

LANE REGIONAL AIR PROTECTION AGENCY

1010 Main Street, Springfield, Oregon 97477

Telephone: (541) 736-1056

Toll Free: (877) 285-7272

Fax: (541) 726-1205

Web Page: www.lrapa.org

STANDARD
AIR CONTAMINANT DISCHARGE PERMIT

Issued in accordance with provisions of Title 34, Lane Regional Air Protection Agency's Rules and Regulations, and based on the land use compatibility findings included in the permit record.

Issued To:

Seneca Sustainable Energy, LLC

90201 Highway 99 North

Eugene, Oregon 97402

Land Use Compatibility Statement:

From: City of Eugene

Dated: January 26, 2009

Mailing Address:

P.O. Box 851

Eugene, Oregon 97402

Fee Basis:

Title 37, Table 1, B.25:

Electrical power generation from combustion

Permit Number: 206470

Permit Type: Standard

SIC: 4911 Power Plant/Wood-fired Boiler

Date Issued: October 9, 2009

Expiration Date: October 7, 2014

Permitted Sources:

18.8 MW Cogeneration Power Plant/Wood-fired Boiler

Issued

By: _____



Merlyn L. Hough, Director

Effective

Date: _____

October 9, 2009

LIST OF ABBREVIATIONS THAT MAY BE USED IN THE PERMIT

ACDP	Air Contaminant Discharge Permit	O ₂	Oxygen
ASTM	American Society for Testing and Materials	OAR	Oregon Administrative Rules
AQMA	Air Quality Maintenance Area	ORS	Oregon Revised Statutes
Calendar	The 12-month period beginning January 1 st and ending December 31 st	O & M	Operation and Maintenance
CFR	Code of Federal Regulations	Pb	Lead
CO	Carbon Monoxide	PCD	Pollution Control Device
COMS	Continuous Opacity Monitoring System		
DEQ	Oregon Department of Environmental Quality	PM	Particulate Matter
dscf	Dry Standard Cubic Foot	PM ₁₀	Particulate Matter less than 10 Microns in Size
EPA	US Environmental Protection Agency	ppm	Part Per Million
FCAA	Federal Clean Air Act	PSD	Prevention of Significant Deterioration
gal	Gallon(s)	PSEL	Plant Site Emission Limit
gr/dscf	Grains per Dry Standard Cubic Foot	PTE	Potential to Emit
HAP	Hazardous Air Pollutant as Defined by OAR 340-244-0040	RACT	Reasonable Available Control Technology
I & M	Inspection and Maintenance	scf	Standard Cubic Foot
lb	Pound(s)	SER	Significant Emission Rate
MMBtu	Million British Thermal Units	SIC	Standard Industrial Code
NA	Not Applicable	SIP	State Implementation Plan
NESHAP	National Emissions Standards For Hazardous Air Pollutants	SO ₂	Sulfur Dioxide
NO _x	Nitrogen Oxides	VE	Visible Emissions
NSPS	New Source Performance Standard	VOC	Volatile Organic Compound

Permitted Activities

1. Until this permit expires or is revoked, the permittee is herewith allowed to discharge exhaust gases containing contaminants only in accordance with the permit application and the requirements, limitations, and conditions contained in this permit. This specific listing of requirements, limitations, and conditions does not relieve the permittee from complying with all other rules of Lane Regional Air Protection Agency (LRAPA).

Emission Unit Description

2. The permittee is authorized to construct the emission units specific to the equipment and technology identified in the application submitted to LRAPA on January 29, 2009, as subsequently amended. The LRAPA Review Report explains the basis of applicable permit requirements and emission estimates; however, it does not contain operating limitations or permit requirements. In addition to federal, state and LRAPA rules and regulations, commencing construction or operations under this permit constitutes acceptance of, and consent to, the following specific conditions:

The emission units regulated by this permit are:

Emission Unit No.	Source Description	Air Pollution Control
EU-1	Wood-fired boiler (B-1): Six cell rotary grate furnace, 352.8 MM Btu/hr maximum heat input rating, 200,000 lb/hr steam production	Multiclones (MC-1), Electrostatic precipitator (ESP-1), Urea injection Selective Non-Catalytic Reduction (SNCR) system
EU-2	Truck unloading station (TD-1): 64 tons/hr	Baghouse (BH-1)
EU-3	Hog and screens (HS-1): 64 tons/hr	Baghouse (BH-1)
EU-4	Fuel storage: 45,000 sq ft storage building	Enclosed building
EU-5	Fuel handling: mechanical conveyors and transfer points (FT-1, -2, -3, and -4): 64 tons/hr	Enclosed conveyors, Baghouse (BH-2)
EU-6	Pneumatic fuel conveyor and target box (TB-1): 32 tons/hr	Enclosed conveyor, Baghouse (BH-2)
Categorically Insignificant Activities		
	Ash truck loading station (TL-1)	Enclosed system, Wetted ash
	Emergency Generator (1000 kw)	None
	Cooling tower	Drift eliminators
	Fugitive road dust	Paved road surface

Specific Conditions

3. All permitted emission units, control equipment, and monitoring equipment shall be properly installed, operated, and maintained. [LRAPA 32-007-1.A]
4. The fuel for the Boiler (B-1) shall be stable and consistent supply limited to: [LRAPA 32-007-1.A]
 - a. Wood and wood products in the form of bark, sawdust, shavings, chips, grindings.

- b. Wood biomass generated from harvesting, thinning, trimming, and other operations including, but not limited to, chips, hogged fuel, chunks, and grindings.
 - c. No chemically treated wood products including painted or oil stained material, or preservative treated wood.
 - d. No fossil fuel may be combusted in the boiler.
 - e. In no event shall sanderdust be a source of fuel for Boiler (B-1).
5. At all times, the boiler exhaust shall be vented through multiclones (MC-1) and the Electrostatic Precipitator (ESP-1) and: [LRAPA 32-007-1.B]
- a. The multiclones and ESP-1 shall be in operation during soot blowing events.
 - b. All electrostatic fields in the ESP-1 shall be in operation whenever the boiler is operated except during periods of startup and shutdown when the exhaust gas is below the recommended operating temperature provided by the ESP-1 manufacturer.
 - c. The ESP-1 electrostatic precipitator shall be maintained and operated in accordance with the manufacturer's specifications and recommendations, a copy of which shall be maintained on site.
6. The permittee shall equip and operate Boiler (B-1) with flue gas recirculation and Urea Injection-Selective Non-Catalytic Reduction (SNCR) system for NOx control. [LRAPA 37-0066 and 32-009-4]

