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# Notice of Construction Worksheet (3/7/17)

NOC No. <b>1343a</b>	Source: Silvastar Forest Products 6975 Salashan Parkway Ferndale, WA 98248
Permit Engineer: <b>Christos Christoforou</b>	NOC Contact: Brett Martin
NOC Received: <b>05/11/2020</b>	NWCAA No.:

## A. Project Description

With OAC 1343, Silvastar constructed three wood drying kilns, each with a drying capacity of 80,000 bf. Under that OAC, Silvastar was allowed to dry 0.519 MMBf/year.

Silvastar has applied to Ecology to be allowed to increase their throughput to the design capacity of the kilns, which is 40 MMBf/year.

Heat for drying wood will continue to be from a natural gas fired water heater.

## B. New Source Review (NSR) Fees

NWCAA NSR fees have been assessed in accordance with the fee schedule effective 1/1/2020. The NSR fees assessed and amount paid are listed in the NSR Fee Worksheet posted on the OAC Whiteboard for this project.

## C. Public Notice

In accordance with NWCAA Section 305.1, an internet notice that the NWCAA received this application was posted on the NWCAA website for a minimum of 15 consecutive days. The 15-day posting period ended on 05/28/2020, and no public comments or requests for additional public review were received.

However, a formal public involvement and notification (i.e., comment period) is required for this project because the project review meets the criteria set forth in NWCAA 305.2(A)(13) and (14):

(13) An increase in emissions of a Toxic Air Pollutant with impacts greater than the Acceptable Source Impact Level (ASIL) for that Toxic Air Pollutant as regulated under chapter 173-460 WAC. and

(14) A Notice of Construction Order of Approval with a second tier component as regulated under chapter 173-460 WAC.

The agency took the following action to meet the public involvement requirements prescribed under NWCAA 300.5.

- A public notice of the agency's preliminary determination to issue Draft OAC 1343a was posted to the NWCAA website on **November 3, 2020, for a period of no less than 30**

days ending on December 4, 2020. This posting included the public notice, Draft OAC 1343a and the associated technical support worksheet.

A public hearing was/was not scheduled because some/no comments were received during the public comment period.

## **D. SEPA Review**

State Environmental Policy Act (SEPA) review under NWCAA Section 155 is addressed as follows.

There is an increase in emissions as a result of this project. The original project was considered non-significant under a DNS issued on 11/27/2019 by Whatcom County. A SEPA Addendum to this original SEPA determination was issued on 03/31/2020 by the NWCAA documenting that the current project will not result in a significant environmental impact. This finding is supported by Ecology's Health Impact Assessment, which recommends approval of the project as well as the emission information documented in this application.

On 03/31/2020, the DNS and SEPA Checklist were sent to the following SEPA contacts.

WA Department of Ecology, [separegister@ecy.wa.gov](mailto:separegister@ecy.wa.gov)  
City of Ferndale, [Joriburnett@cityofferndale.org](mailto:Joriburnett@cityofferndale.org)  
Whatcom County Planning, [mpersoni@whatcomcounty.us](mailto:mpersoni@whatcomcounty.us)

The SEPA checklist and DNS issued by the NWCAA is included in the NOC file.

## **GHG Disclosure and Mitigation**

There are no appreciable new greenhouse gas (GHG) emissions as a result of this project.

## **E. Permit History**

This is the second permit for the kilns, to be issued as a result of Silvastar petitioning the WA State department of Ecology for a Tier II review to increase throughput. Once OAC 1343a is issued, OAC 1343 will be suspended.

## **F. Basis for New Source Review Applicability**

Emission factors for drying wood are taken from EPA Region 10 HAP and VOC Emission factors for Lumber Drying, November 2019 and are summarized in Table F-1. The calculations below are based on the highest emission factor for drying any kind of wood at a temperature below 200 F.

According to the applicant, each of the three kilns is capable of a throughput of  $40/3=13.33$  MMBf per year. Note that this throughput of 40 MMBf/yr for all three kilns is larger than the 31 MMBf/yr that the applicant reported while submitting NOC 1343.

**Table F-1 Emission factors (EPA 2019)**

Pollutant	Emission Factors (lb/Mbf)						Maximum EF Species
	Douglas Fir	Western Hemlock	Western Red Cedar	Lodgepole Pine	Engelmann Spruce	Maximum EF	
PM	0.02	0.02	0.02	0.02	--	0.02	All
VOC	1.149	0.346	0.613	1.1352	0.1769	1.149	Douglas Fir
Acetaldehyde	0.0275	0.0677	0.0677	--	0.0201	0.0677	Hemlock/Cedar
Acrolein	0.0005	0.0012	0.0012	--	0.0005	0.0012	Hemlock/Cedar
Formaldehyde	0.00180	0.00158	0.00436	0.00300	0.00187	0.00436	Western Red Cedar
Methanol	0.0671	0.101	0.196	0.055	0.0407	0.196	Western Red Cedar
Propionaldehyde	0.0003	0.0004	0.0004	--	0.0002	0.0004	Hemlock/Cedar

Emission factors based on EPA Region 10 HAP and VOC Emission Factors for Lumber Drying, November 2019, with the exception of the PM emission factors, which are based on source tests conducted by Horizon at Oregon State University (OSU) in 1998, and by Emission Technologies, Inc. at the Chemco facility in Ferndale, WA in 2013.

Table F-2 shows the maximum emissions, per kiln, for the project.

