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

N089059007

FACILITY: Viking Energy of Lincoln, LLC		**SRN / ID:** N0890
LOCATION: 509 W. State St., LINCOLN		**DISTRICT:** Gaylord
CITY: LINCOLN		**COUNTY:** ALCONA
CONTACT: Keith Stackpoole , Environmental Safety & Training		**ACTIVITY DATE:** 07/01/2021
STAFF: Sharon LeBlanc	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: On site inspection and records review for FCE. sgl		
RESOLVED COMPLAINTS:		

On July 1, 2021, AQD District Staff conducted a scheduled, site inspection of the Viking Energy of Lincoln, LLC. Facility (N0890) located at 509 West State Street, Lincoln, Michigan. The referenced Facility is a bio-fuel electric generating facility, which produces power by burning solid fuels. The referenced Facility is operating under MI-ROP N0890-2020, effective March 9, 2020.

The purpose of the inspection was to determine compliance of the Facility with it's present ROP. At the time of the site inspection District Staff met with :

- Todd Tolkinen, General Manager
- Keith Stackpoole, Environmental, Safety & Training Coordinator
- Tammi Van til, Consultant
- Walt Spiegelmyre, Operations Manager

The most recent site visit to the Facility was conducted on December 18, 2018. No Compliance issues were noted at that time.

FACILITY

Constructed in 1986, Viking Energy of Lincoln (AKA Viking Lincoln or the Facility) is located within the city limits of Lincoln, Alcona County, Michigan. A sister facility is Viking – McBain (N1160) was constructed and permitted at the same time. Both Facilities are presently owned by National Salvage & Service, a subsidiary of which is National Energy. The change in ownership occurring in about March 2020, and has been followed with changes in operators and management since that time.

Since the ownership and staffing changes, a consultant has been brought in to evaluate compliance of the facility with the ROP and recommend changes to be implemented to bring the site better into compliance. Results of this audit were discussed during the site inspection and appear to indicate gaps in recordkeeping. These gaps are being corrected as records are being identified in files, as well as by the addition of supplemental documentation activities which are being implemented by the Facility.

The plant is an electrical generating facility, which produces power by burning solid fuels to produce high pressure steam in its boiler. The steam produced in the boiler powers an electrical generating turbine, which generates up to 18 Megawatts at full capacity. A workday consists of two shifts.

From the roadway, east to west across the Facility is the raw material handling area, the boiler house, multiple cyclone collector, induced draft fan, electrostatic

precipitator and the ash storage building. District staff noted a significant steam plume upon arrival at the Facility. The steam being generated on the north side of the boiler building, out of view from the roadway. Discussions with Facility staff indicated that the source was a cooling tower onsite. Which was confirmed during the site walkover. Further conversations indicated that the cooling tower was installed when the Facility was constructed, and represents original equipment without permit conditions. This was further supported by permit engineer comments and permit applications at the time of initial permitting. The cooling tower will be added to description of EUBOILER as ancillary equipment.

The boiler's primary fuel is wood chips, and under the present ROP may be supplemented with tire-derived fuel (TDF), pentachlorophenol treated woods, creosote treated wood, particleboard, and plywood. Note that at the time of the inspection the facility reports that pentachlorophenol treated woods and particleboard/plywoods are not presently part of the supplemental fuels used onsite.

Changes have occurred over the years in the fuel mix used at the facility. The facility has developed a system to blend the various fuels to provide a consistent fuel blend to the boiler. The current fuel mix consists of a blend of untreated wood, TDF, and creosote treated wood. The fuel mix has a moisture content of approximately 35%, which is lower than untreated wood only that has a moisture content of 45-50%. The lower moisture content allows for a much more efficient and smooth operation of the boiler.

Initial startup of the boiler utilizes natural gas to minimize extra air emissions which would otherwise be associated with boiler start-up. All solid fuels are delivered to the site by truck and are stored onsite in piles managed to control fugitive dust. Permit conditions require fugitive dust control for the piles and limit quantities of all fuels other than untreated wood chips. At the time of the inspection District Staff noted the unloading of untreated wood chips and TDF onsite.

The Facility itself is reported to be in the industrial park and is bounded to the east by other smaller industries (on lake street). Adjacent properties to the south of the Facility include Northern Industrial Wood, which produces non-furniture wood products (pallets), as well as property owned by National Salvage & Service that is used to inspect creosote treated timbers for suitability, and either resells the timbers as landscaping ties, or processes them for fuel at the Facility. North and north-east of the Facility are residential properties and Lincoln Lake. The Village of Lincoln's business center with several stores, a restaurant and Post Office located approximately one-half mile NE.

June 14, 2021, Viking Lincoln installed a new Data Acquisition System (DAS). Facility staff reported that the unit was operating that same day. Per TPU instruction the period of installation was to be considered downtime with respect to continuous monitoring systems.

EQUIPMENT

Permitted equipment onsite consists of:

- EUBOILER

This EU consists of a 230 million BTU/hour, Zurn Industries, non-package boiler equipped with two air pollution control devices. The first being a multiple cyclone collector (precleaner) and an electrostatic precipitator (3 cells). The unit operates as a "negative draft" boiler. The nameplate of the boiler (s/n 101133) identifies the boiler as a type 2 drum, bent tube boiler built in 1987. In addition, EUBOILER is equipped with an oxygen trim system to maintain an optimum air-to-fuel ratio.

Facility staff reported that the boiler is not operated at varying loads, but at 100% baseload. Fuel mixes remain consistent to ensure the most efficient operation. Changes in fuel mixes result in changes not only in emissions (CEMS) but in output, operational efficiency and operating costs.

EUBOILER is scheduled for two planned 5-day outages (spring and fall). In addition to planned outages, the Facility also reports unplanned outages or "trips".

The boiler stack is equipped with a Continuous Opacity Monitor (COMs) as well as Continuous Emission Monitors (CEMS) for NOX, SO2, CO, O2.

The boiler is a two drum, open pass, traveling grate spreader stoker style. The steam produced operates an Alsthom electric generator with a nameplate capacity of 18 megawatts.

EUBOILER at the stationary source has been identified as being subject to the New Source Performance Standards for Industrial-Commercial-Institutional Steam Generating Units promulgated under 40 CFR Part 60, Subparts A and Db because the steam generating unit commenced construction after June 19, 1984, and the heat input capacity from fuels combusted in the steam generating unit is greater than 100 million BTU/hour).

In addition, EUBOILER at the stationary source has been identified as being subject to the Maximum Achievable Control Technology Standards for Industrial, Commercial and Institutional Boilers and Process Heaters – Area Sources promulgated under 40 CFR Part 63, Subparts A and JJJJJJ because the stationary source is an area source of HAPs and EUBOILER includes an existing biomass fueled industrial boiler as defined in 40 CFR 63.11237.

