

# Statement of Basis for the Air Operating Permit—Final

## **Pacific Woodtech Corporation**

Burlington, Washington

**August 26, 2014**



*Serving Island, Skagit & Whatcom Counties*

## PERMIT INFORMATION

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**SIC: 2439**

**NWCAA ID: 1813-V-S**

**NAICS: 321213**

**EPA AFS: 53-057-00055**

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September 18, 2012	August 26, 2018

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## **1 INTRODUCTION**

The Pacific Woodtech Corporation (identified herein as the permittee, the facility or PWC) is required to have an air operating permit (AOP) because the facility has the potential to emit greater than 10.0 tons of methanol per year. This air pollutant is defined as a regulated pollutant in Chapter 173-401 of the Washington Administrative Code (WAC).

The purpose of this Statement of Basis is to set forth the legal and factual basis for the conditions of the PWC AOP in accordance with WAC 173-401-700(8) and to provide background information to facilitate review of the permit by interested parties. This Statement of Basis is not a legally enforceable document.

### **1.1 AOP History and Permit Changes in the First Renewal**

An application for an AOP was submitted by PWC on September 18, 2007; the original AOP was issued on March 17, 2008.

The application for the first AOP renewal was received by Northwest Clean Air Agency (NWCAA) on September 18, 2012. The application was found to be complete on January 1, 2013.

#### **1.1.1 Overall**

The entire air operating permit was reformatted to current Agency standards. Both the AOP and this Statement of Basis were given the new cover page.

#### **1.1.2 General Information and Attest**

The names of the facility responsible official, corporate inspection contact, and the Agency engineer responsible for the preparation of this AOP renewal was updated.

#### **1.1.3 AOP Section 1 Emission Unit Identification**

Table 1-1 was modified based on PWC guidance to better reflect the grouping and organization of emission points at the facility.

#### **1.1.4 AOP Section 2 Standard Terms and Conditions**

Section 2 was updated with current NWCAA standard language, which includes new and modified applicable regulations such as state greenhouse gas reporting requirements and updated citation dates.

#### **1.1.5 AOP Section 3 Standard Terms and Conditions for NSPS**

Section 3 was updated with current NWCAA standard language consistent with the National Emission Standards for Hazardous Air Pollutants (NESHAP) that apply to the PWC facility. New and modified applicable regulations and updated citation dates are included.

#### **1.1.6 AOP Section 4 and 5 Generally and Specifically Applicable Requirements**

Section 4 was reorganized to be consistent with other NWCAA AOPs and was updated to reflect current applicable regulations and effective dates. NWCAA 460 was deleted from Section 4 of the AOP because the regulation does not apply; the aggregate heat input at the PWC facility is less than the applicability threshold of 500 MMBtu/hr.

Section 4 primarily lists NWCAA and Washington Administrative Code (WAC) regulations, which often lack specific methods for compliance determination and require that additional monitoring, recordkeeping and recording (MR&R) provisions be added to the AOP for the purpose of compliance determination. This aspect of Air Operating Permits, known as gap-

filling, is discussed further in sec. 4.4 of this document. Most gap-filled requirements in the AOP Section 4 were modified substantially for this renewal.

In this renewal AOP, the main Section 5 table was divided into five separate tables that list requirements for each set of similar emission points: Plantwide, Line 1 and Line 2 presses, Baghouses 1, 2, & 3, Baghouse 4, and Heaters and Burners. Requirements listed in OAC 1151 for Baghouse 4 were added in this renewal.

Pacific Woodtech is subject to the plywood MACT, 40 CFR 63 Subpart DDDD. The only requirement the facility must meet under this regulation is to submit an initial notification. Pacific Woodtech submitted the required initial notification on December 20, 2007 to EPA Region 10. A copy was provided to the NWCAA on May 27, 2008. Since the initial notification requirement was met, the one-time notification requirement of 40 CFR 63 Subpart DDDD was deleted from Section 5. A place-holder was left in Section 5 to identify 40 CFR 63 Subpart DDDD as an applicable regulation without any on-going compliance requirements. See sec. 4.2 of this Statement of Basis for further detail.

Four natural gas-fired process heaters at the PWC facility are subject to the Boiler MACT, 40 CFR 63 Subpart DDDDD: the two 7.5 MMBtu/hr thermal oil heaters that provide heat for the LVL presses and the two 2.8 MMBtu/hr I-line hot house heaters. Boiler MACT requirements applicable to these heaters were incorporated into the renewal AOP. See the discussion on 40 CFR 63 Subpart DDDDD in sec. 3.2 of this Statement of Basis for further detail.

A more detailed review of the applicability of 40 CFR 64 Compliance Assurance Monitoring (CAM) to baghouse particulate matter emissions was included in this Statement of Basis. See sec. 3.3 for more detail.

MR&R requirements listed in Section 5 were updated, and gap-filled MR&R requirements were more clearly identified.

### **1.1.7 AOP Section 6 Inapplicable Requirements**

PWC did not request a permit shield for inapplicable requirements.

## 2 FACILITY DESCRIPTION

### 2.1 General Facility Description

#### 2.1.1 Commercial Products Produced

Pacific Woodtech Corporation (PWC) is a manufacturer of laminated veneer lumber (LVL) and wood I-joists. The sawdust by-product of primary manufacturing is sold to a wholesaler for use as fuel and animal bedding.

LVL is a composite of wood veneer sheet elements with wood fiber primarily oriented along the length of the member. The veneer sheets are bonded together with structural exterior exposure adhesive. LVL applications include structural members such as headers and rim board, flanges for I-joists, and scaffold planks.

Wood I-joists are structural members manufactured using sawn lumber or LVL flanges and wood structural panel webs bonded together with structural exterior exposure adhesive to form an “I” cross-sectional shape. PWC primarily uses LVL flanges, produced by PWC, and oriented strand board (OSB) web stock, produced by others, to manufacture I-joists. Sawn lumber flanges are occasionally used and are supplied by others. I-joist applications include roof and floor systems.

#### 2.1.2 Manufacturing Processes

PWC receives dried veneer from others. Some of the veneer is processed further by PWC on the Scarf Line where it is trimmed to a uniform length and in some cases receives a tapered cut along its short edge. Not all veneer received by PWC is processed on the Scarf Line.

PWC operates two nearly identical continuous LVL presses. Line 1 began operation in 2000 and Line 2 began operation in 2006.

Veneer is fed into the presses where each sheet passes through a glue curtain where it is coated with a uniform layer of adhesive. PWC uses a phenol-formaldehyde-based adhesive. In some cases a catalyst is added to the adhesive mix for greater control of the resin cure time. An insecticide, whose active ingredient is Imidacloprid<sup>1</sup>, is also occasionally added to the adhesive mix.

The adhesive-coated veneer is then layered. The mat is pre-heated by a microwave before entering the press. Once in the press heat and pressure are applied to form the mat into the intended thickness. The heat for the press is supplied by thermal oil. The thermal oil is heated in natural gas-fired heaters.

The completed LVL billet is cut to length and both edges are hogged to give uniform width as it exits the press. The LVL billets are stacked in the warehouse. Some LVL billets are wrapped and sold as full billets. Most billets are sent through one of three rip saws where they are cut to final width as headers or flanges.

The headers continue down the line where most receive a layer of wax sealant on all surfaces. The headers are then wrapped, prepared for shipping, and sent outside for storage before leaving by truck or rail for sale.

The flanges enter into the I-line assembly process. The flanges have a rout cut into them for their entire length. OSB web is inserted into this rout and this joint is held together with a polyurethane adhesive. The OSB is received from others by PWC in 8' by 8' sheets. The OSB is cut to width in the web saw. The OSB web is then profiled on all four edges before it

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<sup>1</sup> <http://en.wikipedia.org/wiki/Imidacloprid>.

joins the flange. The completed I-joist is cut to length, wrapped, prepared for shipping, and sent outside for storage before leaving by truck or rail for sale.

### **2.1.3 Other Processes**

Four make-up air units are used by PWC. These make-up air units are fueled by natural gas. The make-up air units provide heat for the plant and air into the plant to maintain equal pressure.

### **2.1.4 Operating Schedule**

Both LVL lines are capable of running around the clock continuously except for maintenance. At a minimum the LVL lines need 12 hours of downtime every two weeks for maintenance.

The I-line is capable of running for 16 hours before requiring a downtime of 8 hours for cleaning and maintenance. The I-line also requires 12 hours of downtime every two weeks for more comprehensive maintenance.

The entire facility is shut down for a minimum of 7 days a year for holiday vacations and overall maintenance of plant infrastructure.

The PWC facility is located at 1850 Park Lane in Burlington, Washington.

