



**Air Quality Permitting  
Statement of Basis**

**November 19, 2007**

**Tier II Operating Permit and Permit to Construct  
No. T2-2007.0156**

**Merritt Brothers Lumber Company  
Athol, Idaho**

**Facility ID No. 055-00039**

**Prepared by:**

**Shawnee Chen, P.E.,** *SJC*  
**Senior Air Quality Engineer**  
**Air Quality Division**

**FINAL**

## Table of Contents

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE .....	3
1. PURPOSE .....	4
2. FACILITY DESCRIPTION .....	4
3. FACILITY / AREA CLASSIFICATION.....	4
4. APPLICATION SCOPE .....	4
5. PERMIT ANALYSIS.....	4
6. PERMIT CONDITIONS .....	7
7. PERMIT REVIEW .....	9
8. RECOMMENDATION.....	10
APPENDIX—AIRS INFORMATION .....	11

## Acronyms, Units, and Chemical Nomenclature

acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
HAPs	Hazardous Air Pollutants
IDAPA	A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pound per hour
MACT	Maximum Available Control Technology
MBL	Merritt Brothers Lumber Co.
MBF	1,000 board feet
MMBF	million board feet
MMBtu/hr	Million British thermal units per hour
NESHAP	Nation Emission Standards for Hazardous Air Pollutants
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxides
NSPS	New Source Performance Standards
O <sub>3</sub>	ozone
PC	Permit Condition
PM	Particulate Matter
PM <sub>10</sub>	Particulate Matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	Permit to Construct
PTE	Potential to Emit
Rules	Rules for the Control of Air Pollution in Idaho
scf	standard cubic feet
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SM	synthetic minor
SM80	synthetic minor facility with emissions of a regulated pollutant above 80% of the major source threshold
SO <sub>2</sub>	sulfur dioxide
SO <sub>x</sub>	sulfur oxides
Tier II/PTC	Tier II operating permit and Permit to Construct
T/yr	Tons per year
µg/m <sup>3</sup>	micrograms per cubic meter
UTM	Universal Transverse Mercator
VOC	volatile organic compound

## 1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01 Sections 201 and 404.04, Rules for the Control of Air Pollution in Idaho (Rules) for Tier II operating permits and Permits to Construct.

## 2. FACILITY DESCRIPTION

Merritt Brothers Lumber Company (MBL) owns and operates a planer mill and finger-jointing facility.

## 3. FACILITY / AREA CLASSIFICATION

The facility is not a major facility as defined in IDAPA 58.01.01.205 or 008.10. It is not a designated facility as defined in IDAPA 58.01.01.006. The Standard Industrial Classification defining the facility is 2421. The facility classification is SM80 (synthetic minor facility with emissions of a regulated pollutant above 80% of the major source threshold) because without operational limits the facility's potential to emit would exceed Tier I operating permit major source thresholds.

The facility is located in Athol, Idaho, which is located in Kootenai County. Kootenai County is located in AQCR 62 and UTM zone 11. This area is classified attainment or unclassifiable for all state and federal criteria air pollutants.

The AIRS information provided in the Appendix defines the classification for each regulated air pollutant at MBL. This required information is entered into the EPA AIRS database

## 4. APPLICATION SCOPE

MBL has applied for a Tier II operating permit renewal as required under IDAPA 58.01.01.405.03.

### 4.1 *Application Chronology*

July 30, 2007	DEQ received the application
August 28, 2007	DEQ determined the application complete
October 17, 2007	DEQ issued the draft permit for facility review

## 5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this Tier II operating permit and Permit to Construct (Tier II/PTC).

### 5.1 *Equipment Listing*

This permitting action does not change the equipment listing.

### 5.2 *Emissions Inventory*

This permitting action does not result in any emission changes. The information in Tables 3.1 and 3.2 are taken from statement of basis for the Tier II/PTC No. T2-040121, issued March 15, 2005.

**Table 5.1 EMISSIONS ESTIMATES OF CRITERIA POLLUTANTS**

Merritt Brothers Lumber Company, Athol Potential Emissions <sup>a</sup> – Hourly (lb/hr), and Annual (T/yr)										
Point Source Description	PM <sub>10</sub>		NO <sub>x</sub>		CO		VOC		SO <sub>2</sub>	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
<b>Lumber Drying</b>										
Drying Kilns	3.78	9.35	NA	NA	NA	NA	53.97	96.46	NA	NA
<b>Planer Point Sources</b>										
New Planer Cyclone and Baghouse, No.4	1.66	7.24	NA	NA	NA	NA	NA	NA	NA	NA
<b>Finger-Jointer Point Sources</b>										
Finger Jointer Cyclone, No.5	0.525	2.30	NA	NA	NA	NA	NA	NA	NA	NA
Finger Jointer Cyclone (pull-through), No.6	0.525	2.30	NA	NA	NA	NA	NA	NA	NA	NA
<b>Natural Gas Fired Boiler</b>										
Boiler No.1	0.22	0.96	2.87	12.58	2.41	10.57	0.16	0.69	0.02	0.08
Boiler No.2	0.11	0.48	1.44	6.29	1.21	5.28	0.08	0.35	0.01	0.04
<b>Total Emissions From Point Sources</b>		<b>22.63</b>		<b>18.87</b>		<b>15.85</b>		<b>97.50</b>		<b>0.12</b>

