

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

N236963591

FACILITY: ADRIAN LANDFILL		SRN / ID: N2369
LOCATION: 1970 NORTH OGDEN HWY, ADRIAN		DISTRICT: Jackson
CITY: ADRIAN		COUNTY: LENAWEE
CONTACT: Nicole Green , Environmental Specialist		ACTIVITY DATE: 07/15/2022
STAFF: Diane Kavanaugh Vetort	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Also contact Eric Brisco, Plant Manager, ADRIAN ENERGY ASSOC (S2) Complete scheduled compliance inspection Major ROP Sectioned facility: Landfill and Energy Plant		
RESOLVED COMPLAINTS:		

DATE: July 15, 2022

N2369 Major / ROP Source: Adrian LF (Republic Services) and Adrian Energy Associates (EPP Service; LES Project Holdings). Full Compliance Evaluation (FCE) and electronic records review.

Company Contacts:

Nicole Green, Environmental Specialist, 734-572-6051, NGreen@republicservices.com

Tyler Smith, Environmental Scientist, EIL Consultant, 616-558-3978, tsmith@eilllc.com

Ed Werkheiser, Sr. Asset Manager - Compliance T: 610-557-1884 | C: 484-294-8253, 1605 N. Cedar Crest Blvd., Suite 509 Allentown, PA 18104 ewerkheiser@eppservice.com

Eric Bisco, Plant Manager, AEA on site.

Purpose:

On July 15, 2022, EGLE AQD Diane Kavanaugh Vetort (DKV) conducted an announced compliance inspection of the Adrian Landfill (ALF) and Adrian Energy Associates (AEA) located at 1970 North Ogden Highway, Adrian, Michigan in Lenawee County. The purpose of this inspection was to determine if this facility is in compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the conditions of Renewable Operating Permit (ROP) number MI-ROP -N2369-2020; the Federal New Source Performance Standard (NSPS) for Municipal Solid Waste (MSW) Landfills 40 CFR Part 60, Subpart WWW (now Federal Plan 40 CFR 62, Subpart OOO), the federal National Emissions Standards for Hazardous Air Pollutants (NESHAP) for MSW Landfills 40 CFR Part 63, Subpart AAAA (revised), and the NESHAP for Major Sources, Reciprocating Internal Combustion Engines (RICE) Subpart ZZZZ (RICE MACT). The ROP is currently undergoing a Reopening to add applicable requirements related to Subpart OOO and Subpart AAAA (OOO/AAAA) and remove obsolete Subpart WWW requirements.

EULANDFILL-1, EUACTIVECOLL-1: This is currently an inactive landfill, owned/operated by Republic Services, Section 1 of the ROP, with both a closed portion under final cover and a potentially active area under interim cover. ALF also owns/operates a permit exempt EUOPENFLARE-1 Open Flare on the landfill (active backup LFG OOO/AAAA control) and a

permitted Air Stripper process EUAIRSTRIPPER-1 for groundwater cleanup on the LF that discharges into the nearby river.

The AEA, Section 2, is an operating gas to energy plant with a EUTREATMENTSYS-2 Treatment System (OOO/AAAA control) and three permitted Reciprocating Internal Combustion Engines (RICE) FGENGINES-2 subject to the FGRICEMACT-2.

Access to the site was obtained from both companies prior to AQD arrival. DKV notified ALF and AEA of the purpose of the inspection by email. A list of electronic records was requested by emails to each company (attached to this report). AEA provided their records prior to the inspection date. ALF provided the site's plot diagram pre-inspection, and records post the inspection date.

SECTION 1 ADRIAN LANDFILL INSPECTION:

EULANDFILL-1, EUACTIVECOLL-1, EUOPENFLARE-1, EUASBESTOS-1, EUAIRSTRIPPER-1

Upon my arrival I met with Nicole and Tyler at the landfill entrance, and they let me through the gate. We parked at the main office building, and I rode with them in Republic's truck during the site inspection. Both Nicole and Tyler accompanied me during the inspection and were responsive to all my questions and requests.