- EUGENERATOR

Installed at the time of Facility construction, this EU is a standby emergency generator powered by a Detroit Diesel, diesel-fueled 415 HP engine. EUGENERATOR supplies electricity/power to emergency lighting and the fire pumps.

The totalizing meter indicates 175.1 hours of operation for the approximately last 35 years. The generator was tripped once the previous year. Facility staff that the emergency generator has historically been checked approximately once per year. Facility staff have indicated that a more frequent maintenance schedule is being implemented and will include more detailed documentation.

EUGENERATOR at the stationary source is subject to the Maximum Achievable Control Technology Standards for Reciprocating Internal Combustion Engines (RICE) – Area Sources promulgated under 40 CFR Part 63, Subparts A and ZZZZ because the stationary source is an area source of HAPs and EUGENERATOR is an existing stationary emergency compression ignition engine ≤ 500 hp.

- EUCLDCLNR

This EU is any cold cleaner that is exempt from Rule 201 permitting by exemptions R 336.1281(h) or R 336.1285(r)(iv). There are two cold cleaners reported onsite, which are reported to use solvent, non- halogenated cleaners. The units observed at the time of the site inspection appeared to meet the exemption.

- EURMHANDLING

This EU includes the raw material handling equipment including hoppers, primary and secondary screens, a radial stacker, raw material piles, two hoggers to chip the raw materials and several conveyors. The raw materials (both alternative fuels, and TDF) are conveyed to the feed hopper of EUBOILER.

Feed rates and volume of raw materials used are monitored by operators as frequently as hourly and for segregated and alternative fuels are adjusted to maintain a consistent fuel mix to EUBOILER as well as to ensure that material use limits are maintained. Totals for each day are reported at midnight, and the totalizers on the belt scales are re-zeroed.

- EUASHHANDLING

This EU includes the ash handling equipment onsite. Ash is transported from the boiler to a quench, after which ash and bottom ash are conveyed to a wet rotary unloader where water is added to control fugitive emissions. The ash is then transported to an enclosed building on the west end of the Facility where it is stored until it is trucked offsite for disposal.

REGULATORY

The stationary source is a Major Source subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because the potential to emit each of particulate matter, sulfur dioxide, carbon monoxide, and nitrogen oxides exceeds 100 tons per year. The Facility is an area source of HAPs.

The stationary source is considered a "synthetic minor" source in regards to the Prevention of Significant Deterioration regulations of the Michigan Air Pollution Control Rules Part 18, Prevention of Significant Deterioration of 40 CFR 52.21 because the stationary source accepted legally enforceable permit conditions limiting the potential to emit of nitrogen oxides, sulfur dioxide and carbon monoxide to less than tons per year (247.2 tpy)

In addition to the following Federal Regulations previously identified:

- 40 CFR Part 60 Subpart Db (NSPS for Industrial-Commercial-Institutional Steam Generating Units), and
- 40 CFR Part 63, Subpart JJJJJJ (Boiler MACT)
- 40 CFR Part 63, Subpart ZZZZ (RICE MACT)

The emission limitations for PM from EUBOILER at the stationary source are subject to the federal Compliance Assurance Monitoring (CAM) rule under 40 CFR Part 64. This emission unit has a control device and potential pre-control emissions of PM greater than the major source threshold level. Control devices associated with EUBOILER include multiple cyclones and an ESP.

The CAM Plan for EUBOILER requires continuous opacity monitoring is used as an indicator to the proper functioning of the ESP. It also required prompt repairs or adjustments if opacity becomes greater than normal. Under normal operating conditions, with the ESP operating there will be little or no black smoke visible in EUBOILER exhaust. Dependent on the dampness of the fuel and weather conditions, there is normally a white plume of condensed water vapor.

PERMIT HISTORY

Permit Cards database identified a total of four permits are associated with MI-ROP-N0890-2020. These include:

- 260-86C
- 260-86D
- 45-06B
- 45-06

Voided applications include 895-84, 260-86B, 45-06A.

Discussions with Facility Staff indicated that significant differences in ROP conditions exist for Viking – Lincoln and Viking – McBain (N1160), though at the time of the PTIs, the conditions were reported to be identical. District Staff was made aware that a PTI modification will most likely be applied for within the next year to return permit conditions back to those in the original PTIs.

COMPLIANCE

A review of readily available records indicate that the following submittals are required of the Facility:

- Annual emissions reporting thru MAERS
- Semi-annual and annual ROP deviation reporting
- CAM Monitor Downtime and Excursions/Exceedances Reporting
- Quarterly Monitoring and Emissions Reports
- Cylinder Gas Audits
- Annual RATAs
- Annual BOILER MACT compliance reports

Records indicate that the documents are submitted in a timely manner. The Facility reported that one 2020 submittal had failed to be submitted, and was reported as a deviation.

No Violation Notices (VNs) are of record for the facility since April 17, 2009. The referenced violation was resolved on December 14, 2011, with issuance of PTI 45-06B. No other violations are of record for the Facility.

SOURCE-WIDE CONDITIONS –Conditions associated with the electrical generating facility, which burns wood chips, wood products and tire derived fuel, fuel storage piles, yards, driveways and fuel and ash handling procedures. Source-wide conditions include the following material limits:

MATERIAL TYPE	VOLUME RECEIVED (TPY 12-month rolling time period ending May 2021)	VOLUME RECEIVED (TPY 12-month rolling time period ending December 2020)	LIMIT (TPY)
Particle Board and Plywood	0	0	6,935 (SC II.1)
Creosote Treated Wood	24,536	8,502	60,200 (SC II.2)
Pentachlorophenol Treated Wood	0	0	14,308 (SC II.3)
TDF	10,250	12,044	16,060 (SC II.4)

Permit conditions require fuel records received by the Facility for the previous month are to be used to determine the total fuel and a 12-month total by the 5th day of the month. (VI.2) Records provided by the Facility indicated that the recordkeeping activities were in compliance with permit conditions.

In addition, EUBOILER shall not be operated unless a program for continuous fugitive emissions control for the plant roadways, plant yards and all material storage piles and handling operations (SC III.1) The permittee shall maintain records of activities associated with the Fugitive Emissions Control Plan. (SC VI.1) Discussions with Facility representatives indicate that though the dust control activities are conducted per the Fugitive Emissions Control Plan, they have not been documented adequately. Prior to the July 1, 2021, site inspection, the company has added documentation of the required activities to the daily operation logs to meet the permit conditions.