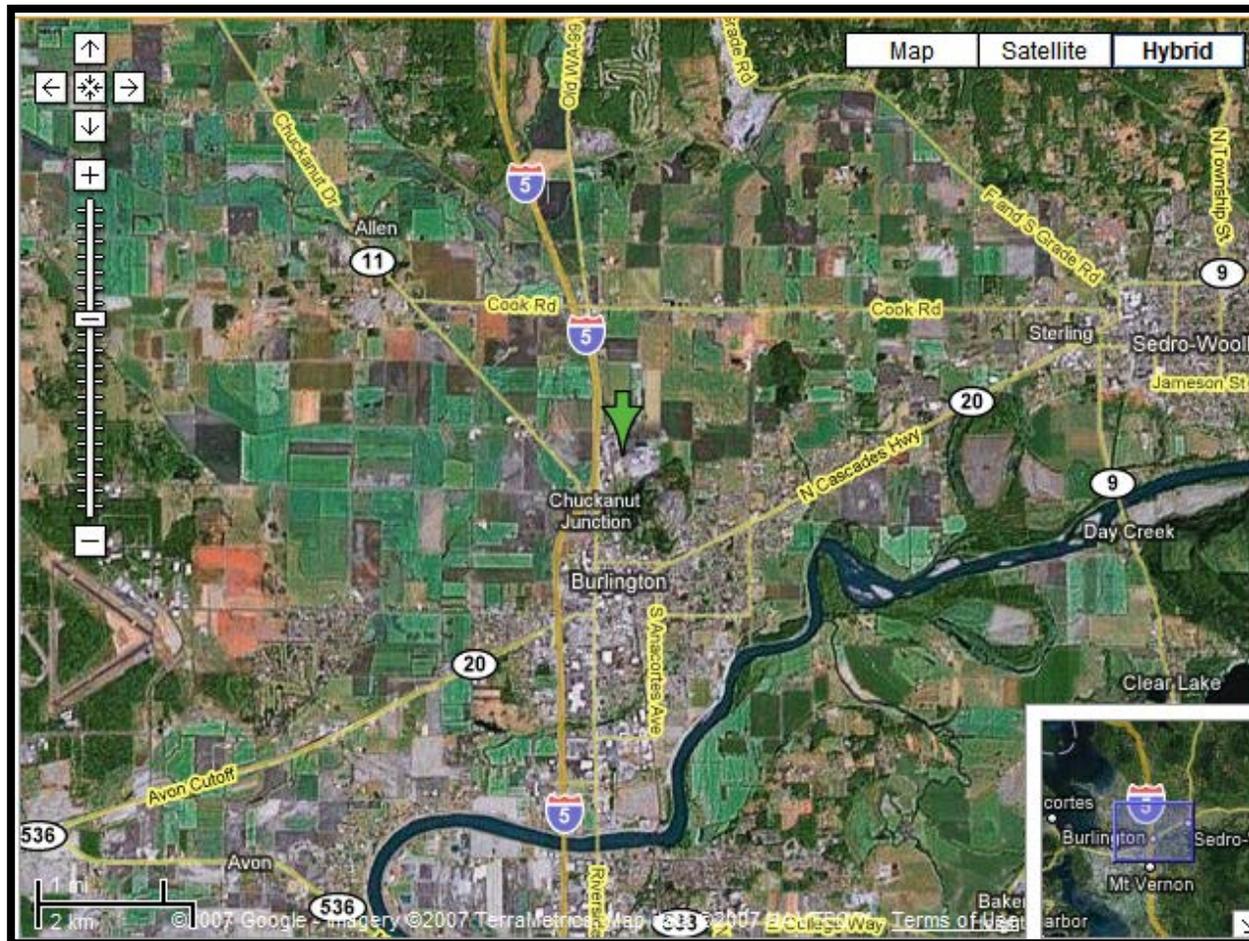


Figure 2-1 Location of Pacific Woodtech Corporation

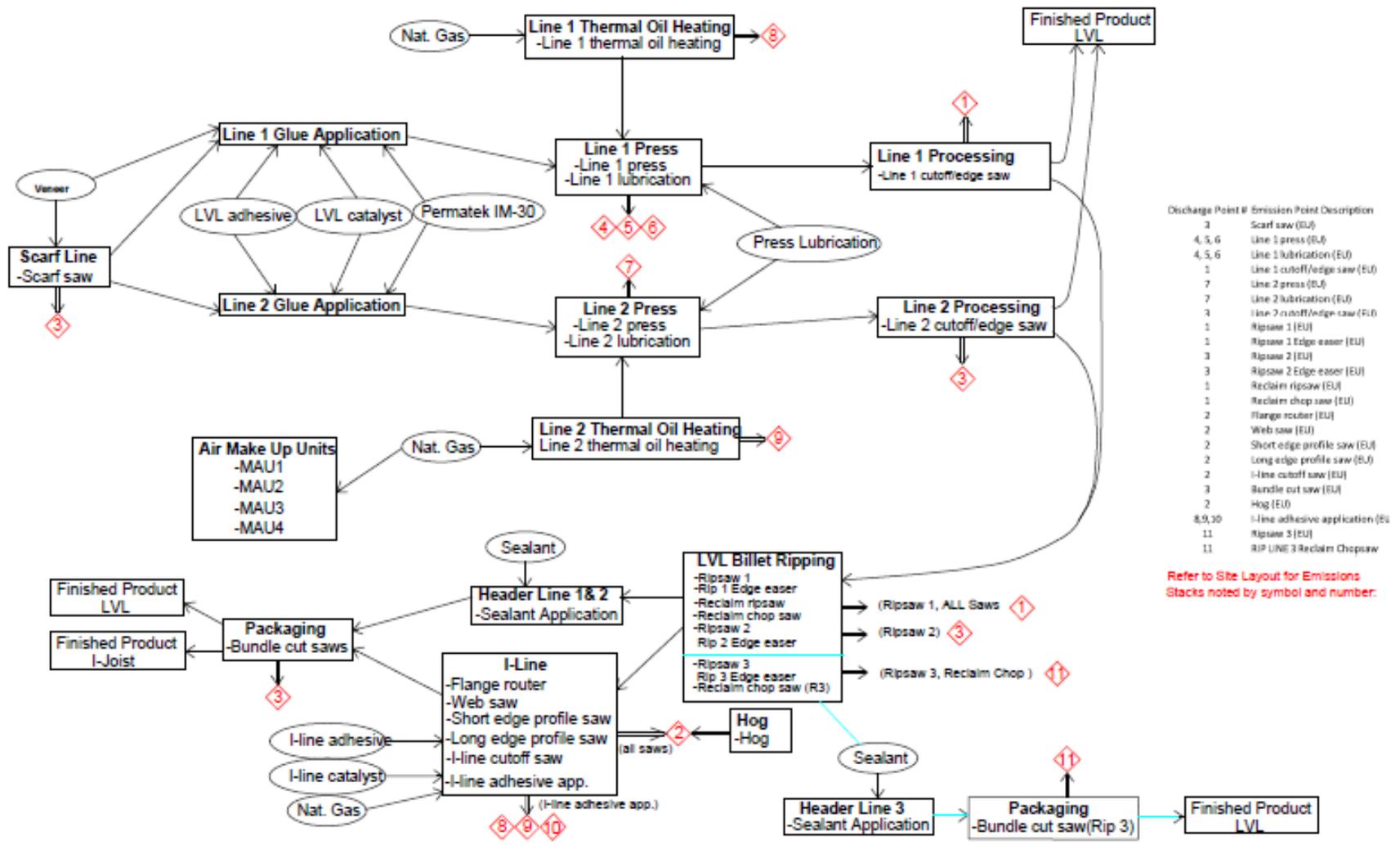


Figure 2-2 Process flow diagram

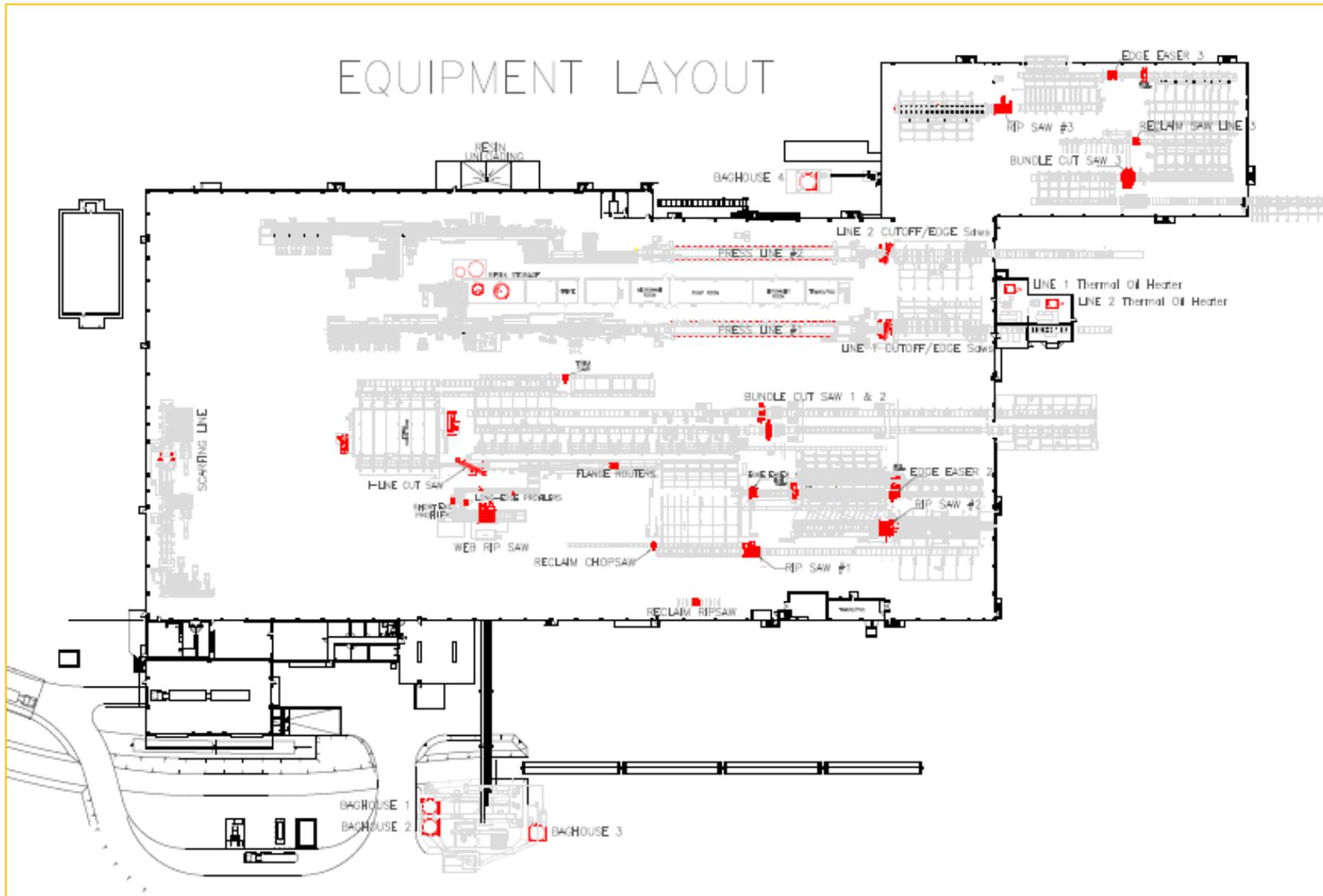


Figure 2-3 Process equipment layout

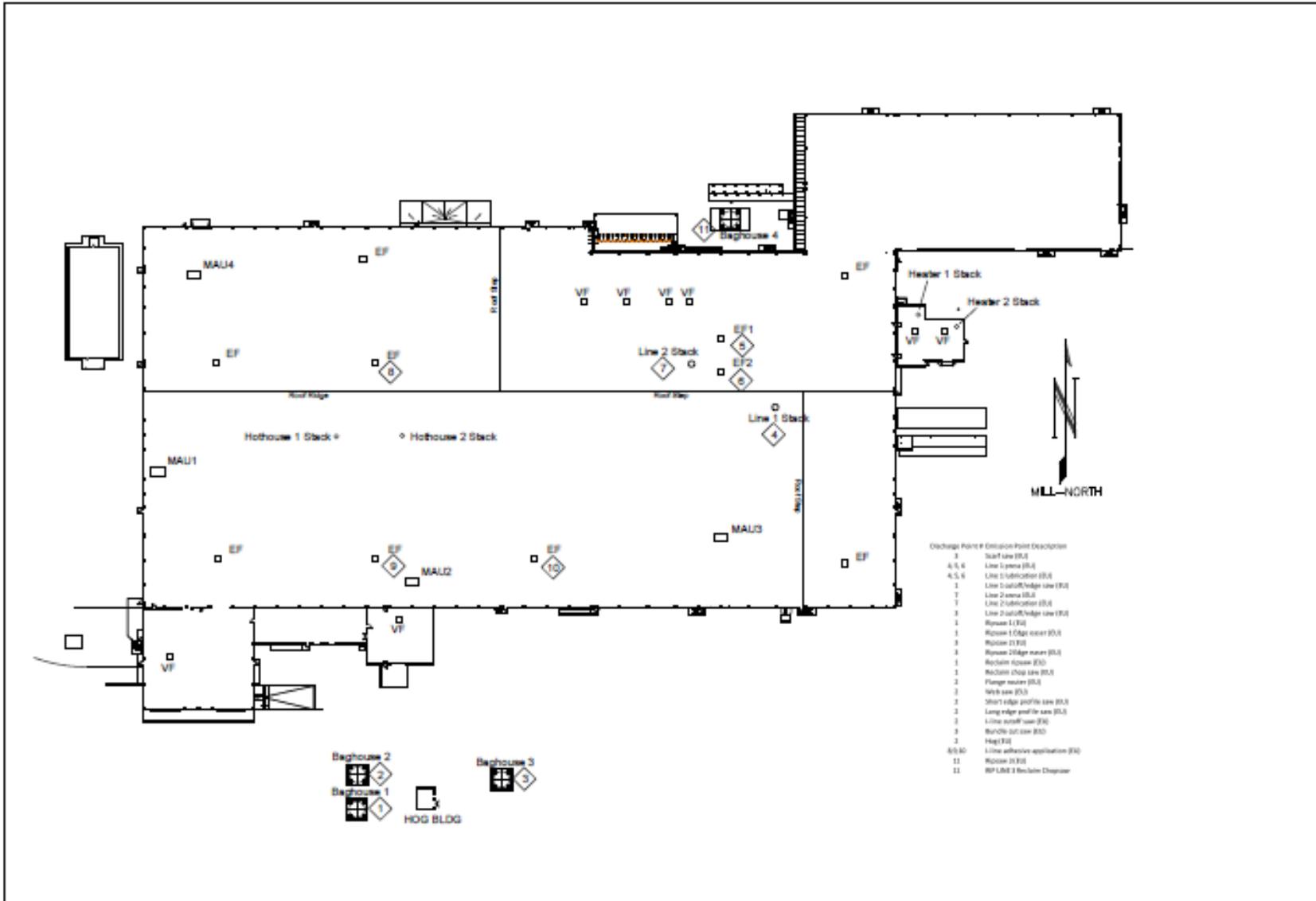


Figure 2-4 Discharge (stack) locations on roof

## **2.2 Emissions Unit Description**

### **Plant-wide**

This category includes all emission units that do not have specific permit requirements. Requirements for these units are in Section 4 of the AOP.

### **Scarf Line**

Raw veneer is checked for moisture content and other defects. Raw veneer is trimmed to length and in some cases receives a tapered cut on the short edge. Particulate emissions from the Scarf Line are controlled by Baghouse 3.

### **Line 1 Glue Application**

On Line 1, resin is mixed with additives and applied via glue curtain to sheets of veneer. There is no control device for this operation, which is vented to the atmosphere through the Line 1 stack and exhaust fans 1 and 2 (EF1 and EF2).

### **Line 1 Press**

On Line 1, alternating layers of veneer and resin are pre-heated with a microwave before entering a continuous press that applies heat and pressure. There is no control device for this operation, which is vented to the atmosphere through the Line 1 stack and EF1 and EF2.

### **Line 1 Processing**

On Line 1, completed billets exiting the press are cut to length and both edges of the billet are hogged to maintain a consistent billet width. Particulate emissions from the Line 1 billet saws are controlled by Baghouse 1.

### **Line 2 Glue Application**

On Line 2, resin is mixed with additives and applied via glue curtain to sheets of veneer. There is no control device for this operation, which is vented to the atmosphere through the Line 2 stack.

### **Line 2 Press**

On Line 2, alternating layers of veneer and resin are pre-heated with a microwave before entering a continuous press that applies heat and pressure. There is no control device for this operation, which is vented to the atmosphere through the Line 2 stack.

### **Line 2 Processing**

On Line 2, completed billets exiting the press are cut to length and both edges of the billet are hogged to maintain a consistent billet width. Particulate emissions from the Line 2 billet saws are controlled by Baghouse 3.

### **LVL Billet Ripping**

Full billets are fed into ripsaws to be cut into smaller widths for use as headers or I-joint flanges. Particulate matter emissions from LVL billet ripping are controlled by Baghouse 1, 3, and 4.

### **Header Line**

LVL Headers receive ink stamps and an optional wax sealant coating. This process is vented to Baghouse 3 for Ripsaw #2 and Baghouse #4 for Ripsaw #3.

### **I-Line**

Flanges are combined with OSB web to construct wood I-joists. Particulate matter emissions from the I-line are controlled by Baghouse 2.

## Packaging

Finished products are wrapped and prepared for shipping. This often includes final length cut using the bundle cut saws. Line #1 and Line #2 saws are controlled by baghouse #3. Header rip line bundle cut saw #3 is controlled by baghouse #4.

### Line 1 Thermal Oil Heating

Thermal oil is used to heat the Line 1 Press and is itself heated by a 7 MMBtu/hr heat input natural gas-fired heater. There is no control device for the gas-fired heater, which is vented to the atmosphere through the Heater 1 stack.

### Line 2 Thermal Oil Heating

Thermal oil is used to heat the Line 2 Press and is itself heated by a 9 MMBtu/hr heat input natural gas-fired heater. There is no control device for the gas-fired heater, which is vented to the atmosphere through the Heater 2 stack.

### Air Make-Up Units

Air is brought into the plant and heated in natural gas-fired heaters. This air serves to maintain pressure differentials and to provide heat to the facility. There are no control devices on the make-up air units (MAU), which vent to the atmosphere through four MAU stacks.

## Hog

Unusable scraps of veneer, LVL, or I-joist are hogged into sawdust. Particulate matter from the hog saw is controlled by Baghouse 2.

