

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

N131568073

<b>FACILITY:</b> LOUISIANA-PACIFIC CORP SAGOLA PLANT		<b>SRN / ID:</b> N1315
<b>LOCATION:</b> N8504 HIGHWAY M-95, SAGOLA		<b>DISTRICT:</b> Marquette
<b>CITY:</b> SAGOLA		<b>COUNTY:</b> DICKINSON
<b>CONTACT:</b> RICHARD MENARD , PLANT ENVIRONMENTAL MANAGER		<b>ACTIVITY DATE:</b> 06/02/2023
<b>STAFF:</b> Michael Conklin	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> MAJOR
<b>SUBJECT:</b> Targeted inspection for FY 23.		
<b>RESOLVED COMPLAINTS:</b>		

**Facility:** Louisiana Pacific Corporation – Sagola Plant (SRN: N1315)

**Location:** N8504 Highway M-95, Sagola, Dickinson County, MI 49881

**Contact(s):** Rich Menard, EHS Manager, 906-542-7360

### Facility Description

The Louisiana Pacific Corporation – Sagola Plant (LP Sagola) is a wood product manufacturing facility that produces strand board siding and oriented strand board (OSB) for building construction. The engineered wood siding consists of wood flakes, resin, waxes, zinc borate, and a paper overlay that is hot pressed together. Historically, LP Sagola produced OSB exclusively but with the issuance of PTI No. 24-22, a major project was initiated to allow the plant to produce siding. The facility now has the capability of producing both OSB and siding but is currently only producing siding. LP Sagola contains production limits of 310,000 tons/year for OSB and 250,000 tons/year for siding. Note, the facility is only able to produce OSB or siding at a time. A change in production requires multiple changes in equipment to occur that would require a mill shutdown.

### Process Description

The siding production process begins with green logs loaded into the hot ponds to be warmed before moving up the ladders toward the de-barker. LP Sagola primarily uses hardwood aspen logs for siding production. The warmed logs are processed through the de-barker and then cut into smaller sections. The waste bark material is routed to the bark bin as fuel for the 60 MMBtu/hr Geka Thermal Oil Heater (EUTOH-WOOD). The debarked, sectioned logs are then fed into the Waferizer to create wood flakes. The flakes are routed to one of two green bins as temporary storage before moving into one of three 50 MMBtu/hr wood-fired dryers. The rotating drum dryers are used to reduce the moisture content of the flakes from about 50% to 5-6% moisture content. From the dryer, the flakes are routed to one of two dry bins as temporary storage for the “surface” or “core” of the board. The flakes then move into the respected “surface” or “core” blenders where additives are mixed in to form the desired properties of the product. Additives include MDI resin, wax, and zinc borate. The mixture then moves through the former machines to create the “wet matt”. Fines are added to the top, along with paper overlay before entering the press. The board press system (EUPRESS) creates the final thickness and moisture content of the board. The pressed boards then move into the finishing section where they are cut to final dimensions, coated with primer, and graded before being packaged and shipped off-site to customers.

## Emissions

Engineered wood product manufacturing involves the generation of sawdust and wood particles from sawing operations which contribute to levels of atmospheric PM and PM10. Cyclones and/or baghouses act as capture/collection systems for air pollution control and product recovery by separating wood residue from the airstream of the pneumatic handling systems.

Volatile organic compounds (VOCs), HAPs, and toxic air contaminants (TACs) are emitted during the drying of the wood flakes (FGDRYERS) and the hot press process (EUPRESS) of forming the boards. VOCs and condensable PM are emitted from these processes by evaporation during the reduction in moisture content of the wood flakes. An RCO is used for control on the press and an RTO is used for control with FGDRYERS.