EULANDFILL, EUACTIVECOLL

We drove around the entire landfill perimeter road, I observed that the landfill cover vegetation appeared to be mostly mowed and in good condition. Nicole indicated they have a new mower company, and they unfortunately missed the area around the Air Stripper. She said they will be addressing it. I observed this condition later when we inspected that area. Nicole indicated there have not been any major cover issues, just the usual minor leachate outbreaks and they have been dealing with them timely.

ALF records received 7/22: Construction Activities Involving the GCCS System July 2021 to June 2022

1. Installation of three (3) new and five (5) replacement LFG extraction wells
 - a. New Wells; CG45, NC73, RW45
 - b. Replacement Wells; CG32A, CG42B, NC2D, NC09A, NC11A
2. Installed 630 feet of 6-inch diameter LFG conveyance piping
3. Installed 1,120 feet of 4-inch diameter LFG conveyance piping
4. Installed 1,500 feet of 3-inch diameter liquid conveyance piping
5. Installed 800 feet of 2-inch diameter compressed air piping
6. Installation of four (4) new horizontal collector
 - a. RWH1, RWL1, RWL2, RWL3

7. Abandonment of five (5) existing extraction wells and associated lateral risers**a. NC09, NC11, CG32, CG42R, NC2R2****8. General maintenance of existing LFG system infrastructure including:****a. Replacement of one (1) existing 8-inch LFG isolation valve****9. Installation of associated valves, flanges, access risers, and other ancillary components related to the gas collection system****10. Installation of 3 pumps****a. NC20A, NC19R, NC18B****No upcoming GCCS construction activities planned for 2022.****EUOPENFLARE**

I observed the Zink Open Flare. We parked and went inside the locked fenced area. There was some vegetation within the fence that needed clearing. The Flare was not operational, and the control panel was covered. Nicole removed the cover, and I observed the panel was functional. I observed a propane tank and the nitrogen tank in the area. Per Nicole they test the operation of the flare every month. Tyler said they sent the flow meter out for maintenance during the past year. The current consultant is *SCS (replaced MCC)*, and they generally maintain the Flare.

The flare does require manual start-up, and ALF records indicate there is low flow to the flare on occasions with very low temperatures. This concern was discussed with Republic during the prior inspection. It was explained as “false flows”. If LFG was going to the thermocouple the temperature would be higher than ambient. Tyler indicated it has something to do with the “block valve – actuated by nitrogen”. He said they did work to minimize the false flow readings.

From ALF records received 7/22: ADRIAN FLARE MAINTENANCE LOG: On June 11, 2021 – SCS performed maintenance on Knock Out Pot and flame arrestor. Demister pad was removed and blown clean, and flame arrestor was power washed. The flame arrestor housing was cleaned of all debris. Both were reinstalled. Greased blower bearings On September 8, 2021 – SCS pulled flow meter SN#2006244 and replaced it with a rental unit L14061. The flow meter was sent in for inspection and calibration. On October 22, 2021 – SCS pulled the loaner flowmeter L14061 and re-installed the site flowmeter SN#2006244. Checked flowmeter, meter operational. Rental flow meter returned to TIC. On March 15, 2022 – Greased blower bearings On July 12, 2022 – replaced nitrogen bottle at automatic valve.

EUAIRSTRIPPER

I observed the air stripper was operating. ROP describes it as a purge water treatment system using an air stripper. The air stripper treats groundwater extracted at the closed portion of the landfill to remove volatile organic compounds. The aeration “spray” chamber consists of an 8-foot diameter and 30-foot-long fractionation tank, ten spray nozzles and fan. Air flow is said to be about 186 cubic feet per minute. EUAIRSTRIPPER-1 was initially covered by Permit to Install No. 105-91.