Emission Limits and Standards

7. The boiler is subject to the federal New Source Performance Standards (NSPS) for Stationary Boilers, 40 CFR 60, Subpart Db, for particulate (only) and shall comply with all applicable requirements. [40 CFR 60b(a)]
8. The permittee must not cause or allow the emissions of any air contaminant into the atmosphere from the boiler, for a period or periods aggregating more than three minutes in any one hour, which is equal to or greater than 20% opacity (not including uncombined water). The permittee shall demonstrate compliance with this limit using the continuous opacity monitoring system required by Condition 21. [LRAPA 32-010-1]
- a. In the event that opacity exceeds 10% (hourly average) the permittee must take corrective actions to return emissions to less than the 10 % opacity action level as measured by COMS. Corrective action must be taken within 1-hour of detection of the opacity emission action level. Operation above the corrective action level but less than the 20% opacity limit is not considered a violation in itself if corrective action is taken to return the boiler opacity to less than 10%. [LRAPA 32-007-2]
9. On and after the date the initial performance test is completed, the permittee shall not cause to be discharged into the atmosphere any gases (not including uncombined water) that exhibit greater than 20% opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. The permittee shall demonstrate compliance with this limit using EPA Method 9 and the continuous opacity monitoring system (COMS) required by Condition 21. [40 CFR 60.43b(f)] This opacity standard shall apply at all times, except during periods of startup,

shutdown, or malfunction. [40 CFR 60.43b(g)]

10. On and after the date on which the initial performance test is complete, the permittee shall not cause or allow the emission of particulate from the boiler in excess of 0.03 lb/MMBtu heat input. This limit applies at all times except during periods of startup, shutdown, and malfunction. [40 CFR 60.43b(g) and (h)]
11. Particulate matter less than 10 microns from the boiler shall not exceed 0.008 lb/MMBtu, except during a startup or shutdown. The permittee shall demonstrate compliance with this limit using the initial performance test required in Condition 32, and a source test to be conducted annually thereafter, and on the following test schedule. [LRAPA 42-0041-2 avoidance]
 - a. An annual test thereafter to demonstrate compliance with 0.008 lb/MMBtu limit and to determine process parameters affecting those emissions.
 - b. If an annual test performed under Condition 11a exceeds 0.008 lb/MMBtu, then the permittee must conduct three (3) quarterly tests in accordance with Condition 32 at three (3) month intervals. The permittee shall be in compliance with Condition 11.a. when:
 - (1) Final results of any one of the subsequent three (3) quarterly tests is less than 0.008 lb/MMBtu, however, all three (3) quarterly tests shall be completed, or
 - (2) The results from the annual test performed under Condition 11a averaged with the three (3) quarterly tests is less than 0.008 lb/MMBtu.

The permittee is not considered out of compliance with this condition unless the average of the four tests exceeds 0.008 lb/MMBtu. When the average of the four tests is greater than or equal to 0.008 lb/MMBtu then the permittee shall continue to conduct quarterly tests until there are four (4) consecutive tests where each is less than or equal to 0.008 lb/MMBtu. Testing shall then revert to annually as specified in Condition 11a.

12. Nitrogen oxide (NO_x calculated as NO₂) from the boiler shall not exceed 42.3 pounds per hour, on a rolling 30-day period. The permittee shall demonstrate compliance with this limit during all hours of operation excluding startups, tuning, and shutdowns using the continuous NO_x emission monitoring system required by Conditions 23 and 25. [LRAPA 42-0041-3]
13. Carbon monoxide emissions from Boiler (B-1) shall not exceed 105.8 pounds per hour, on a rolling 8-hour average and 45.9 pounds per hour, on a rolling 30-day period. The permittee shall demonstrate compliance with these limits during all hours of operation excluding startups, tuning, and shutdowns using the continuous CO emission monitoring system required by Conditions 24 and 26. [LRAPA 42-0041-3.B and 42-0041-3]
14. Ammonia emissions from the boiler shall not exceed 25 ppm, by volume, at 12% CO₂ at standard conditions. The permittee shall demonstrate compliance with this limit using the initial performance test required in Condition 32, and a source test to be conducted every two years thereafter.

Startups and Shutdowns [LRAPA 36-010-3]

15. For purposes of this permit, a startup begins when fuel is ignited in the boiler and continues until the ESP is energized. A shutdown begins when the ESP is de-energized and ends when the fire is extinguished.

16. During periods of startups and shutdowns the permittee shall calculate mass emissions using the following emission factor for PM10 and using the NOx and CO CEMS data (or the following NOx and CO emission factors if valid CEMS data are not available):

- a. NOx 0.24 lb/MMBtu
- b. CO 4.0 lb/MMBtu
- c. PM10 0.24 lb/MMBtu

17. The permittee shall track the duration (hours) and calculate the amount of fuel fed to the boiler during the startup or shutdown. These values will be used to calculate the MMBtu/hr heat input rate. The startup/shutdown emissions will be calculated as:

$$\text{Emission (lb)} = \text{EF (lb/MMBtu)} \times \text{heat input (MMBtu/hr)} \times \text{duration (hours), or}$$

$$\text{Emission (lb)} = \text{CEMS data conversion to mass emissions using methods defined in 40 CFR 60 Appendices B and F.}$$

18. The permittee must notify LRAPA if cold startup/shutdown events exceed 10 events per calendar year. For the purposes of this permit, a cold start is one where the boiler cools to ambient temperature.

