

State Registration Number  
B4260

**RENEWABLE OPERATING PERMIT  
STAFF REPORT**

ROP Number  
MI-ROP-B4260-2021a

**L'Anse Warden Electric Company, LLC**

State Registration Number (SRN): B4260

Located at

157 South Main Street, L'Anse, Baraga County, Michigan 49946

Permit Number: MI-ROP-B4260-2021a

Staff Report Date: September 7, 2020

Amended Date: July 27, 2021

This Staff Report is published in accordance with Sections 5506 and 5511 of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Specifically, Rule 214(1) of the administrative rules promulgated under Act 451, requires that the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), prepare a report that sets forth the factual basis for the terms and conditions of the Renewable Operating Permit (ROP).

## TABLE OF CONTENTS

<b>SEPTEMBER 7, 2020 - STAFF REPORT</b>	<b>3</b>
<b>MAY 3, 2021 - STAFF REPORT ADDENDUM</b>	<b>27</b>
<b>JULY 27, 2021 - STAFF REPORT FOR RULE 216(2) MINOR MODIFICATION</b>	<b>37</b>

State Registration Number  
B4260

**RENEWABLE OPERATING PERMIT**  
**SEPTEMBER 7, 2020 - STAFF REPORT**

ROP Number  
MI-ROP-B4260-2021

**Purpose**

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with an ROP pursuant to Title V of the federal Clean Air Act; and Michigan's Administrative Rules for Air Pollution Control promulgated under Section 5506(1) of Act 451. Sources subject to the ROP program are defined by criteria in Rule 211(1). The ROP is intended to simplify and clarify a stationary source's applicable requirements and compliance with them by consolidating all state and federal air quality requirements into one document.

This Staff Report, as required by Rule 214(1), sets forth the applicable requirements and factual basis for the draft ROP terms and conditions including citations of the underlying applicable requirements, an explanation of any equivalent requirements included in the draft ROP pursuant to Rule 212(5), and any determination made pursuant to Rule 213(6)(a)(ii) regarding requirements that are not applicable to the stationary source.

**General Information**

Stationary Source Mailing Address:	L'Anse Warden Electric Company, LLC. 157 South Main Street L'Anse, Michigan 49946
Source Registration Number (SRN):	B4260
North American Industry Classification System (NAICS) Code:	22118
Number of Stationary Source Sections:	1
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	201500026
Responsible Official:	John Polkky, Plant Manager 906-524-4851
AQD Contact:	Ed Lancaster, Marquette District Supervisor 906-250-5124
Date Application Received:	February 11, 2015
Date Application Was Administratively Complete:	February 11, 2015
Is Application Shield in Effect?	Yes
Date Public Comment Begins:	September 7, 2020
Deadline for Public Comment:	October 7, 2020

## Source Description

The L'Anse Warden Electric Company, LLC (LWEC) is located on the shore of Lake Superior, in the Village of L'Anse, Baraga County, Michigan. LWEC began operating, as the John H. Warden Station, in 1959, as a 22-Megawatt (MW) pulverized coal-fired steam/electrical generating unit, an oil-torch firing #2 fuel oil was used for starting the boiler. Natural gas firing capabilities were added in the 1960's, later discontinued, and reactivated in 1993. In 1975, a three series stage electrostatic precipitator was added under permit to install (PTI) No. 411-73. By October 1994, the station was no longer operating.

In October 2007, LWEC was issued PTI No. 168-07, to convert the coal/natural gas fired boiler to a biomass fired unit, and to increase the boiler heat input to 324 million BTU per hour (MMBTU/hr) for steam production. The facility was permitted to burn natural gas, tire derived fuel (TDF), railroad ties, mill sludges, mill ash, fines and bark. A Prevention of Significant Deterioration (PSD) evaluation was completed during the permit review and it was determined only carbon monoxide (CO) emissions would be subject to the PSD regulations. A continuous emission monitoring system (CEMS) was required for measurement of CO emissions from the boiler. The boiler was considered a synthetic minor source of hazardous air pollutants (HAPs). Over the next five years, AQD issued four (4) modifications to PTI No. 168-07 (PTI Nos. 168-07A, B, C and D). These modifications included:

- PTI No. 168-07A: Increased the natural gas usage of annual heat input from 10% to less than 50%.
- PTI No. 168-07B: Removed mill ash and sludge from fuel list, increased ton per hour limits for TDF and fines and bark, removed testing requirements for arsenic, manganese, nickel, dioxan/furans and creosol isomers, and added a hydrogen chloride (HCl) emission limit of 9.5 tons per year (tpy). The permit writer noted:

*“...for clarification purposes the HCl limit of 2.17 pph was also expressed as a 9.5 tpy limit. The existing permit limited hours of operation to 8,200 hours per 12-month rolling time period; this limit coupled with the pph limit served as an individual HAPs restriction of 9.5 tpy.”*

- PTI No. 168-07C: Added pentachlorophenol treated railroad ties to the fuel list, with a material limit of 0.25 tons per hour, and required the company to verify particulate matter (PM), particulate matter less than 10 microns (PM10), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), lead, hydrogen chloride (HCl), and volatile organic compounds (VOC) emission rates from EUBOILER#1 by testing, by April 16, 2013.
- PTI No. 168-07D: Granted an extension of the stack testing deadline to December 31, 2015 (168-07D).

LWEC submitted an ROP renewal application on February 11, 2015. An initial Staff Report dated August 10, 2015, and draft Renewable Operating Permit identified as MI-ROP-B4260-20XX, were noticed for a public comment period from August 10 to September 9, 2015. A public hearing was requested and scheduled for October 29, 2015. On October 15, 2015, LWEC notified the AQD, that during a scheduled, compliance stack test event the hourly hydrogen chloride emission limit was exceeded. Based on this initial information the AQD postponed the October 29, 2015 public hearing. After receiving and reviewing the Boiler Number One Emissions Test Report, dated November 2015, AQD issued a violation notice (VN) on December 1, 2015. In January 2016, AQD began formal enforcement negotiations with the company to return them to compliance. During late January and early February 2016, the AQD conducted multiple investigations responding to complaints of fugitive dust from LWEC. On February 8, 2016, a second violation notice was issued to LWEC for allowing the release of fugitive dust from fuel conveyance equipment.

A public comment period was held from August 24 to September 22, 2016, for a proposed draft Consent Order and proposed PTI No. 67-16. An informal Q&A meeting for the public was held on September 7, 2016, to provide information and answers about the proposed Consent Order, and draft PTI No. 67-16, prior to the close of the comment period. On September 28, 2016, a public hearing was held to accept comments by the public on the proposed Consent Order and PTI. On October 31, 2016, Consent Order AQD No. 35-2016 and PTI No. 67-16 (to remove pentachlorophenol treated railroad ties from the fuel

portfolio) were issued to resolve air pollution violations of existing Renewable Operating Permit MI-ROP-B4260-2011. Both the Consent Order and PTI No. 67-16 require that emissions testing for HCl be performed on a more frequent basis (four (4) quarterly, two (2) semi-annual, and one (1) within three years after the second semi-annual test). LWEC shut down their pneumatic fuel feed system, which was identified as a source of nuisance dust. The Consent Order also required the construction of an enclosure to minimize fugitive dust emissions from the fuel feed conveyors. LWEC submitted a minor modification application, on December 8, 2016, to incorporate the conditions of PTI No. 67-16 into the draft ROP.

On April 4, 2017, LWEC submitted a permit application (No. 53-17) requesting a trial burn of up to 25,000 tons of engineered fuel pellets as fuel for the boiler, during a 180-day period. A public hearing for the draft ROP MI-ROP-B4260-20XX and PTI No. 53-17 was held on July 26, 2017. Significant comments were received on both the draft ROP and PTI No. 53-17. Responses to those comments are incorporated into Appendix A of this ROP Staff Report for the draft ROP comments and the Response to Comments (RTC) document for PTI No. 53-17, respectively. PTI No. 53-17 was issued on August 8, 2017. LWEC made it clear to the AQD, that if the trial burn of engineered fuel pellets was successful their intention was to apply for a PTI to permanently burn engineered fuel pellets upon the completion of their trial burns. AQD decided to delay issuing the ROP until after the trial burn.

A second request to extend the trial burn of engineered fuel pellets (PTI No. 53-17A) was issued on April 12, 2018. The results of the test burning of the engineered fuel pellets provided emission factors and performance testing which supported an application for the use of fuel pellets.

The AQD held a pre-application meeting with LWEC following the second trial burn, and suggested the company request a technical review of their entire operation, including the addition of engineered fuel pellets, as an additional fuel source, in order to resolve many of the pertinent comments received during the previous public comment periods.

LWEC submitted a permit application (No. 128-18) on July 20, 2018, requesting the allowance to burn up to 50,000 tons per year of engineered fuel pellets in the boiler and the installation of a dry sorbent injection (DSI) system to control HCl emissions while burning the engineered fuel pellets. The engineered fuel pellets have the potential to emit HCl because they contain some plastics, with one type of plastic, polyvinyl chloride (PVC), containing chlorine. The permit does not allow an additional amount of total fuel (heat input) to the boiler, but rather allows for the use of either engineered fuel pellets or tire derived fuel, as fuels in the boiler. The TDF and engineered fuel pellets cannot be burned simultaneously.

A public hearing was held at the end of the public comment period for PTI application No. 128-18 on January 23, 2019. During the hearing, a request was made and granted to extend the public comment period 30 days. A Response to Comments document was developed and finalized on March 29, 2019, to address comments received during the 30-day public comment. PTI No. 128-18 was issued on March 29, 2019.

On May 3, 2019, LWEC submitted an Administrative Amendment to incorporate the conditions of PTI No. 128-18 into ROP Renewal No MI-ROP-B4260-20XX pursuant to Rule 216(1)(a)(v).

After PTI No. 128-18 was issued, LWEC submitted a modification to their CAM plan to include the Dry Sorbent Injection (DSI) system for control of HCl emissions while burning engineered fuel pellets and modified the CAM plan for PM. The following explains CAM for the DSI system.

EUBOILER#1 has emission limitations or standards that are subject to the federal Compliance Assurance Monitoring rule pursuant to 40 CFR Part 64, because the unit has potential pre-control emissions of HCl and PM over the major source levels. LWEC installed a DSI system to control the emissions of HCl while burning engineered fuel pellets in their normal fuel blend. In 2017 and 2018, LWEC was issued temporary permits to conduct trial burns of engineered fuel pellets while operating a DSI system for HCl control.

Based on the trial burns LWEC developed a DSI reagent injection rate vs. tons of pellets burned chart to control HCl emissions.

Changes to the draft ROP renewal were made based on comments received during the previous ROP public comment period and because of changes made at the facility. These include:

LWEC has installed the DSI system to control HCl emissions to meet the existing hourly and annual HCl emission limits. The DSI system also reduces emissions of other acid gases, such as sulfuric acid mist (H<sub>2</sub>SO<sub>4</sub>), hydrofluoric acid (HF) and sulfur dioxide (SO<sub>2</sub>). The DSI system consists of a supersack feeder, gravimetric weigh feeder, rotary air lock, blower, an 8-way splitter, and eight lances that penetrate the exhaust duct work between the high temperature air heater and low temperature air heater, just past the multi-clone particulate removal system and prior to the ESP. The injection site was chosen to provide an acceptable residence time for the reagent to mix with the flue gas components at an acceptable temperature (275 - 1,500 degrees Fahrenheit).