When questioned regarding complaints received by the District office(s) regarding odors associated with creosote fuels, Facility staff indicated that with respect to Viking-Lincoln, the Facility has had complaints of dust from the creosote sorting and handling property located on the south side of the Facility. The location makes use of skid steerers to handle creosote timbers on a brined but unpaved surface. The Facility reports that the sharp turns of the skid steerer had a tendency to break up the brined surfaces, which resulted in fugitive dust. The location was not in operation at the time of the inspection. Use of water is reported to be used to better control dust.

Under the present ROP, the Facility is required to prepare, implement and maintain a Malfunction Abatement Plan (MAP) (SC III.2). If the MAP fails to address or

inadequately addresses an event, the owner operator shall revise the MAP within 45-days for submittal of the document for approval by AQD (SC III.2). Upon request, the Facility provided a copy of the February 20, 2018 Preventative Maintenance & Malfunction Abatement Plan. The document identified the following operational parameters and ranges monitored under the referenced plan:

Mechanical Dust Collector		July 1, 2021, Instantaneous Readings
Differential Pressure	3 – 7 inches	NR by inspector
Opacity (COMS)	<15%	Instantaneous -0.18 % 1-minute – 0.08% 6-minute – 0.03%
Electrostatic Precipitator		
Opacity (COMs)	<15%	Instantaneous -0.18 % 1-minute – 0.08% 6-minute – 0.03%
Primary Voltage	75 – 225 Volts	Cell #1 – 282V Cell #2 – 272V Cell #3 – 318V
	5-35 Amps	Cell #1 – 16A Cell #2 – 24A Cell #3 – 28A
Secondary Voltage	20-45 Kvolts	Cell #1 – 41 KV1, 39 KV2 Cell #2 – 37 KV1, 35 KV2 Cell #3 – 40 KV1, 40 KV2

	45-150 Milli Amps	Cell #1 – 85 MA Cell #2 – 157 MA Cell#3 – 219 MA
CEMs CO	0.9 – 0.25 lb/MMBtu	0.1218
CEMs NOx	0.17 – 0.25 lb/MMBtu	0.246
CEMs SO2	0 – 0.25 lb/MMBtu	0.02013

Also monitored is the spark rate (see below) and stack temperature of 335.66 degrees.

Cell Number	Spark Rate
#1	6
#2	51
#3	60

Instantaeous data recorded during the July 1, 2021, site inspection indicated that ESP primary voltage (volts) and secondary voltage (milliamps) were outside of the higher end of the MAP operating range. Discussions with Facility staff and their consultant indicated that the readings are not recorded as part of the DAS system, and are recorded manually by operators at certain points during the day/shift. In the case of July 1, 2021, the ESP was reported to be overpowered which is reflected in the COMS opacity readings which were <0.5%, well below 15%. The Facility therefore did not determine conditions such that a malfunction was occuring. The Facility indicated that the MAP prepared by the previous owner/operators would be revised to reflect that both the opacity and ESP operating parameters would need to be out of range to confirm a malfunction was or had occurred.

Reporting requirements consist of prompt reporting of deviations, as well as semiannual and annual certification of compliance. (SC VII.1 through 3). A review of records submitted indicated general compliance with permit conditions. Discussions with Facility representatives indicated that since the December 2018 site inspection, a Rule 912 CO exceedance was reported in November 16, 2020, and a missing submittal have been previously reported, in compliance with permit conditions.

EURMHANDLING – Permit conditions with respect to this EU focus on visible emissions (VEs), and limits VEs to a 6-minute average of 5% opacity. (SC I.1). The permittee is required to observe and record VEs once per calendar day, If VEs are

present, the observations are required to be by a certified observer using USEPA Method 9 (SC V.1)

Daily observations are conducted and recorded as part of daily operator logs. No elevated emissions were reported by the Facility, no observations by a certified observer have been required. The Facility reports having updated the daily log sheets for operators to better document VE observations. VE observations have been completed by uncertified staff, the Facility requested information regarding certification opportunities, this information was forwarded to them electronically after completion of the inspection.

Records of the daily VE observations and any repairs or remedial actions performed as a result of daily VE observations are to be made available upon request (SC VI.1) As previously indicated elevated VE observations are not of record, and any repairs or remedial actions were performed as part of regular maintenance activities independent of VE observations.

In addition to daily VE observations, the permittee is required to maintain records of weekly inspections of drop chutes, conveyor covers and other enclosures and any repairs or remedial activities conducted as a result of the weekly inspections (SC VI.2 and SC IX.1). Inspection records are maintained by the Facility in compliance with ROP conditions.

EUBOILER -- The referenced EU is subject to:

Emission Limits – Emission Limits associated with EUBOILER include the following 12-month rolling time period limits:

PARAMETER	2019 (tpy)	2020 (tpy)	2021 to present (May 2021) (tpy)*	LIMIT (tpy)
CO	103.3	91.4	87.9	247.2
NOx	212.3	218.4	219.5	247.2
SO2	158.7	191.9	177.9	247.2
PM10	22.22	15.68	11.15	98.9
VOC	0.85	0.73	0.75	19.1
Arsenic	0.00048	0.00044	0.00048	0.233

Benzo(a)pyrene	0.0000042	0.0000047	0.0000038	0.0000065
Hydrogen Chloride	5.56	3.66	2.17	8.9
Hexavalent Chromium**	0.00313	0.00444	0.00677	0.0071
Total Chromium**	0.00313	0.00444	0.00677	0.0186
Lead	0.013	0.009	0.007	0.03
Mercury Compounds	0.0004	0.0004	0.00046	0.0006
H2SO4	1.29	2.47	4.28	23.7
TCDD toxic equivalent	4.7E-9	4.6E-9	5.35E-9	2.3 x 10-8

*12-month rolling time period determined monthly, for the period ending May 2021

**Hexavalent chromium and total chromium come from the same stack test data.

Other emission limits associated with EUBOILER include hourly and 30-day average limits and are discussed later in this document.

Material Limits- The permittee must comply with the following material limits associated with EUBOILER:

FUEL TYPE	Feb. 18, 2020	October 20, 2020	April 20, 2021	LIMIT (24 Hr period)
Particle Board and Plywood	0	0	0	19 ton burned (SC II.2)
Creosote Treated Wood	0	153.2	168	168 ton burned (SC II.3)

Pentachlorophenol treated Wood	0	0	0	39.2 ton burned (SC II.4)
TDF	41	35	29.2	44 ton burned (SC II.5)

Note that per SC III.9, the boiler shall comply with the definition of biomass, which identifies any biomass, that is not in the coal subcategory, and where biomass means any biomass based solid fuel that is not a solid waste. The Facility reports that the fuels meet the subcategory, and materials observed onsite appear in compliance with the subcategory definition.