PSELS [LRAPA 42.0041-1 and -2]

19. The plant site emissions must not exceed the following limits for each 12 consecutive month period, during all hours of operation including startups, tunings and shutdowns:

Pollutant	Annual PSEL (tons/yr)	Monitoring Requirements	
		Method	Condition
PM/ PM10	14	Recordkeeping	30 and 39
CO	202	CEM and recordkeeping	24, 26, 30
NOx	187	CEM and recordkeeping	23, 25, 30
SO2	39	Recordkeeping	30 and 39
VOC	39	Recordkeeping	30 and 39

Synthetic Minor HAP Limits [LRAPA 42-0060]

20. The facility-wide hazardous air pollutants (HAP) emissions must not exceed the following limits for each 12 consecutive month period, during all hours of operation including startups, tunings and shutdowns:

Pollutant	Annual PSEL (tons/yr)	Monitoring Requirements	
		Method	Condition
Acetaldehyde	6	Recordkeeping	31 and 39
HAPs (any individual HAP except acetaldehyde)	9.4	Recordkeeping	31 and 39
HAPs (aggregate total)	17	Recordkeeping	31 and 39

Monitoring [LRAPA 34-015]

21. The permittee shall demonstrate compliance with Conditions 8 and 9 with EPA Method 9 and a continuous **opacity** monitoring system (COMS). The COMS must be operated during all hours of boiler operation. The permittee shall install, calibrate, maintain, and operate a COMS in accordance with 40 CFR 60.48b, and 40 CFR 60 Appendices B and F. The sampling and analyzing cycle shall be completed every successive 10-second period.
- a. The procedures in 40 CFR 60.13 shall be followed for installation, evaluation, and operation of the COMS [40 CFR 60.48b(e) and 40 CFR 60.13]
 - b. The permittee shall operate and maintain the continuous opacity monitoring system to continuously monitor and record the opacity of the particulate emissions whenever the boiler is operating. The continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.
 - c. The permittee shall maintain records of data obtained by the continuous opacity monitoring system including, but not limited to:
 - (1) Percent opacity on a one-minute and 6-minute block average basis;
 - (2) Number of readings per clock hour with 20% or greater opacity;
 - (3) Results of daily zero/span calibration checks and the magnitude of manual calibration adjustments;
 - (4) Hours of operation of the boiler, continuous opacity monitoring system, and control equipment;
 - (5) Date, time, and hours of operation of the boiler without the control equipment and/or the continuous opacity monitoring system in operation;
 - (6) The date, time, and hours of operation of the boiler during any malfunction of the control equipment and/or the continuous opacity monitoring system; as well as,
 - (7) The reason (if known) and the corrective actions taken (if any) for each such event in (5) and (6).
 - (8) The permittee shall submit semi-annual excess emission and monitoring system performance reports consistent with 40 CFR 60.7(c) and (d). The submittal date for the report covering the second half of the prior year shall be the same as the submittal date for the annual report under this permit.
 - d. If the permittee makes a replacement, modification, or change to the COMS, it shall be re-certified according to the procedures listed in this condition.
22. The permittee shall install, calibrate, maintain, and operate an **oxygen** (O₂) continuous emission monitoring system (CEMS) at the stack location of the Boiler (B-1) combustion unit, in accordance with 40 CFR 60.13 and 40 CFR 60 Appendices B and F. The sampling, analyzing, and data recording cycle shall be completed every successive 15 minute period.
23. The permittee shall install, calibrate, maintain, and operate a **nitrogen oxides** (NO_x) CEMs at the stack location of the combustion unit in accordance with 40 CFR 60.13 and 40 CFR 60 Appendices B and F. The sampling, analyzing, and recording cycle shall be completed every successive 15 minute period.
24. The permittee shall install, calibrate, maintain, and operate a **carbon monoxide** (CO) CEMS at the stack location of the combustion unit in accordance with 40 CFR 60 Appendices B and F. The

sampling, analyzing, and recording cycle shall be completed every successive 15 minute period. [LRAPA 42-0080, 32-007(1), 42-0041-3.B]

25. The NO_x CEMS in Condition 23 must record the NO_x emission rate in pounds per hour for each clock hour that the boiler is operating as an hourly total and a 30-day rolling average. A new 30-day rolling average emission rate is calculated each boiler operating day as the average of all of the hourly NO_x emission data for the preceding 30 boiler operating days. [LRAPA 42-0080, 32-007(1), 42-0041-3.B]
26. The CO CEMS in Condition 24 must record the CO emission rate in pounds per hour for each clock hour that the boiler is operating as an hourly total, an 8-hour rolling average and a 30-day rolling average. New 8-hour and 30-day rolling average emission rates are calculated each boiler operating hour as the average of all of the hourly CO emission data for the preceding 8 boiler operating hours and 30 boiler operating days, respectively. [LRAPA 42-0080, 32-007(1)]
27. The permittee shall prepare a quality assurance (QA) monitoring plan that will define the equipment, performance and audit procedures to be used on each continuous monitor. The QA plan will be reviewed and approved by LRAPA prior to implementation
28. The permittee shall install, calibrate, operate and maintain any equipment necessary to achieve the monitoring specified below. Monitoring equipment shall be operated in accordance with manufacturing specifications.
 - a. Boiler steam production rate (lb/hr), steam pressure (psig) and steam temperature (°F), as recorded on date stamped strip charts, circular charts, or electronic data logs.
 - b. Boiler excess oxygen (%), as recorded on date stamped strip charts, circular charts, or electronic data logs.
 - c. ESP operating parameters including for each field of the ESP the primary and secondary voltage (volts and kilovolts, respectively), primary and secondary current (amps and milliamps, respectively), and sparking rate, shall be recorded on date stamped strip charts, circular charts, or electronic data logs.
 - d. At least once each year, the permittee shall inspect the ESP for physical degradation that could affect the performance of the ESP. At a minimum, the permittee shall check the following components of the ESP for damage that would reduce the efficiency of the ESP
 - (1) Discharge electrodes (wires).
 - (2) Collection electrodes (plates).
 - (3) Electrode alignment.
 - (4) Rapper mechanisms for both the discharge electrodes and collection electrodes.
 - (5) Shell integrity (e.g. insulation and leaks).
 - (6) Transformer-rectifier (TR) sets.
 - e. The permittee shall record in a log, that is retained on-site and available to LRAPA inspectors for at least five years, the results of required inspections and subsequent repair activities conducted on the ESP. The log shall contain the date of inspection, the identity of the inspector, the results of each inspection, and the date and nature of any corrective action taken.