## 2.3 Emissions Inventory

Table 2-1 and Table 2-2 below show the recent emissions history of the facility as identified in the annual emissions inventories submitted to NWCAA for the six-year period from 2007 through 2012. Table 2-1 lists the criteria pollutant emissions in tons per year, and Table 2-2 lists the toxic pollutant emissions in pounds per year. PWC is not, at this time, required to submit emissions inventory data for greenhouse gases. See sec. 3.6 of this Statement of Basis for more detail.

**Table 2-1 Criteria Pollutant Emissions Inventory, tons per year**

Pollutant, ton/yr	2007	2008	2009	2010	2011	2012
Total suspended particles (TSP)	5.4	4	2	3	3	3
PM <sub>10</sub>	0	0	0	0	0	0
PM <sub>2.5</sub>	0	0	0	0	0	0
SO <sub>2</sub>	0	0	0	0	0	0
CO	1.2	2	2	2	2	3
NO <sub>x</sub>	1.8	2	2	2	2	2
VOC	28.3	23	17	24	27	38

**Table 2-2 Toxic Pollutant Emissions Inventory, pounds per year**

Pollutant, lb/yr	2007	2008	2009	2010	2011	2012
4,4-Diphenyl-methane Diisocyanate	NR*	NR	NR	1	1	1
Acetaldehyde	1,459	1,225	925	1,287	1,209	1,671
Acetone	5,537	4,648	3,506	4,883	4,962	6,337
Formaldehyde	1,822	1,748	1,369	2,015	1,978	2,511
Methanol	17,545	16,841	13,180	19,410	19,053	24,181
Toluene	NR	NR	232	796	716	1,005

\*NR = Not reported.

## **2.4 Potential To Emit**

The facility qualifies as a major source subject to the requirements of the Title V program because it has the potential to emit more than 10.0 tons per year (tpy) of methanol, a pollutant that has been designated a hazardous air pollutant (HAP) in Section 112(b) of the Federal Clean Air Act. PWC calculations show that the facility, at full production for 8,760 hours per year, has the potential to emit 14.6 tons of methanol annually.

In addition to methanol emissions, emissions from the PWC facility include other toxic air pollutants from wood binding and treating activities (listed in Table 2-2 above), particulate matter (PM) from sawing activities, and products of combustion from thermal oil heaters, I-line hot house heaters, and make-up air units which provide space heating.

Potential to emit (PTE) calculations included with the PWC AOP renewal application show that emissions of the following EPA-listed HAPs (which are a smaller subset of the Washington State-listed Toxic Air Pollutants, or TAPs, listed in Table 2-2 above) are below the 10 tpy major source threshold: acetaldehyde, 1.1 tpy; formaldehyde, 1.5 tpy; methylene diphenyl diisocyanate (MDI), 0.0 tpy; propionaldehyde, 0.9 tpy; and toluene, 0.6 tpy.

PWC also emits criteria air pollutants due to natural gas combustion and sawing activities. Emissions of each criteria pollutant in quantities greater than 100 tpy qualify a source as major for that pollutant. PWC is not major for any criteria pollutant, as the calculated PTE for the following criteria pollutants show: PM, 19.9 tpy; CO, 5.6 tpy; NO<sub>x</sub>, 11.6 tpy.

## **2.5 Permitting History**

### **2.5.1 OAC 695**

On March 15, 1999, on behalf of Pacific Woodtech, Columbia Engineering International, Ltd., submitted a "Notice of Construction and Application for Approval" to construct a laminated veneer lumber (LVL) header and I-beam plant at 1850 Park Lane, Burlington Hill Business Park, Burlington, Washington. Emission sources from the LVL plant were to include particulate matter from sawing operations, VOC/HAP from gluing, lamination and pressing, and NO<sub>x</sub>, CO, and VOC from assorted natural gas-fired heaters. Wood dust emissions were to be controlled using two Air-Cure model 376AC10 baghouse filters with an efficiency of 99.96%. Best Available Control Technology for natural gas-fired heaters was considered to be fuel selection and good operation and maintenance practices. OAC 695 was issued on May 19, 1999. OAC 695 limited VOC emissions to 21.4 tons per year, and emissions of any single HAP (methanol, formaldehyde,

etc.) to 9.0 tons per year. Compliance with these limits was to be determined by tracking of purchases of raw materials, such as resin and press lube oil.

