



Lane Regional Air Protection Agency
Standard Air Contaminant Discharge Permit

REVIEW REPORT

McFarland Cascade Pole & Lumber Company

Permit No. 205108

90049 Highway 99 North
Eugene, Oregon 97402
<http://www.ldm.com/>

Source Information:

SIC	2491 – Wood Preserving (primary) 4961 – Fuel Burning Equipment (secondary)	Source Categories (LRAPA Title 37, Table 1)	B. 73 – Wood preserving C. 3 - Source electing to maintain the netting basis C.4 – Source w/ PSEL >SER
NAICS	321114 – Wood Preserving (primary) 221330 – Fuel Burning Equipment (secondary)	Public Notice Category	III

Compliance and Emissions Monitoring Requirements:

Unassigned emissions	n	Source test [date(s)]	n
Emission credits	n	COMS	n
Special Conditions	y	CEMS	n
Compliance schedule	n	Ambient monitoring	n

Reporting Requirements:

Annual report (due date)	Mar 15	Excess emissions report	y
NSPS Report (due date)	Jan 30, July 30	Other reports	Biennial Boiler Tune-Up and GHG
Monthly report (due dates)	n		

Air Programs:

NSPS (list subparts)	Dc
NESHAP (list subparts)	JJJJJJ (6J), QQQQQQ (6Q)
CAM	n
Regional Haze (RH)	n
Synthetic Minor (SM)	n
SM-80	n
Part 68 Risk Management	n
Title V	n
ACDP (SIP)	n
Major HAP source	n
Federal major source	n
New Source Review (NSR)	n
Prevention of Significant Deterioration (PSD)	n
Acid Rain	n
Clean Air Mercury Rule (CAMR)	n
TACT	y
>20 Megawatts	n

Permit Action

1. This is a permit renewal for an existing Standard Air Contaminant Discharge Permit (Standard ACDP) which was issued on March 17, 2015 and scheduled to expire on March 17, 2020. The permit will remain valid until LRAPA issues the renewed permit. The facility operates a process listed in Table 1, Part B and C, of LRAPA Title 37 and is, therefore, required to obtain an air contaminant discharge permit (ACDP). McFarland Cascade Pole and Lumber Company ("McFarland" or "the facility") is requesting renewal of their permit.
2. The facility applied for a permit modification on June 19, 2020 as part of the renewal to include two new wood preservation chemicals (in addition to pentachlorophenol): DCOI (Dichloro-octyl-isothiazonlinone) and copper naphthenate. The permit renewal includes the addition of the two new wood preservation chemicals, although there are no specific references to either chemical. See emission details attached to this review report for more information.

Other Permits

3. No other permits have been issued or are required by LRAPA for this facility.

Attainment Status

4. This facility is located in an attainment area for all pollutants. The Eugene-Springfield area is designated as an attainment area with a maintenance plan for both PM₁₀ and CO.

Overview

5. McFarland Cascade Pole and Lumber Company operates a wood treatment facility in Eugene, Oregon. Wood products are treated under pressure in closed cylindrical vessels called retorts. The treatment chemicals include pentachlorophenol, DCOI ("Dichloro-octyl-isothiazonlinone), and copper naphthenate, and a carrier oil for the wood preservative (typically "FP9 oil"). Emissions are from the four (4) retorts, one (1) 14.7 MMBtu/hr natural gas-fired boiler with oil backup, and fugitive emissions sources (unpaved roads, storage tanks, vacuum pumps, paint and aerosol usage, flanges, valves and other pumps). The maximum operating schedule for the facility is 8,760 hours per year (24 hours per day, 7 days per week, and 52 weeks per year).
6. The facility installed a fiber bed filter used to improve control of VOCs and odors prior to the last permit renewal.

Compliance

7. The facility was inspected on April 24, 2013 and found to be in compliance with permit conditions.
8. During the prior permit period LRAPA received one (1) complaint about odor from the facility.
9. There have been no enforcement actions performed against the facility.