As indicated earlier, vegetated area around it was overgrown and I was unable to access a large portion of the unit. I observed the inside through a small viewing opening on one end that was clearer of vegetation. There was some noticeable odor, chemical like, that I smelled only while standing close to the opening looking into the port. I observed that only approximately three of the spray nozzles were operating. Nicole thought this might be due to the lower water flows currently. She mentioned it was 30 gallons per minute (gpm) before and is now 15 gpm. I asked that she follow up with this and let me know if this is normal / appropriate operating condition. She said *Lakeshore Environmental* collects the required samples and *SCS and EIL* are involved in the records & reports. EGLE Materials Management Division (MMD) has oversight regarding the cleanup project. Following the inspection I emailed Brett Coulter, Jackson District to inform him of my inspection and request comments. He provided additional details regarding the groundwater monitoring and treatment including some 2020 sampling results. He informed me that EGLE Water Resources Division (WRD) also has regulatory authority for Adrian's associated discharge / permit (NPDES Outfall 004). I shared all information I currently had with Alex Seeger, WRD Jackson District and requested her review and input.

Following the inspection, noting the information requested during the inspection had not been received, and I had additional questions based on my review of received recordkeeping, on 8/9 I called Nicole and left a message to discuss several areas and request additional information. On 8/11 I sent an email request that Nicole send me the two most recent complete sampling reports for the project and schedule/conduct a comprehensive preventative maintenance review of the EUAIRSTRIPPER. I also asked for some corrections to the Flare records. I received a return reply that she was no longer with the company.

On 8/12 I forwarded my email to contact Christina Pearse, Republic, who replied immediately that she would work on and respond to this.

SECTION 1 ADRIAN LF RECORDKEEPING REVIEW:

On 7/22 AQD received all the initial requested records electronically in an EIL Shared folder from consultant Tyler. The record list:

2021 Adrian Gas AB Overall; Adrian 2021 GCCS Update; Adrian 2022 Plot Map; Adrian Air Stripper Rolling – inspection; Adrian Cover Integrity and Maintenance Repts July 21– June 22; Adrian Flare Maintenance Log; Adrian Flare Operating Records July 21 – Sept 21; (same) Oct 21- June 22; Adrian LF Airstripper – RO Permit Table; Adrian SEM Reports Q3 21 – Q2 22.

EULANDFILL-1: AQD review of Adrian's Cover Reports finds they are generally acceptable, but AQD would like to see the record improved by Republic taking corrective actions within the month that issues are identified, and clearly documenting what actions are taken and when. Acceptable.

Surface Emission Monitoring Reports: AQD notes that Republic's consultant identified only one exceedance over the four reports received. The only hit was in 3RD Quarter 2021. This is somewhat concerning as AQD has typically identified numerous hits at Michigan landfills, especially at penetrations, during our partial audits in recent years. However, it is acknowledged that AQD identified only three hits during our audit of ALF in 2020. AQD may need to conduct future audits here. Acceptable.

EUACTIVECOLL-1: Overall well logs appear to demonstrate compliance. However, Republic provides minimal data on wells; no longer including Oxygen as the new standard does not require it as an operating parameter. AQD recommends Republic enhance their well data log to include all relevant well data for assessment of well operation including gas flow, CH₄, and oxygen. This will be required in the well log record for the next FCE inspection. Acceptable.

EUOPENFLARE-1: AQD acknowledges this involves a large amount of data. However AQD finds Adrian's Flare temperature and landfill gas flow records are difficult to review and are not in a user friendly review format. It is recommended that Republic determine & implement a better record keeping format. Records indicate the flare is not often operating and some of the "false flow" readings are still occurring. Less operation is expected because LFG generation has decreased since it ceased waste acceptance and the AEA Plant treatment system is the primary OOO/ AAAA control. The record received ended with June 2nd (as opposed to the requested June 30); gas flows range 400-1000 cfm but usually 400-600; Temperatures range but usually 1100-1200 degrees F.

On 8/9-10 I contacted Nicole to discuss some of the issues I saw during my review of what they submitted. AQD received email return reply that she is no longer with company. Forwarded to contact Christina Pearse and she said she will respond. On 8/17 received her response (copied below) explaining dates (AQD thought were missing) are there; this is just an Xcel issue. Deviations include one previously reported and one that will be reported in September 2022. Acceptable.