The OAC “preamble” contained a statement that, “A tier 1 modeling analysis has indicated that without controls formaldehyde emissions will exceed the acceptable source impact levels as defined in WAC 173-460. Best Available Control Technology for Toxics (T-BACT for formaldehyde) was determined to be a packed tower scrubber. The Agency required that PWC use a SLY, Inc. Model 102-120 packed tower scrubber to control formaldehyde emissions from the press exhaust hood and billet stacker hood with a control efficiency of 95%.”

### **2.5.2 OAC 695a**

An amended application, dated June 10, 1999, and NCASI technical bulletin #769 entitled “Volatile Organic Compound Emissions from Wood Products Manufacturing Facilities Part II – Engineered Wood Products” were submitted by Columbia Engineering International, Ltd. on behalf of Pacific Woodtech. The NCASI Technical Bulletin contained new testing data indicating that formaldehyde emissions from resin use would not exceed the acceptable source impact level for formaldehyde as defined in WAC 173-460. PWC requested removal of the requirement for installation of a scrubber and some changes to allowable emissions. One new requirement in OAC 695a was that PWC perform a source test to verify that formaldehyde emissions would not be released in quantities sufficient to cause impacts in excess of the ASIL of 0.077 microgram per cubic meter ( $\mu\text{g}/\text{m}^3$ ). The source test took place in 2002. The results of the test indicate emissions were below 0.077  $\mu\text{g}/\text{m}^3$  (in compliance with the limit).

### **2.5.3 OAC 933**

On June 17, 2005 PWC applied to install a second laminated veneer lumber (LVL) manufacturing line. The facility proposed to use a continuous Dieffenbacher press to produce a billet of laminated softwood from previously dried veneer which is then cut to produce headers and I-beams. To support the LVL line, a 9.0 MMBtu/hr natural gas-fired thermal oil heater, two make-up air heaters (each 2.5 MMBtu/hr), hooding and venting equipment, and a Superior Systems Model 13-416-10 baghouse were proposed to be added. The facility would increase emissions of the toxic air contaminants formaldehyde and methanol from the pressing operation and criteria pollutants from the support equipment. With the startup of the Line 2 Press, the facility would become subject to the Air Operating Permit program.

OAC 933 was issued on October 10, 2005, superseding OAC 695a; the conditions of OAC 933 are contained in Section 5 of the AOP.

### **2.5.4 OAC 1151**

In March 2013, PWC applied to construct and operate a new saw cutting area and baghouse to expand LVL sawing capability. PWC purchased a used baghouse and a new fan for this project, which will control particulate matter emissions generated by the operation of a multi-blade ripsaw, a cross-cut saw, a bundle cut package band saw, and two edge easer motors, each with two saw blades. OAC 1151 was issued on August 26, 2013 and establishes limits for particulate matter emissions, source testing requirements, and stack exhaust height. PWC must also monitor baghouse differential pressure daily when the saw cutting area is in operation and maintain monitoring records. The saw cutting area commenced operations on January 2, 2014.

## **2.6 Compliance History**

PWC was initially registered by the NWCAA on June 28, 1999.

### **2.6.1 Notice of Violation**

PWC is required to notify NWCAA if excess emissions are released to the atmosphere or if the facility deviates from AOP terms. NWCAA personnel also conduct annual site inspections to

evaluate facility emissions, monitoring, recordkeeping, and reporting against AOP requirements. NWCAA then makes a determination as to whether there are any violations of AOP terms. If a violation is determined to have occurred, enforcement action may be taken. This may include issuance of a Notice of Violation (NOV), reporting in the Aerometric Information Retrieval System (AIRS) database, and possible listing with EPA Region 10 as a High Priority Violation (HPV). The source is then tracked until it returns to compliance.

NWCAA has issued four NOV's to PWC since 1999. The NOV's are summarized in Table 2-3 below. At the time of this permit issuance, there is one pending enforcement action.

**Table 2-3 Notices of Violation – Pacific Woodtech Corporation**

NOV	Date Issued	Description	Disposition
3569 (Warning)	January 17, 2007	PWC failed to notify NWCAA of a change in catalysts as required by OAC 933.	None.
3711	July 31, 2008	PWC failed to conduct all required monitoring, recordkeeping, and reporting as required; in particular, Baghouse 3 exceeded operating parameters and no reports were made to NWCAA nor were records properly generated.	A penalty, Consent Order and Assurance of Discontinuance (AOD) issued. PWC shall not substantially violate certain AOP terms for five years. PWC shall meet all AOP conditions and shall be subject to NOV for failure to meet AOP terms irrespective of violating the AOD. Penalty paid.
3848	June 17, 2010	PWC failed to submit the 2009 Annual Compliance Certification by the February 28, 2010 deadline.	Penalty levied and paid.
3972	September 12, 2012	Baghouse 1 exceeded its opacity limit.	Penalty levied and paid.
4036	September 5, 2013	Contractor failed to obtain an OAC for a crusher prior to using the crusher at PWC. NOV issued to contractor and PWC.	OAC application has not been received. No penalty assessed to date.

While NOV 4036 is still outstanding, no changes will be made to the AOP as a result of this violation. The crusher used at PWC and cited in NOV 4036 is owned by a contractor and was only on-site for the length of the project. Therefore, no changes are needed to the AOP as a result of this violation.

**2.6.2 Compliance Reports**

The PWC AOP requires semiannual and annual reports to be submitted to the NWCAA as part of the facility's ongoing compliance demonstration. In addition, permit deviations must be reported within 30 days of the end of the month in which the deviation was discovered. Semiannual and annual reports submitted by PWC are certified by the responsible official. Certification of the truth and accuracy of reported information by the responsible official is required at least semiannually. Annually, the responsible corporate official certifies compliance with all applicable requirements in the AOP term by term and whether the facility was fully or intermittently in compliance with each term.

### 3 BASIS OF REGULATION APPLICABILITY

#### 3.1 40 CFR 60 – New Source Performance Standards (NSPS)

No federal New Source Performance Standards apply to PWC.

#### 3.2 40 CFR 63 – National Emissions Standards for Hazardous Air Pollutants (NESHAP)

The facility is subject to **40 CFR 63 Subpart DDDD—National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products** (PCWP) because the facility is a major source of HAP emissions and manufactures composite wood products by bonding veneers with resin under heat and pressure to form an engineered wood product.

Table 1 of the Federal Register in which 40 CFR 63 Subpart DDDD was promulgated (69 FR 45949; 7/30/04) lists process units subject to the final control requirements in which engineered wood product (EWP) presses are listed separately from reconstituted wood product (RWP) presses. Under the rule, RWP presses are subject to control requirements as either new or existing affected sources. Both new and existing EWP presses are clearly excluded from control requirements established by this rule. PWC employs EWP presses to manufacture composite wood products.

40 CFR 63 Subpart DDDD distinguishes between engineered wood products (EWP) and reconstituted wood product (RWP) presses by the following definitions (40 CFR 63.2292):

*Engineered wood product* means a product made with lumber, veneers, strands of wood, or from other small wood elements that are bound together with resin. Engineered wood products include, but are not limited to, laminated strand lumber, laminated veneer lumber, parallel strand lumber, wood I-joists, and glue-laminated beams.

*Reconstituted wood product press* means a press, including (if applicable) the press unloader, that presses a resinated mat of wood fibers, particles, or strands between hot plates or hot rollers to compact and set the mat into a panel by simultaneous application of heat and pressure. Reconstituted wood product presses are used in the manufacture of hardboard, medium density fiberboard, particleboard, and oriented strandboard. Extruders are not considered to be reconstituted wood product presses. A *reconstituted wood product press* is a process unit.

The affected sources at PWC under 40 CFR 63 subpart DDDD include the EWP presses, “miscellaneous finishing operations”, and “miscellaneous coating operations”. PWC applies ink stamps and edge seals to some products, which is considered a “group 1 miscellaneous coating operation”. Group 1 miscellaneous coating operations are subject to work practice requirements in Table 3 to this subpart per 40 CFR 63.2241. However, 40 CFR 63.2252<sup>2</sup> states that process units not subject to the compliance options or work practice requirements specified in 63.2240 are not required to comply with the requirements of subpart DDDD or subpart A of Part 63, except for initial notification. Therefore, since the EWP presses, miscellaneous coating operations, and other PCWP process activities at PWC are not subject to 63.2240, the processes at the facility are subject only to initial notification requirements in 63.9(b) (40 CFR 63 Subpart A). PWC submitted initial notification to NWCAA per 40 CFR 63.2252 as part of their original AOP application in 2007. In a separate correspondence, PWC submitted initial notification to EPA in 2007 as well.

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<sup>2</sup> 40 CFR 63 Subpart DDDD, §63.2252 (2/16/06): For process units not subject to the compliance options or work practice requirements specified in §63.2240 (including, but not limited to, lumber kilns), you are not required to comply with the compliance options, work practice requirements, performance testing, monitoring, SSM plans, and recordkeeping or reporting requirements of this subpart, or any other requirements in subpart A of this part, except for the initial notification requirements in §63.9(b).

**40 CFR 63 Subpart DDDDD – National Emissions Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters** (Boiler MACT) applies to the two 7.5 MMBtu/hr Line 1 Press and Line 2 press thermal oil heaters and to the two 2.8 MMBtu/hr I-line hot house heaters because these heaters meet the 63.7575 definition of process heater. These four heaters became subject to the Boiler MACT upon publication of the rule on January 31, 2013. Boiler MACT requirements for these units include a one-time 8-hour energy assessment, tune-ups once every two or five years, recordkeeping, and periodic reports. The compliance deadline for these existing units, as defined in the Boiler MACT, is January 31, 2016.