<sup>a</sup> As determined by a pollutant-specific EPA reference method, DEQ-approved alternative, or as determined by DEQ's emissions estimation methods used in this permit analysis.

**Table 5.2 FACILITY TAPS (IDAPA 58.01.01.585 AND 586) EMISSION INVENTORY BASED ON PTE<sup>a</sup>**

Pollutants	Natural Gas-Fired Boiler No.1		Natural Gas-Fired Boiler No.2		Dry Kilns	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Benzene	6.03 E-05	2.64E-04	3.02 E-05	1.32E-04		
Benzo(a)pyrene	3.45 E-08	1.51E-07	1.72 E-08	7.55E-08		
Formaldehyde	2.15 E-03	9.44E-03	1.08 E-03	4.72E-03	0.08 <sup>b</sup>	0.34
Hexane	5.17 E-02	2.26E-01	2.59 E-02	1.13E-01		
Naphthalene	1.75 E-05	7.67E-05	8.76 E-06	3.84E-05		
Pentane	7.47 E-02	3.27E-01	3.73 E-02	1.64E-01		
Toluene	9.77 E-05	4.28E-04	4.88 E-05	2.14E-04		
Arsenic	5.75 E-06	2.52E-05	2.87 E-06	1.26E-05		
Barium	1.26 E-04	5.54E-04	6.32 E-05	2.77E-04		
Beryllium	3.45 E-07	1.51E-06	1.72 E-07	7.55E-07		
Cadmium	3.16 E-05	1.38E-04	1.58 E-05	6.92E-05		
Chromium	4.02 E-05	1.76E-04	2.01 E-05	8.81E-05		
Cobalt	2.41 E-06	1.06E-05	1.21 E-06	5.28E-06		
Copper	2.44 E-05	1.07E-04	1.22 E-05	5.35E-05		
Manganese	1.09 E-05	4.78E-05	5.46 E-06	2.39E-05		
Mercury	7.47 E-06	3.27E-05	3.73 E-06	1.64E-05		
Molybdenum	3.16 E-05	1.38E-04	1.58 E-05	6.92E-05		
Nickel	6.03 E-05	2.64E-04	3.02 E-05	1.32E-04		
Selenium	6.89 E-07	3.02E-06	3.45 E-07	1.51E-06		
Vanadium <sup>d</sup>	1.18E-04	5.17E-04	5.90E-05	2.58E-04		
Zinc	8.33 E-04	3.65E-03	4.17 E-04	1.82E-03		
Methanol					2.06 <sup>c</sup>	5.1
Phenol					0.14 <sup>c</sup>	0.34

<sup>a</sup>As determined by a pollutant-specific EPA reference method, a DEQ-approved alternative, or as determined by DEQ's emissions estimation methods used in this permit analysis.

<sup>b</sup> Annual average.

<sup>c</sup> 24-hr average

Tier II/PTC No. T2-2007.0186, issued September 28, 2007, established enforceable facility-wide limits for hazardous air pollutant (HAP) emissions to below the respective major source thresholds in order for the facility to become an area source to avoid being subject to Maximum Available Control Technology

(MACT) standards for “Plywood and Composite Wood Products,” and “Industrial, Commercial, and Institutional Boilers and Process Heaters.” Table 5.3 reflects the HAP emissions limits of the permit.

**Table 5.3 HAP EMISSIONS SUMMARY**

HAPS	Annual PTE
	T/yr
Total Facility-wide HAP Emissions	24
Each Facility-wide Individual HAP Emission	9

### 5.3 Modeling

This permitting action does not result in any emission changes. Facility-wide modeling analysis was conducted for Tier II/PTC No. T2-040121, issued March 15, 2005. The following information regarding criteria pollutant(s) and toxic air pollutant(s) are taken from statement of basis for Tier II/PTC No. T2-040121, issued March 15, 2005.