The facility is a synthetic minor for HAPs as it has accepted enforceable source-wide emission limits and restrictions for individual and aggregate HAPs. It should be noted EUBOILER#1 is the largest emission source of HAPs at LWEC, all of the other processes at the facility have insignificant HAP emissions. The highest individual HAP emitted at the facility is hydrogen chloride (HCl), with an annual emission limit of 9.5 tons per year. The other HAPs emitted in descending quantities are styrene, benzene, toluene, cresol isomers, and acetaldehyde (which are VOCs), and other mainly metallic HAPs with annual emissions significantly less than one ton per year. If total VOC emissions are less than 9.0 tpy, and HCl emissions are limited to below 9.5 tpy, then the total HAP emissions from the facility will be less than 20.0 tpy of aggregate HAP emissions. For determining compliance with the individual and aggregate HAP limits, LWEC is required to verify HCl, lead (Pb), arsenic, manganese, nickel, cresol isomers and VOC emission rates, from EUBOILER#1, at a minimum of once every five (5) years and calculate monthly and 12-month rolling time period emissions.

In addition, if VOC testing shows the total annualized emissions are greater than 9.0 tons per year, the permittee shall perform additional testing to determine styrene, benzene, acetaldehyde, and toluene emission rates, for comparison to the facility's HAP emission limit. VOC emissions shall be calculated by multiplying VOC emissions in pounds per hour by 8200 hours per year, as identified in the Testing/Sampling conditions of EUBOILER#1.

The sorbent injection system adds a minimal amount of particulate matter emissions to the exhaust stream. However, because the sorbent is injected into the boiler exhaust stream prior to the electrostatic precipitator (ESP), and the ESP is designed with excess capacity, the particulate matter (PM and PM10) emission limits were not changed. The facility is required to maintain and operate the control devices in accordance with an approved Preventative Maintenance and Malfunction Abatement Plan (PM/MAP). The most recent PM/MAP (and other required plans) can be found at: [https://www.deq.state.mi.us/aps/downloads/ROP/pub\\_ntce/B4260/](https://www.deq.state.mi.us/aps/downloads/ROP/pub_ntce/B4260/).

LWEC also maintains and operates a continuous opacity monitoring system (COMS), which is used as an indicator of the proper operation of the ESP, and hence, control of PM emissions.

With the installation of the DSI system, SO<sub>2</sub> emissions are expected to decrease over time. The facility will continue to verify SO<sub>2</sub> emission rates at a minimum of once every five years, in addition to sampling and keeping records of the sulfur, lead and chlorine content of each fuel burned in EUBOILER#1.

Based on the number of permitting changes at the facility since the initial draft ROP was noticed for public comment in 2015, the AQD has chosen to submit for public comment this staff report and associated draft renewal ROP with the incorporated conditions of PTI No. 128-18.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year **2019**.

**TOTAL STATIONARY SOURCE EMISSIONS**

Pollutant	Tons per Year
Carbon Monoxide (CO)	170.7
Lead (Pb)	0.002
Nitrogen Oxides (NO <sub>x</sub> )	235.00
Particulate Matter (PM)	21.3
Sulfur Dioxide (SO <sub>2</sub> )	342.2
Volatile Organic Compounds (VOCs)	0.8

The following table lists Hazardous Air Pollutant emissions as calculated for the year **2019** by LWEC.

Individual Hazardous Air Pollutants (HAPs) **	Tons per Year
HCl	5.3
<b>Total Hazardous Air Pollutants (HAPs)</b>	<b>6.1</b>

\*\*As listed pursuant to Section 112(b) of the federal Clean Air Act.

See Parts C and D in the ROP for summary tables of all processes at the stationary source that are subject to process-specific emission limits or standards.

**Regulatory Analysis**

The following is a general description and history of the source. Any determinations of regulatory non-applicability for this source are explained below in the Non-Applicable Requirement part of the Staff Report and identified in Part E of the ROP.

The stationary source is in Baraga County, which is currently designated by the United States Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because the potential to emit of CO, NO<sub>x</sub>, and SO<sub>2</sub> exceed 100 tons per year.

The stationary source is a “synthetic minor” source regarding HAP emissions because the stationary source accepted legally enforceable permit conditions limiting the potential to emit of any single HAP regulated by Section 112 of the federal Clean Air Act, to less than 10 tons per year and the potential to emit of all HAPs combined to less than 25 tons per year.

EUBOILER#1 at the stationary source was subject to review under the PSD regulations of 40 CFR 52.21, because at the time of New Source Review permitting the potential to emit of CO was greater than 100 tons per year.

EUBOILER#1 underwent a PSD BACT review for CO and a toxics review under Rules 224 and 225 during issuance of PTI No. 168-07. Subsequent to those reviews, stack test results have shown the company to be in compliance with the limits established in PTI No. 168-07.

EUBOILER#1 at the stationary source is subject to the Standards of Performance for Electric Utility Steam Generating Units promulgated in 40 CFR Part 60, Subparts A and Da.

EUBOILER#1 at the stationary source is not subject to the Standards of Performance for New Stationary Sources: Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units (CISWI) promulgated in 40 CFR Part 60, Subparts A and DDDD. LWEC meets the exemption determination in 40 CFR 60.2555(e)(1-4) as a *Small power production facility*.

EUBOILER#1 at the stationary source is subject to the National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources promulgated in 40 CFR Part 63, Subparts A and JJJJJJ . The AQD is not delegated the regulatory authority for this area source MACT.

LWEC was issued a Violation Notice (VN) in December 2015 for failing to meet their HCl hourly emission limit during a scheduled compliance stack test. A second VN was issued in February 2016 for fugitive dust emissions (Rule 336.1901(b)). These VNs resulted in an escalated enforcement action, including an entry into a Consent Order (AQD No. 35-2016) and issuance of PTI No. 67-16 to resolve the violations.

The monitoring conditions contained in the ROP are necessary to demonstrate compliance with all applicable requirements and are consistent with the "Procedure for Evaluating Periodic Monitoring Submittals."

The following Emission Units/Flexible Groups are subject to Compliance Assurance Monitoring (CAM):

Emission Unit/Flexible group ID	Pollutant/ Emission Limit	UAR(s)	Control Equipment	Monitoring (Include Monitoring Range)	Emission Unit/Flexible Group for CAM	PAM ? *
EUBOILER#1	PM = 0.06 lb/MMBTU heat input	R 336.1205 R 336.1331(1)(c)	Multicyclone followed three (series) section ESP	COMS (below 10% opacity on a daily block average)	EUBOILER#1	No
EUBOILER#1	PM = 19.2 pph	R 336.1205	Multicyclone followed three (series) section ESP	COMS (below 10% opacity on a daily block average)	EUBOILER#1	No
EUBOILER#1	HCl = 2.17 pph	R 336.1205 R 336.1224 R 336.1225	Dry Sorbent Injection (DSI) System	DSI injection rate in pounds of sorbent per ton of fuel pellets burned. Indicator range is within 90% of target sorbent injection rate	EUBOILER#1	No
EUBOILER#1	HCl = 9.5 tpy	R 336.1205 R 336.1224 R 336.1225	DSI System	DSI injection rate in lb/hr of sorbent per ton of fuel pellets burned. Indicator range is within 90% of target	EUBOILER#1	No



Emission Unit/Flexible group ID	Pollutant/Emission Limit	UAR(s)	Control Equipment	Monitoring (Include Monitoring Range)	Emission Unit/Flexible Group for CAM	PAM ? *
				sorbent injection rate		

\*Presumptively Acceptable Monitoring (PAM)

The HCl and PM emissions from EUBOILER#1 are subject to the federal CAM rule pursuant to 40 CFR Part 64, because the unit has potential pre-control emissions of HCl and PM over the major source levels.

EUBOILER#1 uses a multicyclone followed by a three field ESP, in series, as a control device to reduce the emissions of PM. The COMS recorded opacity of the visible emissions from the ESP is used as an indicator of the proper operation of the ESP. There is not a direct linear relationship between opacity and PM, though it can be assumed that if opacity is low, then PM emissions are low. Opacity readings indicate optimal performance of the ESP. A properly operating ESP will provide good control of PM emissions.

The CAM requirements for monitoring PM emissions from EUBOILER#1 have been revised since the last renewal. LWEC will continue to utilize the COMS to monitor compliance with the PM emission limit, however, an excursion shall be defined as a daily block average opacity value greater than 10 percent opacity. This excursion level is indicative of PM emissions below the permitted emission limits and was established based on information from 40 CFR Part 63, Subpart JJJJJJ. For CAM compliance, opacity serves as a surrogate indicator for PM emissions.

LWEC installed a DSI system to control the emissions of HCl while burning engineered fuel pellets in their normal fuel blend. LWEC estimates pre-control HCl emissions, while burning engineered fuel pellets, range from 10.7 to 13.5 pounds per hour. Stack test results and manufacturer's specifications estimate a conservative control efficiency of the DSI system of 90%, keeping HCl emissions below the hourly and annual emission limits. A reagent injection rate vs. tons of pellets burned chart was developed by LWEC to estimate the amount of DSI reagent needed to be injected to control HCl emissions. The sorbent injection rate is used as the performance indicator because it is indicative of operation of the DSI system in a manner necessary to remove HCl as intended and to comply with the HAP emission limit. When the sorbent injection rate is within the specified indicator ranges, the DSI system is considered to be operating properly.

LWEC has performed stack testing while burning engineered fuel pellets at different burn rates as well as testing without pellets. Information regarding the chlorine content of the fuel and reagent injection rates were also collected. Wood ash is alkaline and reacts with acid gas emissions to form salts which remain in the fly ash and bottom ash. Higher levels of wood or cross-tie derived fuel in the mix provide more scrubbing inherent to the boiler exhaust and the higher acid gas removal that will occur.

Based on the results of the trial burns of engineered fuel pellets while using a temporary DSI system, LWEC developed a correlation between the amount (in lbs/hr) of sorbent needed to be injected into the exhaust gas stream per the tons of fuel pellets burned. Based on this information the company, on a daily basis, sets the pound per hour sorbent injection rate based on the number of tons per hour of pellets scheduled to be fed to the boiler.

LWEC calculated the HCl emissions from the pre-control fuel mix at different levels of pellet use (from 0 tph up to 6 tph) and corresponding DSI injection rates. The curve indicates that, as pellet use increases from 0 tph to 6 tph (the permit limit), the sorbent use must increase from 0 to 256 lb/hr. With respect to chlorine levels in the pellets and their impact on emissions, LWEC has an aggressive and comprehensive pellet testing program which is detailed in its *Fuel Procurement and Monitoring Plan*.

The HCl target emission rate is set at 1.7 lb/hr to provide a satisfactory margin to keep HCl emissions under the 9.5 tpy limit specified in the permit. Emissions limits are on an annual basis; 12-month rolling totals are calculated to show compliance with annual emission limits.

Please refer to Parts B, C and D in the draft ROP for detailed regulatory citations for the stationary source. Part A contains regulatory citations for general conditions.

**Source-Wide Permit to Install (PTI)**

Rule 214a requires the issuance of a Source-Wide PTI within the ROP for conditions established pursuant to Rule 201. All terms and conditions that were initially established in a PTI are identified with a footnote designation in the integrated ROP/PTI document.

The following table lists all individual PTIs that were incorporated into previous ROPs. PTIs issued after the effective date of ROP No. MI-ROP-B4260-2011 are identified in Appendix 6 of the ROP.

PTI Number			
411-73	168-07	168-07A	168-07B

**Streamlined/Subsumed Requirements**

This ROP does not include any streamlined/subsumed requirements pursuant to Rules 213(2) and 213(6).

**Non-applicable Requirements**

Part E of the ROP lists requirements that are not applicable to this source as determined by the AQD, if any were proposed in the ROP Application. These determinations are incorporated into the permit shield provision set forth in Part A (General Conditions 26 through 29) of the ROP pursuant to Rule 213(6)(a)(ii).

**Processes in Application Not Identified in Draft ROP**

The following table lists processes that were included in the ROP Application as exempt devices under Rule 212(4). These processes are not subject to any process-specific emission limits or standards in any applicable requirement.