The length of the one-time energy assessment is determined according to the combined annual heat input capacity of affected process heaters in trillion Btu (TBtu) per year (by definition of energy assessment in 40 CFR 63.7575):

$$\left( \left( 2 \times 7.5 \frac{\text{MMBtu}}{\text{hr}} \right) + \left( 2 \times 2.8 \frac{\text{MMBtu}}{\text{hr}} \right) \right) \times 8760 \frac{\text{hr}}{\text{yr}} \times 10^{-6} \frac{\text{TBtu}}{\text{MMBtu}} = 0.18 \frac{\text{TBtu}}{\text{yr}}$$

As this combined annual heat input capacity of affected process heaters is below 0.3 TBtu/yr, the energy assessment requirement requires “8 on-site technical labor hours [by a *qualified energy assessor*] in length maximum, but may be longer at the discretion of the owner or operator of the affected source. The boiler system(s) and any on-site energy use system(s) accounting for at least 50 percent of the affected boiler(s) energy (e.g., steam, hot water, process heat, or electricity) production, as applicable, will be evaluated to identify energy savings opportunities, within the limit of performing an 8-hour on-site energy assessment”.

The four Make-Up Air Units are not subject to the Boiler MACT because they provide space heating to the facility and are exempt from the Boiler MACT by the definition of process heater in 63.7575, which specifically states that “[p]rocess heaters do not include units used for comfort heat or space heat...”

### **3.3 Compliance Assurance Monitoring (CAM)**

**40 CFR 64 – Compliance Assurance Monitoring:** PWC is subject to the CAM rule. The CAM rule under 40 CFR 64 requires owners or operators of subject sources to conduct monitoring that satisfies specific criteria established in the rule to provide a reasonable assurance of compliance with applicable requirements. Monitoring focuses on emission units that rely on pollution control equipment to achieve compliance. The CAM rule coordinates existing monitoring requirements with additional monitoring if current requirements fail to specify adequate detail. CAM applies to units that meet all three of the following criteria: (1) are subject to an emission limit, other than an emission limit from a NSPS or NESHAP that was proposed after November 15, 1990 (2) use an add-on control device to meet the emission limit, and (3) have potential pre-control device emissions that would classify the unit as a major source (referred to as an “uncontrolled major source”).

CAM applies to emission units equipped with add-on control devices; air pollution control devices in use at PWC are four baghouses (i.e., fabric filters). Therefore, the emission units that exhaust to these four baghouses are reviewed for CAM applicability. According to Chapter 1 of EPA’s CAM Technical Guidance Document<sup>3</sup>, pre-control device emissions can be estimated using post-control potential to emit and the estimated control device efficiency. Post-control annual potential to emit and control device efficiency estimates were included as part of the PWC AOP renewal application. By this estimate, all four emission points controlled by the baghouses emit greater than the major source threshold of 100 tons per year of PM10. See Table 3-1.

<sup>3</sup> [http://www.epa.gov/ttnchie1/mkb/documents/TSD\\_1.pdf](http://www.epa.gov/ttnchie1/mkb/documents/TSD_1.pdf)

**Table 3-1 CAM Applicability: PWC Baghouse PM10 Pre-Control Potential to Emit**

Emission point	Annual Potential to Emit, Tons PM	Add-on Control Estimated Efficiency	Estimated Pre-Control Annual Potential to Emit, Tons PM10*	Uncontrolled Major Source?
Baghouse 1	1.42	99.99%	5,680	Yes
Baghouse 2	1.19	99.99%	4,760	Yes
Baghouse 3	1.78	99.99%	7,120	Yes
Baghouse 4	1.49	99.99%	5,960	Yes

\* Based on the California Air Resources Board (CARB) Speciation Manual, as cited in the General Calculations Assumptions section of San Joaquin Valley Air Resources Board “Authority to Construct Application Review [for] Woodworking Operations”<sup>4</sup>, 40% of total PM mass is PM less than 10 µm (PM10).

Emissions from each of the four baghouses are subject to emission limits. Baghouses 1, 2, & 3 are subject to the AOP Section 4 generally applicable PM emission limit of 0.1 gr/dscf and a visible emissions limit of 20%. They are also subject to an AOP Section 5 specifically applicable opacity limit from OAC conditions, which requires that visible emissions from the baghouses not exceed 5% opacity for more than three minutes in any one-hour period. Baghouse 4 is subject to both the AOP Section 4 generally applicable PM emission limit of 0.1 gr/dscf and the Section 4 generally applicable visible emission limit of 20%. Baghouse 4 is also subject to an AOP Section 5 specifically applicable PM emission limit from an OAC condition of 0.005 gr/dscf and a 5% opacity limit from an OAC condition.

Visible emissions from baghouses are directly related to sawdust particulate matter emissions; when a baghouse is functioning properly, no visible emissions will be observed. Since each baghouse controls PM emissions to below the major source threshold (100 tpy PM emissions), 40 CFR 64.3(b)(4)(iii) requires data collection at least once per 24-hour period. The PWC AOP was modified during this renewal to include the PWC CAM Plan, which consists of daily observation of emissions from the baghouses and daily readings of the pressure drop across the baghouses. This monitoring plus monitoring records were found to be appropriate based on guidance provided by EPA in a Frequently Asked Questions Concerning the CAM Rule (October 2004) guidance document<sup>5</sup>. In this document, EPA stated that daily observation for any visible emissions from a baghouse stack satisfies the monitoring requirement of CAM for PM emissions.

### **3.4 Risk Management Plan (RMP)**

**40 CFR 68 – Chemical Accident Prevention Provisions:** PWC is not subject to the provisions of this program at the time of permit renewal. The goal of 40 CFR 68 and the Risk Management Program (RMP) it requires is to prevent accidental release of substances that can cause serious harm to the public and the environment and to mitigate the severity of releases if they do occur. If a tank, drum, container, pipe, or other process at a facility contains any of the regulated toxic and flammable substances listed in 40 CFR 68.130 in an amount above the

<sup>4</sup> [http://www.valleyair.org/busind/pto/gears/gear16\\_woodworking\\_ee.doc](http://www.valleyair.org/busind/pto/gears/gear16_woodworking_ee.doc)

<sup>5</sup> [www.epa.gov/ttn/emc/cam/camfaq1r1004.pdf](http://www.epa.gov/ttn/emc/cam/camfaq1r1004.pdf)

“threshold quantity” specified for that substance, the facility operator is required to develop and implement a risk management program. At the time of permit renewal, PWC states that no substance listed in 40 CFR 68.130 is maintained at the facility at or above threshold quantities. PWC will certify in the annual compliance certification that, should the facility become subject to the regulation, PWC will comply with the requirement to submit a Risk Management Plan according to the requirements of 40 CFR 68.

### **3.5 New Source Review (NSR)**

#### **3.5.1 Basic Information**

New Source Review (NSR) requires stationary sources of air pollution to acquire permits before they begin construction. NSR is also referred to as construction permitting or preconstruction permitting.

There are three types of NSR permits. A source may have to acquire one or more of these permits:

- Prevention of Significant Deterioration (PSD) permits, which are required for new major sources or a major source making a major modification in an attainment<sup>6</sup> area;
- Nonattainment NSR permits, which are required for new major sources or major sources making a major modification in a nonattainment area. (There are currently no areas classified as nonattainment with the NWCAA’s jurisdiction. Hence, the use of a nonattainment NSR permit is not required at this time.); and
- Minor source permits, which are required for sources that emit pollutants below the major source threshold but above the minor source threshold. It is generally the case that a major new or modified source will also require minor NSR permitting that covers a different subset of pollutants.

#### **3.5.2 What are Permits?**

Permits are legal documents that the source must follow. Permits specify what emission limits must not be exceeded and how the source is to demonstrate compliance with the set limits. Permits may contain conditions to ensure that the source is built according to the permit application upon which the permitting agency relies for air impact analysis. For example, the permit may specify a stack height that was used by the permitting agency to determine compliance with air pollutant limits. Some limits in the permit may be specified at the request of the source to keep them from being subject to other requirements. For example, the source may take limits in a minor NSR permit to keep the source out of PSD. To assure that sources follow permit requirements, permits also contain monitoring, recordkeeping, and reporting (MR&R) requirements.

#### **3.5.3 Who Issues the Permits?**

In Washington State most NSR permits are issued by the Washington State Department of Ecology (Ecology) or local air pollution control agencies. The EPA issues the permit in some cases. Ecology and local air pollution control agencies have their own permit programs that are approved by the EPA in the State Implementation Plan (SIP). In general, in the NWCAA jurisdiction, which encompasses Island, Skagit, and Whatcom Counties, Ecology issues major

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<sup>6</sup> An attainment area means a geographic area designated by EPA at 40 CFR 81 as having attained the National Ambient Air Quality Standard for a given criteria pollutant (Reference: WAC 173-400-030 (9)).

NSR permits (PSD permits) and NWCAA issues minor NSR permits (Orders of Approval to Construct, or OACs).

### **3.5.4 Prevention of Significant Deterioration (PSD)**

Up to the issuance date of this AOP renewal, PWC has not qualified as a major source under the PSD program (40 CFR 52.21) for any new projects undertaken since the establishment of the PSD program.

Before a major source can be constructed or modified in an area that meets all the health-based ambient air requirements (i.e. in an attainment area), the owner or operator must demonstrate that the project will not cause or contribute to violations of any ambient air quality standard or air quality increment through the PSD permitting program. Also, the owner or operator must demonstrate that the project will not cause significant deterioration in nearby Class I Areas (parks and wilderness areas).

### **3.5.5 Minor New Source Review**

New or modified sources of air pollution are required to obtain a permit from the NWCAA before construction begins. Permits are referred to as Orders of Approval to Construct (OACs) and contain requirements to minimize air pollution impacts on the environment. The type of activity, the size of the operation, and the kinds of pollutants emitted determine permit conditions.

### **3.5.6 Other Federal New Source Review Programs**

The entire jurisdiction of NWCAA is designated as in attainment for all criteria pollutants. For this reason no other federal new source review programs for new or modified sources of air pollution are applicable.

## **3.6 Greenhouse Gas (GHG) Regulation**

Greenhouse gases are chemicals that contribute to climate change by trapping heat in the atmosphere. The greenhouse gases (GHG) recognized by EPA and Ecology are: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF<sub>6</sub>). "Hydrofluorocarbons" or "HFCs" means a class of greenhouse gases primarily used as refrigerants, consisting of hydrogen, fluorine, and carbon.

PWC emitted 3,840 metric ton CO<sub>2</sub> equivalents<sup>7</sup> (CO<sub>2</sub>e) during the period between November 2012 and October 2013. Because the amount of GHG emissions from stationary sources located at PWC is below the reporting thresholds described below, PWC is not required, as of date of this permit renewal, to report GHG emissions.