"For the period of time Jan – Jun 2022 the dates are not replaced by ###. This is a function of Microsoft Excel. To view the dates, column A just needs to be expanded and the dates should appear.

In June 2022 Adrian Landfill's O&M team was working on the flow meter and once finished, the power to the device was not fully restored. The landfill recognized the issue and returned power to the flow meter. This period of missing data will be address in the upcoming deviation report due on September 15, 2022.

In July 2021 Adrian Landfill experienced a site wide power outage that ceased power to the flow meter. This period was addressed in the 2021 semi-annual NSPS report submitted via email on March 7, 2022. A hard copy of this reports was marked as received by the Jackson District Office on March 10, 2022."

EUAIRSTRIPPER-1: Conditions VI.1-4.: Records for the 12 month period ending June 2022. Record submitted demonstrate compliance with the permit limits:

VOC Limit 0.003 Tons per year based on a 12 month rolling time period as determined at the end of each calendar month. VOC Limit 0.005 pounds per hour. Note hours of operation are not provided and it is assumed Unit runs 24/7 however, AQD since learned from WRD that is not the case and there is/has been extensive downtime mainly for maintenance it appears. This is something MMD and WRD may need to address with Republic as deemed necessary. For AQD permit compliance Republic obtains Semi-annual influent and effluent water sample testing and weekly water flow rate monitoring according to protocol agreed upon by AQD.

Adrian record indicates two Sampling Averages (sample every 6 months) for 12 month period July 2021 through June 2022. Results were 3.8 ug/L (Jul - Dec 21) and 5.9 ug/L (Jan-Jun 22).

Adrian record shows Chlorobenzene emissions for the period July 21- June 22 = 0.175 pounds, 12 month rolling. Throughput gallons total = 4,383,792. Calculation provided is $(\text{conc ug/l}) \times (3.785 \text{ l/1 gal}) \times ((0.0000001 \text{ g/ 1 ug}) \times (1\text{lb}/453.6 \text{ g}))$

On 8/9-10 I contacted Nicole and requested a copy of the most recent sampling report for the project. AQD received email return reply that she is no longer with company. Forwarded to contact Christina Pearse (CP) and she said she will respond. On 8/17 received additional information in email with attachments: MI0048232 DMR Reports.pdf; 50293720 frc treatment samples 2SA2021.pdf; 50307760 frc treatment samples 1SA2022.pdf; Adrian Air Stripper Rolling.pdf.

CP email states Groundwater remediation reports are submitted to both MMD and WRD. Air emissions with sampling support information is submitted annually in MAERS.

"Adrian Landfill submits EUAIRSTRIPPER activity detail and emissions, along with an attachment that summarizes the calculated emissions in a 12-month rolling format each year under the MAERS reporting system. Adrian is attaching the most recent 12-month rolling emissions. Sampling of the influent and effluent of the treatment system occurs semi-annually in January and July of each year concurrently with the groundwater monitoring events. These results are included in the submittal to Brett Coulter at EGLE in the semi-annual groundwater monitoring reports. The weekly flow rate of the treatment system is submitted via MiWaters on a monthly basis. Adrian Landfill is submitting the last two Influent/Effluent sampling reports along with the MiWaters reports from the same time period."

CP also stated with regard to system operation:

"Adrian Landfill submits EUAIRSTRIPPER activity detail and emissions, along with an attachment that summarizes the calculated emissions in a 12-month rolling format each year under the MAERS reporting system. Adrian is attaching the most recent 12-month rolling emissions. Sampling of the influent and effluent of the treatment system occurs semi-annually in January and July of each year concurrently with the groundwater monitoring events. These results are included in the submittal to Brett Coulter at EGLE in the semi-annual groundwater monitoring reports. The weekly flow rate of the treatment system is submitted via MiWaters on a monthly basis. Adrian Landfill is submitting the last two Influent/Effluent sampling reports along with the MiWaters reports from the same time period."

CP sent photos verifying that vegetation has been cleared from around the Airstripper and auxillary components. Acceptable.