Emissions

10. Proposed PSEL information:

Pollutant	Baseline Emission Rate (tons/yr)	Netting Basis		Plant Site Emission Limit (PSEL)		
		Previous (tons/yr)	Proposed (tons/yr)	Previous PSEL (tons/yr)	Proposed PSEL (tons/yr)	PSEL Increase (tons/yr)
PM	2.8	2.8	2.8	24	24	0
PM ₁₀	1.1	1.1	1.1	14	14	0
PM _{2.5}	NA	1.1	1.1	9	9	0
CO	0.3	0.3	0.3	99	99	0
NO _x	1.4	1.4	1.4	39	39	0
SO ₂	0.1	0.1	0.1	39	39	0
VOC	20.2	20.2	20.2	59	59	0
GHG	2,823	2,823	2,823	74,000	74,000	0

- 10.a. The baseline emission rates for PM, PM₁₀, CO, NO_x, SO₂ and VOC were determined in previous permitting actions and there has been no changes.
- 10.b. In accordance with LRAPA 42-0041(1) the PSELs for PM, PM₁₀, PM_{2.5}, CO, NO_x, and SO₂ are set at the generic PSEL levels. In accordance with LRAPA 42-0041(2) the VOC PSEL is set at the source specific PSEL level accounting for the VOC Baseline Emission Rate.
- 10.c. A baseline emission rate is not required for PM_{2.5} in accordance with LRAPA 42-0048(3). The PM_{2.5} netting basis was established with the previous renewal as being equivalent to the PM₁₀ netting basis. The fraction of PM₁₀ in the netting basis that is PM_{2.5} is assumed to be 100%. The PM from the boiler combustion in the baseline year is assumed to be 100% PM_{2.5}.
- 10.d. The baseline for greenhouse gases (GHGs) is based upon actual emissions from 2004 calendar year.
- 10.e. The PSEL for greenhouse gases GHGs has been set at the generic PSEL level because the facility has demonstrated that GHGs emissions are lower than the “de minimis” emission level.
- 10.f. Emissions from the pole shaving were calculated previously and were shown to be minimal. This permit does not contain limits on pole shaving emissions.
- 10.g. The facility does not currently have any unassigned emissions or Emission Reduction Credits.

Hazardous air pollutants/Toxic Air Contaminants

- 11. Under the Cleaner Air Oregon program, only existing sources that have been notified by LRAPA and new sources are required to perform risk assessments. This source has not been notified by

LRAPA and is therefore, not yet required to perform a risk assessment or report annual emissions of toxic air contaminants.

LRAPA required reporting of approximately 600 toxic air contaminants in 2016 and regulates approximately 260 toxic air contaminants that have Risk Based Concentrations established in rule. All 187 hazardous air pollutants are on the list of approximately 600 toxic air contaminants. The hazardous air pollutants and toxic air contaminants listed below were reported by the source in 2016 and verified by LRAPA. After the source is notified by LRAPA, they must update their inventory and perform a risk assessment to see if they must reduce risk from their toxic air contaminant emissions. Until then, sources will be required to report toxic air contaminant emissions triennially.

12. This source is not a major source of hazardous air pollutants (HAPs). The HAP emissions detail is provided at the end of this report. Provided below is a summary of the HAP and toxic air contaminant (TAC) actual emission estimates from the 2016 calendar year.

Pollutant Name	Sum Of Actual Source Emissions (lbs/yr)
1,2,4-Trimethylbenzene	12.946
1,4-Dichlorobenzene	0.053
Acetaldehyde	0.136
Acrolein	0.119
Arsenic	0.009
Barium	0.194
Benzene	0.255
Beryllium	0.001
Cadmium	0.048
Cobalt	0.004
Copper and compounds	0.037
Cumene	1.681
Ethyl benzene	14.230
Formaldehyde	0.541
Hexane	0.202
Lead	0.022
Manganese	0.017
Mercury	0.011
Methyl ethyl ketone	39.684
Methyl isobutyl ketone	11.717
Naphthalene	0.013
Nickel	0.092
Pentachlorophenol	6.842
Propylene	23.316
Propylene glycol monomethyl ether acetate	14.786

Pollutant Name	Sum Of Actual Source Emissions (lbs/yr)
Selenium	0.001
PAHs (excluding naphthalene)	0.004
Toluene	749.150
Vanadium (fume or dust)	0.101
Xylenes (mixed)	86.507
Zinc	1.276
TOTAL	963.983

Toxics Release Inventory

13. The Toxics Release Inventory (TRI) is federal program that tracks the management of certain toxic chemicals that may pose a threat to human health and the environment, over which LRAPA has no regulatory authority. It is a resource for learning about toxic chemical releases and pollution prevention activities reported by certain industrial facilities. Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) created the TRI Program. In general, chemicals covered by the TRI Program are those that cause:
- Cancer or other chronic human health effects;
 - Significant adverse acute human health effects; or
 - Significant adverse environmental effects.