The source also contains wood-fired equipment. Waste wood residue is collected and used as fuel in FGDRYERS and EUTOH-WOOD. The waste wood residue includes bark and fines from cutting operations. The primary pollutants emitted from wood-fired combustion include PM, CO, NO<sub>x</sub>, VOCs, and HAPs. The incomplete combustion of the organic material causes the release of these pollutants. Design and operating conditions (air/fuel ratio) contribute to combustion efficiency that in turn affects the quantity of pollutants emitted. The dryers utilize a wet electrostatic precipitator (WESP) for filterable particulate control and a regenerative thermal oxidizer (RTO) for VOC and condensable organics control. The Geka thermal oil heater is controlled by an ESP.

LP Sagola also contains natural gas-fired equipment, including a back-up Geka thermal oil heater (EUTOH-NG) and three natural gas-fired burners for the dryers. Pollutants emitted from the combustion of natural gas-fired equipment includes nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), volatile organic compounds (VOCs), particulate matter (PM), carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and trace amounts of sulfur dioxide. CO and VOC emissions are directly related to combustion efficiency. Higher combustion temperatures, longer residence times, and well mixing of fuel and combustion air results in greater combustion efficiency and lower emissions of CO and VOCs. Emissions of sulfur oxides are low since processed natural gas contains a very low sulfur content. PM emissions are also low since natural gas is a gaseous fuel. Nitrous oxide and methane emissions are related to the combustion temperature and amount of excess oxygen.

## Emissions Reporting

LP Sagola is required to report its annual emissions to Michigan Air Emissions Reporting System (MAERS). The following table lists the source total emissions for the reporting year 2022.

Pollutant	Emissions (TPY)
CO	208
Lead	0
NO <sub>x</sub>	120

PM10, FLTRBLE	28
PM10, PRIMARY	0.04
PM2.5, FLTRBLE	0.9
PM2.5, PRIMARY	0.04
SO2	8.1
VOC	23

### Regulatory Analysis

LP Sagola is subject to MI-ROP-N1315-2018 and PTI No. 24-22A. The source is considered major for CO, NO<sub>x</sub>, PM10, and PM2.5 because the potential-to-emit (PTE) for these pollutants is over 100 tpy. The facility is also considered a major source for HAPs because the PTE is greater than the major source thresholds of 10 tpy for individual HAPs and 25 tpy for aggregate HAPs. EUTOH-WOOD and EUTOH-NG are subject to MACT DDDDD. EUFIREPUMP, EUTODIESEL, EUDRYER1BACKUP, EUDRYER2BACKUP, and EUDRYER3BACKUP are subject to MACT ZZZZ. The facility is also subject to the NESHAP for Plywood and Composite Wood Products, 40 CFR Part 63 Subpart DDDD.

### Compliance History

The facility was last inspected in February 2021 and found to be in compliance with all applicable air pollution control rules and federal regulations at that time. No violation notices have been issued since the last inspection date.

### Inspection

A targeted inspection was scheduled for June 2, 2023, to determine LP Sagola's compliance with MI-ROP-N1315-2018 and PTI No. 24-22A. The contacts for the facility are Rich Menard, EHS Manager, and Joe Bal, EHS Assistant. AQD staff (Michael Conklin) arrived at 11:00 AM CST and met with Rich Menard and Joe Bal to conduct an inspection for compliance with MI-ROP-N1315-2018 and PTI No. 24-22A. An overview of the main processes at the facility was provided followed by discussions on the new equipment covered under PTI No. 24-22A, along with a discussion on the ROP renewal. Next, a tour of the facility was provided with an emphasis on the emission units and control equipment covered under the permits. The following is a summary of LP Sagola's compliance with MI-ROP-N1315-2018 and PTI No. 24-22A.

### EUTOH-WOOD

This emission unit includes the wood-fired Geka Thermal Oil Heater, rated at 60 MMBtu/hr and associated control equipment. EUTOH-WOOD is controlled by a multiclone and dry electrostatic precipitator (ESP).