SECTION 2 ADRIAN ENERGY ASSOCIATES INSPECTION:

EUTREATMENTSYS-2 and FGENGINES-2 (CAT G3516, 1053 HP each).

Nicole and Tyler dropped me off at the parking lot following the LF inspection. I walked to the AEA Plant office, entered, and introduced myself to Eric in the control room. He accompanied me during the inspection and was responsive to my questions and requests. The following is information provided to me in discussion with Eric. Currently AEA operators are on-site 5 days per week, and on call on the weekend. Some days they are not there all day, they come in the morning and do daily checks and some maintenance.

The plant's rated capacity is 2.4 MW. Over the last 5 years ALF's gas throughput to the plant has been decreasing. EUCENGINE#2 and EUCENGINE#3 were operating today. Eric said EUCENGINE#1 broke down and has been offline. I observed from the Operator daily logbook, today #2 output is 660 kW, and #3 is 500 kW.

The landfill (Republic) asked AEA to maintain or limit vacuum into the plant at 50 inches at the main header. Eric said the Engines are automated to this draw now. They average around 600 scfm each. He said Methane (CH₄) content today is 46% and ranges to 50 % usually.

Operators continue to do regular maintenance and fill out a daily check sheet; I observed an open binder on a desk (photos attached). AEA also has a comprehensive online maintenance program.

Serial numbers observed: Engine 1 #3RC00440; Engine 2# 4EK01538; Engine 3 # 4EK00962

AEA Engine Information Table record indicates the engines were built 10/1991, 10/1997, and 6/1996 respectively, and installed at Adrian on 12/4/2014, 4/4/2014, and 2/8/2013 respectively.

AEA only operates and maintains the EUTREATMENTSYS-2 and FGENGINES-2. If the plant is down for a longer period, they can and have started the Open flare for Republic, but they do not maintain it. Occasionally the plant will be kicked offline by the Utility (Consumers), or if there is a transformer issue, or power outage for example.

I walked through the Engine room and observed their condition, operation, and general housekeeping. I obtained photos of each of the Engine Serial # plates. The engines, stacks, and auxiliary equipment appeared to be in good condition. I walked through the Treatment System, located outside in a courtyard next to the Engine building. I took several photos of this equipment. Everything looked to be in good operating condition. No obvious issues were observed.

SECTION 2 AEA RECORDKEEPING:

A separate email requesting records for the 12 month period ending June 2022 was sent to contact Ed W. prior to the inspection 7/11/22. Records were received and reviewed is part of this FCE for the files. Email received on 7/13/22 had the attached requested recordkeeping, and provided Ed's responses below:

Adrian Energy Air Permit ROP N2369 Engine Recordkeeping Information Request JUL 2022.doc

40 CFR Part 62 Subpart OOO Treatment System Monitoring Plan Training Adrian.pdf

Adrian Landfill Subpart OOO—AAAA Treatment Monitoring Plan Final SEP 2021.pdf

Adrian Energy Emissions Data JUL 2021-JUN 2022.pdf

Adrian Energy EOM Jun 2022 Records Request.xlsm

Adrian Energy Engine Information.pdf

Adrian Energy SSM Event Spreadsheet 2022.xlsx

Treatment System Preventative Maintenance Record Example.xlsx

EM4387-04 3516 emission sheet (2 gram NO_x).pdf

EUTREATMENTSYS-2 (Ed responses below)

1. For the period January – June 2022:

- Provide Status of PMP/SSM Plan, any updates or changes. NOTE: The facility opted into 40 CFR Part 62, Subpart OOO and prepared and implemented a Site Specific Treatment System monitoring plan. This actually supersedes the SSM plan. A copy of the new plan is attached and maintained on site. I also included a copy of the training program I put together for Eric to give him understanding of the changes. There were no deviations from the monitored ranges during the period covering Jan 1 – June 30, 2022. Records are maintained on-site.
- Provide details of any SSM events. See attached SSM events. These are actually no longer required since we are now under 40 CFR Part 62 – Subpart OOO.
- Provide the details of any significant Preventative Maintenance activities. Maintenance records are maintained on site.