SC II.1 limits NG usage for EUBOILER to 490,200,000 cubic feet per 12-month rolling time period. Reported usage is presented below:

12-Month time period ending	Total NG usage (cubic feet/12 month rolling time period)	Limit (cubic feet/12-month rolling time period) (SC II.1)
December 2020	13,479	490,200,000
May 2021	21,197	490,200,000

Facility staff reported that it takes approximately 8 hours of operation on NG to get steam pressure up.

In addition, SC II.6 limits fuel burned by EUBOILER to not exceed the following limits (on a dry basis):

- 0.8 percent by weight of chlorine
- 5 ppm by weight of hexavalent chromium, nor
- 0.5 ppm by weight of mercury

Samples collected are shipped to Hazen Labs for fuel analysis in compliance with the ROP. Fuel types that are not being used by the Facility are not sampled for analysis. Analytical results is summarized later in this report.

Per SC III.10 the permittee shall not burn alternative wood fuels and TDF unless the Fuel Procurement and Handling Plan (dated January 13, 2020) as approved by the District Supervisor has been implemented and maintained. A review of the Fuel Procurement and Handling Plan indicates that each truck is visually inspected and that a log of each truck and materials are maintained by the Facility. Materials are

sorted and sent via conveyors, and screens to hoppers and feeders to feed the boiler. Separate logs, weight scales, and feed rates from the various segregated fuels are monitored and maintained to stay under appropriate limits. As previously indicated, District Staff observed delivery and unloading of both untreated wood and TDF at the site. Records appear to be consistent with permit conditions.

Process/Operational Restrictions –The ROP contains a number of operational restrictions associated with EUBOILER which includes an operational limit of 8,600 hours per 12-month rolling time period, as determined at the end of each calendar month (SC III.5). Records provided by the Facility indicated the following hours of operation:

Time Period	Hours of Operation (12-month rolling)
2020 Calendar Year	8,561.5
12-month period ending May 2021	8,413.5
LIMIT	8,600 hours (SC III.5)

SC III.3 restricts the firing of EUBOILER from a cold start using NG only. Facility representatives report that only NG is used to fire EUBOILER when cold starting the EU in compliance with the ROP. A previously indicated, it is reported to take approximately 8 hours of firing on NG to bring the steam pressure up to levels where the fuel can transition to solid fuels.

SC III.4 restricts operation of EUBOILER to only those times the multiple cyclone collector and electrostatic precipitator are operating properly. Facility representatives report compliance with the ROP condition. Operational parameters, CEMS and COMs are all monitored by the Facility to ensure proper operation of the pollution control devices in compliance with permit conditions.

The ROP restricts firing of TDF and particle board and/or plywood simultaneously to only those rates with stack test verification (SC III.2) and does not allow for the simultaneous firing of TDF and pentachlorophenol-treated wood at any time. (SC III.1) Facility Staff indicate that they have not had pentachlorophenol-treated or particle board/plywood fuels onsite for some time. They also report a consistent fuel mix of 168 tons of creosote treated fuels and 44 tons of TDF with dry wood fuels per 24-hour time period. The mix is consistent with permit conditions and fuels used during the 2020 stack testing.

SC II.7 requires that the permittee must conduct a tune-up of the boiler biannually to demonstrate continuous compliance with paragraphs (b)(1) through (7) of Section 63.11223. The tune-up must be conducted using the fuel type or types that the boilers routinely burn and that provide the majority of the heat input to the boiler over the 12-months prior to the tune-up. Boilers with an oxygen trim system (SC

IV.12) that maintains an optimum air-to-fuel- ratio that would otherwise be subject to a biennial tune-up must conduct a tune-up of the boiler every 5 years, and no later than 61 months after the previous tune-up. (SC III.6)

Facility representatives reported that tune-up records for activities that occurred before the change in ownership were unable to be located. To meet permit conditions, the Facility conducted tune-up activities on June 25, 2021, and were conducted in accordance with the above referenced conditions, and included applicable activities from the following:

- Inspect burner, and clean or replace components, as necessary.
- Inspect the flame pattern and adjust the burner as necessary to optimize the flame pattern.
- Inspect the air-to-fuel-ratio system to ensure it is correctly calibrated and functioning properly
- Optimize emissions of CO
- Measure CO concentrations (ppm) and O2 (percent) in the effluent stream before and after adjustments are made using a portable CO analyzer

<u>Design/Equipment Parameters</u> – The Permittee under the ROP is required to install, calibrate, maintain and operate a Continuous Emission Monitoring (CEMs) device to monitor NOx, SO2, CO, and O2. (SC IV.1-3) The CEMS is required to be properly maintained including maintaining spare parts for routine maintenance (SC VI.14). In addition, the Facility is required to install, calibrate, maintain and operate a Continuous Opacity Monitor (COMs) (SC IV.4). The permittee is also required by permit to follow the procedures identified in SC IV.5-10 for the referenced CEMS and COMs.

Records indicate that the referenced CEMs and COMs were installed and operated in compliance with appropriate conditions and consist of:

Parameter	Make and Model No.	Serial No./Monitor No.
CO	Fuji Model ZPA1	N8O1377/#1838
NOx	Teledyne Model T20H	297/#1575
O2-Dilutent	Ametek Thermox Series 2000	C158477/#837
SO2	Fuji Model ZRF - NDIR	A7m46191/#836
Opacity	Teco Model 400B	40175-B55/262/#91

District files contain copies of required CEMs/COMs operational plans, Cylinder Gas Audits and RATA testing as well as RATA test results for the units. RATA testing for the CEMS is scheduled for August 26, 2021, onsite.

Testing/Sampling – Under the present ROP, the permittee is required to annually collect samples of all solid fuels burned in EUBOILER for analysis of chromium and mercury content in ppm dry weight (SC V.1) and chlorine content in percent by dry weight (SC V.2) Parameter content limits are defined in Source Wide Condition SC II.6. Analytical data obtained from the fuel samples are summarized below:

SAMPLE DATE	Chromium Content (ppm dry weight) (SC V.1)	Mercury Content (ppm dry weight) (SC V.1)	Chlorine Content (ppm dry weight) (SC V.2)
4/2019 Wood	2.4	<.01	<.005%
8/2019 TDF	0.048	0.03	0.065
6/25/2020 Wood	1.24	<0.01	<.005
6/25/2020 Creo	1.34	0.07	0.012
6/25/2020 TDF	<0.38	0.03	0.059
LIMIT	5 ppm (SC II.6)	0.5 ppm (SC II.6)	0.8 % by weight (SC II.6)

As previously indicated, samples are collected for those fuels being utilized as fuel by the Facility. As no creosote treated fuels, particle board/plywood or Pentachlorophenol treated woods were being used as fuel in 2019, no samples were collected for analysis. At the time of the inspection, records for materials sampled in 2020 were unable to be located, and the Facility presented analytical data for samples collected in Viking-McBain (N1160), which is reported to be an identical Facility as to Viking-Lincoln. The Facility has since provided copies of laboratory analytical data for the Facility dated June 25, 2020 for the facility.They have been incorporated above.