There are currently over 650 chemicals covered by the TRI Program. Facilities that manufacture, process or otherwise use these chemicals in amounts above established levels must submit annual TRI reports on each chemical.

McFarland Cascade Pole and Lumber Company reported the release of the following TRI-listed chemicals and amounts for the calendar year 2018:

Hazardous Air Pollutant/Toxic Air Contaminant	Potential to Emit (pounds/year)
Pentachlorophenol	16
Polycyclic Aromatic Compounds	0.5
Dioxin and Dioxin-like Compounds	0.0004 (0.1656 grams/year)

Other Emissions Limitations

14. The permit includes general visible emissions limitations for the facility. The permit also includes general grain-loading (particulate matter) limitations and fugitive emission precautions for the facility.

Production Limits

15. The facility is limited to treating no more than 6,000,000 cubic feet per year and/or no more than 2,400 charges per 12-month rolling period. The facility production will be limited to prevent increasing VOC emissions by more than the Significant Emission Rate.
16. The facility is also limited to no more than two (2) retort door openings in any 60-minute period. This is to prevent a sudden emission level that may result in odor complaints. This is not based on past odor complaints, but rather the potential for future odor complaints.
17. The previous permit included a 1,098,592 gallon/year limit on fuel oil combustion. That limit was removed with the proposed permit because it was determined that the boiler could not physically combust more than maximum fuel oil combustion (920,000 gallons/year, based on the maximum design heat input of 14.7 MMBtu/hour). In lieu of a usage limit on fuel oil combustion, the permit includes emission factors and calculations that are required to be used to show compliance with the respective PSEs.

Typically Achievable Control Technology (TACT)

18. LRAPA 32-008 requires an existing emission unit at a facility to meet TACT if the emissions unit has emissions of criteria pollutants greater than ten (10) tons per year of any gaseous pollutant or five (5) tons per year of particulate, and the emissions unit is not subject to the emissions standards under LRAPA Title 30, Title 32, Title 33, Title 38, Title 39, or Title 46 for the pollutants emitted, and the facility is required to have a permit. The retorts and boilers each emit greater than 10 tons/year of gaseous pollutants and is, therefore, required to meet TACT. While a formal TACT determination has not been conducted, the type of controls and work practices used by the facility are considered TACT by LRAPA.

Criteria Pollutants

19. A major source is a facility that has the potential to emit more than 100 tons per year of any criteria pollutant. This facility is not a major source of criteria pollutant emissions.

New Source Review (NSR) and Prevention of Significant Deterioration (PSD)

20. Because the proposed PSEs for all regulated pollutants are below the Significant Emission Rates (SERs) in LRAPA Title 12, the facility is not subject to LRAPA's PSD requirements for PM₁₀, PM_{2.5}, SO_x, NO_x, CO, and VOC in LRAPA Title 38.

New Source Performance Standards (NSPS)

21. Because the boiler at the facility has a maximum heat input capacity between 10 MMBtu/hr and 100 MMBtu/hr (14.7 MMBtu/hr), and it was constructed after June 9, 1989, the boiler is subject to 40 CFR 60, Subpart Dc; New Source Performance Standards for Small Industrial-Commercial-Institutional Steam Generating Units, including, but not limited to, record keeping of fuel usage and annual reporting.
22. As stated in the NSPS and LRAPA 32-065(2)(b) the sulfur content in the backup fuel oil may not exceed 0.5% by weight. The facility is allowed to demonstrate compliance with this rule by fuel supplier certification.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 23. The facility emits less than 10 tons per year of any single HAP and less than 25 tons per year for any combination of HAPs and is therefore an “area” source of HAPs. As an area source of HAPs the facility is subject to 40 CFR 63, Subpart QQQQQQ – National Emission Standards for HAPs for Wood Preserving area sources. Use of pentachlorophenol as a wood preservative makes the NESHAP applicable to the facility because dioxin may be formed as a byproduct of its use. EPA recognized in the NESHAP that dioxin emissions at wood preserver facilities is due to the use of pentachlorophenol.
- 24. The boiler at the facility is applicable to 40 CFR 63, Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources because the boiler is an existing industrial boiler firing liquid fuels at an area source per 40 CFR 63 Subpart 63.11194. The NESHAP requires boilers firing liquid fuels with a heat input capacity of 10 million Btu per hour or greater to submit a signed certification in the Notification of Compliance Status report that an energy assessment of the boiler and its energy use systems was completed per Table 2 of the subpart. The existing boiler must also have biennial tune-ups.