During the inspection, EUTOH-WOOD was operating and showed a furnace temperature of 1187 degrees Fahrenheit as of 1:02 PM CST. The fuel feed ramps were operating at 109 and 105 strokes per hour. This equates to roughly 37 tons of wood material per day. The COMS showed an instantaneous opacity reading of 0.02%, the multiclone showed a differential pressure reading of 2" WC, and the ESP displayed 53 KV on TR #1 and 47 KV on TR#2. Only wood was being fired in EUTOH-WOOD at the time of the inspection. The oxygen trim was showing 10.2% and the set point is at 8.4%. No visible emissions were observed from the stack (SVTOHBNG). Based on the operating data reviewed and observations of the equipment, EUTOH-WOOD appeared to be operating in accordance with good air pollution control practices.

#### *Emission Limits and Testing*

EUTOH-WOOD contains emission limits of PM, PM10, NO<sub>x</sub>, CO, and VOCs. Compliance with these emission limits is demonstrated through stack testing and visible emission readings. Stack testing on EUTOH-WOOD was last conducted on 9/20/22 – 9/21/22 to show compliance with both the state and federal MACT limits. All emission rates passed the respected limits and testing will next be required by 9/20/2025 for compliance with the state limits. The average results are summarized below.

PM	PM10	NO <sub>x</sub>	CO	VOC
0.055 lb/hr	0.33 lb/hr	10.1 lb/hr	11.0 lb/hr	0.17 lb/hr

#### *Material Limits*

EUTOH-WOOD is limited to 30,660 tons of dry wood fuel on a 12-month rolling time period. Fuel usage records reviewed for 2022 through May 2023 show the rolling totals to be below 15,000 tons.

#### *Monitoring/Recordkeeping*

LP Sagola is required to perform daily VE readings on the stack for the ESP and record the monthly and previous 12-month rolling fuel usage. From discussions with the company, VE readings are performed daily in addition to the usage of COMS. The 12-month rolling total fuel usage records were provided for the period of June 2022 through May 2023. During this period, the 12-month rolling total fuel usage never exceeded 15,000 tons of dry fuel.

#### *Reporting*

The facility submits semiannual and annual compliance reports and notes any deviations from EUTOH-WOOD as applicable. In reviewing the 2022 annual compliance report, 5 deviations were reported for EUTOH-WOOD. These deviations involved the ESP not operating temporarily due to power disruption. There were no deviations that were over an hour in duration.

### *Stack/Vent*

A RangeFinder was used to measure the stack height of SVTOHBNG using the 2-point measurement from eye level. A stack height of 96.3 ft was measured. Accounting for additional height from ground to eye level, the stack height appears to meet the minimum height requirement of 100 ft.

### EUTOH-NG

This emission unit includes the natural gas-fired Geka Thermal Oil Heater rated at 24 MMBtu/hr. This unit primarily acts as a backup to EUTOH-WOOD. EUTOH-NG emits out the same stack as EUTOH-WOOD. EUTOH-NG contains emission limits for PM, PM<sub>10</sub>, NO<sub>x</sub>, CO, and VOC. Compliance with these limits is demonstrated through upon request stack testing. To-date, the AQD has not requested testing of EUTOH-NG. No deviations were reported for EUTOH-NG during 2022.

At the time of the inspection, EUTOH-NG was not operating. Only piped natural gas lines were observed as fuel feed to EUTOH-NG.

### EUPRESS

EUPRESS includes the mat forming line with a paper overlay system and the board press. The paper overlay system will unroll, measure, cut, and apply the paper to the formed mat prior to the board press. The board press will include embossing plates to provide the SmartSide® wood grain finish. Emissions from EUPRESS are controlled by a single device that oxidizes VOCs and HAPs either thermally (RTO) or catalytically (RCO). When operating as a RCO a layer of catalyst is placed in the combustion chamber, which allows the oxidation of VOC and HAPs to occur at lower temperatures. If the catalyst deactivates, the RCO can be converted to an RTO simply by increasing the temperature in the combustion chamber. Exposing the catalyst to high temperatures for prolonged periods of time deactivates the catalyst thus an RTO cannot be converted to a RCO unless the new layer of catalyst is placed in the combustion chamber.