### **3.6.1 40 CFR 98, Federal Mandatory Greenhouse Gas Emission Inventory Regulation**

This regulation does not apply to PWC at the time of this permit renewal because GHG emissions from stationary sources at PWC do not exceed the 25,000 metric ton CO<sub>2</sub>e reporting threshold. If at some point GHG emissions from stationary sources at the PWC facility do exceed 25,000 metric tons CO<sub>2</sub>e, then PWC will become subject to this rule. This regulation is implemented in its entirety by the EPA and is specifically excluded from appearing in a Title V air operating permit.

### **3.6.2 Chapter 173-441 WAC, Reporting of Emissions of Greenhouse Gases**

This rule does not apply to PWC at the time of this permit renewal because annual GHG emissions from stationary sources at PWC do not exceed the state greenhouse gas reporting

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<sup>7</sup> CO<sub>2</sub>e is the sum of metric tons per year of each greenhouse gas multiplied by the global warming potential (GWP) of the gas. For example, CO<sub>2</sub> has a GWP of 1, and methane has a GWP of 21. Then 100 tons of CO<sub>2</sub> and 10 tons of methane have a CO<sub>2</sub>e of: 100\*1 + 10\*21 = 100 + 210 = 310.

threshold. This rule requires greenhouse gas reporting for owners or operators of a source that emits at least 10,000 metric tons of greenhouse gases annually. The rule is similar to the existing Federal Mandatory Greenhouse Gas Emission Inventory Regulation (40 CFR 98). Should the annual emissions of GHG from PWC exceed the reporting threshold, then PWC will be required to report GHG emissions to Ecology according to the provisions of this rule.

## 4 GENERAL PERMIT ADMINISTRATION AND ASSUMPTIONS

### 4.1 Permit Content

The permit contains (1) standard terms, (2) generally applicable conditions for the type of facility permitted, and (3) specifically applicable conditions originating from approvals to construct and any regulatory orders referencing the facility. Applicable requirements that were satisfied by a single past action on the part of the source are not included in the permit but are discussed in this Statement of Basis. An example would be performance testing to demonstrate compliance with applicable emission limitations as a requirement of initial startup. Also, regulations that require action by a regulatory agency, but not of the regulated source, are not included as applicable permit conditions.

### 4.2 Excluded Requirements

The following portions of Condition 7 from Order of Approval to Construct (OAC) 933 and of Condition 11 from OAC 1151 are not included in the AOP because more stringent monitoring requirements from the PWC CAM plans require daily opacity monitoring:

- OAC 933, Condition 7: “Compliance with Condition 6 shall be monitored by observing the baghouses’ exhaust for visible emissions monthly for six consecutive months. ... If, at the end of the six month period of monthly monitoring, visible emissions have consistently been zero, monitoring may become quarterly. If visible emissions are detected for more than two minutes during any quarterly observation, inspection frequency shall revert to monthly until six consecutive months of acceptable observations are recorded. .... A request must be made to the NWCAA if the facility wishes to progress to quarterly monitoring”.
- OAC 1151, Condition 11: “The baghouse stack shall be observed at least once per operating week while it is operating and controlling emissions from sawing operations. ...”

Daily opacity monitoring established by the CAM plans meets the requirements of monthly and weekly monitoring required by OAC 933 and OAC 1151, respectively. The recordkeeping and reporting requirements established by OAC 933 and OAC 1151 are still included in the AOP terms that address baghouse opacity standards.

The following actions are noted as having been completed as required by OAC 933 and are not included in the AOP:

- OAC 933, Condition 13: “The permittee shall demonstrate compliance with the Washington Administrative Code (WAC) Chapter 173-460 within eight weeks of permit issuance. Compliance may be demonstrated through (a) computer modeling, or (b) installation of a ninety-four foot above grade exhaust stack for the Line 2 Press prior to initial startup. A report certifying compliance with this condition shall be submitted to the NWCAA at the end of the eight week period”. A report demonstrating compliance with WAC 173-460 by dispersion (computer) modeling was submitted to the NWCAA on December 7, 2005.
- OAC 933, Condition 17: “Written notification of initial startup of the second press line shall be submitted to the NWCAA no less than 20 days following startup”. Written notification of the first test billets produced by the Line 2 Press on August 29, 2006 was received by the NWCAA on September 1, 2006.

PWC is subject to 40 CFR 63 Subpart DDDD; however, no applicable requirements from this regulation are included in the AOP because only initial notification was required. The Title V permit regulations require that all applicable rules be identified; therefore, a place-holder has been left for 40 CFR 63 Subpart DDDD in Section 5 of the AOP. However, there are no on-going compliance requirements with the rule as PWC already satisfied the initial notification

requirement. PWC submitted an initial notification to NWCAA in August 2007 as part of its original AOP application and to EPA Region 10 by mail on 12/20/2007. 40 CFR 63 Subpart DDDD, §63.2252 (2/16/06) states “For process units not subject to the compliance options or work practice requirements specified in §63.2240 (including, but not limited to, lumber kilns), you are not required to comply with the compliance options, work practice requirements, performance testing, monitoring, SSM plans, and recordkeeping or reporting requirements of this subpart, or any other requirements in subpart A of this part, except for the initial notification requirements in §63.9(b)”. Line 2 commenced operation on August 29, 2006, and PWC had one year to submit an AOP application. PWC submitted an AOP application on August 29, 2007. 40 CFR 63.2233(c) requires that an area source that increases its potential to emit such that it becomes a major source of HAP must be in compliance with Subpart DDDD by 10/1/07 or upon initial startup of the affected source as major source, whichever is later. PWC became an affected source upon startup of the Line 2 press, and had 120 days from 10/1/07 (the later compliance date) to submit initial notification. The 40 CFR 63 Subpart DDDD initial notification was submitted (postmarked) by mail on December 20, 2007, 80 days after the 10/1/07 compliance date and within the 120 days allowed by 40 CFR 63.9(b).

### **4.3 Federal Enforceability**

Federally enforceable requirements are terms and conditions required under the Federal Clean Air Act or under any of its applicable requirements such as NSPS or NESHAP. Local and state regulations may become federally enforceable by formal approval and incorporation into the State Implementation Plan (SIP) or through other delegation mechanisms. Federally enforceable requirements are enforceable by the EPA and citizens of the United States. All applicable requirements in the permit including Standard Terms and Conditions, Generally Applicable Requirements, and Specifically Applicable Requirements are federally enforceable unless identified in the permit as enforceable only by the state (i.e., labeled as “state only” by the regulation citation).

Chapter 173-401 WAC is not federally enforceable although the requirements of this regulation are based on federal requirements for the air operating permit program. Upon issuance of the permit, the terms based on Chapter 173-401 WAC become federally enforceable for the source.

Most rules and requirements are followed by a date in parentheses. Two different versions (identified by the date) of the same regulatory citation may apply to the source if federal approval/delegation lags behind changes made to the Washington Administrative Code (WAC) or the NWCAA Regulation. The date associated with a WAC regulation denotes the “State Effective Date” of the regulation. For SIP-approved WAC regulations (identified by the absence of the “state only” designation), the date represents the “State Effective Date” of the regulation version that was SIP-approved. For NWCAA regulations, the date represents the most recent Board of Directors adoption date, which is identified as the “Passed” or “Amended” date in the NWCAA Regulation. For SIP-approved NWCAA regulations (also identified by the absence of the “state only” designation), the parenthetical date represents the “Passed” or “Amended” date of the regulation version that was SIP-approved. The date associated with an OAC or PSD permit represents the latest revision date of that order. For a federal rule, the date is the rule’s most recent promulgation date prior to issuance of the AOP.

### **4.4 Gap-Filling**

Title V of the Federal Clean Air Act is the basis for the EPA’s 40 CFR 70, which is the basis for the State of Washington air operating permit regulation, Chapter 173-401 WAC. Title V requires that all air pollution regulations applicable to the source be called out in the AOP for that source. Title V also requires that each applicable regulation be accompanied by a federally enforceable means of “reasonably assuring continuous compliance.” Some of the older general regulations and federal NSPS do not have monitoring, recordkeeping and reporting requirements that are sufficient to reasonably assure continuous compliance with emission limitations. Title V, 40 CFR

70, and WAC 173-401-615 all contain a “gap-filling” provision for that situation<sup>8</sup>. The permitting agency is required to create MR&R requirements that fill the gap and to incorporate those requirements into the air operating permit. For instance, nuisance rules and opacity requirements have site-specific gap-filled obligations for the source. If a requirement has been gap-filled in the AOP, the MR&R for that term will state “*Directly Enforceable*” above the gap-filled text.

On August 19, 2008, the U.S. Court of Appeals vacated EPA’s 2006 interpretive rule that prohibited states from enhancing monitoring in Title V permits. As a result, permitting authorities again must ensure that monitoring in each permit is sufficient to assure compliance with the terms and conditions of the permit.

#### **4.5 Future Requirements**

Applicable requirements promulgated with future effective compliance dates may be included as applicable requirements in the permit. Some requirements that are not applicable until triggered by an action, such as the requirement to file an application prior to constructing a new source, are addressed within the standard terms and conditions section of the permit.

There are presently no pending applications to construct or modify PWC in such a way as to trigger New Source Review. PWC has certified in the permit application that the facility will meet any future applicable requirements on a timely basis.

#### **4.6 Compliance Options**

PWC did not request emissions trading provisions or specify more than one operating scenario in the air operating permit application; therefore, the permit does not address these options as allowed under WAC 173-401-650. This permit does not condense overlapping applicable requirements (streamlining) nor does it provide any alternative emission limitations.

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<sup>8</sup> WAC 173-401-615(1) Monitoring. Each permit shall contain the following requirements with respect to monitoring:  
(b) Where the applicable requirement does not require periodic testing or instrumental or noninstrumental monitoring (which may consist of recordkeeping designed to serve as monitoring), periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source’s compliance with the permit, as reported pursuant to subsection (3) of this section. Such monitoring requirements shall assure use of terms, test methods, units, averaging periods, and other statistical conventions consistent with the applicable requirement. Recordkeeping provisions may be sufficient to meet the requirements of this paragraph; and  
(c) As necessary, requirements concerning the use, maintenance, and, where appropriate, installation of monitoring equipment or methods.