**Table F-2 PTE per kiln based on 13.33 MMbf/yr**

Pollutant	Averaging Period	Emission Factor (lb/Mbf)	Emission Rate (lb/year)	Emission Rate (tpy)	Emission Rate (lb/avg per.)	SQER (lb/avg per.)	Modeling Analysis Required?
PM	N/A	0.02	800	0.13	--	N/A	N/A
VOC	N/A	1.15	45,948	7.7	--	N/A	N/A
Acetaldehyde	year	0.0677	2,708	--	903	60	Yes
Acrolein	24-hour	0.0012	48	--	0.044	0.026	Yes
Formaldehyde	year	0.00436	174	--	58.1	27	Yes
Methanol	24-hour	0.1964	7,856	--	7.2	1500	No
Propionaldehyde	24-hour	0.0004	16	--	0.015	0.59	No

According to NWCAA 300.4(D) and WAC 173-460, each kiln is subject to permitting for VOC, acetaldehyde, acrolein and formaldehyde.

## G. Criteria Air Pollutant Emissions and Impacts

There are no criteria air pollutant emissions that are subject to permitting. VOC is not a criteria pollutant, and there are no limits for it.

Potential project emissions for VOC are  $3 \times 7.7 = 23$  tpy of VOC. This is below the PSD significant emission rate of 40 tpy, and below the modeling threshold, also 40 tpy.

No further analysis is carried out.

## H. Toxic Air Pollutant Emissions and Impacts

Potential emissions for TAP subject to permitting are shown in Table F-2.

The applicant submitted modeling results for the three TAP that exceed their respective SQER: acetaldehyde, acrolein, and formaldehyde. According to the application, predicted ambient concentrations of these three TAPs will exceed screening impact levels (see results in Table H-1).

As a result, a petition will be submitted to the Washington Department of Ecology (Ecology), requesting that Ecology perform a “second tier” review to assess whether the proposed increase in TAP emissions attributable to the project source is sufficiently low to protect human health and safety from potential carcinogenic and/or other toxic effects.

**Table H-1 Maximum project concentrations predicted by modeling**

Toxic Air Pollutant	CAS #	Averaging Period	Maximum Concentration ( $\mu\text{g}/\text{m}^3$ )	ASIL ( $\mu\text{g}/\text{m}^3$ )	Over ASIL?
Acetaldehyde	75-07-0	Annual	9.60	0.37	Yes
Acrolein	107-02-8	24-hr	0.450	0.35	Yes
Formaldehyde	50-00-0	Annual	0.618	0.17	Yes

### **I. Prevention of Significant Deterioration (PSD) Program**

Emission increases associated with this project were reviewed for Prevention of Significant Deterioration (PSD) Program applicability.

The facility is not an existing PSD major source.

This project is not over the PSD significance thresholds (including 75,000 tpy CO<sub>2e</sub>).

### **J. Air Operating Permit (AOP) Program**

The facility is not a Title V air operating permit source because post project PTE remains below Title V applicability thresholds and criteria. The source is considered a “**natural minor**”.

### **K. NWCAA Compliance Database (Stratus)**

The **NWCAA Stratus database has been updated** to include the emission unit(s) approved by this OAC.

### **L. Confidential Business Information (CBI)**

The NOC application does not contain any information deemed by the applicant to be CBI.

### **M. Applicable/Inapplicable Regulations**

Relevant sections of NWCAA, state and federal regulations as they relate to the approved emission units listed in the OAC.

Section 451 establishes a visible emission standard of 20% opacity using Method 9A. The OAC includes a more stringent limit of 0% opacity using Method 9A.

**State**

WAC 173-400 contains requirements similar to those listed above. WAC 173-460 contains requirements for new sources of Toxic Air Pollutants.

**Federal**

none

**N. Best Available Control Technology (BACT) Technology Review**

This project is similar to the following projects permitted by NWCAA:

OAC 1297 Pacific Rim Tonewoods: one 2900 bf kiln used to dry maple and spruce wood. 0% opacity, 580,000 bf/yr limit, recordkeeping.

OAC 1295 Chemco: one 250,000 bf kiln used to cure resin for wood hardening process. VE limit 0% opacity, temperature limit & monitoring, TAP emission limitation.

OAC 1279 Skagit River Reman: four 25,000 bf kilns, VE limit 0% opacity, throughput limit, wood species restriction.

OAC 1257 Home Fire Prest Logs: 4.474 MMBtu/hr wood shaving rotary drum dryer. VE limit 5% opacity, fuel restriction, drying time, species & throughput limitation.

OAC 1048 Socco Forest Products: two 138,000 bf kilns, VE limit 10% opacity, computerized steam management system to control kiln temperatures to no more than 200 degrees F, species restriction, TAP emission limitation.

OAC 1319, Metrie (12/20/2019): two 80,000 bf kilns, VE limit 0% opacity, throughput limit of 0.636 MMBf/year based on modeling, temperature limitation to less than 200 degrees F.

OAC 1319a, Metrie (05/06/2020): increase of throughput after Tier II analysis by Ecology BACT for the kilns is keeping the temperature of the kiln below 200 degrees F.

**O. Basis for OAC conditions**

- (1) Limit for protecting SQER
- (2) Recordkeeping
- (3)-(6) Temperature control inside kilns, less than 200 F
- (7) Visible Emissions limit (BACT)

**P. Timeline and Review**

<b>Timeline</b>	<b>Date</b>
NOC Received	05/11/2020
NOC Incompleteness Determined (due 30 days from receipt)	05/18/2020
NOC Completeness Determined	

Final Decision Due (due 60 days from complete)		
Final OAC issued		
<b>Review</b>		<b>Date</b>
NWCAA Engineering	Dan Mahar	12/16/2019
NWCAA Compliance	Matt Holmquist	12/16/2019
Source	Doug Martin	12/17/2019