- f. **Boiler Monitoring During Tests.** During each test run required by conditions 32 through 33, the following parameters shall be monitored and record [LRAPA 34-015]
- (1) As-fired fuel characteristics including higher heating value, moisture content and ash content using ASTM methods; and, estimates of percentages of bark, species of wood and material less than 1/8 inch. The fuel sample analyzed must be a composite of samples taken during each test run from the fuel feed system to the boiler and which is representative of the fuel being burned during the test.
 - (2) The average value recorded by each process or control monitoring device required in condition 28. For monitoring devices that do not have continuous recordings, the average must consist of no fewer than 3 values recorded per test run.
 - (3) The average boiler fuel feed rate (lb/hr) such that the firing rate to steam production rate (MMBtu/mlb steam) is determined using the fuel higher heating value determined by condition 29 and the steam production rate determined by condition 28.a.
29. The actual higher heating value (HHV) of the wood fed to the boiler, as determined by ASTM Method E 711, shall be used for emission calculation purposes and by the CEMS until the next PM10 source test is conducted. The average of the test shall be used until three separate tests have been conducted, after which the three most recent tests shall be used for this purpose. Composite samples of the wood fuel shall be taken at the same time as the PM10 source tests. An Ultimate Analysis shall be performed on the composite wood fuel samples including an analysis for HHV. [LRAPA 34-015]

PSEL Monitoring [LRAPA 42-0080]

30. By the 15th day of each month for the period ending the previous calendar month the permittee must demonstrate compliance with the PSELs established in Condition 19 of this permit by conducting monitoring and calculations on a rolling 12-month period using the following procedures, test methods and frequencies:
- a. Emissions must be calculated using the following formula, process parameters, and emission factors:

$$E = \sum [Peu \times EFeu \times K + (SU/SD)]$$

Where:

- Σ = Symbol representing "summation of"
E = Pollutant in lbs/month and tons/yr
Peu = Process parameter for emission unit listed in the table below
EFeu = Emission factor for each emissions unit and pollutant listed in the table below (units are lb/throughput unit);
K = Conversion constants
SU/SD = startup and shutdown emissions calculated using Conditions 16 and 17 in lbs/month and tons/yr

Table 2: Emission Factors

EU Description	Process Throughput	PM/PM10	SO2	NOx	CO	VOC	HAPs
Boiler (B-1)	Heat input (MM Btu) ⁽¹⁾	0.008 lb/MMBtu	0.025 lb/MMBtu	CEMS	CEMS	0.005 lb/MMBtu	See Attachment
Truck unloading station (TD-1)	Wood GT/month	0.00055 Lb/GT	N/A	N/A	N/A	N/A	N/A
Hog and Screens (HS-1)	Wood GT/month	0.00055 Lb/GT	N/A	N/A	N/A	N/A	N/A
Target box (TB-1)	Wood GT/month	0.00055 Lb/GT	N/A	N/A	N/A	N/A	N/A
4 Conveyor Transfer points (FT-1 thru FT-4)	Wood GT/month (total)	0.00055 Lb/GT	N/A	N/A	N/A	N/A	N/A
Aggregate Insignificant	Constant (lb/year)	2000	2000	2000	2000	2000	2000

(1) Calculated from steam production rates and HHV of fuel. HHV determined by most recent lab analysis of fuel.

- b. Annual NOx emissions for the boiler are the sum of the hourly emissions measured by Condition 25 plus startup/shutdown emissions (Conditions 16 and 17) (summed monthly and annually on a rolling 12-month period)
- c. Annual CO emissions for the boiler are the sum of the hourly emissions measured by Condition 26 plus startup/shutdown emissions (Conditions 16 and 17) (summed monthly and annually on a rolling 12-month period)
- d. Annual PM10, SO2 and VOC boiler emissions are summed based on the MMBtu rate calculated from boiler steam production plus PM10 startup/shutdown emissions Conditions 16 and 17) (summed monthly and annually on a rolling 12-month period).
- e. Emission factors listed in Conditions 16, 30.a Table 2, and the Attachment specified in 31.a are not enforceable limits unless otherwise specified in this permit.

Synthetic Minor HAP Limits [LRAPA 42-0060, 42-0080]

- 31. By the 15th day of each month for the period ending the previous calendar month the permittee must demonstrate compliance with the **synthetic minor HAP emission limits** established in Condition 20 of this permit by conducting monitoring and calculations on a rolling 12-month period using the following procedures, test methods and frequencies:
 - a. Emissions must be calculated using the following formula, process parameters, and emission factors:

$$E_t = \sum (E_{Peu} \times E_{Feu} \times K)$$

Where:

- \sum = Symbol representing "summation of"
- E_t = HAPs (aggregate total) in lbs/month and tons/yr
- E = Individual HAP pollutant in lbs/month and tons/yr
- Peu = Process parameter for emission unit listed in Table 2 (Condition 29)
- E_{Feu} = Emission factor for each emissions unit and pollutant listed in the Attachment: Boiler Hazardous Air Pollutant Emission Factors
- K = Conversion constants

Specific Testing [LRAPA 35-0120]

32. To demonstrate compliance with the emission limits and standards in Conditions 8, 9, 10, 11, 12 and 13, of this permit, the permittee shall conduct an initial performance test on the new boiler within 60 days after achieving the maximum production rate at which the boiler will be operated, but not later than 180 days after initial startup of the boiler.
 - a. The following reference methods specified in 40 CFR 60 and ODEQ Method 5 shall be used:
 - (1) Method 7 or 7E: NO_x
 - (2) Method 10: CO
 - (3) Method 18 or 25A: VOC (as total organic carbon)
 - (4) ODEQ Method 5: PM₁₀ Emissions (front and back halves)
 - (5) Method 6 or 8: SO₂
 - (6) Method 3A: CO₂ and O₂
 - (7) Method 1 and 2: stack gas velocity
 - (8) Method 4: stack gas moisture content
 - (9) Ammonia using EPA approved test and lab method
 - (10) Wood HHV: ASTM Method E 711
 - (11) EPA Method 9: opacity
33. Hazardous air pollutant (HAP) emission factor verification testing shall be performed at the same time as the initial performance test. HAP emission factors referenced in Condition 31 shall be verified using EPA approved test and lab methods. The emission factor verification testing shall be performed only for the following HAPs: [LRAPA 34-015]
 - (1) Hydrogen chloride
 - (2) Chlorine
 - (3) Acetaldehyde
 - (4) Acrolein
 - (5) Formaldehyde
 - (6) Styrene
 - (7) Toluene
34. Initial performance testing and emission factor verification testing shall be conducted at 90% or more of the maximum boiler operating rate, and while the boiler is operating under representative conditions. [LRAPA 34-015]
35. LRAPA must be notified 30 days prior to any compliance source testing and the permittee shall submit a source test protocol for LRAPA approval at least 30 days prior to source test sampling.