SC V.3 & 4 requires the Permittee to verify emissions rates for the following eleven parameters 5 years from the date of the last test. Testing conducted in July 2020 is summarized below:

PARAMETER	July 28 – 31, 2020	LIMIT
PM10	0.0084 lb/MMBTU heat input*	0.10 lb/ MMBTU Heat Input (SC I.11)

*Values were reported as Total PM.

	2.13 pph*	23.0 pph (SC I.12)	**Values were reported as Total Chromium. SCV.5 & 6 requires verification testing of PM emission rates from EUBOILER every 5 years from the date of the previous test. Records provided indicated the following emission rates:
	9.33 TPY*	98.9 TPY (SC I.13)	
Arsenic	0.458 mg/dry scm @7% O2	28.7 mg/dry scm @7% O2 (SC I.17)	
	0.000093 pph	0.0053 pph (SC I.18)	
	0.0041 TPY	0.0233 TPY (SCI.19)	
Benzo(a)pyrene	0.0034 mg/dry scm @7% O2	0.008 mg/dry scm @7% O2 (SC I.20)	
	7.10 E-7 pph	0.0000015 pph (SC I.21)	
	3.11 E-6 TPY	0.0000065 tpy (SC I.22)	
Hydrogen Chloride	1565 mg/dry scm @7% O2	23,000 mg/dry scm @7% O2 (SC I.23)	
	0.35 pph	2.07 pph (SC I.24)	
	1.53 TPY	8.9 tpy (SC I.25)	
Hexavalent Chromium	6.90 mg/dry scm @ 7% O2**	8.8 mg/dry scm @7% O2 (SC I.23)	

	0.00142 pph**	0.0016 pph (SC I.24)
	0.0062 TPY**	0.0071 tpy (SC I.25)
Total Chromium	6.90 mg/dry scm @7% O2	23.0 mg/dry scm @7% O2 (SC I.29)
	0.00142 pph	0.0043 pph (SC I.30)
	0.0062 TPY	0.0186 (SC I.31)
Lead	0.0000053 lb/MMBtu	0.00003 lb/MMBtu Heat Input (SC I.32)
	0.0012 pph	0.0069 pph (SC I.33)
	0.0053 TPY	0.03 tpy (SC I.34)
Mercury Compounds	mg/dry scm @7% O2	0.8 mg/dry scm @7% O2 (SC I.35)
	<0.000091 pph	0.00015 pph (SC I.36)
	<0.00040 TPY	0.0006 tpy (SC I.37)

Sulfuric Acid (H2SO4)	0.0039 lb/MMBtu heat input	0.0157 lb/MMBtu heat input (SC I.38)
	0.92 pph	5.5 pph (SC I.39)
	4.02 TPY	23.7 TPY (SC I.40)
TCDD Toxic Equivalent (Total Dioxins and furans)	4.47 E-06 mg/dry scm @7% O2	0.000029 mg/dry scm @7% O2 (SC I.41)
	9.34 E-10 pph	5.4 E-9 pph (SC I.42)
	4.09 E-9 TPY	2.3 E-8 TPY (SC I.43)
VOC (expressed as propane)	0.00061 lb/MMBtu heat input	0.020 lb/MMBtu heat input (SC I.14)
	0.14 pph	4.6 pph (SC I.15)
	0.63 TPY	19.1 TPY (SC I.16)

TEST DATE	PM	LIMIT
July 28, 2020	0.0084 lb/MMBTU heat input*	0.10 lb/MMBTU heat input (SC I.10)

*Reported as total PM.

Flowrate testing from EUBOILER to determine the average flow rate , which shall be used in conjunction with CEM data to calculate NOx, SO2, and CO lb/hr emission rates are required to be conducted annually (one calendar year from the date of the last test) per SC V.7-9. The two most recent events are summarized below:

TEST DATE	FLOW RATE
July 27, 2020	50,964
7/2019	49,094

The next testing is tentatively scheduled for August 26, 2021, RATA test protocols have been submitted electronically on June 8, 2021.

Monitoring/Recordkeeping – Activities associated with monitoring and recordkeeping required for EUBOILER focus in large part on data generated by the COM, CEMS, and emissions calculations using most recent analytical data . In addition to emissions Viking Lincoln also monitors various parameters to ensure compliance with CAM and permitting requirements. (see previous table in source wide summarizing parameters monitored).

The Facility maintains records of monitoring data, monitor performance data, corrective actions taken, a written quality improvement plan and any other information documenting the adequacy of monitoring records, maintenance, or corrective actions (SC VI.27). Records are required to be kept for a period of 5 years (SC VI.26). Compliance with the wide range of ROP conditions associated with EUBOILER monitoring and recordkeeping is discussed below.

COMs Requirements –

Under the existing ROP, the Facility is required to operate the COMS during all periods when the boiler is operating. (SC VI.6) The Facility is required to monitor opacity, to show compliance with the PM limit. Data from periods of malfunction, repair or QA/QC are not to be used to show compliance (SC VI.6 and VI.15). The unit recently reported downtime, when the new DAS system was installed.

An excursion is defined as two consecutive one hour block averages of greater than 15-percent opacity (SC VI.1) Proper functioning of the ESP is reflected in a COMS opacity reading of 0-15% (SC VI.3). Instantaneous COMs reading of less than 1% opacity were reported at the time of the July 1, 2021, site inspection and are reported earlier in the report. A review of opacity data indicated that unless a malfunction or boiler upset occurs, that COMs data is well below the permitted limit.

Should an excursion occur, the permittee shall examine and correct the electrostatic precipitator primary and secondary voltage in accordance with the MAP (SC VI.4, VI.22 and VI.23) The most recent MAP for the Facility (Preventative Maintenance and Malfunction Abatement Plan) is dated February 20, 2018. At the time of the July 1,

2021, site inspection, the following instantaneous readings of primary and secondary voltage readings were recorded.

Cell No.	Primary Voltage	Primary Amperage	Secondary Voltage	Secondary Amperage
#1	282	16	41	85
#2	272	24	37	157
#3	318	28	40	219
PM/MAP Range	75-225 Volts	5-35 Amps	20 – 45 KVolts	45 – 150 MilliAmps

The Facility is required to maintain written procedures for the opacity monitor quality assurance program/ Quality Control Plan. (SC VI.24 and IX.4). The plan, dated August 10, 2016, reflects the second revision of the document, and appears to be complete with respect to content. The Facility reports that the document will be undergoing another revision in the near future.

