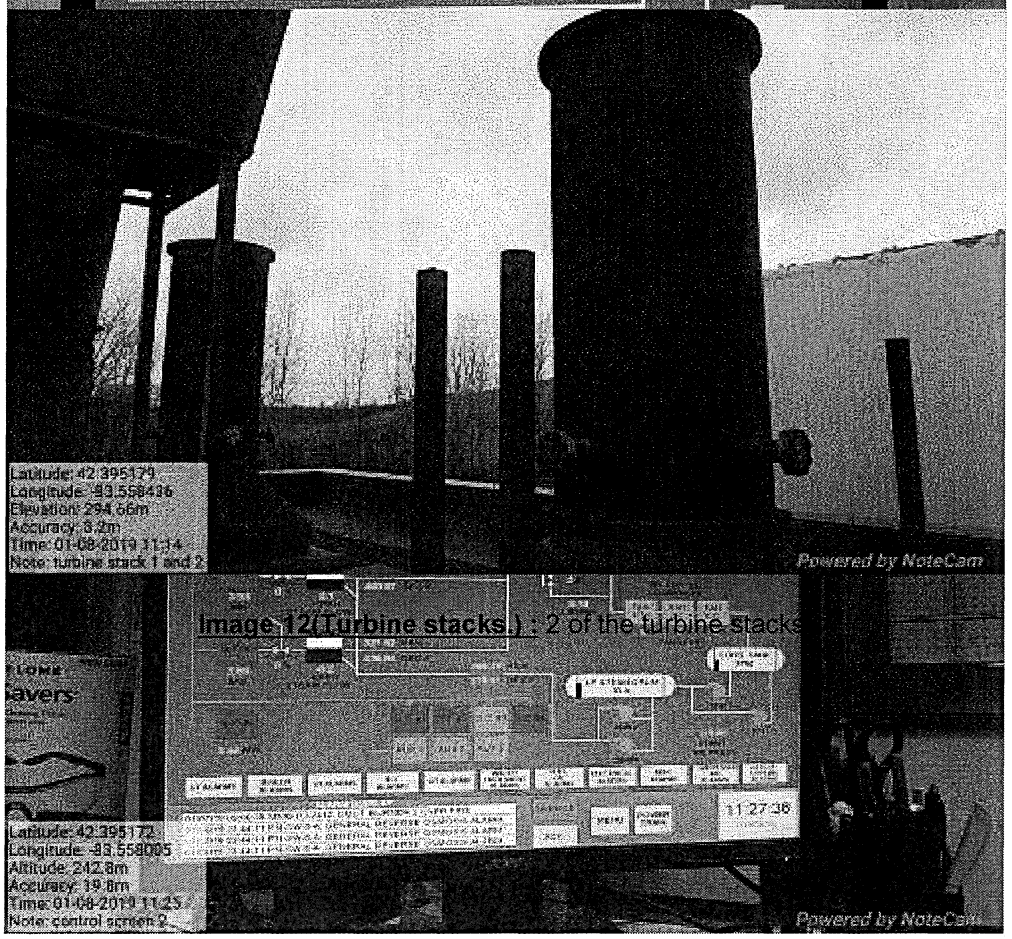


Image 12(Turbine stacks) : 2 of the turbine stacks

Image 15(Control screen 2) : Control screen view 2.