## **5 PERMIT ELEMENTS AND BASIS FOR TERMS AND CONDITIONS**

### **5.1 Permit Organization**

The Pacific Woodtech Corporation Air Operating Permit (AOP) is divided into the following sections:

**Permit Information**

**Attest**

**Table of Contents**

**Section 1 Emission Unit Identification**

**Section 2 Standard Terms and Conditions**

**Section 3 Standard Terms and Conditions for National Emission Standards for Hazardous Air Pollutants**

**Section 4 Generally Applicable Requirements**

**Section 5 Specifically Applicable Requirements**

**Section 6 Inapplicable Requirements**

### **5.2 Permit Information and Attest**

#### **5.2.1 Permit Information**

The Permit Information page identifies the source and provides general information relevant to the permit such as the facility address, the responsible corporate official, the permit issuance date and the permit expiration date, and the agency personnel responsible for permit preparation, review, and issuance.

#### **5.2.2 Attest**

The Attest page provides authorization for the source to operate under the terms and conditions contained in the permit.

### **5.3 AOP Section 1 Emission Unit Identification**

The Emission Unit Identification section lists process names and descriptions, emission points, and associated control device, if any. This section provides a general overview of the facility. More detailed information about the plant can be found in this Statement of Basis, the permit application, and supporting files.

### **5.4 AOP Section 2 Standard Terms and Conditions**

The Standard Terms and Conditions section of the permit specifies administrative requirements or prohibitions with no ongoing compliance monitoring requirements. The legal authority for the Standard Terms and Conditions are provided in the citations in Section 2 of the permit. The description of the regulation in each of these conditions (with the exception of those labeled “Directly enforceable under WAC 173-401-615(1)(b) & (c), 10/17/02”) is sometimes a paraphrase of the actual regulatory requirement. Where there is a difference between the actual requirement and the paraphrased description, the cited regulatory requirement takes precedence. In an effort to make the section more readable, the terms and conditions have been grouped by function. In some cases, similar requirements at the state and local authority level are grouped together.

Several permit conditions in Section 2 are labeled “Directly enforceable under WAC 173-401-615(1)(b) & (c), 10/17/02”. These conditions are a clarification of the regulatory requirements, as the NWCAA interprets those requirements. They are legal requirements, directly enforceable through the permit, with which the permittee must comply.

A number of requirements that would not be applicable until triggered have also been included in this section. An example of one such requirement is the requirement for a source to submit an application for new source review.

### **5.5 AOP Section 3 Standard Terms and Conditions for National Emission Standards for Hazardous Air Pollutants**

Section 3 Standard Terms and Conditions for NESHAP contains applicable requirements from 40 CFR 63 Subpart A – General Provisions. PWC is subject to the NESHAP General Provisions because the facility is subject to 40 CFR 63 Subpart DDDD – National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products. Only the initial notification requirements of the General Provisions apply to PWC as discussed in section 3.2 above.

### **5.6 Introduction to AOP Sections 4 and 5: Generally and Specifically Applicable Requirements**

Requirements that limit emissions and broadly apply to all sources within the jurisdiction of the NWCAA are identified in Section 4 - Generally Applicable Requirements. Requirements that limit emissions and apply specifically to emission units at PWC are identified in Section 5 - Specifically Applicable Requirements. The first column of the tables in these sections contains the term number followed by the pollutant type or requirement type. The second column identifies the regulatory citation. The third column provides a brief description of the applicable requirements for informational purposes and is not itself enforceable. The fourth column identifies monitoring, recordkeeping, and reporting (MR&R) requirements in accordance with WAC 173-401-605(1), -615(1) & (2). The MR&R from the underlying cited requirement may be paraphrased in the MR&R column, in which case the underlying requirement is the enforceable requirement. If the MR&R is listed as “directly enforceable”, then the wording of the MR&R is the explicit requirement. If appropriate, test methods associated with an applicable requirement or in accordance with WAC 173-401-615(1)(a) are included in the MR&R column.

Many generally applicable requirements and some specifically applicable requirements do not specify test and/or monitoring methods within the text of the regulation, statute, or OAC. Since WAC 173-401-615 requires that the permit require monitoring and recordkeeping adequate to demonstrate compliance with requirements, legally enforceable site-specific monitoring methods were established (“gap-filled”) based on the characteristics of the facility, the nature of the underlying requirement, the requirements of WAC 173-401-615, and EPA guidance on monitoring. See sec. 4.4 above for more details on gap-filling. Sections 5.7 and 5.8 below provide a discussion of the basis for including gap-filled MR&R requirements.

Requirements pertaining to operation and maintenance, nuisance, fugitive emissions and odor may be met through adherence to operation and maintenance (O&M) manuals and timely complaint response and follow-up corrective action. Note, however, that PWC O&M manuals are not included as part of the AOP.

The following discussion of permit terms provides some information on how the facility demonstrates compliance with these terms.

### **5.7 AOP Section 4 Generally Applicable Requirements**

Section 4 - Generally Applicable Requirements of the AOP identifies requirements that apply broadly to the facility. These requirements are normally not called out in NOC approvals (i.e., OACs). Instead, they are general air pollution rules found in the NWCAA Regulation or the WAC.

Some of the conditions in this section contain terms that are not well defined or list MR&R for which the rationale is not readily apparent. These items are discussed below.

### **5.7.1 General Nuisance (Permit Terms 4.3 and 4.4):**

NWCAA Regulations and the WAC contain requirements regarding emissions deemed to be a “general nuisance”. Emissions of air contaminants that damage human health, plant or animal life, or otherwise interfere with the “enjoyment of life and property” are prohibited. These rules, however, do not include specific monitoring, recordkeeping, or reporting requirements. Therefore, per the requirements of WAC 173-401-615, the MR&R for AOP term 4.3 was “gap-filled” with MR&R requirements. The gap-filled MR&R requirements require PWC to inspect potential sources of nuisance emissions upon receipt of a complaint, repair problems found, document the inspection and subsequent work, and notify NWCAA if repairs cannot be made in a timely fashion. If nuisance emissions cannot be corrected within four hours, PWC must notify the NWCAA within twelve hours with a description of the complaint and action being taken to resolve the problem. PWC will provide assurance of compliance with these requirements in the annual compliance certification and by maintaining a log of nuisance complaints and associated repairs and mitigation actions.

### **5.7.2 Odor and Fugitive Emissions (Permit Terms 4.5 through 4.11):**

PWC may not generate odors that “unreasonably interfere with property use” and must use good practices to reduce odors to a reasonable minimum. PWC must also take “reasonable precautions to prevent” fugitive emissions, which are defined as particulate emissions made airborne by forces of wind, man’s activity, or both. Further, AOP terms regarding fugitive emissions prohibit the offsite deposition of particulate matter.

AOP terms that limit odors and fugitive emissions refer to the gap-filled requirements of permit term 4.3, which require the facility to respond to and correct nuisance emissions as soon as possible, and to the gap-filled requirements of permit term 4.12, which require PWC to conduct a facility-wide inspection at least once per month to identify visible emissions, odors, prohibited activities, or activities that require New Source Review. PWC must maintain records of odor or dust complaints, visible emissions observations, and corrective actions taken.

### **5.7.3 Opacity and Particulate Matter Standards (Permit Terms 4.12 through 4.15):**

Opacity is defined as “the degree to which an object seen through a plume is obscured, stated as a percentage” and is assumed to be a reasonable approximation of particulate matter emissions. As such, generally applicable AOP terms establishing opacity and particulate matter standards have a common MR&R requirement. NWCAA Regulations and the WAC require that opacity from any stack not exceed 20% for any period aggregating more than 3 minutes in any 60-minute period and that particulate matter emissions from any stack not exceed 0.1 grains per dry standard cubic foot or 0.05 grains per dry standard cubic foot, depending on emission source. These opacity and particulate matter standards apply generally to all stacks at the facility. However, the Line 1 and Line 2 glue application and press exhaust stacks and the baghouses must comply with more stringent opacity limits, which are listed in Section 5 of the AOP.

The generally applicable opacity and particulate matter MR&R requirements require that PWC conduct a facility-wide inspection at least once per month for visible emissions, odors, prohibited activities listed in AOP Section 2.7 and activities that require New Source Review as required by AOP Section 2.8. PWC is required to take immediate corrective actions if visible emissions are observed and to maintain records of observations and actions taken. Since the MR&R requirements of term 4.12 were generated as part of the Air Operating Permit, the MR&R is denoted as “Directly Enforceable”, which establishes the language as enforceable requirements.

#### 5.7.4 Sulfur Dioxide and Fuel-bound Sulfur (Permit Terms 4.16 through 4.18)

Below is a discussion of each of the generally applicable terms related to SO<sub>2</sub>.

##### 5.7.4.1 Fuel Sulfur Content (Permit Term 4.16):

Natural gas is used in the Line 1 and Line 2 thermal oil heaters and various room air heaters and is the only fuel allowed at PWC. NWCAA 520 limits sulfur content of gaseous fuels to a maximum of 412 ppm sulfur, which is about 26 grains of sulfur per 100 standard cubic feet. Natural gas is supplied via pipeline by Cascade Natural Gas and contains an average of 1 to 2 grain of sulfur per 100 standard cubic feet and up to 20 grains of sulfur per 100 standard cubic feet, which is equivalent to about 321 ppm sulfur:

$$\frac{20 \text{ gr. Sulfur}}{100 \text{ ft}^3} \times \frac{1 \text{ lb}}{7000 \text{ gr}} \times \frac{1 \text{ lb-mole}}{32 \text{ lb}} \times \frac{359 \text{ ft}^3}{1 \text{ lb-mole}} \times 10^6 = 321 \text{ ppm S by volume}$$

Note:

A “lb-mole” of a pure gas weighs the molecular weight of that gas in pounds and occupies 359 ft<sup>3</sup> at 32° F and 1 atmosphere pressure. A “lb-mole” of sulfur (S) weighs 32 lb and reacts with a lb-mole of oxygen (O<sub>2</sub>) which also weighs 32 lb to form a lb-mole of sulfur dioxide, which weighs 64 lb. Therefore, 2 lb of SO<sub>2</sub> are emitted for every lb of sulfur in the fuel.

PWC demonstrates compliance with this requirement by burning only natural gas as required in Term 5.5.1.

##### 5.7.4.2 Sulfur Dioxide, Stack Emissions (Permit Terms 4.17 and 4.18):

SO<sub>2</sub> emissions are not to exceed 1,000 parts per million on a dry, volumetric basis<sup>9</sup> (ppm) according to AOP terms 4.17 and 4.18.