During the inspection the press was operating and producing siding. The press was operating at 15 press loads an hour, which roughly equates to 24 tons of product. The RCO was operating with a combustion temperature of 972 degrees Fahrenheit and a flow rate of 106,690 ACFM. The Press is subject to MACT DDDD and is required to have an enclosure that captures all emissions to route them through a control device. The enclosure is required to maintain negative pressure as to draw airflow through all natural draft openings into the enclosure. The draw off the press appeared to be adequate with steam and effluent gases being drawn upwards through the hood enclosure and to the RCO. There were no fugitive emissions observed escaping the enclosure.

The Press was included as an affected emission unit with the proposed project under PTI No. 24-22. Therefore, the Press was considered modified in 2022 and contains new requirements in PTI No. 24-22A.

### ***Emission Limits and Testing***

EUPRESS contains emission limits of NO<sub>x</sub>, CO, VOC, PM<sub>10</sub>, PM<sub>2.5</sub>, and formaldehyde. Compliance is demonstrated through stack testing and 12-month rolling emission calculations. The press was last tested for NO<sub>x</sub>, CO, VOC, and formaldehyde during August 24-25, 2021. The average results are summarized below.

VOC	NO <sub>x</sub>	CO	PM <sub>10</sub>	Formaldehyde
1.604 lb/hr 10.63 ppmvd	8.93 lb/hr	0.132 lb/TFP	0.0613 lb/TFP	2.278 lb/hr

PTI No. 24-22A added new hourly limits for PM<sub>10</sub> and PM<sub>2.5</sub>. Stack testing to show initial compliance with these limits is required within 180 days of initial startup. The commencement of trial operation and startup of this project was considered April 3, 2023, when the press began producing siding product. LP Sagola is planning on testing the press to show compliance with the new PM<sub>10</sub> and PM<sub>2.5</sub> limits during the last week of August 2023.

### ***Process/Operational Restrictions***

The RCO for the press was in operation at the time of the inspection and displayed a combustion temperature of 972 degrees Fahrenheit. No visible emissions were observed from the RCO.

### ***Design/Equipment Restrictions***

During the inspection, the RCO appeared to be operating properly. The combustion temperature and flow rate were in specification and no visible emissions were observed. The induced draft fan appeared to be operating properly by having sufficient air draw over the press hood enclosure.

### ***Monitoring/Recordkeeping***

The RCO/RTO combustion chamber temperature and volumetric flowrate through the RCO/RTO are continuously monitored and recorded from the CPMS.

12-month rolling total emission rates for PM<sub>10</sub>, NO<sub>x</sub>, CO, and VOC are recorded by the facility. LP Sagola updates the emission factors based on the last stack test. For the period July 2021 through May 2023, the 12-month rolling totals for these pollutants remain below the emission limits.

### ***Reporting***

The facility submits semiannual and annual compliance reports and notes any deviations from EUPRESS as applicable. In reviewing the 2022 annual compliance report, there were no deviations reported from EUPRESS.

### ***Stack/Vent Restrictions***

A RangeFinder was used to measure the stack height of SVPRESS using the 2-point measurement from eye level. A stack height of 94 ft was measured. Accounting for additional height from ground to eye level, the stack height appears to meet the minimum height requirement of 100 ft.

### FGDRYERS

This flexible group consists of three (3) direct wood-fired rotary dryers with maximum rated heat input of 50 MMBtu/hr and controlled by a wet ESP and RTO. All three dryers also have a natural gas burner as backup. There are 3 wet ESPs in parallel, one for each dryer, followed by a single RTO in series. Combined emissions are emitted out of the stack from the RTO. FGDRYERS is CAM subject for the PM and PM10 emission limits.