The protocol shall include the test methods, procedures, and operating parameters for each source test. [LRAPA 35-0410(1)]

36. A written report documenting results of emissions testing shall be submitted within 60 days of completion of on-site testing. [LRAPA 34-015]
37. Source testing platforms, test location, sampling ports and stack access must be approved by LRAPA prior to installation. [LRAPA 34-015]

Operation and Maintenance for Highest and Best Control (O&M) [LRAPA 32-007-1]

38. The permittee shall inspect multiclones (MC-1) during the annual boiler shutdown for signs of physical degradation that could affect performance of the control device. Any necessary repair or maintenance shall be performed prior to re-starting boilers. [LRAPA 32-015(2)]

Results of all Multiclone inspection, maintenance and repair shall be documented in an operating log.

Specific Recordkeeping [LRAPA 35-0160]

39. The permittee shall record and maintain records as listed below. These records shall be maintained on-site for at least five years after the date of recording and shall be provided to regulatory personnel upon request.
 - a. Hourly, daily, monthly and annual amount of steam produced in the boiler;
 - b. Results of each and all lab analyses to determine wood fuel properties including its heating value (HHV and LHV) and composition (ultimate analysis) of wood fuel.
 - c. Daily amount of wood combusted in Boiler (B-1) in MMBtu heat input (based on a calculation from daily steam production and heating value of the fuel)
 - (1) Amount (monthly and annual) of wood fuel handled through TD-1, HS-1, TB-1, and FT-1 through FT-4.
 - (2) Occurrence and length of downtime for all pollution control devices (hours or minutes);
 - (3) Annual pollutant emissions calculated each month (tons/year);
 - (4) Excess emissions
 - (5) NSPS records for the boiler and emergency generator [40 CFR 60 Subpart A and Subpart Db and Subpart IIII]
 - (6) Occurrence and duration of any startup, shutdown, or malfunction in operation;
 - (7) Any malfunction of the air pollution control equipment;
 - (8) Any periods during which a continuous monitoring system or monitoring device is inoperative;
 - (9) Opacity monitoring data;
 - (10) NO_x CEMS data;
 - (11) CO CEMS data;
 - (12) Boiler exhaust flow rate data

<u>Emission unit or activity</u>	<u>Process or production parameter</u>	<u>Frequency</u>
Boiler (B-1)	1000 pounds of steam produced	Hourly, daily, monthly, annual
Boiler (B-1)	MMBtu heat input	Daily
Truck unloading station (TD-1)	Green tons unloaded	Monthly
Hog and Screens (HS-1)	Green tons processed	Monthly
Target box (TB-1)	Green tons moved	Monthly
4 Conveyor Transfer points (FT-1 thru FT-4)	Green tons moved	Monthly
Truck unloading station (TD-1)	Moisture content, type, supplier or origination	Each delivery

Specific Reporting [LRAPA 34-015]

40. The permittee shall submit written semi-annual reports that are postmarked by the 30th day following the end of each semiannual calendar period. The semiannual CEMS report must include opacity, NOx and CO monitoring information including a log of all planned and unplanned excess emissions and a monitoring system performance report in accordance with 40 CFR 60.7.
 - a. The summary report shall contain the information and be in the format shown in figure 1 of 40 CFR 60.7. One summary report shall be submitted for each pollutant monitored (i.e., NOx, CO and opacity).
 - b. If the total duration of excess emissions for the reporting period is 1 percent or greater of the total operating time for the reporting period or the total CMS downtime for the reporting period is 5 percent or greater of the total operating time for the reporting period, the summary emission report must be accompanied by an excess emission report including the following information:
 - (1) Magnitude of the excess emissions computed in accordance with 40 CFR 60.13(h), including any conversion factor used;
 - (2) The date and time of commencement and completion of each excess emission period;
 - (3) The amount of time Boiler (B-1) was operated during the reporting period;
 - (4) Identification of which periods of excess emissions occurred during startups, shutdowns, or malfunctions;
 - (5) The nature and cause of any malfunction reported and the corrective actions or preventative measures taken (adopted);
 - (6) The date and time of periods when the continuous monitoring system is inoperative, except during periods of zero and span checks; and
 - (7) When no excess emissions have occurred or the continuous monitoring system has not been inoperative, such information must be stated in the report.
41. The permittee must notify LRAPA at least 60 days prior to any physical or operational change which may increase the emission rate of any air pollutant to which a standard applies. [40 CFR 60.7(a)(4)]
42. Within 96 hours of discovery, the operator shall report to the LRAPA any violation of the NOx or CO emission standards indicated by the CEMS.
43. The permittee shall notify LRAPA no later than eight hours after the detection of a breakdown of the CEMS. The operator shall inform LRAPA of the intent to shutdown the CEMS at least 24 hours prior to the event.

44. All records shall be retained for a minimum of five years, and shall be made available for LRAPA inspection upon request.

Operation and Maintenance Practices [LRAPA 32-007]

45. Operation and maintenance practices. The permittee is subject to the following operation and maintenance practices.
- a. At all times, including periods of startup, shutdown, and malfunction, the permittee must operate and maintain each/any affected source, including associated air pollution control devices and monitoring equipment, in a manner consistent with good air pollution control practices.
 - b. Malfunctions must be corrected as soon as practicable after their occurrence.

Other Reporting Requirements Include [LRAPA 36-001 through 36-030]

46. Unless stated otherwise in this permit, the permittee shall report all excess emissions in accordance with LRAPA 36-001 through 36-030. In summary, the permittee shall immediately (i.e., as soon as possible but in no case more than one hour after the beginning of the excess emission period) notify LRAPA by telephone or in person of any excess emission, other than pre-approved startup, shutdown, or scheduled maintenance. Notification shall, to the extent reasonably ascertainable at the time of notification, include the source name, nature of the emissions problem, name of the person making the report, name and telephone number of the contact person for further information, date and time of the onset of the upset condition, whether or not the incident was planned, the cause of the excess emission (e.g., startup, shutdown, maintenance, breakdown, or other), equipment involved in the upset, estimated type and quantity of excess emissions, estimated time of return to normal operations, efforts made to minimize emissions, and a description of remedial actions to be taken. Follow-up reporting shall be made in accordance with Condition 46e.
- a. Notification shall be made to LRAPA. The current LRAPA telephone number is (541) 736-1056.
 - b. In the event of any excess emissions, which are of a nature that could endanger public health and occur during non-business hours, weekends, or holidays, the permittee shall immediately notify LRAPA by calling the after-hours number is 1-541-726-1930.
 - c. If startups, shutdowns, or scheduled maintenance may result in excess emissions, the permittee shall submit startup, shutdown, or scheduled maintenance procedures used to minimize excess emissions to LRAPA for prior authorization, as required in LRAPA 36-015. New or modified procedures shall be received by LRAPA in writing at least 72 hours prior to the first occurrence of the excess emission event. The permittee shall abide by the approved procedures and have a copy available at all times.
 - d. The permittee shall notify LRAPA of planned startup/shutdown or scheduled maintenance events only if required by permit condition or if the source is located in a nonattainment area for a pollutant, which may be emitted in excess of applicable standards.
 - e. The permittee shall maintain and submit to LRAPA a log of planned and unplanned excess emissions, on LRAPA-approved forms, in accordance with LRAPA 36-025.