Should the duration of opacity excursions be greater than 5% of the total operating time (excluding startup and shutdown periods), the permittee is required to implement a quality improvement plan (SC VI.5). The file contains no indication that a quality improvement plan needed to be implemented.

CEMs Requirements –

Under the existing ROP, the Facility is required to monitor and record CO, NOx, SO2 and O2 emissions from EUBOILER on a continuous basis (SC VI.7). This is achieved by use of CEMS, which is monitored not only by operations staff from the control room, but also is recorded using a DAS. CEMS data is used to determine emissions for the facility as well as to monitor proper operation of EUBOILER in compliance with the ROP.

Emissions Calculations –

SC VI.8 requires that all pollutants not monitored by CEMS the permittee shall establish emission factors using the most recent stack test data, and that the emission factors shall be used to calculate emissions for each pollutant in the same units and the same time periods as identified in the emission limits for EUBOILER. As previously indicated, the Facility conducts verification testing every 5 years. Verification testing is used to not only verify compliance with emission limits, but to determine emission factors in compliance with permit conditions below.

- The permittee is required to calculate and maintain records of CO, NOx and SO2 in lbs/hour and lbs/MMBtu heat input emission rates, using hourly averages from the CEMS and the average flow rates established in the most recent flow data testing (SC VI.9)
- Emissions for PM, PM10, VOC, Lead and Sulfuric Acid from EUBOILER shall be calculated and maintained by the permittee in lbs/MMBtu heat input, using emission factors based on the most recent emissions testing (SC VI.10)
- Emissions for PM10, VOC, arsenic, benzo(a)pyrene, hydrogen chloride, hexavalent chromium, total chromium, lead, mercury compounds, H2SO4 and TCDD Toxic Equivalent in lbs/hour from EUBOILER using emission factors based on the most recent emissions testing (SC VI.11)

Other Requirements –

The permittee maintains as required a written log of the hours of operation of EUBOILER (SC VI.20). As is most written data, it is input into the electronic database maintained by the Facility.

Under the ROP, For each operating day, the following records must be maintained for EUBOILER (SC VI.21)

- Calendar Date
- Average hourly NOx (expressed as NO2) emission rates (lb/MMBtu/hr) measured or predicted.
- 30-day average NOx emission rate in lb/MMBTU heat input Identification of "F" factor used for calculations , method of determination and fuel type combusted.
- Identification of the operating days when the calculated 30-day average NOx emission rates in excess of standards under 40 CFR 60.44b
- Identification of operating days for which pollutant data have not been obtained
- Identification of times when emission data has been excluded from the average emission calculations
- Identification of the times when the pollutant concentration exceeded full span of the CEMS
- Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with performance specification 2 or 3.
- Results of daily CEMS drift tests and quarterly accuracy assessments.

A new DAS system was installed at the site on June 14, 2021. At the time of the July 1, 2021 site inspection, the Facility was still in the process on incorporating previous data into the new system, and 30 days under the new DAS system had not yet occurred. Data provided by the Facility to show compliance with the above referenced conditions was provided on July 22, 2021 for June 13, 2021, and indicated the following:

Date	June 13, 2021
Average Hourly NOX	0.023 lb NOx/MMBTU
30-Day Rolling Average NOx	0.221 lb NOx/MMBTU
30-Day Rolling Average NOx	49.99 lb NOx/Hr

Operating Days exceeding 40 CFR 60.44b	None
F-Factor	9475 (Determined during 2020 stack testing)

The Facility reports that with respect to the number of operating days pollutant data has not been obtained, or the number of times when emission data has been excluded from the average emission calculations is reported as part of required reporting submitted by the Facility.

The Facility reports that the new DAS system will more easily report any events when the pollutant concentration exceeded full span of the CEMS. It also will be able to print out a report of the daily CEMS drift tests and quarterly accuracy assessment results. In addition, no changes/modifications have occurred to the CEMS that would affect compliance with performance specifications 2 or 3.

SC VI.16 requires the permittee to monitor and record the NG use of EUBOILER in a continuous basis and in a manner and instrumentational acceptable to AQD. NG usage shall be calculated on a monthly and 12-month rolling time period (SC VI.17) and be made available upon request. NG usage as well as other fuel usage (below) is monitored and recorded in compliance with permit requirements. 12-month NG usages were reported previously in this document.

The permittee shall record and maintain records of the amounts of each fuel combusted during each day and calculate the annual capacity factor individually for NG and wood for the reporting period. (SC VI.18 and VI.19). Annual Fuel Capacities are determined based on a 12-month rolling average basis and are calculated at the end of each calendar month. These usages are calculated in compliance with permit conditions and were reported earlier in this report.

The permittee shall maintain records required for 40 CFR Subpart JJJJJJ (Boiler MACT) compliance reporting. (SC VI.25). Compliance with this high-level citation with respect to recordkeeping is believed to be met by meeting the other recordkeeping requirements for EUBOILER.

Reporting – Reporting requirements for EUBOILER include prompt reporting of deviations pursuant to General Conditions 21 and 22 of ROP Part A (SC VI.1) semiannual (SC VI.2), and annual deviation reporting (SC VI.3). In addition to the above reporting the following reporting is required for EUBOILER:

- CEMS and COMs Monitoring Plan (SC VI.4)
- Quarterly reporting of Excess Emissions Reports (EERs) (SC VI.5)
- Semiannual reporting of Monitor downtime (SC VI.7)
- Semiannual reporting of Excursions and/or exceedances (SC VI.6)
- Quarterly Cylinder Gas Audits (CGAs) for CEMS (SC VI.8)
- Quarterly submittal of QA procedures for COMS (SC VI.9)
- Annual Compliance certification reports under Subpart JJJJJJ (Boiler MACT) (SC VI.10)

A review of the District files appear to indicate general compliance with reporting requirements specified above. Reports appear to be complete and submitted in a timely manner.

Should the facility intend to commence or recommence combustion of solid waste, 30-days prior notification is required (SC VI.11) In addition, should the permittee switch fuels or make a physical change to EUBOILER that results in the boiler becoming subject to a different subcategory, notification must be provided within 30-days. (SC VI.12) Discussions with Facility Staff indicated that the Facility has not nor intends to combust solid waste, nor change fuel categories. So the referenced condition(s) are not applicable at this time.

Stack/Vent Restrictions – the stack for EUBOILER must discharge unobstructed vertically into the ambient air and meet the minimum height of 150 feet above ground level and a maximum diameter of 72-inches.(SC VIII.1) Discussions with Facility staff indicated that the stack was constructed to meet permit conditions. It has had a liner installed and reinforcement in recent years. The present stack has fins to re-direct the wind, so they do not create structural stresses on the stack.