At the time of the inspection, Dryer #1 and Dryer #2 were operating while Dryer #3 was down. Both the ESP for Dryer #1 and Dryer #2 were operating, along with the RTO. The transformers voltage for Dryer #1 showed 67.1 kV and 66.1 kV, and the transformers voltage for Dryer #2 showed 70 kV and 68.6 kV. The RTO combustion temperature was reading 1610 degrees Fahrenheit and the flowrate to the RTO was reading 77,411 ACFM. Dryer #2 was set to reduce the flake moisture content to 5% and Dryer #1 was set to 6%.

### *Emission Limits and Testing*

FGDRYERS contains emission limits for NO<sub>x</sub>, CO, VOC, PM, PM10, and formaldehyde. Compliance is demonstrated through stack testing and 12-month rolling emission calculations. FGDRYERS was last tested for NO<sub>x</sub>, CO, VOC, PM, PM10, and formaldehyde during August 24-25, 2021. The average results are summarized below.

VOC	NO <sub>x</sub>	CO	PM-PM10	Formaldehyde
0.020 lb/TFP 97.4% THC as carbon reduction	0.506 lb/TFP	1.111 lb/TFP	0.00157 gr/dscf 0.686 lb/hr	0.391 lb/hr

The dryers contain emission limits for both softwood and hardwood usage. The facility will either process only hardwood or a hardwood and softwood blend, with a softwood percentage not exceeding 30%. Softwood was used previously for OSB production but with the mill now primarily focusing on siding, only hardwood is being processed. During previous compliance tests, the facility would calculate an emission limit based on a softwood and hardwood production weight basis. A discussion was had during the inspection about revising the emission limits for FGDRYERS to include limits for hardwood production and for blended production. This would eliminate the softwood only limits, which is not reflective of the actual operations at the facility. During the previous compliance tests, the facility would be processing a blend and would meet the hardwood limits, though the facility does not test at 60% softwood. Thus, having the softwood limits revised to reflect a blended production usage would be more reflective of the facility's actual operations and testing conditions.

### *Material Limits*

The dryers contain a softwood limit of 60 percent or less based on a 12-month rolling time period. Currently, the facility is not processing softwood and is only using hardwood to produce siding. A review of material usage records for July 2021 through May 2023 show the 12-month rolling average softwood percentage to be below 30%.

#### *Process/Operational Restrictions*

Observations of the RTO stack were taken during the inspection and no visible emissions were observed. The combustion temperature of the RTO was reading 1610 degrees Fahrenheit and the flow rate recorded was 77,411 ACFM.

#### *Design/Equipment Parameters*

During the inspection, both ESPs for Dryer #1 and Dryer #2 appeared to be operating properly along with the RTO. No visible emissions were observed.

#### *Monitoring/Recordkeeping*

The RTO combustion chamber temperature and the volumetric flow rate through the RTO are monitored and recorded on a continuous basis with the CPMS. The facility calculates 12-month rolling emission totals for NO<sub>x</sub>, CO, and VOCs using the most recent stack test emission factors.

For CAM, the indicator of compliance is the transformer voltage for each of the wet ESPs. The indicator range is 40kV to 70kV. During the inspection, the ESPs For Dryer #1 and #2 were operating within this range. The transformer voltage is monitored and recorded continuously through the CPMS. CAM reports are being submitted semiannually that note if there were any monitor downtimes or excursions.

#### Reporting

In reviewing the second semiannual CAM report for 2022, there were no periods of monitor downtime or indicator exceedances for FGDRYERS. LP Sagola also reports deviations from FGDRYERS as applicable with the semiannual and annual deviation reports. No deviations from FGDRYERS were reported in 2022.

#### *Stack/Vent*

A RangeFinder was used to measure the stack height of the RTO using the 2-point measurement from eye level. A stack height of 97 ft was measured. Accounting for additional height from ground to eye level, the stack height appears to meet the minimum height requirement of 100 ft.