FGENGINES-2 (also referred to as Unit 1, 2, 3)

AQD finds AEA Operations and Maintenance daily logs are detailed and demonstrate units are being well monitored and maintained. Records submitted were reviewed for compliance with AEA permit conditions.

Permit Emission Limits:

CO Limit 21.25 pounds per hour (pph) hourly average on a weekly basis. FGENGINES

NOx Limit 15.38 pph hourly average on a weekly basis. FGENGINES

VOC Limit 6.73 pph (includes formaldehyde) hourly average on a weekly basis. FGENGINES

AEA submitted a record indicating the FGENGINES monthly and 12 month rolling tons per year (TPY) emissions. Plant 12 month rolling emissions in TPY for the period ending June 2022:

HCL 0.76; SO2 1.24; CO 51.12; NOx 7.98; VOC 13.28; PM 1.59

Records indicate compliance with calculated TPY limits (note there are no specific limits in the ROP): HCL 6.64; SO2 16.80; CO 93.1; NOx 67.36; VOC 29.47

The most recent Performance Testing was conducted on September 29-30, 2020, and demonstrated compliance. The following Emission Factors were determined:

Unit 1 (g/bhp-hr): 2.53 CO; 0.45 NOx; 0.56 VOC (includes formaldehyde)

Unit 2 (g/bhp-hr): 2.69 CO; 0.28 NOx; 0.63 VOC

Unit 3 (g/bhp-hr): 2.65 CO; 0.52 NOx; 0.52 VOC

Records show the plant operated during the compliance review period roughly between 1300-1500 hours per month. Landfill gas usage (scf) during the period had a low monthly 22,993,000 and a high monthly 28,876,000.

June 2022 Record was reviewed in more detail.

June 2022 Weekly detail records indicate Unit 1 operated only 150 hours for the month (out of a possible 720), Unit 2 operated 524 hours, and Unit 3 operated 654 hours. Weekly Emissions in lb/hr indicate compliance: CO < limit 21.25; NOx < limit 15.38; VOC < limit 6.73

June 2022 Aftercooler Temperatures (AC degrees F) of each Unit are recorded and indicate compliance during the period. Most recent test was September 29-30 and set AC Temps as: Engine1 130 degrees F (Max 125 + 5 = 130); Engine2 126 F (Max 121 +5 =126); Engine3 126 F (Max 121 +5 =126).

8/12 Email to contact Ed W. to request most recent test results for this parameter and for him to add current limits to their record keeping. 8/15 Received requested information from Ed. I later realized Test Temperature Data is a Tab in their spreadsheet. Compliant.

June 2022 Average LFG Methane % 49 and LHV BTU 442.

June 2022 Downtime summary indicates Engine/Unit downtime and reason

EUTREATMENTSYS-2

AQD finds the AEA Site Specific Treatment System plan submitted to be excellent. It appears to include all relevant related documents, an appropriate Treatment System PMP record / log, and an operator training portion. Acceptable.

The 1st Semi-annual 2022 SSM events list submitted included one apparent typo (2021 and was later corrected) and otherwise indicates several events when control was inoperable for more than 1 hour. It is possible the Flare control was operated during these times. There were no events of 5 days or longer without any control. Ed sent updated chart on August 15th, replaced typo with 2/24/22 TS event of 18 minutes. Acceptable.

COMPLIANCE SUMMARY

The AQD has determined that the Adrian LF and Adrian Energy Associates facility is in substantial compliance with the requirements of their ROP MI-ROP-N2369-2020. All requested records were reviewed and are attached to this report to file. This includes any follow up communication with questions, comments, and concerns with the facility.

Adrian LF has some stated AQD recommendations in this report for future compliance evaluations.

AQD will continue contact with MMD and WRD regarding the multi-media groundwater remediation project, with permitted Air Stripper.