Reporting

- 25. In accordance with 40 CFR 60.48(c), the facility is required to submit semi-annual reports of the use of No. 2 oil for semi-annual periods when No. 2 oil is used. The semi-annual reports are to be postmarked by the 30th day following the end of the reporting period, and include the following information:
 - 25.a. The name of the oil supplier;
 - 25.b. A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in 40 CFR 60.41c;
 - 25.c. A certification statement signed by the permittee that the records of fuel supplier certification submitted represent all of the fuel combusted during the reporting period.
- 26. By March 15th each year, the facility is required to submit an annual report to include the following information:

<u>Parameter</u>	<u>Units</u>
(a) Quantity of wood treated by each treatment chemical	Cubic Feet/year
(b) Amount and type of all chemicals used in the wood treatment process	Gallons/year
(c) Natural gas combustion	Cubic Feet/year
(d) Oil combustion	Gallons/year
(e) Certification by supplier of sulfur content in oil	NA
(f) Certification of biennial boiler tune-ups Error! Reference source not found.	NA

27. The facility is also required to submit an annual GHG report, as applicable, in accordance with OAR 340 division 215.

Source Testing

28. Source testing is not required by the permit. The use of production limits and associated emission factors are sufficient to show compliance with the PSELs.

Public Notice

29. The draft permit was on public notice from October 2, 2020 to November 5, 2020. During this period, LRAPA received one comment from the general public. The commenter expressed concern about fugitive emissions of particulate matter (PM) and asked if fenceline monitoring should be required.

LRAPA Response: While the Plant Site Emission Limit (PSEL) in the permit for PM is set at the generic PSEL level of 24 tons/year, the facility has the potential to emit (PTE) a much lesser amount. As shown on pages 9 and 10 of this review report, the PTE for PM from natural gas and diesel combustion are 0.16 tons/year and 1.52 tons/year, respectively. Actual emissions are even less than the PTE. For example, in 2019 the facility reported PM emissions from natural gas and diesel combustion of 113 pounds/year and 172 pounds/year, respectively. Truck traffic estimated emissions of PM are also relatively insignificant at 600 pounds/year. For facilities that have a PTE above the de minimis (e.g. 1 ton/year for PM), the LRAPA rules (in Title 42) require the PSEL be set at the generic PSEL level.

As far as fenceline monitoring is concerned, low-cost air sensors are a potential option, but they do not factor in wind direction and are not typically required in our area for indications of industrial source fugitive emissions.

Max
11/09/2020

Emission Details

Emission Summary

Pollutant	Potential to Emit (tons/year)	PSEL (tons/year)
PM	1.52	24
PM10	1.06	14
PM2.5	0.74	9
CO	5.4	99
NOx	9.2	39
SO2	32.7	39
VOC	43.7	59
GHG	18053	74,000

Boiler Emission Details

Max Hourly Heat Input = 14.7 MMBtu/hr
 Maximum Annual Gas usage = 129 MMCF/yr
 Maximum Annual No.2 Oil usage = 920 kgal/yr

Gas

Pollutant	Gas Emission Factor (lb/MMCF)	EF Ref	Potential to Emit (tons/yr)
PM	2.5	DEQ AQEF-05	0.16
PM10	2.5	DEQ AQEF-05	0.16
PM2.5	2.5	DEQ AQEF-05	0.16
SO2	1.7	DEQ AQEF-05	0.11
NOX	100	DEQ AQEF-05	6.44
CO	84	DEQ AQEF-05	5.41
VOC	5.5	DEQ AQEF-05	0.35
GHG	1.20E+05	40 CFR Part 98	7726.32