PTI Exempt Emission Unit ID	Description of PTI Exempt Emission Unit	Rule 212(4) Citation	PTI Exemption Rule Citation
EUGENERATOR	Two (2) portable generators	R 336.1212(4)(d)	R 336.1285(2)(g)

**Draft ROP Terms/Conditions Not Agreed to by Applicant**

The following table lists terms and/or conditions of the draft ROP that the AQD and the applicant did not agree upon and outlines the applicant’s objections pursuant to Rule 214(2). The terms and conditions that the AQD believes are necessary to comply with the requirements of Rule 213 shall be incorporated into the ROP.

Emission Unit/ Flexible Group ID	Permit Term(s) and/or Condition(s) in Dispute	Applicant’s Objection

## **Compliance Status**

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements as of the effective date of this ROP.

## **Action taken by EGLE, AQD**

The AQD proposes to approve this ROP. A final decision on the ROP will not be made until the public and affected states have had an opportunity to comment on the AQD's proposed action and draft permit. In addition, the USEPA is allowed up to 45 days to review the draft ROP and related material. The AQD is not required to accept recommendations that are not based on applicable requirements. The delegated decision maker for the AQD is Christopher Ethridge, Field Operations Manager. The final determination for ROP approval/disapproval will be based on the contents of the ROP Application, a judgment that the stationary source will be able to comply with applicable emission limits and other terms and conditions, and resolution of any objections by the USEPA.

## Appendix A

The following are AQD's responses to pertinent comments received during the July 26, 2017 public hearing and comment period for the draft ROP No. MI-ROP-B4260-20XX.

### **EPA Comments**

#### EPA Comment 1:

EPA requested the draft ROP be revised to include applicable requirements, including the associated monitoring, recordkeeping, and reporting requirements, that apply to the emission units and activities at the Fuel Aggregation Facility (FAF), in accordance with 40 CFR Sections 70.6(a)(1) and (a)(3).

#### AQD Response 1:

AQD agrees. With the incorporation of the conditions from PTI No. 128-18, the associated monitoring, recordkeeping and reporting requirements were added to FGFUEL. FGFUEL covers all the fuel handling, processing and storage equipment, road(s), and storage pile(s) located at the LWEC Generating Station and the FAF. The Fuel Procurement Management Plan (FPMP), Preventative Maintenance/Malfunction Abatement Plan (PM/MAP) and Fugitive Emissions Control Plan (FECF) address in detail the associated monitoring, recordkeeping, and reporting necessary for FGFUEL. The most recent copies of these plans are available for review at: [http://www.deq.state.mi.us/aps/downloads/ROP/pub\\_ntce/B4260/](http://www.deq.state.mi.us/aps/downloads/ROP/pub_ntce/B4260/)

#### Condition Changes:

The conditions in PTI No. 128-18, for FGFUEL and FGFACILITY (Source-Wide Conditions in the draft ROP) combine and update the conditions for all fuel handling activities and associated monitoring, recordkeeping, and reporting.

#### EPA Comment 2:

Evaluate provisions in "Fugitive Emissions Control Plan" and revise permit to include monitoring and recordkeeping necessary to assure compliance with the opacity and particulate matter limits for EUFUEL and EUASH

#### AQD Response 2:

The permit includes the required monitoring such as daily visible emissions monitoring and recordkeeping necessary to assure compliance with the opacity and particulate matter limits for EUFUEL. LWEC has updated as necessary the FECF which includes the daily observation logs at the generating station and FAF.

EUASH was removed from the draft permit. The facility reconfigured the ash handling system, converting it to a wet ash removal system and disconnected the ash silo with baghouse control.

#### Condition Changes:

Special Condition (SC) VI.3 in FGFUEL requires the facility to perform and document daily visible emissions observations when operating.

#### EPA Comment 3:

Supplement the Staff Report to verify the COMS is the appropriate compliance indicator because there is a correlation between the applicable PM limits and the COMS sufficient to assure compliance with the PM limits. In addition, include any operational requirements applicable to the ESP, pursuant to 40 CFR Part 64, and/or to assure compliance with the Section I. PM limits and Section IV.1. requirements to operate the control in a satisfactory manner.

AQD Response 3:

The COMS recorded opacity of the visible emissions from the ESP is used as an indicator of the proper operation of the ESP. There is not a direct linear relationship between opacity and PM, though it can be assumed that if opacity is low, then PM emissions are low. Opacity readings indicate optimal performance of the ESP. A properly operating ESP will provide good control of particulate matter emissions. High opacity indicates particulate matter emissions are increased. The opacity indicator ranges were selected because they are instantaneous indicators of whether the ESP is performing normally. LWEC's PM/MAP Tables 2-6 and 2-8, list ESP Operational Variables and Corrective Procedures to ensure compliance with the PM limits.

EPA Comment 4:

Provide additional information regarding facility-wide PTE for aggregate and individual HAPs

AQD Response 4:

The facility has accepted source-wide emission limits for individual and aggregate HAPs, to be a synthetic minor. The highest individual HAP emitted at the facility is HCl, with an annual emission limit of 9.5 tons per year. The other HAPs emitted in descending quantities are styrene, benzene, toluene, cresol isomers, and acetaldehyde (which are VOCs), and other mainly metallic HAPs with annual emissions significantly less than one ton per year. If total VOC emissions are less than 9.0 tpy, and HCl emissions are below the 9.5 tpy limit, then the total HAPs emissions from the facility will be less than the 20.0 tpy aggregate HAP limit. For determining compliance with the individual and aggregate HAP limits, LWEC is required to verify HCl, lead (Pb), arsenic, manganese, nickel, creosol isomers, and VOC emission rates, from EUBOILER#1, at a minimum of once every five (5) years and calculate monthly and 12-month rolling time period emissions.

In addition, if VOC testing shows the total annualized emissions are greater than 9.0 tons per year, the facility shall perform additional testing to determine styrene, benzene, acetaldehyde, and toluene emission rates, for comparison to the facility's HAP emission limits. VOC emissions shall be calculated by multiplying VOC emissions in pounds per hour by 8200 hours per year, as identified in the Testing/Sampling conditions of EUBOILER#1.

Finally, the permit requires LWEC to calculate both individual and total HAPs on a monthly and a 12-month rolling time period basis. Those records are to be kept on file and made available to the AQD upon request.

EPA Comment 5:

Revise permit to include the specific monitoring, recordkeeping, and calculations (including emissions factors) necessary to assure compliance with the individual and aggregate HAP emission limits in EUBOILER#1.

AQD Response 5:

AQD agrees. The current FPMP, includes emission factors and equations used to calculate monthly and annual emissions. In Part B. Source-Wide Conditions, the monitoring and recordkeeping requirements are spelled out in a basic list (Section VI. Monitoring/Recordkeeping) that are necessary to assure compliance with the individual and aggregate Source-Wide HAP emission limits.

Condition Changes:

The emission limits for HAPs, testing, monitoring, and recordkeeping necessary to assure compliance with the individual and aggregate HAP emission limits were consolidated in Part B. Source-Wide Conditions. Appendix 7 contains additional detail on the emission calculations used to demonstrate compliance.

EPA Comment 6:

Update the Staff Report to comprehensively address the CISWI applicability requirements, including the percentage amount of natural gas in order to qualify for the small power production exemption and also the definition of solid waste provisions in 40 CFR Part 241 (RCRA).

#### AQD Response 6:

The regulations for CISWI were first proposed in 1999 and became effective in 2000. In 2007 the company stated that the facility was not subject to the CISWI regulations because they were recovering useful energy from the combustion of biomass and the then current regulations exempted such facilities from CISWI applicability. The AQD agreed with that determination based upon the regulations in effect at the time.

Subsequent revisions to the CISWI regulations removed the blanket exemption for recovering energy from the fuel stream. CISWI applicability is now based upon the use of materials designated as "solid waste." Railroad ties are considered a non-hazardous secondary waste and considered solid waste under the CISWI regulations.

The non-hazardous secondary material (NHSM) regulations define solid waste and therefore, what is subject to the CISWI regulation. The finalized NHSM regulations exclude the applicability of the CISWI regulations under the following conditions:

- The unit qualifies as a small power-production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)).
- The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity.
- The facility submits documentation to the Administrator notifying the Agency that the qualifying small power production facility is combusting homogenous waste.

On August 27, 2014, the company provided documentation to USEPA and the AQD that they meet the exemption criteria listed above, and the facility is not subject to CISWI regulations.

Within the definition of Section 796(17)(C) it states: "*including requirements respecting fuel use...*". The definition of "fuel use" is found in Title 18 Conservation of Power and Water Resources, Part 292, Subpart B, Section 292.204(b)(2) and states: "*Use of oil, natural gas and coal by a facility, under section 3(17)(B) of the Federal Power Act, is limited to the minimum amounts of fuel required for ignition, startup, testing, flame stabilization, and control uses, and the minimum amounts of fuel required to alleviate or prevent unanticipated equipment outages, and emergencies, directly affecting the public health, safety, or welfare, which would result from electric power outages. Such fuel use may not, in the aggregate, exceed 25 percent of the total energy input of the facility during the 12-month period beginning with the date the facility first produces electric energy and any calendar year subsequent to the year in which the facility first produces electric energy.*"

AQD has evaluated the fuel use as reported by the permittee to the Michigan Air Emissions Reporting System. Based upon LWEC reported fuel usages, the natural gas usage/heat input compared to the annual heat input of all other biomass fuels from 2012 through 2015 were 0.16 percent, 0.20 percent, 1.13 percent and 0.14 percent, respectively.

Further, the AQD has changed the natural gas material limit to read "Less than 25% of annual heat input" and added Underlying Applicable Requirements (UARS): R336.1205, and 18 CFR 292.204(b)(2).

Based upon the above, the AQD has determined that LWEC is not currently subject to the CISWI regulations. That determination could change in the future if LWEC changes how they operate the plant and/or the CISWI regulations change again.

#### EPA Comment 7:

Revise PM/MAP and FECP and the permit conditions in EUFUEL, EUBOILER#1, and EUASH to clearly identify the relationship of these documents to one another and to the applicable permit requirements to operate in accordance with the PM/MAP.

AQD Response 7:

LWEC updated all of their plans to clearly identify the relationship of these documents to one another and the applicable permit requirements. AQD has reviewed and approved each plan. The plans are available for review at: [http://www.deq.state.mi.us/aps/downloads/ROP/pub\\_ntce/B4260/](http://www.deq.state.mi.us/aps/downloads/ROP/pub_ntce/B4260/).

NOTE: EUASH has been removed from the draft ROP, as the ash removal system has been converted to a wet, drag chain removal and the silo and associated baghouse are no longer in use.

EPA Comment 8:

EUFUEL, sections III.2 and VI.2, and EUASH, sections III.2, VI.2, and VII.5 include requirements referred to as the "Program for Continuous Fugitive Emissions Control." Verify whether these applicable requirements should also include permit conditions specifically requiring these units to be operated in accordance with LWEC's FECP and revise the permit conditions as appropriate to ensure that the permit clearly identifies the plans that apply to these units.

AQD Response 8:

AQD modified the specified conditions identifying the FECP and the requirement for LWEC to operate in accordance with their FECP.

Condition Changes:

The requirement for the FECP was consolidated in Part B. Source-Wide Conditions, SC III.1.

EPA Comment 9:

Emission table of EUBOILER#1 in section I, conditions 1-5, and 8-10 do not reference specific associated monitoring/testing methods. Revise the permit as appropriate to include the specific monitoring, recordkeeping, and calculations (including emission factors) necessary to assure compliance with the PM, sulfur dioxide, nitrogen oxides, volatile organic compounds, and lead emission limits.

AQD Response 9:

There were typographical errors in the Draft ROP that incorrectly referenced monitoring/testing conditions for several of the emission limits in EUBOILER#1. This has been corrected.

The permit references specific monitoring/testing methods for each emission limit in Section I. Additional conditions for compliance are located in the Monitoring/Recordkeeping Section but are not specifically called out in the Emission Limit Table.