#### FGBH: 1, 2, 3, 4, 5, 6, 7, and 8

These flexible groups include new emission units and baghouses that were permitted under PTI No. 24-22A as part of the siding production project. These flexible groups replace FGSANDER1, FGSANDER2, FGMAIN1, FGMAIN3, and FGLAIDIG that are listed in MI-ROP-N1315-2018. Below is a summary from PTI No. 24-22A that includes modified and new equipment along with the associated new baghouses.



EULAPLANE2	Board (lap) sawing, trimming, scoring, sanding, and finishing controlled by baghouse dust collector BH6.	2022	FGBH6, FGBH5
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EUVSLINE	Board (vented soffit) sawing, trimming, sanding, and finishing controlled by baghouse dust collector BH8.	2022	FGBH8, FGBH5
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EUHOG	Downgrade hog and room aspirations controlled by baghouse dust collector BH8.	2022	FGBH8, FGBH5
EUOVERFINES	Overlay fines hammermill, storage bin, and metering bin controlled by baghouse dust collector BH5.	2022	FGBH5
EUSCREENS	Aspiration from rotary screeners, conveyors, and dry bins controlled by baghouse dust collector BH1.	2022	FGBH1

EUFORMING	Forming line system includes blenders, formers, fines blender, fines former, flying cut off saw, mat forming line controlled by baghouse dust collector BH2.	1988 / 1998 / 2022	FGBH2, FGBH1
EUSAWLINE	Sawline system includes first and second pass saws and controlled by baghouse dust collector BH4.	1988 / 1998 / 2022	FGBH4, FGBH1, FGBH5
EUPULVERIZING1	#1 Fuel fines pulverizing mill	2003	FGBH3
EUPULVERIZING2	#2 Fuel fines pulverizing mill	2003	FGBH3
EUSANDER	Sanding operations controlled by a baghouse dust collector BH7.	1988 / 1998	FGBH7, FGBH1, FGBH5
EUTGPATTERN	Tongue and Groove machine controlled by a baghouse dust collector BH7.	1988 / 1998	FGBH7, FGBH1, FGBH5
EUHAMMERMILL1	Primary fuel fines hammermill.	1988 / 1998	FGBH7, FGBH1, FGBH5
EUFUELBIN	Fuel fines bin.	1988 / 2003	FGBH1, FGBH3
EUPANELLINE	Board (panel) sawing, trimming, scoring, sanding, and finishing controlled by baghouse dust collector BH6.	2022	FGBH6, FGBH5
EUPANELOV	Direct heated natural gas-fired oven on the Panel finishing line, total heat input 5.0 million Btu/hr.	2022	FGFINISHOVENS
EULAPLANE1	Board (lap) sawing, trimming, scoring, sanding, and finishing controlled by baghouse dust collector BH6.	2022	FGBH6, FGBH5

### ***Emission Limits and Testing***

The flexible groups for the baghouses include PM10 and PM2.5 limits. Compliance is demonstrated through an initial stack test and upon request from the AQD. LP Sagola is planning to conduct testing on all 8 baghouses in August 2023.

### ***Process/Operational Restrictions***

Each baghouse is required to have a malfunction abatement plan (MAP). LP Sagola submitted a MAP for the baghouses on 4/20/2023. The MAP adequately addresses the responsible personnel, preventative maintenance inspection and frequency, spare parts available, and indicators of proper operation. LP Sagola is using visible emission observations and differential pressure as indicators of proper performance on each of the baghouses. An excursion is defined as any visible

emissions observed and a differential pressure outside the operating range of 0.1 to 10.0 inches of water. The MAP also provides QA/QC practices and criteria for monitoring.

### *Design/Equipment Parameters*

Each baghouse is equipped with a differential pressure gauge that is continuously monitored. Pressure drop is manually recorded from the gauge once per 12-hour shift. During the inspection, the following differential pressure data was collected for each baghouse:

- FGBH1: 0.41" WC
- FGBH2: 0.47" WC
- FGBH3: 0.74" WC
- FGBH4: 0.42" WC
- FGBH5: 0.51" WC
- FGBH6: 0.57" WC
- FGBH8: 0.16" WC

FGBH7 was not in operation at the time of the inspection because the primary emission units associated with it were still being constructed.