Other Requirements – The permittee shall promptly notify the need to modify the CAM Plan if the existing plan is found to be inadequate and will submit a proposed modification to the ROP if necessary. (SC IX.1) In addition, this portion of the ROP includes a high-level citation that requires the permittee to comply with all applicable requirements of 40 CFR Part 64 (CAM).(SC IX.6) Based on monitoring activities conducted by the Facility, it appears that the Facility is in general compliance with their CAM Plan, and the referenced permit conditions.

A high-level citation for 40 CFR Part 63 Subpart JJJJJJ is included for EUBOILER (SC IX.13 & IX.11)). Compliance with the subpart is assumed should the permittee be in compliance with ROP conditions.

Per the permit, the permittee shall maintain and operate EUBOILER and any associated pollution control devices in such a manner as to meet the emission standards/limits identified in the ROP (SC IX.5). Failure to meet the standards the permittee is required to promptly notify the AQD and submit if necessary, an application for permit modification (SC IX.12). Since the December 18, 2018 site inspection, there are no records of permit modification applications, and with the exception of the Rule 912 notification from November 16, 2020,

The permittee shall conduct/perform CEMS and COMs quality assurance procedures. (SC IX.2 & 3) The Facility records indicate that quarterly and annual quality assurance activities are conducted by the Facility in compliance with permit conditions.

Should the opacity monitor fail two consecutive annual audits, two consecutive quarterly audits or five consecutive daily checks, the permittee is required to either revise quality control procedures for the opacity monitor or determine whether the opacity monitor is malfunctioning and take Federally specified corrective actions. (SC IX.5) No records were found indicating failure of audits or daily checks, that would require a revision of the quality control procedures.

SC IX.8 & 9 pertain to Boilers combusting solid waste and are not applicable at this time.

EUASHHANDLING - This EU includes ash handling equipment as well as an ash wetting system.

The permittee shall not operate EUASHHANDLING unless the wetting system is installed and is operating properly (III.1). The ash handling system was operating at the time of the July 1, 2021, site inspection. In addition, loading and transport offsite of one load of ash was noted.

Emission limits are limited to a 6-minute average opacity of 5% (SC I.1). The permittee shall observe and record the VE from EURMHANDLING once per calendar day. If VEs are observed, then VEs observations must be done by a certified observer using USEPA Method 9. (SC V.1) Records of daily VEs and those repairs and remedial actions performed in response to the daily observations shall be made available upon request (SC VI.1) No elevated emissions were reported by the Facility, no observations by a certified observer have been required. No VEs were noted at the time of the site inspection.

The Facility reports having updated the daily log sheets for operators to better document VE observations. VE observations have been completed by uncertified staff, the Facility requested information regarding certification opportunities, this information was forwarded to them electronically after completion of the inspection.

Should VE from the EU exceed the 5% opacity limit, the permittee shall within 24 hours either shut down the process or conduct any maintenance needed to return opacity to within the 5% limit. (SC III.2) As no reported exceedances were of record, any maintenance activities were the result of scheduled maintenance inspections.

Prompt reporting of deviations (SC VII.1) as well as semiannual and annual deviation reporting are required for EUASHHANDLING(SC VII.2 & 3). Reports submitted appear to be in compliance with permit conditions.

EUGENERATOR - The Facility maintains a standby, diesel-fired reciprocating Detroit Diesel 415 hp emergency generator to provide electricity on an emergency basis. The generator is equipped with a non-resettable hour meter in compliance with SC IV.1.

Conditions associated with the EU include a SO2 fuel limit of 0.5% sulfur content and a heat value of 18,000 BTUs/lb fuel. (SC I.1) Documentation provided by the Facility indicates that ultra low diesel fuels purchased from the Gary Oil Company meet the required content.

Process/Operational Restrictions - EUGENERATOR is limited to no more than 100 hours per year (SC III.1). SC III.3 further defines the 100-hours of operation to maintenance checks, readiness testing, etal. SC III.4 allows for EUGENERATOR to operate for up to 50-hours in non-emergency situations to be counted toward the 100 total hours. Inspection of the non-resettable hour meter indicates that EUGENERATOR was operated for a total of a total of 175.1 hours since installation in 1986-87. The December 18, 2018, site inspection report reported total hours of operation as 172.7 hours. Which would indicate and operation of approximately 2.4 hours. The Facility reports total hours of operation per calendar year as part of their MAERS submittals.

The EU shall also be maintained and operated in a manner consistent with safety and good air pollution practices. (SC III.2) Facility staff indicated that it appears that the generator has only had annual maintenance checks, and one reported period of emergency operation during the previous calendar year. The facility shall be implementing a more frequent maintenance schedule and more detailed documentation of generator operation.

Monitoring/Recordkeeping – Conditions under this section are limited to a written log of hours of operation for EUGENERATOR (SC VI.1). The Facility reports documentation of annual hours of operation as part of the annual emissions reporting. As historically the engine has only had annual maintenance checks, this appears to meet the intent if not the requirement of the condition. With more frequent maintenance activities, more documentation will be required to determine periods of time for emergency vs non-emergency operations.

The permittee shall also maintain analytical results for each shipment of diesel fuel used in EUGENERATOR (SC VI.2). The analytical report should contain the sulfur content as a percent, and the heating value of the fuel in BTU per gallon. As previously indicated, the facility purchases ultra low-sulfur fuels and is reported by the supplier to meet the permit requirements. Documentation was provided by the Facility upon request.

The Facility stores fuel for the emergency generator in what was visually estimated to be an approximately 50-gallon tank in the same room as the emergency generator. Facility staff reported that purchase of fuel for the emergency generator is infrequent, as operation of the EU is so limited.

The lb/MMBTU emission rate shall be calculated for each shipment of diesel fuel as outlined in Appendix 7. (SC VI.2) The Facility reports for the ultra low-sulfur fuels that the maximum lb/MBTU emission rate is 0.0016 lb/MMBtu for any shipment received at the facility.

Reporting – VII.1-3 include prompt reporting of deviations, semiannual reporting and annual compliance reporting. A review of submittals indicates that the reporting meets permit requirements.

Other Requirements – IX.1 contains a high-level citation for the RICE AREA MACT. Compliance with this citation is believed to be met by complying with other conditions of the ROP for EUGENERATOR.