Condition Changes:

The emission limits for HAPs, testing, monitoring, and recordkeeping necessary to assure compliance with the individual and aggregate HAP emission limits were consolidated in Part B. Source-Wide Conditions. For EUBOILER#1, the emission limits for visible emissions, PM, PM10, SO<sub>2</sub>, NO<sub>x</sub>, CO, VOC, lead, and HCl reference the correct testing, monitoring, and recordkeeping necessary to assure compliance. Appendix 7 contains additional detail on the emission calculations used to demonstrate compliance.

EPA Comment 10:

EUBOILER#1. Evaluate the provisions of the FPMP and revise the permit as appropriate to include monitoring and recordkeeping necessary to assure compliance with the fuel limits

AQD Response 10:

Material limits for natural gas and engineered fuel pellets were added and hourly material limits were adjusted to daily. The monitoring and recordkeeping conditions referenced in EUBOILER#1 ensure compliance with the fuel limits identified in Section II. The monitoring and recordkeeping provisions in the FPMP have been revised as appropriate.

Condition Changes:

See EUBOILER#1, Section II and Section VI specifically SC VI.3 and 4.

EPA Comment 11:

It appears the FPMP states that compliance with the hourly material limits and annual material limits will be based on the monthly fuel usage divided by the total number of hours in a month. The permit would be clearer if it defined the time frame for the calculation as hours of operation per month.

AQD Response 11:

AQD agrees and LWEC has updated the FPMP to address this concern. In addition, with the issuance of PTI No. 128-18, the hourly material limits were revised to calendar daily limits and recordkeeping of daily hours of operation for EUBOILER#1 were added. The fuel feed system at LWEC was not designed to accurately record a ton per hour feed rate, with the changes to a daily limit and requirement to record the hours of boiler operation on a daily basis, this allows the company to more accurately record on a daily, monthly and 12-month rolling basis.

Condition Changes:

With PTI No. 128-18, adjustments were made to conditions in EUBOILER#1, Section II and Section VI specifically SC VI.3, 4 and 9.

EPA Comment 12:

FPMP includes an incorrect hourly material usage limit for railroad ties listed in Section 2.3.1, Table I -Acceptable Fuel and Material Limits, and Table 1-1 of Appendix A.

AQD Response 12:

The permittee has corrected the material usage limit in the FPMP, and it is available for review as described above.

EPA Comment 13:

EUBOILER#1, Section V.1 includes broad references to federal test methods, but does not specify the test methods for determining compliance with the emission limits in section I.

AQD Response 13:

Within EUBOILER#1, SC V.1, the general testing method references are listed for each pollutant. SC V.1 also requires LWEC to submit a test protocol in advance of the testing for AQD review and approval. The test protocol will include the specific reference test methods which will be used when the testing is performed. The AQD specifies the general test method in a permit, rather than specific test methods because test methods are often updated or changed. Doing so avoids the need for a new permit when test methods change.



## **Environmental Integrity Project (EIP)**

### **EIP Comment 1:**

The ROP fails to require monitoring sufficient to assure LWEC's compliance with applicable Clean Air Act Requirements. The ROP improperly relies on monitoring specified in off-permit plans that are not incorporated by reference into the permits and can be revised without public comment and without AQD approval.

### **AQD Response 1:**

The Facility has updated the Fuel Procurement and Monitoring Plan (FPMP), Fugitive Emissions Control Plan (FECF), and Preventative Maintenance/Malfunction Abatement Plan (MAP). The AQD has reviewed and approved these plans and they are available for review at:

[http://www.deq.state.mi.us/aps/downloads/ROP/pub\\_ntce/B4260/](http://www.deq.state.mi.us/aps/downloads/ROP/pub_ntce/B4260/).

The AQD considers the plans to be free-standing documents that do not get incorporated into the ROP to allow flexibility for necessary changes by submitting plan revisions to the AQD for review and approval without going through a more formal and time-consuming process to incorporate future revisions into the ROP. It should be noted, if plans were to be included in the ROP and required revisions at a future date, the facility would have to submit an ROP minor modification application to make the change in the ROP, and minor modifications do not go through public comment. All required monitoring is referenced properly in the permit.

### **EIP Comment 2:**

The draft ROP provides that the EUFUEL emission unit is subject to an opacity limit of 5%, 6-minute average. However, the draft ROP does not specify any monitoring associated with assuring compliance with this limit.

### **AQD Response 2:**

AQD agrees and added SC VI.3 in FGFUEL. Refer to LWEC's Fugitive Emissions Control Plan, Appendix A, Example Daily Observation Logs, for the emission points to be monitored.

### **Condition Changes:**

Daily visible emissions monitoring has been added in FGFUEL, SC VI.3.

### **EIP Comment 3:**

The work practice standard in the FECF regarding roadways is too vague to be enforceable. Does not identify climactic conditions that would dictate sweeping, does not indicate what constitutes "the presence of materials that could generate fugitive dust."

### **AQD Response 3:**

AQD agrees and explains the term climatic conditions is understood to mean, during the winter months of late October through April, daily snowfalls in excess of several inches is a common event for the area, and may prevent the observation and/or sweeping of spilled material. AQD requested the company to revise their FECF which is now available for review (see web address above).

### **EIP Comment 4:**

No indication of how compliance with trucks delivering fuel must be completely enclosed or covered by a tarp.

### **AQD Response 4:**

State Transportation Laws require all open trailers to be covered with a tarp or other suitable covering when transporting material.

EIP Comment 5:

No method provided for assuring fuel unloading is conducted at a slow rate (approximately 1-2 tons per hour).

AQD Response 5:

The conveyor system at the Facility acts as a “bottle-neck” and limits the rate of speed a driver can unload fuel onto the conveyor. A higher rate of speed would overwhelm the capacity of the conveyor belt causing spillage of fuel and causing a shutdown in the system. The blower system has been disconnected per conditions of Consent Order AQD No. 35-2016.

EIP Comment 6:

The permittee must be required to document daily observations of the hopper building seams and flashing.

AQD Response 6:

This requirement is included in the Fugitive Emissions Control Plan (FECF), Appendix A, “Generating Station Daily Fugitive Emission Inspection and Observation Logs,” Item #1 Fuel Handling Area and is enforceable through FGFUEL, SC III.1.

EIP Comment 7:

No indication of how compliance with keeping hopper curtain (door) closed when blower/conveyor system is operating.

AQD Response 7:

As mentioned in #5 above the blower system has been disconnected.

EIP Comment 8:

Commenter states in several areas the requirement to take action in a “timely manner” is too vague to be enforceable, in this statement, specifically if fuel escapes from an enclosed conveyor and requests permit to specify regular inspections.

AQD Response 8:

AQD agrees. The FECF has been updated and is available for review (see above), in addition see Response #6 above regarding requirement to keep “Daily Fugitive Emission Inspection and Observation Logs.”

EIP Comment 9:

MDEQ needs to explain how compliance with the continuous 5% opacity requirement is assured when woody fuel is stockpiled outside the enclosed storage area.

AQD Response 9:

The Fuel Procurement and Monitoring Plan (FPMP) states the material will be covered with a tarp to control fugitive emissions. In addition, the FECF states the permittee will keep “Daily Fugitive Emission Inspection and Observation Logs” to ensure compliance.

EIP Comment 10:

To ensure the Fuel Storage Building doors are kept closed except when necessary, permit must include some sort of regular daily inspection or other mechanism to document compliance.

AQD Response 10:

The FECF requires the permittee to keep “Daily Fugitive Emission Inspection and Observation Logs” to ensure and document that the doors are kept closed.

EIP Comment 11:

To be enforceable, the permit must be more specific regarding the FAF when wet suppression is required, the method used, and the areas covered.

AQD Response 11:

AQD agrees and the FECP has been updated to include these details.

EIP Comment 12:

To assure the facility's compliance of visually monitoring the stockpiled fuel for dust generation, fuel moisture content must be monitored proactively to prevent fugitive dust.

AQD Response 12:

Typically, only two types of fuel are stockpiled at the FAF, wood chips and railroad ties. Wood chips are "green" and have a high moisture content (15-35% moisture) and are in the 1-2-inch size range. Railroad ties are stored whole, after processing, the material is immediately moved into the Processed Railroad Tie Storage Building or loaded into semi-trailers for transfer to the Generating Station. The FECP states the permittee will keep "Daily Fugitive Emission Inspection and Observation Logs" to ensure compliance.

EIP Comment 13:

Commenter states any visible fugitive dust emissions that occur, from unloading of fuel on the truck dumper, that lasts for more than a couple of minutes likely represents a violation of the opacity standard and must be reported as such. The provision to avoid dumping ground railroad ties will be avoided on windy days is too vague. Dumped material will be "timely" transferred from the concrete pad to the Processed Railroad Tie Storage Building or loaded into delivery trucks.

AQD Response 13:

The AQD agrees and the permittee has updated the FECP. The facility states in the FECP the use of the truck dumper is limited to a maximum wind speed of 25 mph, which limits the likelihood of fugitive dust leaving the property. Based on AQD observations, it takes significantly less than six (6) minutes to unload a truck on the dumper and the possibility of recording a 5% visible emission over the six minutes is unlikely due to the moisture content and size of the fuel, as stated in # 13, and the short amount of time needed to unload the truck.

EIP Comment 14:

The permit must specify when a water spray is needed as a precautionary measure to prevent fugitive dust.

AQD Response 14:

AQD agrees and has included the water spray bar as pollution control equipment in FGFUEL. Also refer to LWEC's FECP.

EIP Comment 15:

To make the condition of adding sidewalls to the fuel loading bin if operation of the blower/conveyor system is resumed enforceable, the permit must clarify that sidewalls be added prior to resumption of the blower/conveyor.

AQD Response 15:

The AQD has determined the company cannot restart the blower/conveyor system without first applying for a Permit to Install, at which time this condition will be addressed.

EIP Comment 16:

Commenter claims the statement in the FECP: “in the event dust generation is observed associated with the doors being open on the Ash Storage Building, LWEC will repair or reconstruct a new door system,” is drafted as a reaction to a violation and AQD must explain why LWEC is expected to comply with the opacity standard. The measure to remove spilled ash material in a timely manner commensurate with the climatic conditions is unenforceable as written and lacks monitoring, recordkeeping and reporting.

AQD Response 16:

As mentioned above in EPA response number 2, EUASH has been removed from the draft ROP. However, in response to the comment, EUASH did not contain an opacity standard except for as identified in General Condition #11, however, the FECP does contain the requirement to maintain “Daily Fugitive Emission Inspection and Observation Logs” to ensure compliance. In addition, the ash has a high moisture content (15-30%) and is not considered to be a likely source of fugitive emissions. As discussed above, the permittee has updated their plans to address the definition of “timely manner” and define “climatic conditions.” “Climatic conditions” was initially approved due to the number of days and large amounts of snowfall the area receives.

EIP Comment 17:

MDEQ must modify the permit as necessary to clarify that LWEC is responsible for ensuring any third-party contractor’s compliance with permit requirements, and for identifying and reporting any deviations from permit requirements that occur under a third party’s watch.

AQD Response 17:

AQD agrees and has added EUFAF and FGFUEL to the draft ROP to ensure compliance of the fuel handling activities occurring at the Fuel Aggregation Facility. In addition, LWEC’s Fuel Procurement and Monitoring Plan explains the contract terms between the fuel aggregation contractors and LWEC, and identifies procedures for inspecting and rejecting fuel due to non-conformance with fuel specifications.

EIP Comment 18:

Commenter identifies, in EUBOILER#1, PM Limits that identify monitoring requirements that are inadequate. A once per permit term stack test does not constitute “periodic” monitoring and must be supplemented with other monitoring that will be performed on an on-going basis.