### *Monitoring/Recordkeeping*

The facility conducts daily VE readings for each of the baghouses and the pressure drop is recorded once per 12-hour shift. From records reviewed for April and May 2023, the pressure drop for the new baghouses is typically between 0.2" WC and 0.5 " WC.

### *Stack/Vent Restrictions*

A RangeFinder was used to measure the stack height of all eight baghouses using the 2-point measurement from eye level. BH1 measured 56', BH2 measured 57', BH3 measured 56', BH4 measured 77', BH5 measured 57, BH6 measured 57', BH7 measured 57', and BH8 measured 57'. Accounting for additional height from ground to eye level, the stack heights measured appear to meet the minimum height requirements.

### FGFINISHOVENS

During the inspection, five natural gas-fired drying ovens for the finishing process were observed. These ovens were still being constructed and were not yet in operation.

### Source-Wide/FGFACILITY

LP Sagola contains source-wide production limits for finished product of OSB and Siding in tons per year. Compliance is demonstrated through 12-month rolling calculations. Records were provided of 12-month rolling production totals for the period July 2021 through May 2023. Production totals stayed below 250,000 tons per year.

For major maintenance items conducted at the facility for EUTOH-WOOD, EUPRESS, and FGDRYERS, the Dryer RTO media was replaced in May 2023. No other major maintenance items were conducted. The baghouses for the forming and finishing were all replaced with new units during 2022 and into 2023 as part of the siding conversion project.

The facility keeps records of fugitive dust control activities performed and weather conditions on a daily basis. During the inspection, the plant roadways and yard area appeared to be well saturated, and no excessive dust was observed. The facility appears to be following their fugitive dust control plan (Rev.

1/18/23).

**FGENGINECI and FGENGINESI**

LP Sagola has 5 emergency engines that are subject to MACT ZZZZ. EUFIREPUMP is an existing diesel fired fire pump engine. EUTOHDIESEL is an existing diesel fired emergency thermal oil pump engine. EUDRYER1BACKUP, EUDRYER2BACKUP, and EUDRYER3BACKUP are propane gas fired emergency drive engines. All five emergency engines are equipped with an hour meter. At the time of the inspection, Dryer 3 backup engine showed 33.3 hours, Dryer 2 backup engine showed 32.1 hours, Dryer 1 backup engine showed 41.8 hours, the thermal oil pump engine showed 288 hours, and the fire pump engine showed 2309 hours.

Records were provided on total hours of operation for preventive maintenance and emergency usage. For the period June 2022 through May 2023, the dryer backup engines were operated less than 5 hours total for preventative maintenance, the thermal oil pump engine was operated for 12 hours, and the fire pump engine for 81.6 hours. Total emergency hours of operation were also provided for June 2022 through May 2023. The only engine with emergency operation during this time period was the fire pump engine for 27.5 hours total, 11.5 hours during May 2022, 10 hours during November 2022, and 6 hours during December 2022. There were emergency fire events at the facility during these months that required the use of the fire pump engine.

The facility also keeps records of all maintenance conducted on the emergency engines. Records provided show the engine oil and air filter are changed annually, along with hoses and belts are being inspected and replaced as necessary.

**FGBOILERMACT**

EUTOH-WOOD and EUTOH-NG at the facility are subject to 40 CFR Part 63, Subpart DDDDD. MACT DDDDD contains emission limits for HCl, mercury, CO, and PM from EUTOH-WOOD. Compliance is demonstrated through stack testing and fuel analysis. The last MACT DDDDD test conducted for EUTOH-WOOD was on September 20-21, 2022. The following table summarizes the results.