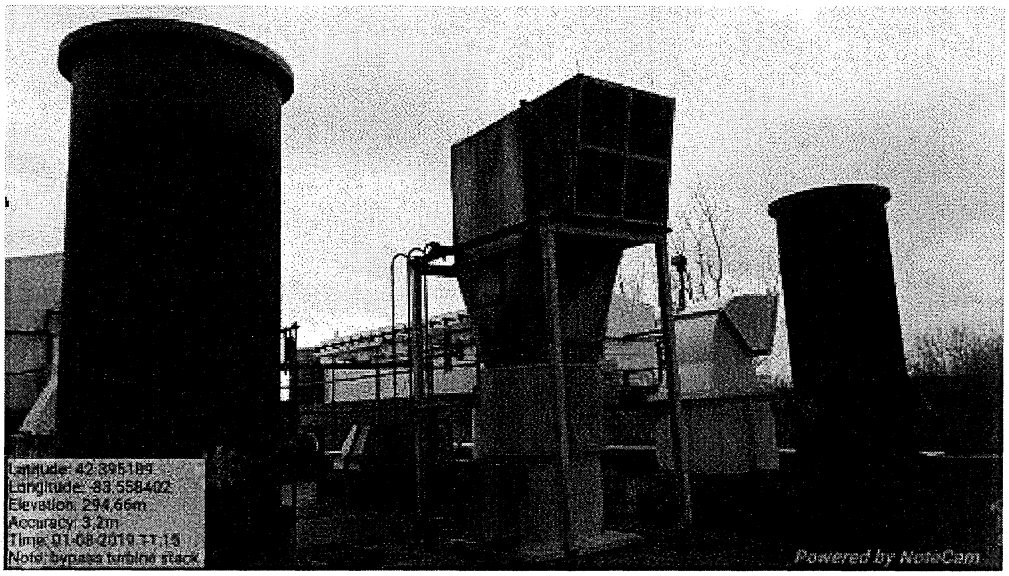


Image 13(Bypass stack) 2 of 3 turbine bypass stacks.

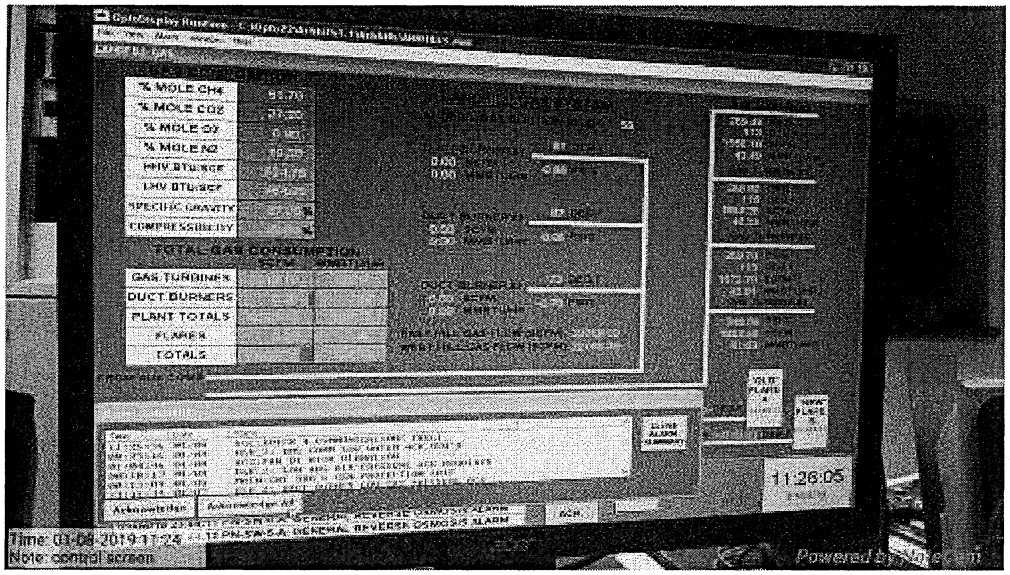
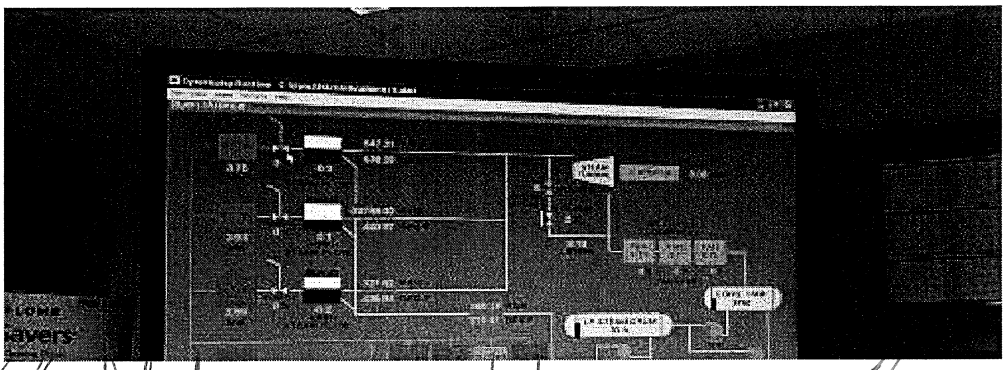


Image 17(Location unknown) Control screen for 10,000 gallon diesel storage tank.



NAME M. Kovalchuk DATE 1/15/2019 SUPERVISOR