Oil

Pollutant	No. 2 Oil Emission Factor (lb/kgal)	EF Ref	Potential to Emit (tons/yr)
PM	3.3	DEQ AQEF-04	1.52
PM10	2.3	DEQ AQEF-04	1.06
PM2.5	1.6	DEQ AQEF-04	0.74
SO2	71	DEQ AQEF-04	32.65
NOX	20	DEQ AQEF-04	9.20
CO	5	DEQ AQEF-04	2.30
VOC	0.2	DEQ AQEF-04	0.09
GHG	2.25E+04	40 CFR Part 98	10,327

1 cubic foot of natural gas = 1000 Btu

1 gallon of No. 2 fuel oil = 140,000 Btu

Boiler capable of operating 8760 hours/year on either gas or fuel oil

Treatment Plant Details

Total Wood Treated = 6,000,000 cubic feet/year
 Total Preservative Used = 5,100,000 gal/year
 Totals below each calculated using the total wood and preservative used amounts

Pentachlorophenol Treatment

Pollutant	EF	Potential to Emit (tons/year)
VOC	Material Balance*	43.3
Pentachlorophenol	Material Balance*	0.004

Includes treating cylinders, vacuum pumps, flanges, valves, pumps, work tanks and storage tanks

DCOI Treatment**

Pollutant	EF	Potential to Emit (tons/year)
VOC	Material Balance*	6.7
Naphthalene	Material Balance*	0.039

Includes treating cylinders, work tanks and storage tanks. Other sources not included

**Dichloro-octyl-isothiazolinone (4,5-Dichloro-2-n-octyl-4-isothiazolin-3-one, CAS # 64359-81-2)

Naphthalene is from the fuel/carrier oil. SDS listed as "less than 1%".

Copper Naphthenate (CuNap) Treatment

Pollutant	EF	Potential to Emit (tons/year)
VOC	Material Balance*	5.6
Naphthalene	Material Balance*	0.033

Includes treating cylinders, work tanks and storage tanks. Other sources not included

Naphthalene is from the fuel/carrier oil. SDS listed as "less than 1%".

*All emissions are from the facility's emission estimation tools/software/worksheets

and are based on EPA AP-42 Chapter 7, Liquid Storage Tanks and the use of liquid mass fractions to estimate the vapor mass fraction

Fugitive emissions from treated storage have not been included in the emission estimates.

Emission Factor (VOC)	
0.01443	lb/cubic feet

EF is derived from the total PTE for VOC from Penta treatment (43.3 tons/year), divided by the total wood treated (6 million cu. ft./year)

VMT and Unpaved Roads								
Insignificant Emission Unit - Unpaved Roads			Updated with 2020 Renewal					
PM	0.30	tons/year						
PM10	0.09	tons/year						
PM2.5	0.01	tons/year						
Vehicles VMT/year								
Trucks	500	Update based on facility estimation						
Unpaved Road Dust Emission Factor Calculation--AP-42 13.2.2 11/06								
VMT - Loaders								
	k (lb/VMT)	s(%)	C	a	b	W	E (uncorrected)	E (Corrected)*
PM-30	4.9	4.0	0.00047	1.0	0.45	5.0	2.06	1.21
PM10	1.5	4.0	0.00047	1.0	0.45	5.0	0.63	0.37
PM2.5	0.2	4.0	0.00036	1.0	0.45	5.0	0.06	0.04
*Corrected for number of days with at least 0.254 mm of precipitation per year, P=150 based on Figure 13.2.2-1								
For vehicles traveling on unpaved surfaces at industrial sites, emissions are estimated from the following equation:								
$E = k (s/12)^a (W/3)^b$				(1a)				
where k, a, b, c and d are empirical constants (Reference 6) given below and								
E = size-specific emission factor (lb/VMT)								
s = surface material silt content (%)								
W = mean vehicle weight (tons)								
M = surface material moisture content (%)								
S = mean vehicle speed (mph)								
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.								
Includes only unpaved roads								
Paved roads and paved parking lots within an urban growth boundary are considered "Categorically Insignificant Activities" according to the definition in LRAPA Title 12								