- (1) In accordance with LRAPA 36-025, for any excess emissions event the permittee must submit to LRAPA a written report of excess emissions for each calendar day of the event. The report must be submitted within 15 days of the date of the event (unless based on the severity of the event, LRAPA specifies a shorter time period for submittal for the report) and include the following:
- (2) The date and time of the beginning of the excess emissions event and the duration or best estimate of the time until return to normal operations;
- (3) The date and time the owner or operator notified the LRAPA of the event;
- (4) The equipment involved;
- (5) Whether the event occurred during a period of planned startup, planned shutdown, scheduled maintenance, or as a result of a breakdown, malfunction, or emergency;
- (6) Steps taken to mitigate emissions and corrective actions taken;
- (7) The magnitude and duration of each occurrence of excess emissions during the course of an event and the increase over normal rates or concentrations as determined by continuous monitoring or a best estimate (supported by operating data and calculations);
- (8) The final resolution.

Emergency Generator-NSPS Subpart III Requirements

47. The permittee must meet all of the following requirements for operation of their Emergency Generator (1000 kW) to comply with the equipment and HAP standards that apply to compression ignition engines:
- a. Installation of a compression ignition (CI) internal combustion (IC) engine certified to meet the federal emission standards for new nonroad CI engines, for all pollutants, for the same model year and maximum engine power for their installation. [40 CFR 60.4205 (b)]
 - b. Must install, operate and maintain the emergency generator according to the manufacturer's written instructions or procedures developed by the permittee and approved by the engine manufacturer. In addition, the permittee may only change those settings that are permitted by the manufacturer. [40 CFR 60.4211]
 - c. Before October 1, 2010, must only use diesel fuel that meets or exceeds the federal low sulfur fuel standards of 40 CFR 80.510(a). [40 CFR 60.4207 (a)]
 - d. Non-emergency operation not to exceed 100 hours per year for maintenance checks and readiness testing, except:
 - (1) The permittee may operate the emergency generator for non-emergency purposes for up to 50 hours per year, but those 50 hours are counted toward the 100 hours allowed for maintenance and readiness testing,
 - (2) The 50 hours per year allowance in (1) cannot be used to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [60 CFR 4211(e)]
 - (3) There is no time limit on the use of emergency stationary IC engines in emergency situations.
 - e. Before initial startup, the emergency generator must be equipped with a non-resettable hour meter.

- f. Must maintain the following records onsite and made immediately available to the LRAPA staff upon request:
- (1) Operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter.
 - (2) The time of operation of the engine and the reason the engine was in operation during that time. [40 CFR 60.4214].
 - (3) Fuel usage in gallons.

Conditions for Cooling Tower

48. The permittee shall properly install and maintain high efficiency low drift eliminators on the cooling tower to minimize drift losses. The high-efficiency low drift eliminators shall have a manufacturer's specified drift rating of 0.0008%. The drift eliminators will be installed and maintained according to manufacturer's specifications [LRAPA 42-0041-2 and 32-007]
49. The permittee shall perform a visual inspection of the cooling tower drift eliminators at least once per calendar year, and repair or replace any drift eliminator components which are broken or missing. Prior to the initial operation of the facility, the permittee shall have the cooling tower vendor's field representative inspect the cooling tower drift eliminators and certify that the installation was performed in a satisfactory manner. [LRAPA 32-007]

Fugitive Emissions and Dust Control

50. The permittee shall pave (apply asphalt) all road surfaces, open areas, and all other SSE facility surfaces which can create airborne dusts. These paved roads and surfaces shall be maintained with scheduled application of asphalt and periodic sweeping or cleaning as necessary including prompt removal of material that may be a source of airborne dust.
51. The permittee shall conduct surveys as necessary to ensure that truck unloading, hogs and screens, and conveyor transfer points are not sources of fugitive dust emissions. If sources of excess fugitive emissions are identified during the survey, the permittee shall use water, repair, require a cover or take other corrective measures to prevent fugitive emissions. If water is used to control the fugitive emissions, the permittee shall take care not to create a water quality problem caused by surface water run-off. Corrective measure shall be recorded in a maintenance log, and be made available for viewing by LRAPA.
52. There shall be no visible emissions from the Baghouses (BH-1 and BH-2). Each baghouse shall be maintained, and equipped with parts, according to the manufacturer specifications, including bag material and differential pressure gauges.
53. The permittee shall take sufficient measures to minimize the generation of air-borne fugitive dust during the construction activities of the 18.8 MW power plant covered by this permit. Sufficient measures shall be taken on a 24hr/d-7d/wk basis and include but are not limited to:
- a. Use of water, non-toxic chemical or organic dust suppressants on unpaved roads and traffic areas.
 - b. Limit or reduce vehicle speed on unpaved roads and traffic areas.
 - c. Maintain areas in a stabilized condition (ex., restricting vehicle access).
 - d. During high winds, minimize activities that disturb the soil.