#### Criteria pollutant

**Table 5.4 FULL IMPACT ANALYSIS RESULTS FOR CRITERIA POLLUTANT(S)**

Pollutant	Averaging Period	Facility Ambient Impact ( $\mu\text{g}/\text{m}^3$ )	Background concentration ( $\mu\text{g}/\text{m}^3$ )	Total Ambient Concentration ( $\mu\text{g}/\text{m}^3$ )	NAAQS ( $\mu\text{g}/\text{m}^3$ )	Percent of NAAQS
PM <sub>10</sub>	24-hour	54.7	66	120.7	150	80
	Annual	10.27	21	31.27	50	62

#### Toxic air pollutant

Because formaldehyde emissions from the fifth dry kiln exceeded the corresponding screening emissions level in IDAPA 58.01.01.586 and the modeled concentration exceeds the corresponding acceptable ambient concentrations in IDAPA 58.01.01.586, a T-RACT analysis was required and subsequently conducted by MBL’s consultant. The analysis was submitted to DEQ on December 17, 2004. DEQ reviewed the submittal and determined that the T-RACT analysis satisfied the requirement under IDAPA 58.01.01.210.

### 5.4 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this Tier II/PTC.

#### 5.4.1 Attainment Designation (40 CFR 81.313)

The facility is located in Kootenai County which is designated as attainment or unclassifiable for PM<sub>10</sub>, PM<sub>2.5</sub>, CO, NO<sub>2</sub>, SO<sub>x</sub>, and Ozone.

#### 5.4.2 Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

MBL is an SM80 source. It is not subject to Title V program.

### 5.4.3 NSPS Applicability (40 CFR 60)

MBL is not subject to any NSPS at the time of the permit issuance.

### 5.4.4 NESHAP Applicability (40 CFR 61)

MBL is not subject to any NESHAP standards at the time of the permit issuance.

### 5.4.5 MACT Applicability (40 CFR 63)

The permit contains enforceable facility-wide limits for hazardous air pollutant (HAP) emissions to below the respective major source thresholds in order for the facility to become an area source to avoid being subject to MACT standards for "Plywood and Composite Wood Products," and "Industrial, Commercial, and Institutional Boilers and Process Heaters." Therefore, MBL is not subject to any MACT standards at the time of the permit issuance.

### 5.4.6 CAM Applicability (40 CFR 64)

MBL is not subject to CAM because MBL is not a Title V source.

## 5.5 Fee Review

In accordance with IDAPA 58.01.01.407, the processing fee associated with this permitting action (i.e., Tier II renewal) is \$10,000 because MBL's permitted emissions are greater than 100 tons per year. DEQ received \$10,000 on November 1, 2007.

Table 5.5 TII OPERATING PERMIT PROCESSING FEE TABLE

Emissions Inventory	
Pollutant	Annual Emissions PTE (T/yr)
NO <sub>x</sub>	18.87
SO <sub>2</sub>	0.12
CO	15.85
PM <sub>10</sub>	22.63
VOC	97.50
HAPS	24
Total:	179
Fee Due	\$ 10,000

## 6. PERMIT CONDITIONS

This section describes only those permit conditions (PCs) that have been added, revised, modified or deleted as a result of this permitting action. All other permit conditions remain unchanged.

### PC 1.1

This permit condition states the purpose of this permitting action.

### PC 1.2

This permit condition provides a chronological history of permits issued at this facility.

### Existing PC 2.6

The existing PC 2.6 is the same as General Provision 7 of the permit. It reads, “*The permittee shall maintain sufficient records to ensure compliance with all of the terms and conditions of this permit. Records of monitoring information shall include, but not be limited to the following: (a) the date, place, and times of sampling or measurements; (b) the date analyses were performed; (c) the company or entity that performed the analyses; (d) the analytical techniques or methods used; (e) the results of such analyses; and (f) the operating conditions existing at the time of sampling or measurement. All monitoring records and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Supporting information includes, but is not limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation and copies of all reports required by this permit. All records required to be maintained by this permit shall be made available in either hard copy or electronic format to DEQ representatives upon request.*”

### New PC 2.6

To remove the redundancy and avoid renumbering of the permit conditions, the new PC 2.6 now includes the requirements for fuel sulfur content which is in the current Tier II/PTC template. It reads:

#### ***“Sulfur Content***

2.6 *The permittee shall not sell, distribute, use, or make available for use any distillate fuel oil containing more than the following percentages of sulfur:*

- *ASTM Grade 1 fuel oil - 0.3% by weight.*
- *ASTM Grade 2 fuel oil - 0.5% by weight.*
- *ASTM Grades 4, 5, and 6 fuel oil – 1.75% by weight.*

2.6.1 *The permittee shall not sell, distribute, use, or make available for use, any coal containing greater than 1% sulfur by weight.*

2.6.2 *The permittee shall maintain documentation of supplier verification of distillate fuel oil sulfur content on an as received basis.”*

### Existing PC 2.7

The existing PC 2.7 is the same as General Provision 8 of the permit. It reads, “The permittee shall comply with the procedures and requirements of IDAPA 58.01.01.130-136 for excess emissions due to startup, shutdown, scheduled maintenance, safety measures, upsets and breakdowns.”