AQD Response 18:

The COMS recorded opacity of the visible emissions from the ESP is used as an indicator of the proper operation of the ESP. There is not a direct linear relationship between opacity and PM, though it can be assumed that if opacity is low, then PM emissions are low. Opacity readings indicate optimal performance of the ESP. A properly operating ESP will provide good control of PM emissions. High opacity indicates particulate matter emissions are increased. The opacity indicator ranges were selected because they are instantaneous indicators whether the ESP is performing normally. LWEC’s PM/MAP Tables 2-6 and 2-8, list ESP Operational Variables and Corrective Procedures to ensure compliance with the PM limits.

The AQD agrees it is appropriate to require more frequent testing in those situations where there have been compliance issues. The permittee’s prior emission test results for PM indicates compliance with permit limits, with actual emissions well below allowable permit limitations. The frequency of testing for PM is appropriate based on previous testing results.

EIP Comment 19:

SO<sub>2</sub> limit does not require a specific testing method; the ROP does not incorporate by reference a specific version of the FPMP; and fuel analysis procedures are insufficient to assure compliance is properly monitored.

AQD Response 19:

The AQD has evaluated its policy on referencing specific test methods. See response to EIP Comment #1 above, in reference to the FPMP. The allowed decrease in fuel analysis is based on years of sampling data that show little variance in sulfur content of the various fuels used by LWEC.

EIP Comment 20:

NOx, VOC and lead limits only identify a once per permit term stack test as the only monitoring.

AQD Response 20:

LWEC is required to keep records of the sulfur, lead and chlorine content of each fuel burned in EUBOILER#1, to monitor VOC and lead emissions. Also, LWEC operates a CEMS for CO that can be used as a surrogate for VOC emissions. In this instance, CO concentration is used as a surrogate for VOC because CO is a product of incomplete combustion and elevated levels of CO indicate incomplete combustion and an elevation in VOC emissions. The facility cannot operate EUBOILER#1 unless the boiler overfired air system is installed and operating in a satisfactory manner (SC IV.1). The overfired air system is designed to reduce NOx emissions. Lastly, past NOx, VOC and lead emission tests of the boiler have shown the emissions are typically one-half, one-tenth, and one-fifth of the permitted emission limits, respectively.

EIP Comment 21:

HCl quarterly and semiannual testing events.

AQD Response 21:

This condition was the result of a Consent Order between the AQD and LWEC. The company has successfully satisfied all of testing requirements of the Consent Order (four quarterly, two semi-annual and one within 3 years of last semi-annual test), except the final test which must be conducted within three years of the second semi-annual test, which occurred in June 2018.

EIP Comment 22:

Material Limits. The permit must specifically identify how the facility is required to track each of the parameters at issue and what must be included in the facility's records.

AQD Response 22:

AQD agrees and EUBOILER#1, SC VI.3. was modified in PTI No. 128-18:

The permittee shall monitor and keep records, in a satisfactory manner, of the following:

- a. The amount and type of each fuel combusted in EUBOILER#1 on a daily, monthly and 12-month rolling basis, as determined at the end of each calendar month.
- b. The heat input of each fuel combusted in EUBOILER#1 on a monthly and 12-month rolling basis, as determined at the end of each calendar month.
- c. The permittee shall keep, in a satisfactory manner, hourly and 24-hour rolling average CO emission records for EUBOILER#1, as required by SC I.6 and I.7.

The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.2810, 40 CFR 52.21(c), (d), and (j))**

Condition Changes:

EUBOILER#1, SC VI.3

EIP Comment 23:

Material Limits. Limit on the chlorine content of railroad ties. Condition VI.3 is inadequate for purposes of assuring the facility's compliance with the chlorine limit because it instructs the permittee to obtain and keep records of chlorine content without specifying how chlorine content is to be determined.

AQD Response 23:

This condition evolved out of LWEC's failed HCl hourly stack test result, in September 2015, from its use of pentachlorophenol (PCP) railroad ties as a fuel. The 400-ppm chlorine limit is to show compliance that the company has discontinued its use of PCP-treated railroad ties. An EPA document identifies any tie with a chlorine content greater than 400 ppm is assumed to be treated with PCP. The reference of SC VI.3 as a monitoring/testing method was a typo in the draft ROP, the Monitoring/Testing Methods were updated in PTI No. 128-18. The Fuel Procurement and Monitoring Plan provides details on analyzing and monitoring the chlorine content of railroad ties.

Condition Changes:

EUBOILER#1, SC III.2,4,5,7, V.4 and VI.4

EIP Comment 24:

Maximum annual heat input (SC III.1, p. 16): The ROP must be amended to include an enforceable condition specifying exactly how the permittee must track and calculate heat input to demonstrate compliance with this requirement.

AQD Response 24:

See AQD Response 22 above. The maximum annual heat input is calculated by multiplying the BTU value of each fuel by the amount burned on a 12-month rolling time period. In order to show compliance with the daily and annual fuel usage limits contained in the permit, as well as the annual heat release to the boiler on an annual basis, LWEC is required to keep daily records on the amount of each fuel combusted and its heat content.

All records collected and produced must be done so in a format acceptable to the AQD and are audited/reviewed at least every two years by the AQD when the facility is inspected. Additionally, under their Renewable Operating Permit, LWEC is required to report any emission excursions to the AQD.

Condition Changes:

EUBOILER#1, SC VI.1 and 3

EIP Comment 25:

The permittee shall fire natural gas followed by other fuels during startup (Condition III.3, p. 16): The language of this condition needs to be amended to make it clear that only natural gas may be burned during startup. Requiring the permittee to "start with natural gas" and then follow with other fuels is ambiguous regarding when it is appropriate to switch to other fuels.

AQD Response 25:

During start-up, the boiler is fired on natural gas for approximately 4 to 6 hours to bring it up to temperature at which time additional fuel types can be added to bring the boiler up to operating temperature. The boiler cannot reach operating temperature on natural gas alone. In addition, the permittee shall not operate EUBOILER#1 unless an acceptable plan that describes how emissions will be minimized during all startups, shutdowns and malfunctions has been submitted to the AQD District Supervisor. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices.

Condition Changes:

EUBOILER#1, SC III.4

EIP Comment 26:

Operate Boiler According to FPMP (SC III.4, p. 17): This provision requires the permittee to operate EUBOILER#1 "according to the FPMP" and specifically instructs the permittee to utilize the FPMP to ensure that only fuel as defined in the "material limits" is burned. To assure compliance with the applicable material

limits, the ROP must specifically identify the various procedures that the permittee must implement to demonstrate compliance with the material limits.

AQD Response 26:

AQD Policy is supplemental plans to the ROP are considered free-standing documents that are not incorporated into the ROP to allow flexibility to submit plan revisions to the AQD for review and approval without going through a more formal and time-consuming process to incorporate future revisions into the ROP. If specific elements were to be included in the ROP and the plan(s) required revisions at a future date, the facility would have to submit an ROP minor modification application to make the change in the ROP. Note that minor modifications do not go through public comment.

EIP Comment 27:

Conditions pertaining to 40 CFR Parts 60 and Part 63 requirements: Throughout the draft ROP, permit conditions provide that the permittee shall apply with “applicable” requirements from Parts 60 and 63 without specifically identifying which of these provisions apply to the facility.

AQD Response 27:

To clarify conditions from 40 CFR Part 63, Subpart JJJJJJ, the flexible group FGBOILERMACT-6J was added. AQD made every attempt to include all conditions the facility is subject to; however, these conditions are added to ensure no applicable requirements were omitted.

Condition Changes:

Requirements from 40 CFR Part 63, Subpart JJJJJJ were added to the ROP in FGBOILERMACT-6J.

EIP Comment 28:

The sole emission limitation identified in the permit as being applicable to emission unit EUASH is a PM limit of 0.10 lb per 1000 lbs of exhaust gases. AQD must amend the permit to add monitoring designed to demonstrate compliance with this limit and explain in the narrative material accompanying the permit why the selected monitoring approach is sufficient to assure the facility’s compliance with this limit at all times.

AQD Response 28:

The permittee has changed to a wet method for the disposal of ash from EUBOILER#1 and the ash silo and baghouse have been disconnected from the system. The PM limit for EUASH is now obsolete and was removed

EIP Comment 29:

EUASH, SC VI.2 requires the permittee to keep records and information as required by the Program for Continuous Fugitive Emissions Control. The requirements set forth in the Fugitive Dust Control Plan regarding ash handling lack sufficient specificity and monitoring to make them enforceable.

AQD Response 29:

EUASH was removed from the draft permit. The facility reconfigured the ash handling system, converting it to a wet ash removal system and disconnected the ash silo with baghouse control.

**Olson, Bzdok & Howard comments**

Olson Comment 1:

Undefined Terms: The CO emissions rate and VOC concentration allowed under the permit do not apply during “start-up” and “shut down.” Those two terms are undefined, creating the possibility that the exception may be exploited for longer periods of time than intended. Similarly, Condition III.4 of the ROP discusses the identification and removal of “unacceptable” fuels but does not describe “unacceptable.”

AQD Response 1:

The terms start-up and shutdown are defined in Act 451 of 1994, as Amended, Natural Resources and Environmental Protection Act and Air Pollution Control Rules, Part 1, R336.1119 Definitions; S. Rule 119. As used in these rules:

- (d) "Shutdown" means the cessation of operation of a source for any purpose.
- (p) "Start-up" means the setting in operation of a process or process equipment for any purpose.

"Unacceptable fuels" are those materials not described in EUBOILER#1, Special Condition II. Material Limits and wood fuel treated with pentachlorophenol. The condition was modified in PTI No. 128-18 EUBOILER#1, SC III.5.

Olson Comment 2:

Missing and/or unenforceable limits: The description of EUBOILER#1 under EUBOILER#1 Emission Unit Conditions states that the maximum heat input is 324 million Btu/hr. However, the maximum heat input in the Process/Operational Restriction(s) section is only expressed as an annual limitation of 2,656,800 MMBTU per year. Without an explicit hourly heat input restriction, LWEC may comply with the annual limit but exceed a corresponding hourly limit, while creating conditions that may lead to emissions exceedances or other violations.

AQD Response 2:

Descriptions are not an enforceable condition. Although EUBOILER#1 has a nameplate rated capacity of 324 MMBTU/hour, it has an enforceable annual restriction on the maximum heat input to the boiler (2,656,800 MMBTU/year). The maximum heat input to EUBOILER#1 is 324 MMBTU/hour times 8,760 hours per year which calculates to 2,838,240 MMBTU/year. EUBOILER#1 is restricted to less than 94% of maximum heat input capacity.

Olson Comment 3:

In the 2015 comments, FOLK discussed at length the lack of enforceability of the area source provisions, stating that "It is not clear how the applicant will ensure compliance with the 20 tons/year limit for aggregate HAPs. It appears that this involves calculations, using emission factors." The comment went on to apply EPA's AP-42 emissions factors for various HAPs, which demonstrated potential HAPs levels of nearly 54 tons per year, more than double the amount suggested by LWEC's analysis. This comment too remains valid, and with the addition of fuel pellets to the mix without set limits or conditions for the combustion of those fuels, calculations concerning aggregate HAPs become even more unreliable.

AQD Response 3:

To demonstrate compliance with the 20 tons/year limit for aggregate HAPs, LWEC is required to continuously monitor and record process parameters necessary to determine HCl emissions, in tons per year, using a compliance monitoring system (CMS). Also, stack testing is required for HCl, arsenic, lead, manganese, nickel, cresol isomers and VOC. If VOC emissions are greater than 9.0 tpy, emissions testing for styrene, benzene, acetaldehyde, and toluene is also required. Finally, the permit requires LWEC to calculate aggregate HAPs on a monthly and a 12-month rolling time period basis. These records are to be kept on file and made available to the AQD upon request.

Olson Comment 4:

Indefensible SO<sub>2</sub> and NO<sub>x</sub> emissions limits: Using the permitted emission limits for SO<sub>2</sub> and NO<sub>x</sub>, FOLK calculated annual allowable emissions for these pollutants in its 2015 comments (Ex. A) and compared those annual rates to other Michigan power generating facilities, and determined that, despite the company's efforts to cast its operations as a green biomass plant, LWEC is one of the worst offenders in Michigan with SO<sub>2</sub> and NO<sub>x</sub> emissions. Considering its relatively small size and output, such limits cannot be defended. Nevertheless, the same limits are again allowed in the current draft renewal.