FGCOLDCLEANERS

This FG consists of two existing cold cleaners using a non-halogenated, solvent-based cleaner (Crystal Clean #106 mineral spirits). The units were not in use at the time of the July 1, 2021, site inspection. The lids were closed. Both units appeared to be in good shape, less than 10 square feet in area and unheated. The larger of the two (#031) stores it's solvent in a drum below the cleaning reservoir, which is equipped with a drain. In the smaller unit (#280) the solvent and cleaning area all in common reservoir, with a rack for draining.

Used solvents are collected and serviced by Crystal Clean personnel. Information provided by the Facility indicated that the Reid Pressure for the cleaning solvent is

<1 mm Hg (<0.019 psi). Based on this information, the following special conditions are not applicable at this time:

- SC II.1 – which restricts cleaning solvents to no more than 5% by weight of six halogenated compounds.
- SC IV.1 – restricts air-vapor interface to no more than 10 square feet and emission are released into the general in-plant environment.
- SC IV.3 – requires a cover, and that the cover be closed when not in use.
- SC IV.4 – requires a mechanically assisted cover if the reid pressure of the solvent is more than 0.3 psia or if the solvent is agitated or heated.
- SC IV.5 - which applies only to reid pressures above 0.6 psia or cold cleaners heated to above 120 degrees Fahrenheit.
- SC VI.1 – monitoring and recording weekly the temperature of the solvent during routine operating conditions.

In compliance with SC VI.2, the permittee maintains the following information for its Rule 281(2)(h) exempt cold cleaning units:

Identifier	Installation	Air/vapor Interface (Square Feet)	Reid Vapor Pressure (psia) (at 20 degrees C)	Rule 707(2)
031	Original to Facility (circa 1986)	<10	<0.019 psi	NA existing cold cleaner
280	Original to Facility (circa 1986)	<5	<0.019 psi	NA existing cold cleaner

Reporting for FGCOLDCLEANERS is limited to reporting of deviations pursuant to General Conditions 21 and 22 of Part A of the ROP (SC VIII.1), as well as semiannual and annual compliance reporting (SC VIII.2 and 3). Documents in District Files appear to indicate general compliance with reporting requirements for this FG.

SUMMARY

On July 1, 2021, AQD District Staff conducted a scheduled, site inspection of the Viking Energy of Lincoln, LLC. Facility (N0890) located at 509 West State Street, Lincoln, Michigan. The referenced Facility is a bio-fuel electric generating facility, which produces power by burning solid fuels. The referenced Facility is operating under MI-ROP N0890-2020, effective March 9, 2020.

The stationary source is a Major Source subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because the potential to emit each of particulate matter,

sulfur dioxide, carbon monoxide, and nitrogen oxides exceeds 100 tons per year. The Facility is an area source of HAPs.

The stationary source is considered a "synthetic minor" source in regards to the Prevention of Significant Deterioration regulations of the Michigan Air Pollution Control Rules Part 18, Prevention of Significant Deterioration of 40 CFR 52.21 because the stationary source accepted legally enforceable permit conditions limiting the potential to emit of nitrogen oxides, sulfur dioxide and carbon monoxide to less than tons per year (247.2 tpy).

In addition to the following Federal Regulations previously identified:

- 40 CFR Part 60 Subpart Db (NSPS for Industrial-Commercial-Institutional Steam Generating Units), and
- 40 CFR Part 63, Subpart JJJJJJ (Boiler MACT)
- 40 CFR Part 63, Subpart ZZZZ (RICE MACT)

The emission limitations for PM from EUBOILER at the stationary source are subject to the federal Compliance Assurance Monitoring (CAM) rule under 40 CFR Part 64. This emission unit has a control device and potential pre-control emissions of PM greater than the major source threshold level. Control devices associated with EUBOILER include multiple cyclones and an ESP.

The purpose of the inspection was to determine compliance of the Facility with it's present ROP. The most recent site visit to the Facility was conducted on December 18, 2018. No Compliance issues were noted at that time.

Constructed in 1986, Viking Energy of Lincoln (AKA Viking Lincoln or the Facility) is located within the city limits of Lincoln, Alcona County, Michigan. A sister facility is Viking – McBain (N 1160) was constructed and permitted at the same time. Both Facilities are presently owned by National Salvage & Service, a subsidiary of which is National Energy. The change in ownership occurring in about March 2020, and has been followed with changes in operators and management since that time.

Since the ownership and staffing changes, a consultant has been brought in to evaluate compliance of the facility with the ROP and recommend changes to be implemented to bring the site better into compliance. Results of this audit were discussed during the site inspection and appear to indicate gaps in recordkeeping. These gaps are being corrected as records are being identified in files, as well as by the addition of supplemental documentation activities which are being implemented by the Facility.

The plant is an electrical generating facility, which produces power by burning solid fuels to produce high pressure steam in its boiler. The steam produced in the boiler powers an electrical generating turbine, which generates up to 18 Megawatts at full capacity. A workday consists of two shifts.

The boiler's primary fuel is wood chips, and under the present ROP may be supplemented with tire-derived fuel (TDF), pentachlorophenol treated woods, creosote treated wood, particleboard, and plywood. Note that at the time of the inspection the facility reports that pentachlorophenol treated woods and particleboard/plywoods are not presently part of the supplemental fuels used onsite.

The fuel mix has a moisture content of approximately 35%, which is lower than untreated wood only that has a moisture content of 45-50%. The lower moisture content allows for a much more efficient and smooth operation of the boiler.

Initial startup of the boiler utilizes natural gas to minimize extra air emissions which would otherwise be associated with boiler start-up. All solid fuels are delivered to the site by truck and are stored onsite in piles managed to control fugitive dust.

June 14, 2021, Viking Lincoln installed a new Data Acquisition System (DAS). Facility staff reported that the unit was operating that same day. Per TPU instruction the period of installation was to be considered downtime with respect to continuous monitoring systems.

Emission Units onsite include:

- EUBOILER
- EUGENERATOR
- EUCLDCLNR
- EURMHANDLING
- EUASHHANDLING

Based on information obtained at the time of the July 1, 2021, site inspection as well as subsequent records provided by the Facility, it appears that with the exception of some minor recordkeeping, the documents having been generated by previous staff/owners and not located as of the time of the site inspection, that the Facility is in general compliance with the conditions of the ROP. This determination has been made based on activities taken by the Facility to bring in outside staff to audit the present records and implement recommendations to strengthen monitoring and recordkeeping practices at the Facility. In addition, the Facility has indicated that they anticipate revising their MAP and the COMs quality assurance program/quality control plan. sgl

Sharon LeBlanc Digitally signed by Sharon LeBlanc Date: 2021.08.24 10:52:01 -04'00'

NAME _____ DATE _____ SUPERVISOR _____ Shane Nixon Digitally signed by Shane Nixon Date: 2021.09.08 12:45:42 -04'00'