### Revised PC 2.7

To remove the redundancy and avoid renumbering of the permit conditions, the new PC 2.7 now reads “Reserved.”

### Existing PC 2.10

It reads, “*The permittee shall comply with the requirements of IDAPA 58.01.01.600-616, Rules for Control of Open Burning.*”

#### Revised PC 2.10

IDAPA 58.01.01.600-616 is replaced with IDAPA 58.01.01.600-617 to reflect the Rules change. The revised PC 2.10 reads, “*The permittee shall comply with the requirements of IDAPA 58.01.01.600-617, Rules for Control of Open Burning.*”

#### Existing PC 4.1

It reads, “*The facility consists of five dry kilns used to dry green lumber. The dry kilns are heated using non-contact steam coils, with steam being supplied by Boiler No. 1 and Boiler No. 2. The dry kilns have five heat exchangers. This permit allows for the construction of the fifth dry kiln.*”

#### Revised PC 4.1

The last sentence is deleted from the existing PC 4.1. It was for the PTC action and is obsolete for this permitting action. Revised PC 4.1 reads, “*The facility consists of five dry kilns used to dry green lumber. The dry kilns are heated using non-contact steam coils, with steam being supplied by Boiler No. 1 and Boiler No. 2. The dry kilns have five heat exchangers.*”

#### Existing PC 4.5

It reads, “*The permittee shall monitor and record, monthly and annually, the lumber throughput and lumber species to the five dry kilns to demonstrate compliance with Permit Conditions 4.3 and 4.4. Throughput shall be recorded as million board feet, or 1,000 board feet. Annual throughput shall be determined by summing each monthly throughput over the previous consecutive 12-month period.*”

#### Revised PC 4.5

To make the condition more clear, MMBF and MBF are added to the revised PC 4.5. It reads, “*The permittee shall monitor and record, monthly and annually, the lumber throughput and lumber species to the five dry kilns to demonstrate compliance with Permit Conditions 4.3 and 4.4. Throughput shall be recorded as million board feet (MMBF), or 1,000 board feet (MBF). Annual throughput shall be determined by summing each monthly throughput over the previous consecutive 12-month period.*”

## **7. PERMIT REVIEW**

### **7.1 Regional Review of Draft Permit**

The draft permit was sent to Coeur d’Alene Regional Office for review on October 5, 2007. The received comment was addressed in the permit.

### **7.2 Facility Review of Draft Permit**

The draft permit was sent to MBL for facility review on October 17, 2007. The facility stated no comments on the draft permit on November 8, 2007 through email.

### **7.3 Public Comment**

In accordance with IDAPA 58.01.01.404.04, a public comment period is not required because the proposed project is a permit renewal with no authorized increase in allowable emissions.

## 8. RECOMMENDATION

Based on review of application materials, and all applicable state and federal rules and regulations, staff recommend that Merritt Brothers Lumber Company be issued a final Tier II/PTC No. T2-2007.0156 for the Tier II operating permit renewal. No public comment period is recommended, no entity has requested a comment period, and the project does not involve PSD requirements.

SYC/hp

Permit No. T2-2007.0156

**APPENDIX—AIRS INFORMATION**

# AIRS/AFS<sup>a</sup> FACILITY-WIDE CLASSIFICATION<sup>b</sup> DATA ENTRY FORM

**Facility Name:** Merritt Brothers Lumber Co.  
**Facility Location:** Athol, Idaho  
**AIRS Number:** 055-00039

AIR PROGRAM POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	SM80	TITLE V	AREA CLASSIFICATION
								A-Attainment U-Unclassified N- Nonattainment
SO <sub>2</sub>	B							U
NO <sub>x</sub>	B							U
CO	B							U
PM <sub>10</sub>	B							U
PT (Particulate)	B							---
VOC	SM					Y	SM80	U
THAP (Total HAPs) or an individual HAP	SM					Y	SM80	---
			APPLICABLE SUBPART					

<sup>a</sup> Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

<sup>b</sup> AIRS/AFS Classification Codes:

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAPs only, class "A" is applied to each pollutant which is at or above the 10 T/yr threshold, or each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAPs.
- SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B = Actual and potential emissions below all applicable major source thresholds.
- C = Class is unknown.
- ND = Major source thresholds are not defined (e.g., radionuclides).