AQD Response 4:

The commenter makes an assumption that LWEC continuously operates and emits pollutants at their permitted limit. Stack test results consistently show the facility's SO<sub>2</sub> and NO<sub>x</sub> emissions are well below their permitted emission limits. The most recent stack test results (September 2015) showed both pollutants were being emitted at less than half of the permitted limit.

Olson Comment 5:

No clear PM and PM<sub>2.5</sub> limits: As pointed out in the 2015 comments, the draft ROP specifies limits for PM and PM<sub>10</sub>, but does not state whether those numbers include filterable and condensable fractions. Further, there are no specified limits for PM<sub>2.5</sub>, a critical criteria pollutant. These vague limits are unenforceable on their face.

AQD Response 5:

At the time AQD was reviewing PTI No. 168-07 there were no standards for PM<sub>2.5</sub>. EPA promulgated the final rules for PM<sub>2.5</sub> on January 15, 2013. The AQD does not have authority to add emission limits through the ROP review. Also, the emission limit for PM is filterable only and PM<sub>10</sub> includes both filterable and condensable particulate matter.

Olson Comment 6:

HCl emissions are an on-going concern.

AQD Response 6:

Pentachlorophenol-treated railroad ties were removed from the fuel mixture in late 2015, as part of an agreement between LWEC and the AQD, prior to entering a Consent Order and the issuance of PTI No. 67-16. Since the December 2015 memo the commenter quotes from, LWEC has conducted all but one of the stack tests required in the Consent Order to determine the HCl emission rate from the boiler, while firing a RR tie to wood chip ratio of 2:1. The results from the stack tests shows the company has returned to compliance by reducing their HCl emission rate to below the permitted limit. In addition, LWEC has installed a dry sorbent injection system as additional HCl control while burning engineered fuel pellets.

Olson Comment 7:

We note that except for CO, which is monitored using CEMS, none of the other major pollutants are monitored using CEMS. This is particularly egregious for SO<sub>2</sub> and NO<sub>x</sub>. These pollutants are routinely monitored using CEMS (and have been for at least that [sic] 20+ years) at most power plants including gas fired power plants, with emission[s] that are considerably smaller than what is allowed under the draft ROP for EUBOILER#1.

AQD Response 7:

Stack test history for SO<sub>2</sub> and NO<sub>x</sub> emission rates from the boiler has indicated compliance with the emission limits. In addition, the AQD has the regulatory authority to request additional testing and set the performance test criteria, per Rule 1003.

**R 336.2003 Performance test criteria.**

Rule 1003. (3) All performance tests shall be conducted while the source of air contaminant is operating at maximum routine operating conditions, or under such other conditions, within the capacity of the equipment, as may be requested by the department. Other conditions may include source operating periods of startup, shutdown, or such other operations, excluding malfunction, specific to certain sources. Routine operating conditions shall also include those specified within a permit to install or a permit to operate. The owner or operator shall make available to the department such records as may be necessary to determine the conditions of source operation that occurred during the period of time of the performance test.

Olson Comment 8:

Opacity limits are incongruent. In its 2015 comments, FOLK pointed out that sources covered under EUFUEL are subject to a 5% opacity limit (6-minute average) but the EUBOILER#1 is subject to a much weaker 20% opacity limit (with a 27% allowed exception). The same provisions are again stated in the current draft ROP. EUBOILER#1 is the largest source of emissions at LWEC, and no explanation is provided for this apparent leniency towards the greater offender.

AQD Response 8:

The AQD does not have the authority to change conditions from New Source Review (NSR) during the ROP renewal.

Olson Comment 9:

Testing occurs at less than full operating capacity. This issue was also raised in PFPI's 2016 comments: "*HCl and PM stack tests are invalid because they were conducted at less than maximum operating conditions* " Stack tests should be conducted under maximum operating conditions allowed under the air permit to ensure that the facility can comply with permit limits." LWEC has never been required to demonstrate compliance through testing at maximum operating conditions, and this remains a valid concern.

AQD Response 9:

Emission testing should be conducted at the maximum routine operating condition (see Rule 1003, above) of the process being tested or at a load representative of the operating capacity of the emission unit. In some situations, it is not possible to run emission tests at the maximum rated capacity of the emission unit because of process variables such as the physical age of the emission unit. The company has stated the boiler is not capable of operating at the production levels contained in the previous permit. A maximum throughput rate of 17 tons per hour of railroad ties has been added to the permit to better reflect the boiler capacity. The latest comprehensive emission testing done at LWEC, in July 2016, was required by the USEPA. The USEPA approved the boiler load and fuel feed rates in the test protocol. One of the items evaluated as part of the testing protocol was the load at which the boiler was operating, and the ratio of the different fuels being fed into the boiler during the test. The throughput rates and operating load were determined by the USEPA to be representative of normal operation for purposes of showing compliance with permit limits.

State Registration Number

B4260

**RENEWABLE OPERATING PERMIT**

ROP Number

MI-ROP-B4260-2021

**MAY 3, 2021 - STAFF REPORT ADDENDUM**

**Purpose**

A Staff Report dated September 7, 2020, was developed to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by Rule 214(1) of the administrative rules promulgated under Act 451. The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft ROP during the 30-day public comment period as described in Rule 214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

**General Information**

Responsible Official:	John Polkky, Plant Manager 906-524-4851
AQD Contact:	Ed Lancaster, Marquette District Supervisor 906-250-5124

**Summary of Pertinent Comments**

AQD received comments from the Keweenaw Bay Indian Community, the Environmental Integrity Project, several citizens and the L’Anse Warden Electric Company’s consultant Fishbeck. One comment by Fishbeck was the omission by AQD of the “**Draft ROP Terms/Conditions Not Agreed to by Applicant**” in the September 7, 2020, Staff Report. The AQD regrets this oversight and includes those conditions here, followed by the remaining comments and AQD’s responses below.

**Draft ROP Terms/Conditions Not Agreed to by Applicant**

The following table lists terms and/or conditions of the draft ROP that the AQD and the applicant did not agree upon and outlines the applicant’s objections pursuant to Rule 214(2). The terms and conditions that the AQD believes are necessary to comply with the requirements of Rule 213 shall be incorporated into the ROP.

<b>Emission Unit/ Flexible Group ID</b>	<b>Permit Term(s) and/or Condition(s) in Dispute</b>	<b>Applicant’s Objection</b>
EUBOILER#1	Condition VI.11 An excursion for the indicator range shall be defined as a daily block average opacity value greater than 10 percent opacity.	Applicant feels 10% opacity trigger is unfair and not merited, as they have never failed a PM stack test nor had an opacity excursion. AQD Response: CAM serves to identify potential problems in the operation and maintenance of a control device and prompts the owner or operator to take corrective actions before there is a deviation of an applicable emission limitation/control requirement. Excursions are possible exceptions to compliance with applicable requirements and are

Emission Unit/ Flexible Group ID	Permit Term(s) and/or Condition(s) in Dispute	Applicant's Objection
		not necessarily violations of an applicable emission limitation /control requirement.
EUBOILER#1	VI.11	Applicant suggests raising the opacity excursion to 15%. AQD Response: As commenter notes, LWEC has consistently demonstrated effective PM control and operated well under its permit limits, however, they do not provide a convincing reason to raise the indicator range to 15% opacity. When LWEC tested for PM and showed compliance, the opacity was less than 5%. AQD allowed up to 10% because the MACT 6J allows it. AQD does not know the PM emissions at 15% opacity or a basis for this limit.
EUBOILER#1	VI.14	Applicant requests the condition be updated to reference a daily block average reagent injection rate. AQD Response: While AQD agrees in part with the company, the condition change was inadvertently left out of the Draft ROP, and therefore cannot be changed at this time. AQD suggests as the hourly HCl limit also applies, the condition be changed from an hourly to a 3-hour rolling average with hourly data collection to be consistent with 3 one-hour HCl testing requirements with the next ROP renewal.

**KBIC Comments**

Comment 1

**Stack Testing:** Request upcoming stack test include all the fuel sources that LWEC is permitted to burn.

AQD Response 1

AQD agrees, with two exceptions.

First, LWEC is permitted to burn up to 129.6 tons/day of “Fines & Bark”, however, the company has not burned Fines & Bark for the last several years. AQD would not expect LWEC to purchase and burn Fines & Bark, when records show the company does not regularly use this fuel. LWEC daily burns a mixture of fuels and AQD believes the emissions from burning Fines & Bark would not be significantly different from the wood chips the company burns on a daily basis.

Second, EUBOILER#1 Special condition III.3 states: The permittee shall not burn TDF while burning engineered fuel pellets, except when changing to or from fuel blends that include engineered fuel pellets.

Comment 2

**Fuel Aggregation Facility (FAF) – Fuel Procurement Lot:** How are inspections performed at the Kopper Facility (aka FAF) and where can inspection records for this facility be viewed by the public?

AQD Response 2

The FAF is part of the compliance inspection for LWEC, however a separate inspection of the FAF can also occur. The FAF has an “Unregistered” State Registration Number (SRN) of U071601074 and inspection reports can be found at the following link:

<https://www.deq.state.mi.us/aps/downloads/SRN/U071601074/>

When the FAF inspection is part of LWEC’s compliance inspection, the findings can be found here:

<https://www.deq.state.mi.us/aps/downloads/SRN/B4260/>

### Comment 3

**Warden Night Operations:** How is visual opacity monitoring being reported by LWEC during those hours when vision is limited?

### AQD Response 3

EUBOILER#1 Special Condition (SC) VI.7 and Appendix 3, requires LWEC to calibrate, maintain and operate on a continuous basis a device to monitor and record the visible emissions from EUBOILER#1. LWEC uses a Continuous Opacity Monitoring System (COMS) to meet these requirements. In addition, LWEC submits quarterly Excess Emission Reports (EER) which includes the following information:

- a. A report of each exceedance above 20 percent. This includes the date, time, magnitude, cause and corrective actions of all occurrences during the reporting period.
- b. A report of all periods of COMS downtime and corrective action.
- c. A report of the total operating time of the EUBOILER#1 during the reporting period.
- d. If no exceedances or COMS downtime occurred during the reporting period, the permittee shall report that fact.

AQD staff review the EERs for compliance.

### Comment 4

**Previous EGLE Response to Comments:** (AQD Responses 3 and 4).

- a. How is the assumption made that there is no correlation between opacity and PM emissions?
- b. How is the optimal operation of the ESP for removal of HAPs and VOCs being verified, especially if opacity is high?

### AQD Response 4

- a. LWEC has not correlated their PM emissions with opacity during any of their past compliance stack testing events. However, review of past PM stack test results and field notes of the opacity recorded during the stack tests shows the facility to be in compliance with both their PM and visible emission limits.
- b. The ESP is designed to remove particulate matter from the exhaust stream, not HAPs and VOCs. The Dry Sorbent Injection system is designed to remove HAPs (specifically HCl) when the engineered fuel pellets are being fired as part of the fuel stream.

## Citizen Comments

### Comment 1

The State of Michigan has not complied with the provisions of the Clean Air Act (CAA) in its issuance of the ROP and continues to ignore the CAA General Conformity Rule and Michigan's State Implementation Plan (SIP) to ensure that there will be no increase in emission in nonattainment or maintenance areas in which fuels used by the LWEC are processed, manufactured and transported.