The heaters and other fuel-consuming sources at PWC are required to burn only natural gas and are incapable of violating the SO<sub>2</sub> limit. The following calculations show that while burning natural gas, an emission unit cannot exceed the 1,000 ppm sulfur dioxide limit.

Natural gas means a mixture of gaseous hydrocarbons, with at least 80 percent methane (by volume), such as the gas sold or distributed by any utility company regulated by the Washington Utilities and Transportation Commission. PWC receives the same natural gas as all of the other natural gas consumers, private and industrial, in the Northwest.

According to *Perry's Chemical Engineer's Handbook*, each cubic foot of natural gas requires approximately 10 cubic feet of air for combustion, yielding approximately 11 cubic feet of combustion exhaust gases, consisting mostly of nitrogen, water vapor, and carbon dioxide. The sulfur in the natural gas will almost all be converted to sulfur dioxide, with each cubic foot of sulfur producing the same volume of sulfur dioxide. Since each cubic foot of natural gas may contain up to  $3.21 \times 10^{-4}$  cubic foot of sulfur (from section 5.7.4.1 above), each cubic foot of stack exhaust will contain approximately:

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<sup>9</sup> “ppm” means “parts per million on a dry, volumetric basis.” Sometimes this is written as “ppmdv.” Stack gas is usually sampled through a probe placed somewhere in the middle of the stack cross-section. The moisture is removed from the gas stream as part of the sampling process. The stack gas sample is analyzed for the pollutant in question, with the lab results being calculated as cubic feet (or meters) of pollutant per million cubic feet (or meters) of dry stack gas. If you had a stack with 50% moisture that was running right at the 1,000 ppm SO<sub>2</sub> standard, you would have 1,000 cubic feet of SO<sub>2</sub> for every million cubic feet of dry stack gas. You would also have 1,000 cubic feet of SO<sub>2</sub> for every two million cubic feet of “wet” (as is) stack gas, which is 500 ppm. This is why it’s important to know how stack sampling is done and why stack sampling and continuous emission monitoring methods are so specific.

$$3.21 \times 10^{-4} \frac{ft^3 S}{ft^3 nat. gas} \times \frac{1 ft^3 SO_2}{1 ft^3 S} \times \frac{1 ft^3 nat. gas}{11 ft^3 stack exhaust} = 2.92 \times 10^{-5} \frac{ft^3 SO_2}{ft^3 stack exhaust}$$

This is equivalent to 29.2 ppmdv SO<sub>2</sub>. Note that this estimated value is about three percent of the 1,000 ppm SO<sub>2</sub> standard. Therefore, it is reasonable to assume that combustion units that are fired on natural gas cannot exceed the 1,000 ppm SO<sub>2</sub> limit.

## **5.8 AOP Section 5 Specifically Applicable Requirements**

This section lists requirements that apply specifically to the emission units at PWC. Section 5 is divided into five tables that list applicable requirements for the five different emission unit groups at the facility: plantwide, Line 1 and Line 2 presses, Baghouses 1, 2, & 3, Baghouse 4, and heaters and burners. The format and organization of this section are the same as the AOP Section 4 table for the generally applicable requirements.

### **5.8.1 Table 5-1 – Plantwide**

This table lists two AOP terms that apply plantwide and originate from OAC 933. Since these two AOP terms establish requirements concerning operations and maintenance (O&M) and odors, the MR&R requirements for O&M and odors in AOP Section 4 serve to ensure compliance for these terms as well.

### **5.8.2 Table 5-2 – Line 1 Press & Line 2 Press**

This table lists the requirements from OAC 933 that apply specifically to the Line 1 and Line 2 laminated veneer lumber presses. These AOP terms establish opacity limits for the press exhaust stacks and requirements for daily opacity observations and for handling and monitoring materials that contain Hazardous Air Pollutants (HAP).

### **5.8.3 Table 5-3 – Baghouses 1, 2, & 3**

Table 5-3 lists conditions from OAC 933 that apply specifically to the three original baghouses. PWC must periodically monitor the baghouses and fines collection hopper for visible emissions and the differential pressure gauges on the baghouse to ensure proper operation.

### **5.8.4 Table 5-4 – Baghouse 4**

Conditions established in OAC 1151 for a new sawing area and associated baghouse are listed in Table 5-4. Requirements for Baghouse 4 are similar to those for Baghouses 1, 2, & 3, with the addition of an initial particulate matter source test requirement and a requirement to test Baghouse 4 for particulate emissions if the configuration of the system changes.

### **5.8.5 Table 5-5 – Heaters and Burners**

This table lists AOP terms that apply to the heaters and burners. Heaters and burners at PWC are limited by OAC 933 to burn only natural gas. The two 7.5 MMBtu/hr thermal oil heaters that provide heat to the two LVL presses and the two 2.8 MMBtu/hr I-line hot house heaters are subject to 40 CFR 63 Subpart DDDDD (the “Boiler MACT”); those requirements are also listed in this table.

## 6 INSIGNIFICANT EMISSIONS UNITS

Some categorically exempt insignificant emission units (IEU) as defined in WAC 173-401-532 are present at PWC and are listed in Table 6-1. Emission units at PWC that have been determined to be insignificant on the basis of size or production rate as defined in WAC 173-401-530 and WAC 173-401-533 are also listed as IEUs in Table 6-1.

**Table 6-1 Insignificant Activities and Emissions Units**

IEU Name	Basis for IEU Designation
Vehicle exhaust from repair shop	WAC 173-401-532 (7) Categorically exempt insignificant emission units: Vehicle exhaust from auto maintenance and repair shops.
Vents from microwave room and hydraulic pump room	WAC 173-401-532 (9) Categorically exempt insignificant emission units: Vents from rooms, buildings and enclosures that contain permitted emissions units or activities from which local ventilation, controls and separate exhaust are provided.
Vehicles in parking lot	WAC 173-401-532 (54) Categorically exempt insignificant emission units: Fuel and exhaust emissions from vehicles in parking lots.
Bathroom vents	WAC 173-401-532 (48) Categorically exempt insignificant emission units: Natural and forced air vents and stacks for bathroom/toilet facilities.
Welding	WAC 173-401-533 (2)(i) Units and activities defined as insignificant on the basis of size or production rate: Welding using not more than one ton per day of welding rod.
Sealant application	WAC 173-401-532 (32) Categorically exempt insignificant emission units: Wax application.
Make-up air units 1, 2, 3, & 4	WAC 173-401-533 (2)(r) Units and activities defined as insignificant on the basis of size or production rate: Space heaters and hot water heaters using natural gas, propane or kerosene and generating less than five million Btu/hr.

## **7 INAPPLICABLE REQUIREMENTS**

WAC 173-401-640 Permit Shield requires the permitting authority to issue a determination regarding the applicability of requirements with which the source must comply upon the source's request. The source must specify in the AOP application the requirements for which a determination is requested. Inapplicable requirements must be listed in the AOP in order for the permit shield to apply. PWC specifically stated in their AOP application that they were not requesting a permit shield against any specific requirements at the time of application, nor has PWC made any requests for an applicability determination since the original AOP application.

## 8 DEFINITIONS AND ACRONYMS

Definitions are assumed to be those found in the underlying regulation. A short list of definitions has been included to cover those not previously defined.

An "applicable requirement" is a provision, standard, condition or requirement in any of the listed regulations or statutes as it applies to an emission unit or facility at a stationary source.

"Ecology" means the Washington State Department of Ecology.

An "emission unit" is any part or activity of a stationary source that emits or has the potential to emit any regulated air pollutant.

"PWC" means Pacific Woodtech Corporation.

A "permit" means for the purposes of the air operating permit program an air operating permit issued pursuant to Title 5 of the 1990 Federal Clean Air Act Amendments.

"State" means for the purposes of the air operating permit program NWCAA or the Washington State Department of Ecology.

The following is a list of Acronyms used in the Air Operating Permit and/or Statement of Basis:

AOP	Air Operating Permit
ASIL	Acceptable Source Impact Level
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
CFR	Code of Federal Regulations
EF	Exhaust fan
EPA	The United States Environmental Protection Agency
FCAA	Federal Clean Air Act
FR	Federal Register
IEU	Insignificant emission unit
MR&R	Monitoring, Recordkeeping and Reporting
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOC	Notice of Construction
NO <sub>x</sub>	Oxides of Nitrogen
NSPS	New Source Performance Standard
NSR	New Source Review
NWCAA	Northwest Clean Air Agency
O <sub>2</sub>	Oxygen
OAC	Order of Approval to Construct
PM	Particulate Matter
PM <sub>10</sub>	Particulate Matter less than 10 microns in diameter
ppmdv	(same as ppmvd) parts of pollutant per million parts of dry stack gas on a volumetric basis

PSD	Prevention of Significant Deterioration (federally required program for pre-construction review of sources)
QA/QC	quality assurance/quality control
RCW	Revised Code of Washington
scf	standard cubic foot (cubic foot of gas at standard conditions: 20 °C [68 °F] and 760 mmHg)
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxide
VOC	Volatile Organic Compounds
WAC	Washington Administrative Code

## 9 PUBLIC DOCKET

Copies of PWC's air operating permit, permit application, and any technical support documents are available by request at [www.nwcleanair.org](http://www.nwcleanair.org) and at the following location:

Northwest Clean Air Agency  
1600 South Second Street  
Mount Vernon, WA 98273-5202

A copy of PWC's air operating permit and the supporting statement of basis are also posted on the NWCAA website, at [http://www.nwcleanair.org/aqPrograms/airPermits\\_pg2.htm](http://www.nwcleanair.org/aqPrograms/airPermits_pg2.htm).

## 10 PUBLIC COMMENT AND NWCAA RESPONSES

### 10.1.1 June 2014 Comments (AOP 018R1)

The draft AOP and SOB were published for a 30 day public review period which ended on June 25, 2014. Chuck Plante of Pacific Woodtech provided the only comment received during the comment period. On June 6, 2014 Mr. Plante sent an email to Agata McIntyre in which he stated: *"I notice on page 14 of 37 of the SOB the "Resizing Area (AM1)" was not changed as I had noted in my older comments on the draft. We do not call any area by that name. We refer to the area where final length cuts and wrapping as the packaging area. I had commented and made a word change to support a single comment for all three packaging areas. See attached page."*

NWCAA Response: Change made to the Statement of Basis as requested by Mr. Plante.