Image 1(Engine 2) : Serial number 4EK01538



Image 2(ALF AIRSTRIPPER 1) : Verify vegetation cleared around unit



Image 3(ALF AIRSTRIPPER 2) : Verify vegetation cleared around unit



Image 4(AEA ENGINE1 SERIAL #) : SERIAL # 3RC00440

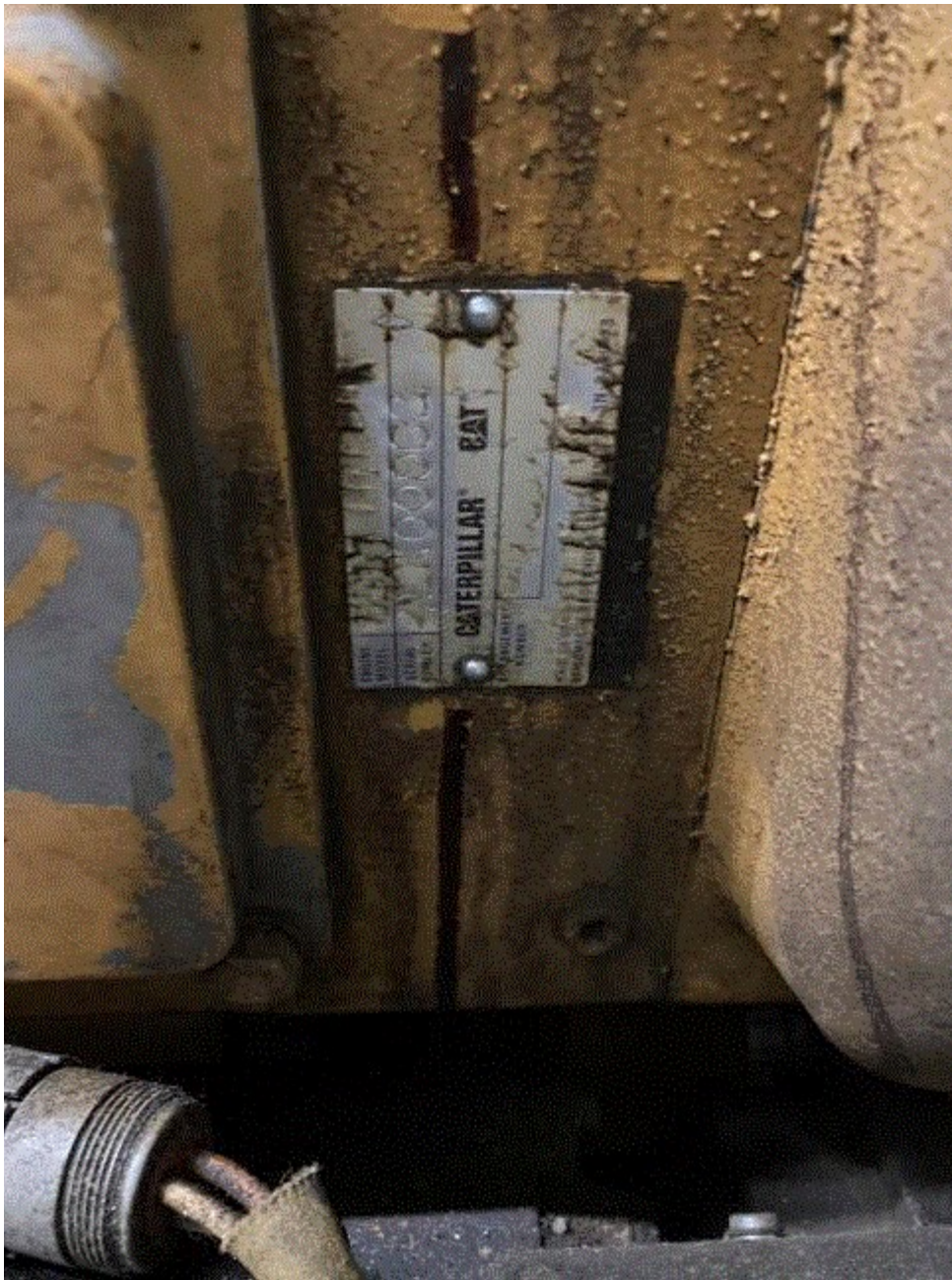


Image 5(AEA ENGINE3 SERIAL#) : Engine 3 Serial number 4EK00962



Image 6(AEA CAT 3516 1) : ENGINE



Image 7(AEA ENGINE PHOTO 2) : ENGINE

7/15/22

STAPLES

Time 8:00	Ambient Temp 67	Unit 1	Unit 2	Unit 3	Operator Compounding Report 6:00
Manifold Pri	2.1	13.1	13.1	Drive 171.9	Plant Readings Control Room
Oil Pri @ ESCM	6.0	5.3	5.3	LEB Total 77.9745%	"H2O Flow 5.46 Sec/in
Oil Temp @ ESCM	1.89	1.86	1.86	Parabolic load 17.7	Kwh/Gas Press 10.2 Psi
Kwh Load	1.14 / 1.87	5.22 / 6.97	5.22 / 6.97	Export Volt 512.5	Kwh/Gas Temp 7.6 F
Kwh	5.7256	6.1107.8	6.1107.8	Personal Gas Monitor	Methane Detector
AC Temp	13.0	11.9	11.9	Utility Meter Readings	
Oil Level	13.752	11.033	11.033	Time 14 15 16	
DEG Hours	14.71	Same	Same	Plant Readings Engine Room	
Engine Hours	10	10	10	Air Comp 1.2 Psi Oil level 2.1	Clean? ✓
Oil Filter Paid	1	1	1	Gas CH4 16.3 CO2 35.7 O2 7	Back 18.6
JM Temp	155.12	159.472	159.472	Plant Temp	
MU Oil Level	11	1.4	1.4	Plant Readings Blower Room	
Vent Fan	0.4	0.4	0.4	Draw 2.1 "HG	
CCV Draw	1	1	1	Filter Tower 1.5 "H2O <2psi	Liquid Lvl 0
SCAC Temp	1.05	1.14	1.14	Polishing Tower 1.5 Psi	Liquid Lvl 0