### AQD Response 1

Section 176(c) of the **Clean Air Act (CAA)** prohibits **federal agencies** from taking actions in **nonattainment and maintenance areas** unless the emissions from the actions conform to the **State or tribal implementation plan** (SIP/TIP) for the area. Based on air quality data and other information, EPA, states and tribes identify specific areas as not meeting a **national ambient air quality standard** (NAAQS) and EPA designates those areas as nonattainment. In addition to designating areas as nonattainment, EPA, for some pollutants, also classifies areas based on the severity of the pollution problem. EPA publishes the designations and classifications in 40 CFR Part 81. When the air quality in the nonattainment area improves so that the area is meeting the NAAQS, and the state or tribe develops a plan to maintain the air quality, the area can be re-designated as attainment. These areas are known as maintenance areas. The CAA requires federal agencies to demonstrate that the emissions caused by their actions will not interfere with the plans to attain or maintain the NAAQS in both nonattainment and maintenance areas.

Since agencies of the federal government make numerous decisions and take numerous actions every day and very few have the potential to cause significant increased emissions in nonattainment or maintenance areas, EPA's General Conformity Regulations list a number of categories of actions that are presumed to conform, have insignificant emissions, or have emissions that are not reasonably foreseeable. 40 CFR 93.153(c)(2)(ii) states:

- (c) The requirements of this subpart shall not apply to the following Federal actions:
- (1) Actions where the total of direct and indirect emissions are below the emissions levels specified in paragraph (b) of this section.
  - (2) Actions which would result in no emissions increase or an increase in emissions that is clearly de minimis:
    - (ii) Continuing and recurring activities such as permit renewals where activities conducted will be similar in scope and operation to activities currently being conducted.
- (d) Notwithstanding the other requirements of this subpart, a conformity determination is not required for the following Federal actions (or portion thereof):
- (1) The portion of an action that includes major or minor new or modified stationary sources that require a permit under the new source review (NSR) program (Section 110(a)(2)(c) and Section 173 of the Act) or the prevention of significant deterioration program (title I, part C of the Act).
- (k) The provisions of this subpart shall apply in all nonattainment and maintenance areas except conformity requirements for newly designated nonattainment areas are not applicable until 1 year after the effective date of the final nonattainment designation for each NAAQS and pollutant in accordance with section 176(c)(6) of the Act.

#### Comment 2

Commentor stated: "Given the current amount of uncertainty surrounding various emissions and other tests, ... EGLE cannot in good faith fulfil its obligation to the public... Changes in emissions due to different fuel sources, a lack of random sampling visits, and updated testing requested by the surrounding community must be reconciled before the permit is renewed..."

#### AQD Response 2

AQD agrees and will amend the testing requirements for HAPs and HCl.

#### Condition Changes

- Source-Wide condition V.2 was changed to: "The permittee shall verify the HCl and HAP emission rates from EUBOILER#1, at a minimum, every *three* years from the date of the last test.", and
- EUBOILER#1 condition V.4 was added: "*The permittee shall verify the HCl emission rates from EUBOILER#1, at a minimum, every three years from the date of the last test.*"

#### Comment 3

A commentor requested the facility be converted to fire only natural gas.

#### AQD Response 3

AQD cannot require LWEC to burn a fuel in quantities greater than requested, nor can the boiler be reclassified from a solid fuel boiler to a natural gas-fired boiler in the ROP process. LWEC requested a restriction on the annual amount of natural gas usage rate for several reasons. First, the plant has never used a large amount of natural gas other than for startup and flame stabilization. Second, in order to be classified as a small electric utility generator, and to be exempt from CISWI applicability, the total usage of natural gas cannot exceed 25 percent of the total heat released to the boiler, on an annual basis. Third, the facility is under contract to produce a prescribed amount of renewable energy, and natural gas is not considered to be a renewable fuel. As LWEC is able to meet all applicable air quality rules and regulations

and all applicable air quality standards burning their proposed fuel mix, the AQD cannot require them to burn larger amounts of natural gas.

#### Comment 4

Commentor requested the facility be permitted as a solid waste incinerator.

#### AQD Response 4

The regulations for CISWI were first proposed in 1999 and became effective in 2000. In 2007 LWEC stated the facility was not subject to the CISWI regulations because they were recovering useful energy from the combustion of biomass, and the regulations exempted such facilities from CISWI applicability at that time. The AQD agreed with that determination based upon the regulations in effect at the time.

Subsequent revisions to the CISWI regulations removed the blanket exemption for recovering energy from the fuel stream. CISWI applicability is now based upon the use of materials designated as “solid waste”. Railroad ties are considered to be a non-hazardous secondary waste and considered solid waste under the CISWI regulations.

The non-hazardous secondary material (NHSM) regulations define solid waste and therefore, what is subject to the CISWI regulation. The finalized NHSM regulations exclude the applicability of the CISWI regulations under the following conditions:

- The unit qualifies as a small power-production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)).
- The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity.
- The facility submits documentation to the Administrator notifying the Agency that the qualifying small power production facility is combusting homogenous waste.

On August 27, 2014, the company provided documentation to USEPA and the AQD that they meet the exemption criteria listed above, and the facility is not subject to CISWI regulations.

Within the definition of Section 796(17)(C) it states: “*including requirements respecting fuel use...*”. The definition of “fuel use” is found in Title 18 Conservation of Power and Water Resources, Part 292, Subpart B, Section 292.204(b)(2) and states: “*Use of oil, natural gas and coal by a facility, under section 3(17)(B) of the Federal Power Act, is limited to the minimum amounts of fuel required for ignition, startup, testing, flame stabilization, and control uses, and the minimum amounts of fuel required to alleviate or prevent unanticipated equipment outages, and emergencies, directly affecting the public health, safety, or welfare, which would result from electric power outages. Such fuel use may not, in the aggregate, exceed 25 percent of the total energy input of the facility during the 12-month period beginning with the date the facility first produces electric energy and any calendar year subsequent to the year in which the facility first produces electric energy.*”

AQD has evaluated the fuel use as reported by the facility to the MAERS. Based upon LWEC-reported fuel usages, the ratios of natural gas usage/heat input to the annual heat input of all other biomass fuels were 0.16 percent, 0.20 percent, 1.13 percent and 0.14 percent, for the years 2012, 2013, 2014, and 2015, respectively.

Further, the facility has a natural gas material limit of: “Less than 25% of annual heat input”.

Based upon the above, the AQD has determined that LWEC is not currently subject to the CISWI regulations. That determination could change in the future if LWEC changes how they operate the plant and/or the CISWI regulations change again.

### Comment 5

Commentor questions AQD's response to EPA Comment 3 in Appendix A above, "that there is not a direct linear relationship between opacity and particulate matter though it can be assumed that if opacity is low then particular emissions are low." Commentor states: "But how low are emissions with say 5% opacity or 15% opacity, you don't know unless you take a large number of simultaneous emissions and opacity measurements unless you do this as the Warden plant, you cannot justify equating opacity measurements with particular emissions, modeling is no substitute for actual measurement."

### AQD Response 5

AQD agrees. Smoke (plume) density is a function of the density of the emitted material, the particle size distribution, and the optical properties of the particles. Therefore, it is appropriate to quantify the emissions in relation to the opacity range. L'Anse has done stack tests for PM and recorded opacities. They haven't done PM tests when the opacity is 10% (the indicator range for CAM), as LWEC's boiler typically operates with visible emissions in a range of 1-3% opacity. Sources may not want to manipulate their processes to study the opacity vs PM limit.

### EIP letter dated November 4, 2020

#### Comment 1, pages 2-4

I) The 2019 Modification to Add Engineered Fuel Pellets Was a Major Modification Subject to Major New Source Review. EGLE must revise the draft permit to require compliance with PSD requirements, including placing the facility on an enforceable compliance schedule.

- A) LWEC incorrectly calculated Baseline NO<sub>x</sub> Emissions.
- B) EGLE must Conduct a PSD Review and Establish BACT Emission Limits

### AQD Response 1

I.A.) The AQD reviewed and concurred with the calculations performed by LWEC to show the change in NO<sub>x</sub> emissions that will result from the burning of the engineered fuel pellets is less than significance and is not subject to PSD.

LWEC performed an actual to projected actual (A2A) applicability determination per Michigan Air Pollution Control Rule R 336.2802(4)(c) to show the burning of the engineered fuel pellets in the existing boiler would not trigger major source new source review under the PSD rules. An A2A applicability determination compares, for each regulated pollutant, the baseline actual emissions from the existing facility to the projected actual emissions from the modified facility to determine if the change will be above the PSD significance value. If the change is above the significance value, the project is subject to PSD for that pollutant. If the change is below the significance value, the project is not subject to PSD for that pollutant. As was shown in Table 1 of the Technical Fact Sheet for PTI 128-18, LWEC's proposed change for all regulated pollutants, including NO<sub>x</sub>, was less than significance and therefore not subject to PSD.

LWEC calculated their baseline actual NO<sub>x</sub> emissions using an emission factor of 0.244 lb/MMBTU. That value was measured during a 2009 stack test and had been subsequently used by the facility to report emissions to the Michigan Air Emissions Reporting System (MAERS). The AQD concurred with LWEC on the use of this emission factor.

Even though LWEC had 2018 stack test data, showing NO<sub>x</sub> emissions of 0.231 lb/MMBTU, they used the emission factor of 0.244 lb/MMBTU to calculate their projected actual NO<sub>x</sub> emissions. While conservative, the AQD concurred with LWEC on the use of this emission factor. **See PTI 128-18 Response to Comment (RTC) #13**

I.B.) LWEC is an existing major PSD source, however, this project to allow the burning of engineered fuel pellets on a permanent basis will result in an increase of NO<sub>x</sub> below the significance level of 40 tons per



year. Since the emissions increase will be less than significant, LWEC is not subject to the PSD regulations and the associated BACT review for NO<sub>x</sub>. **See PTI 128-18 RTC #21**

Comment 2, pages 5-10, and 13-20:

- II) LWEC is a Major Source of Hazardous Air Pollutants (HAPS) Rather than an Area Source.
- A) LWEC's Historic and Recent HAP Quantifications Are Incomplete and Underestimate HAP PTE.
  - B) LWEC and EGLE Improperly Estimate PTE for the 13 of 14 HAPs Included in the Facility's Most Recent HAP Analysis
  - C) The Draft ROP's Synthetic Minor Limits for HAPs are Unenforceable and Do Not Restrict LWEC's PTE to Avoid Major Source Status.
    - 1) The Draft ROP's Recordkeeping is Not Sufficient to Monitor 12-Month Rolling HAP Emissions.
    - 2) Nothing in the Draft ROP Accounts for Higher HAP Emissions During Startup and Shutdown.
    - 3) The Stack Testing Requirements are Not Sufficient to Monitor HAP Emissions.
    - 4) Opacity Monitoring Requirements for Emission Unit EUFUEL (Fuel Handling and Storage Equipment, Roads and Storage Piles) are Insufficient.
    - 5) Monitoring Associated with Emission Unit EUBOILER#1 is Insufficient to Assure Compliance with Applicable Emission Limits.
    - 6) The Draft 2020 ROP Fails to Assure Compliance with the Applicable Malfunction Abatement Plan Requirements.

AQD Response 2

II.A.) The AQD disagrees. The highest individual HAP emitted at the facility is hydrogen chloride (HCl), followed in descending order by styrene, benzene, toluene, cresol isomers, and acetaldehyde (each of which are VOCs), and other HAPs which have annual emissions significantly less than a ton per year. As not all VOCs are HAPs, if total VOC emissions are less than 9.0 tpy, then the total HAPs emissions from the facility are less than 10 tpy. **See PTI 128-18 RTC #2**

Based on information provided by LWEC in permit No. 168-17 and the AQDs evaluation, LWEC is an area source of HAPs. **See PTI 128-18 RTC #'s 16 and 20**

The total combined HAP and TAC emissions were calculated to be 42.2 tpy. It appears the commenter incorrectly estimated HAP emissions by including both HAP and non-HAP emissions. Note, that there is a strict list of HAPs in the Clean Air Act, although the AQD defines many compounds not in this list as being TACs. Total HAPs were calculated to be 21.24 tpy. The calculations were based upon AP-42 emission factors, stack testing of similar processes, and fuel analysis data. The emission factors were then applied to the maximum operational capacity of the boiler, thereby calculating the worst-case potential emissions. The highest individual HAP was HCl, which was calculated to be 8.9 tpy. Any facility which has both total HAPs below 25 tpy and each individual HAP below 10 tpy is an "area" (non-major) source of HAPs.