Pollutant	Units	Test Date	Results	Boiler MACT Limit	<75% of the Limit
Filterable PM	LB/MMBtu of heat input	9/20/22	0.0012	0.037	Yes
CO	PPM dry, corrected to 3% oxygen	9/20/22	300	1500	Yes
Mercury	LB/MMBtu of heat input	9/21/22	6.6E-07	5.7E-06	Yes
HCl	LB/MMBtu of heat input	9/20/22	8.4E-04	2.2E-02	Yes

With the test results below 75% of the limit, testing on EUTOH-WOOD for MACT DDDDD compliance remains on a three-year cycle. The operating limits, re-established with the most recent performance test, are an oxygen trim system set point of 8.29% and fuel load of 109.3 wet tons/day on a 30-day rolling average. For 2022, burner tune-ups were performed on 1/04/2022 for EUTOH-NG and EUTOH-WOOD.

At the time of the inspection, EUTOH-WOOD was in operation and EUTOH-NG was not. The COMS was reporting an instantaneous opacity of 0.2% for EUTOH-WOOD. No visible emissions were observed and the thermal oil heater appeared to be operating in a manner consistent with good air pollution control rules.

#### **40 CFR Part 63, Subpart DDDD**

LP Sagola is subject to 40 CFR Part 63, Subpart DDDD – Plywood and Composite Wood Products. The affected sources include the dryers, press, forming line system, and finishing operations. The Notification of Compliance Status was submitted to EGLE and the EPA on December 4, 2008. The facility uses the compliance options for add-on control systems found in 40 CFR 63.2240(b) and Table 1B of 40 CFR Part 63, Subpart DDDD. The add-on control systems for the affected sources are the RTO for the dryers and the RCO for the press. The baghouses for the forming line system and the finishing operations are not subject to any control or work practice requirements, as noted in 40 CFR 63.2252. For the green strand dryers, the facility is complying with the option of reducing emissions of total HAPs, measured at THC (as carbon), by 90 percent and maintaining the 3-hour block average combustion temperature in the RTO above the minimum temperature established during the performance test. For the press, the facility is complying with the option of limiting emissions of total HAP, measured at THC (as carbon), to 20 ppmvd and maintaining the 3-hour block average catalytic oxidizer temperature above the minimum temperature established during the performance test and checking a representative sample for the catalyst annually. The press also contains a wood products enclosure that meets the requirements in 40 CFR 63.2292.

Testing on the press and dryers last occurred in August 2021 and test results showed an emission rate of 10.63 ppmvd THC for the press and a 97.4% THC reduction for the dryers. The established minimum combustion temperature in the RTO was 1576 degrees Fahrenheit and for the RCO, 932 degrees Fahrenheit. Repeat performance testing is required within 60 months following the previous performance test.

To show compliance with the operating requirements, the facility is required to monitor and record the RCO and RTO temperatures on a 3-hour block average. Records of these operating temperatures were requested for the dates 11/13/2021, 1/20/2022, 4/16/2022, and 5/15/2023. Records of the 3-hour block averages were provided for the dates 11/13/2021, 1/20/2022, 4/16/2022. All but two 3-hour block temperature averages on 1/20/2023 were above the minimum temperatures established during the performance test. The mill was down for maintenance on 1/20/2022 from 7:30 AM to 1:55 PM and the dryers and press were down during this period. The mill was entirely down for maintenance on 5/15/2023, so no operating data was provided.

Samples of the catalyst for the RCO was performed in May 2022. The laboratory results of the samples were entered into a performance model of the reactor to estimate expected field conversion. The samples were found to have sufficient performance for VOC removal. The

expected field conversions, based on the samples analyzed, were 97.3% for CO, 97.6% for MEK, and 99.8% for Toluene.

The facility submits semiannual compliance reports for MACT DDDD. In reviewing the second semiannual report for 2022, the facility reported no deviations from the operating and work practice requirements.

**Compliance**

Based on the inspection conducted and records reviewed, LP Sagola appears to be in compliance with MI-ROP-N1315-2018 and PTI No. 24-22A.

NAME *Michael Kaplan*

DATE 7/11/2023

SUPERVISOR *Michael Kaplan*