Comb. Door Pos	1.0	1.0	1.0	Blower	
Comb. Temp	8.1	8.1	8.1	Amps 10.8	Inlet Bearing Temp 12.5 F
Radiator Motor	1	1	1	Temp 2.04	Outlet Bearing Temp 17.5 F
Make-Up Oil Added	1	1	1	Outlet Press 12.5 Psi	
Temp 7.7	1	1	1	Transformer Readings	Gas cooler
Draw 11.4	1	1	1	Oil Temp 7.7	Motor ✓
Signature:	1	1	1	Plant Readings	Tank Readings
Date:	1	1	1	New Oil Tank 7.7	Waste Oil Tank 2.4
	1	1	1	Condensate Tank	Condensate Tank ✓

Image 8(LOGBK FCE 071522) : AEA LOG BK 1

Adrian Energy Associates Treatment System Preventative Maintenance Plan Monitoring and Recordkeeping Documentation

Date Beginning: 7/11/2022

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Is Condensate Accumulation in the Knockout vessel greater than 50% at the sight glass	N	N	N	N	N	N	N
Is discharge blower pressure at least 2 psig?	Y	Y	Y	Y	Y	Y	Y
Is the primary filter dp less than 2 psid?	Y	Y	Y	Y	Y	Y	Y
Is the polishing filter dp less than 1 psid?	Y	Y	Y	Y	Y	Y	Y
Is the outlet gas temperature greater than 120 F	Y	Y	Y	Y	Y	Y	Y
Weekly Preventative Maintenance Performed	Y	Y	Y	Y	Y	Y	Y
Clean condensate knock out 7-11							
Signature:							
Date:							

Image 9(AEA LOG BK 2 071522) : FCE PHOTO 2



Image 11(TS PHOTO 1) : AEA Treatment system 1



Image 12(TS PHOTO 2) : AEA Treatment system 2

NAME *Alicia Kavanaugh Vertort*

DATE July 15, 2022

SUPERVISOR *[Signature]*