To demonstrate its status as an area source of HAPs, LWEC is required to continuously monitor and record process parameters necessary to determine HCl emissions, in tons per year, using a compliance monitoring system (CMS). Also, stack testing is required for arsenic, manganese, nickel, and cresol isomers. If VOC emissions are greater than 9.0 tpy, emissions testing for styrene, benzene, acetaldehyde, and toluene is also required. Finally, the permit requires LWEC to calculate both individual and total HAPs on a monthly and a 12-month rolling time period basis. Those records are to be kept on file and made available to the AQD upon request.

In addition to operating the HCl CMS, LWEC is required to perform stack testing every five years to confirm their HCl emissions. LWEC is also required to calculate individual and aggregate facility-wide HAP emissions on a monthly and a 12-month rolling time period basis. HCl emissions resulting from the use of the engineered fuel pellets, will be controlled by use of the required sorbent injection system. All of these items together will adequately ensure compliance with the facilities' HCl limit on an on-going basis.

II.B.) As the Technical Fact Sheet did not include a specific list of HAPs, the AQD is unsure of which specific 14 HAPs the commenter is referencing. All the values listed in both Table 1 and Table 2 in the Technical Fact Sheet, except for the projected actual fluorides listed as hydrofluoric acid emissions of 29.31 tons per year in Table 1, are correct. The fluorides value of 29.31 tpy was an error that resulted from a misplaced decimal point. Unfortunately, the error was not discovered until after the start of the comment period. The correct projected actual fluorides emissions are 2.93 tpy. **See PTI 128-18 RTC #3**

II.C.) Special Condition Nos. I.1 and I.2 within Source-Wide Conditions limit the HAPs emissions from the facility to 9.5 tpy for any single HAP and less than 20.0 tpy for all HAPs combined. Compliance with these limits will be demonstrated via the recordkeeping and calculation requirements contained in Special Condition No. VI.3 within Source-Wide Conditions. That condition is clear as to how the HAP emissions are to be calculated and recorded, including the emission factors used, the calculation methods, when the calculations must be performed, and for how long the records must be maintained. **See PTI 128-18 RTC #32**

- 1) Source-Wide Condition SC No. V.1 states, "For determining compliance with the individual and aggregate HAP limits; HCl, Lead, Arsenic, Manganese, Nickel, and Creosol Isomers are at a minimum to be tested." In addition, EUBOILER#1 SC No. V.1 in part states, "If VOC testing shows the total annualized emissions are greater than 9.0 tons per year, the permittee shall perform additional testing to determine styrene, benzene, acetaldehyde, and toluene emission rates; for comparison to the facility's HAP emission limit."
- 2) During Startup and Shutdown operations LWEC fires only natural gas, and therefore, HAP emissions are minimized.
- 3) AQD agrees and will require verification of HAP emissions by stack testing once every three years. **See PTI 128-18 RTC #'s 11, 27 and Appendix 1, Tables A and B.**
- 4) As the commentor correctly points out, 5% opacity generally cannot be seen, therefore, any visible emissions would be considered a deviation, and the company must immediately perform a Method 9 observation.
- 5) AQD disagrees. The draft ROP includes the following monitoring, recordkeeping and reporting requirements:
  - Stack testing every five years to measure PM, PM10, SO<sub>2</sub>, NO<sub>x</sub>, VOCs, and HCl emissions from the boiler.
  - Installation and operation of a CEMS to continuously monitor and record CO emissions from the boiler.
  - Installation and operation of a CMS to continuously monitor and record process parameters necessary to determine HCl emissions.
  - Installation and operation of a COMS to continuously monitor and record visible emissions from the boiler.
  - Records of the amount and type of each fuel burned in the boiler on a daily, monthly, and 12-month rolling time period basis.
  - Records of the sulfur, lead, and chlorine content of each fuel burned in the boiler.
  - Records of the dry sorbent injection rate on an hourly basis.
  - All monitoring, recordkeeping, and reporting requirements included in the facilities' fuel procurement and monitoring plan, the facilities' fugitive dust plan, and the facilities' malfunction abatement plan.
  - Individual and aggregate HAPs emission calculations determining the monthly emission rate of each in tons per calendar month and the annual emission rate of each in tons per 12-month rolling time period as determined at the end of each calendar month.
  - A requirement that all records be kept on file for a minimum of five years and be made available to the AQD upon request.

These requirements are sufficient to ensure that LWEC's facility and its operation are enforceable, and that monitoring, recordkeeping, and reporting will be performed to assure compliance with the terms and conditions of the permit. **See PTI 128-18 RTC #40**

- 6) AQD disagrees. The change in the language regarding the Malfunction Abatement Plan and LWEC's subsequent request (in footnote 46) was an Administrative Amendment application

(number 201900080), LWEC submitted to incorporate the conditions of PTI 128-18 into the ROP renewal.

Comment 3, pages 11-12:

IV) The ROP Fails to Require Monitoring Sufficient to Assure LWEC's Compliance with Applicable Clean Air Requirements.

- A) The ROP Improperly Relies on Monitoring Specified in Off-Permit Plans that Are Not Incorporated by Reference into the Permits and Can be Revised Without Following Title V Permit Revision Procedures and Without EGLE Approval.
- B) The Monitoring Requirements Specified in the Draft ROP Are Insufficient to Assure the Facility's Compliance with Applicable Requirements.

AQD Response 3

IV.A) AQD disagrees, in part. The plans are required in the ROP by special conditions and the most recent approved plans are located on EGLE's website ([http://www.deq.state.mi.us/aps/downloads/ROP/pub\\_ntce/B4260/](http://www.deq.state.mi.us/aps/downloads/ROP/pub_ntce/B4260/)) or by request to the District Office. In addition, if plan modifications do not change any conditions in the ROP, an "Off-permit" change is allowed per R336.1215(3) and consistent with 40 CFR 70.4(b)(14) & (15).

IV.B) See response to II.C.5 above.

Comment 4, pages 20-21:

III) LWEC's ROP application is Out of Date and Incomplete, and LWEC Must Submit a New Application Prior to Issuance of the ROP Renewal.

AQD Response 4

III) AQD disagrees with the statement. Since the ROP renewal application was submitted on February 11, 2015, LWEC has submitted a Minor Modification (MM) and Administrative Amendment (AA) applications. The MM application (#201600198) was received on December 8, 2016, to incorporate PTI 67-16 into the ROP renewal. AA application #201900080, was received on May 3, 2019, to incorporate PTI 128-18 into the ROP renewal.

**Fishbeck letter dated October 21, 2020**

Comment 1

Commenter noted that applicant did not agree with certain conditions in the draft ROP, and those conditions were not included in the Staff Report section titled "Draft RO Permit Terms/Conditions Not Agreed to by Applicant".

AQD Response 1

AQD agrees with the oversight of not including draft conditions applicant disagreed with and has corrected the mistake in the Staff Report.

Comment 2

LWEC is not a major source of HAPs. Therefore, CAM should not apply.

AQD Response 2

AQD agrees in part, that while LWEC is not a major source of HAPs, they are an area source with federally enforceable HAP emission limits of 9.5 tons per year for each individual HAP and less than 20.0 tons per year for aggregate HAPs. LWEC has the potential to emit (while burning engineered fuel pellets) greater than 10 tons of HCl per year. To limit LWEC's HAP emissions, EUBOILER#1 Special condition IV.2 reads

in part, "The permittee shall not burn fuel blends containing the engineered fuel pellets in EUBOILER#1 unless the DSI system is installed and operating in a satisfactory manner..."

EUBOILER#1 is subject to the CAM requirements as identified in 40 CFR Part 64.2(a)(2) and (3): 64.2(a)(2): The unit uses a control device to achieve compliance with any such emission limitation or standard.

64.2(a)(3): The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. For purposes of this paragraph, "potential pre-control device emissions" shall have the same meaning as "potential to emit," as defined in § 64.1, except that emission reductions achieved by the applicable control device shall not be taken into account.

### Comment 3

Commenter states the HCl limit is not an hourly limit, it is a 12-month rolling total and excursions are designed to alert the permittee to potential HCl exceedances of the annual limit.

### AQD Response 3

AQD disagrees. As stated in the Source Description above, the permit writer for PTI 168-07B wrote in the permit evaluation the following:

"All other existing emission limits from previous permitting exercises remain the same. **NOTE: for clarification purposes the HCl limit of 2.17 pph was also expressed as a 9.5 tpy limit.** (emphasis added) The existing permit limited hours of operation to 8,200 hours per 12-month rolling time period; this limit coupled with the pph limit served as an individual HAPs restriction of 9.5 tpy. For ease of reporting reasons, the 9.5 tpy limit was added to this permit. This is not a regulatory change, only a reporting change. As this permit already went out to public comment as a minor source of HAPs during the 168-07 review, no new public comment period is necessary."

LWEC is subject to both an hourly and annual HCl emission limit and therefore an hourly excursion is appropriate to alert the permittee to a potential hourly HCl exceedance.

### Changes to the September 7, 2020 Draft ROP

AQD received several comments on the frequency of all stack testing events, especially related to HCl and HAPs with the recent change in pellet suppliers. Therefore, AQD made the following changes to the testing frequency:

- **Source-Wide** condition V.2 was changed to: "Within 180 days of permit issuance, the permittee shall verify the HCl and HAP (Lead, Arsenic, Manganese, Nickel, and Creosol Isomers are at a minimum to be tested) emission rates from EUBOILER#1. Thereafter, the permittee shall verify HCl and HAP emissions, at a minimum, every *three* years from the date of the last test.", and
- **EUBOILER#1** condition V.4 was added: "*The permittee shall verify the HCl emission rates from EUBOILER#1, at a minimum, every three years from the date of the last test.*"

State Registration Number

B4260

## RENEWABLE OPERATING PERMIT

ROP Number

MI-ROP-B4260-2021a

### JULY 27, 2021 - STAFF REPORT FOR RULE 216(2) MINOR MODIFICATION

#### Purpose

On June 22, 2021, the Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-B4260-2021 to L'Anse Warden Electric Company, LLC pursuant to Rule 214 of the administrative rules promulgated under Act 451. Once issued, a company is required to submit an application for changes to the ROP as described in Rule 216. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to Rule 216(2).

#### General Information

Responsible Official:	John Polky, Plant Manager 906-524-4851
AQD Contact:	Caryn Owens, Senior Environmental Engineer 231-878-6688
Application Number:	202100058
Date Application for Minor Modification was Submitted:	March 15, 2021

#### Regulatory Analysis

The AQD has determined that the change requested by the stationary source meets the qualifications for a Minor Modification pursuant to Rule 216(2).

#### Description of Changes to the ROP

This Minor Modification was to incorporate PTI 128-18A into the ROP, which was to fix an apparent mistake in a PTI condition regarding the diluent gas used for CEMS in EUBOILER#1.

#### Compliance Status

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements associated with the emission unit(s) involved with the change as of the date of approval of the Minor Modification to the ROP.

#### Action Taken by EGLE

The AQD proposes to approve a Minor Modification to ROP No. MI-ROP-B4260-2021, as requested by the stationary source. A final decision on the Minor Modification to the ROP will not be made until any affected states and the United States Environmental Protection Agency (USEPA) has been allowed 45 days to review the proposed changes to the ROP. The delegated decision maker for the AQD is the District Supervisor. The final determination for approval of the Minor Modification will be based on the contents of the permit application, a judgment that the stationary source will be able to comply with applicable emission limits and other requirements, and resolution of any objections by any affected states or the USEPA.