- e. Maintain the site to prevent dust and mud trackout by vehicles entering and leaving the site.
54. The permittee shall develop, and submit to the LRAPA for review and approval, a written startup, shutdown and malfunction plan (SSMP). The SSMP must describe in detail, procedures for operating and maintaining the wood-fired boiler during periods of startup, shutdown, and malfunction, and include a program of corrective action for malfunctioning equipment and associated air pollution control and monitoring equipment. The permittee shall update the plan as applicable after each malfunction or upset event. [LRAPA 32-007]

GENERAL PERMIT CONDITIONS

General Conditions and Disclaimers

- G1. A copy of the permit application and this Air Contaminant Discharge Permit (ACDP) must be available on site for inspection upon request.
- G2. The permittee shall allow the Director or his/her authorized representatives access to the plant site and pertinent records at all reasonable times for the purpose of making inspections, surveys, collecting samples, obtaining data, reviewing and copying air contaminant discharge records and otherwise conducting necessary functions related to this permit in accordance with ORS 468.095. [LRAPA 13-020(1)(h)]
- G3. The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

Performance Standards and Emission Limits

- G4. The permittee shall not cause or permit the emissions of any particulate matter which is greater than 250 microns in size if such particulate matter does or will deposit upon the real property of another person. [LRAPA 32-055]
- G5. The permittee shall not discharge from any source whatsoever such quantities of air contamination which cause injury, detriment, public nuisance or annoyance to any persons or to the public or which cause injury or damage to business or property; such determination to be made by LRAPA. [LRAPA 32-090(1)]
- G6. The permittee shall not cause or permit emission of water vapor if the water vapor causes or tends to cause detriment to the health, safety or welfare of any person or causes, or tends to cause damage to property or business. [LRAPA 32-090(2)]
- G7. The permittee shall not willfully cause or permit the installation or use of any device or use of any means which, without resulting in a reduction in the total amount of air contaminants emitted, conceals emissions of air contaminants which would otherwise violate LRAPA rules. [LRAPA 33-030(1)]
- G8. The permittee shall not cause or permit the installation or use of any device or use of any means designed to mask the emissions of an air contaminant which causes or tends to cause detriment to health, safety or welfare of any person. [LRAPA 33-030(2)]

- G9. The permittee shall not allow any materials to be handled, transported, or stored; or a building, its appurtenances or road(s) to be used, constructed, altered, repaired, or demolished; or any equipment to be operated, without taking reasonable precautions to prevent particulate matter from being airborne. [LRAPA 48-015(2)]
- G10. The permittee shall not cause or permit the emissions of odorous matter in such a manner as to cause a public nuisance. [LRAPA 49-010(1)]

Excess Emissions: General Policy

- G11. Emissions of air contaminants in excess of applicable standards or permit conditions are considered unauthorized and are subject to enforcement action, pursuant to LRAPA 36-010 and 36-030. These rules apply to any permittee operating a source which emits air contaminants in violation of any applicable air quality rule or permit condition resulting from the breakdown of air pollution control equipment or operating equipment, process upset, startup, shutdown, or scheduled maintenance. [LRAPA 32-001(1)]

Excess Emissions: Notification and Record-keeping

- G12. The permittee must immediately (i.e., as soon as possible, but in no case more than one (1) hour after the beginning of the excess emissions period) notify LRAPA by telephone or in person of all cases of excess emissions due to upset or breakdown. [LRAPA 36-020(1)] Notification shall include:
- a. source name;
 - b. nature of the emissions problem;
 - c. name of the person making the report;
 - d. name and telephone number of the contact person for further information;
 - e. date and time of the onset of the upset condition;
 - f. whether or not the incident was planned;
 - g. equipment involved in the upset or breakdown;
 - h. estimated type and quantity of excess emissions;
 - i. estimated time of return to normal operations;
 - j. efforts made to minimize emissions; and
 - k. description of remedial actions to be taken.

Notification shall be made to the LRAPA office. The current LRAPA telephone number during regular business hours (8 a.m. - 5 p.m., M-F) is (541) 736-1056. During nonbusiness hours, weekends, or holidays, the permittee shall immediately notify LRAPA by calling the LRAPA Upset/Complaint Line. The current number is (541) 726-1930.

Follow-up reporting, if required by LRAPA, shall contain all information required by Condition G15.

- G13. At each reporting period specified in this permit, or sooner if required by LRAPA, the permittee shall submit a copy of the upset log entries for the reporting period, as required by Condition G15. [LRAPA 36-025(4)]

- G14. Any excess emissions which could endanger public health or safety shall immediately be reported to the Oregon Emergency Response System (OERS) at 1-800-452-0311.
- G15. The permittee shall keep an upset log of all planned and unplanned excess emissions. [LRAPA 36-025(3) and 36-030(1)] The upset log shall include the following:
- a. date and time each event was reported to LRAPA;
 - b. whether the process handling equipment and the air pollution control equipment were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;
 - c. whether repairs or corrections were made in an expeditious manner when the permittee knew or should have known that emission limits were being or were likely to be exceeded;
 - d. whether the event was one in a recurring pattern of incidents which indicate inadequate design, operation, or maintenance; and
 - e. final resolution of the cause of the excess emissions.

Upset logs shall be kept by the permittee for two (2) calendar years.
[LRAPA 36-025(4)]

Excess Emissions: Scheduled Maintenance

- G16. Where it is anticipated that shutdown, by-pass, or operation at reduced efficiency of production equipment or air pollution control equipment for necessary scheduled maintenance may result in excess emissions, the permittee must obtain prior LRAPA approval of procedures that will be used to minimize excess emissions. Application for approval of procedures associated with the scheduled maintenance shall be submitted and received by LRAPA in writing at least seventy-two (72) hours prior to the event. [LRAPA 36-015(1)] The application shall include the following:
- a. reasons explaining the need for maintenance, including why it would be impractical to shut down the source operation during the period, and why the by-pass or reduced efficiency could not be avoided through better scheduling for maintenance or through better operation and maintenance practices;
 - b. identification of the specific production or emission control equipment or system to be maintained;
 - c. nature of the air contaminants likely to be emitted during the maintenance period, and the estimated amount and duration of the excess emissions, including measures such as the use of overtime labor and contract services and equipment that will be taken to the length of the maintenance period; and
 - d. identification of specific procedures to be followed which will minimize excess emissions.
- G17. No scheduled maintenance which is likely to result in excess emissions shall occur during any period in which an Air Pollution Alert, Air Pollution Warning, or Air Pollution Emergency has been declared, or during an announced "Stage I Red" woodstove advisory period, in areas determined by LRAPA as PM₁₀ Nonattainment Areas. [LRAPA 36-015(6)]

- G18. In cases where LRAPA has not received notification of scheduled maintenance that is likely to cause excess emissions within the required seventy-two (72) hours prior to the event, or where such approval has not been waived pursuant to LRAPA 36-025(2), the permittee shall immediately notify LRAPA by telephone of the situation, and shall be subject to the requirements of Conditions G12 and G13. [LRAPA 36-015(7)]

Air Pollution Emergencies

- G19. The permittee shall, upon declaration of an air pollution episode, take all actions specified in Tables 1, 2, and 3 of LRAPA's Title 51 (see Attachment A) and shall particularly put into effect the LRAPA-approved preplanned abatement strategy for such condition, if applicable. [LRAPA 51-015]

Notification of Construction/Modification

- G20. The permittee shall notify LRAPA in writing and obtain approval in accordance with LRAPA 34-035 before:
- a. constructing or installing any new source of air contaminant emissions, including air pollution control equipment; or
 - b. modifying or altering an existing source that may significantly affect the emissions of air contaminants, or
 - c. making any physical change which increases emissions; or
 - d. changing the method of operation, the process, or the fuel use, or increasing the normal hours of operation to levels above those contained in the permit application and reflected in this permit and which result in increased emissions.

Notification of Name Change

- G21. The permittee shall notify LRAPA in writing, using an LRAPA Application for Administrative Amendment to ACDP form, within 60 days after legal change of the registered name of the company with the Corporation Division of the State of Oregon.

Applicable administrative fees must be submitted with an application for the name change.

Permit Renewal

- G22. Application for renewal of this permit must be submitted not less than 60 days prior to the permit expiration date. [LRAPA 37-0040]
- G23. The procedure for issuance of a permit shall apply to renewal of a permit. If a completed application for a renewal of a permit is filed with LRAPA in a timely manner, prior to the expiration date of the permit, the permit shall not be deemed to expire until final action has been taken on the renewal application to issue or deny a permit. [LRAPA 37-0040]

Termination Conditions

- G24. This permit shall be automatically terminated: [LRAPA 37-0040 and 37-0082]
- a. within sixty (60) days after sale or exchange of the activity or facility which requires a permit;
 - b. upon change of nature of the activities, operations, emissions, or discharges from those of record in the last application;
 - c. within one (1) year after a plant closure lasting continuously for one (1) or more years;
 - d. upon issuance of a new, renewal, or modified permit for the same operation; or
 - e. upon written request of the permittee.
- G25. In the event that it becomes necessary to suspend or terminate this permit due to non-compliance with the terms of the permit, unapproved changes in operation, false information submitted in the application or any other cause, LRAPA shall notify the permittee by registered or certified mail of its intent to suspend or revoke the permit. Such notification shall include the reasons for the suspension or revocation. The suspension or revocation shall become effective twenty (20) days from the date of mailing of such notices unless, within that time, the permittee requests a hearing. Such a request for hearing shall be made in writing and shall state the grounds for such a request. [LRAPA 37-0082-4]
- G26. Termination of this permit resulting from continuous plant closure shall subject the source to review as a new non-permitted source upon application to operate the facility. [LRAPA 37-0082-3]
- G27. If LRAPA finds that there is a serious danger to the public health or safety or that irreparable damage to a resource will occur, it may suspend or terminate this permit, effective immediately. Notice of such suspension or termination must state the reasons for such action and advise that the permittee may request a hearing. Such a request for a hearing shall be made in writing within ninety (90) days of the date of the suspension and shall state the grounds for the request. [LRAPA 37-0082-4.B]
- G28. Any hearing requested shall be conducted pursuant to the rules of LRAPA. [LRAPA Title 31]
- G29. The permittee may be required to submit, by April 20 of each year, the emission inventory form provided by LRAPA.

SLL/cw/mr [revised 10/9/009]

Attachment

Boiler Hazardous Air Pollutant Emission Factors

Pollutant	Emission Factor		
	Value	Units	Reference
Inorganics			
Antimony	7.9 E-06	lb/MMBtu	EPA AP-42
Arsenic	1.8 E-07	lb/MMBtu	Ecology
Beryllium	1.7 E-07	lb/MMBtu	Ecology
Cadmium	4.4 E-07	lb/MMBtu	Ecology
Chromium- total	2.7 E-05	lb/MMBtu	Ecology
Cobalt	6.5 E-06	lb/MMBtu	EPA AP-42
Lead	3.2 E-06	lb/MMBtu	Ecology
Manganese	4.2 E-05	lb/MMBtu	Ecology
Mercury	2.7 E-07	lb/MMBtu	Ecology
Nickel	3.0 E-06	lb/MMBtu	Ecology
Selenium	2.0 E-06	lb/MMBtu	Ecology
Chlorine	7.9 E-04	lb/MMBtu	EPA AP-42
Hydrogen chloride	6.7 E-04	lb/MMBtu	NCASI TB 858
Organics			
POM or PAH	3.0 E-05	lb/MMBtu	EPA AP-42
Dioxins	1.7 E-06	lb/MMBtu	EPA AP-42
Furans	1.9 E-09	lb/MMBtu	EPA AP-42
Acetaldehyde	8.3 E-04	lb/MMBtu	EPA AP-42
Acetophenone	3.2 E-09	lb/MMBtu	EPA AP-42
Acrolein	4.0 E-03	lb/MMBtu	EPA AP-42
Benzene	1.2 E-04	lb/MMBtu	Ecology
Bromomethane	1.5 E-05	lb/MMBtu	EPA AP-42
Carbon tetrachloride	4.5 E-05	lb/MMBtu	EPA AP-42
Chlorobenzene	3.3 E-05	lb/MMBtu	EPA AP-42
Chloroform	2.8 E-05	lb/MMBtu	EPA AP-42
Chlormethane	2.3 E-05	lb/MMBtu	EPA AP-42
Ethylbenzene	3.1 E-05	lb/MMBtu	EPA AP-42
Formaldehyde	1.1 E-03	lb/MMBtu	Ecology
Naphthalene	9.7 E-05	lb/MMBtu	EPA AP-42
Pentachlorophenol	5.1 E-08	lb/MMBtu	EPA AP-42
Phenol	5.1 E-05	lb/MMBtu	EPA AP-42
Propionaldehyde	6.1 E-05	lb/MMBtu	EPA AP-42
Styrene	1.9 E-03	lb/MMBtu	EPA AP-42
Tetrachloroethene	3.8 E-05	lb/MMBtu	EPA AP-42
Toluene	9.2 E-04	lb/MMBtu	EPA AP-42
1,1,1-trichloroethane	2.6 E-09	lb/MMBtu	EPA AP-42
Trichloroethene	3.0 E-05	lb/MMBtu	EPA AP-42
2,4,6-trichlorophenol	2.2 E-08	lb/MMBtu	EPA AP-42
Vinyl chloride	1.8 E-05	lb/MMBtu	EPA AP-42
Xylene	2.5 E-05	lb/MMBtu	EPA AP-42