

Public Notice

DEQ Requests Comments on Pacific Northwest Generating Cooperative Proposed Air Quality Permit

The Oregon Department of Environmental Quality invites the public to submit written comments on the conditions of the Pacific Northwest Generating Cooperative proposed air quality permit, known officially as a Title V Operating Permit.

Summary

DEQ is proposing to renew the company's Title V Operating permit. The current permit was issued on April 1, 2009 and was scheduled to expire on Jan. 1, 2014. The company submitted a complete and timely renewal application. Therefore, the existing permit remains in effect until the renewal is issued. The company is not proposing any emission increases.

How do I participate?

To submit your comments for the public record, send them by mail, fax, or email:

Patty Hamman, Permit Coordinator
4026 Fairview Industrial Drive SE
Salem, Oregon 97302
Fax: 503 378-4196
Email: hamman.patricia@deq.state.or.us

Written comments are due by 5 p.m. Dec. 20, 2016

About the facility

The company operates a 5.7 megawatt power generation facility located at Coffin Butte Landfill. The landfill is owned and operated by Valley Landfills Inc. The company uses the gas collected from the landfill to generate electric power.

What air pollutants would the permit regulate?

This permit regulates emissions of the pollutants listed in the table at the end of this document.

How does DEQ determine permit requirements?

DEQ evaluates types and amounts of pollutants and the facility's location, and determines permit requirements according to state and federal regulations.

How does DEQ monitor compliance with the permit requirements?

This permit requires the facility to monitor pollutants using federally-approved monitoring practices and standards.

DEQ inspects the facility on a regular basis. The company is required to document and report compliance with the permit to DEQ semi-annually.

What happens after the public comment period ends?

DEQ will schedule a public hearing if one is requested by 10 or more people, or by an authorized person representing an organization of at least 10 people. An additional public notice will be published to advertise the public hearing.

DEQ will consider and provide responses to all comments received at the close of the comment period. DEQ may modify provisions in the proposed permit, but the permit writers can only modify conditions of the permit in accordance with the rules and statutes under the authority of DEQ. Participation in the rulemaking or the legislative process is the only way to change the rules or statutes. Ultimately, if a facility meets all legal requirements, DEQ will issue the facility's air quality permit.

Where can I get technical information?

Find out more about the permit by viewing the documents below, or contact Karen White-Fallon:

Phone: 503 378-5315 or 800-349-7677

Fax: 503 378-4196

Email: white-fallon.karen@deq.state.or.us

View the application and related documents in person at the DEQ office in Salem or at the Benton County Public Library located at 645 NW Monroe Ave, Corvallis, OR 97330. For a DEQ review appointment, call Patty Hamman at 503-378-5305.

Accessibility information

Documents can be provided upon request in an alternate format for individuals with disabilities or in a language other than English for people with limited English skills. To request a document in another format or language, call DEQ in Portland at 503-229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696; or email deqinfo@deq.state.or.us.



State of Oregon
Department of
Environmental
Quality

**Western Region
Air Quality Program**
4026 Fairview Industrial Dr
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Salem, OR 97302
Phone: 503-378-8240
800-349-7677
Fax: 503-378-4196
Contact: Karen White-
Fallon

www.oregon.gov/DEQ

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Public Notices, Pacific
Northwest Generating
Cooperative*

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water.*

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Emissions Limits

Regulated Pollutants: Table 1 below and Table 2 present maximum allowable emissions for the facility. The proposed emission limit reflects maximum emissions the facility would be able to emit under the proposed permit. Typically, a facility's actual emissions are less than maximum limits established in a permit; however, actual emissions can increase up to the permitted limit.

Criteria pollutants:

Table 1

Regulated Pollutant	Previous Limit (tons/yr)	Proposed Limit (tons/yr)
PM	24	24
PM ₁₀	14	14
PM _{2.5}	9	9
CO	249	249
NO _x	95	95
SO ₂	39	39
VOC	57	57
GHG (CO ₂ e)	74,000	74,000

For more information about criteria pollutants, go to the EPA Criteria Air Pollutants page:
<https://www.epa.gov/criteria-air-pollutants> .

Hazardous air pollutants:

The company is a minor source of hazardous air pollutants with the proposed emission levels. Table 2 lists the maximum amount of hazardous air pollutants which the source may emit.

Table 2

Pollutant	Maximum Emissions (tons/yr)
Formaldehyde	1.53
Hydrogen chloride	0.53
Ethylbenzene	0.14
Methyl ethyl ketone	0.14
Toluene	0.44
Xylene	0.33
All other HAP	<0.5
Total HAP	3.4

For more information about hazardous air pollutants, go to the EPA page: [Health Effects Notebook for Hazardous Air Pollutants | Technology Transfer Network Air Toxics Web site | US EPA](#)





OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
OREGON TITLE V OPERATING PERMIT

Western Region
4026 Fairview Industrial Drive SE
Salem, OR 97302

Issued in accordance with provisions of ORS 468A.040
and based on land use compatibility findings included in the permit record.

ISSUED TO:

Pacific Northwest Generating Cooperative
711 NE Halsey
Portland, OR 97232

INFORMATION RELIED UPON:

Application Number: 27123
Received: 12/26/12
Revised: 11/11/15

PLANT SITE LOCATION:

29160 Coffin Butte Road
Corvallis, OR 97330

LAND USE COMPATIBILITY STATEMENT:

Issued by: Benton County
Dated: 07/29/94

ISSUED BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY

Claudia Davis, Western Region Air Quality Manager

Dated

Nature of Business

Landfill Gas to Energy Plant

SIC

4911

NAICS

221118

RESPONSIBLE OFFICIAL

Title: President and CEO

FACILITY CONTACT PERSON

Name: Steve King

Title: Generation Resources Manager

Phone: 541-745-3812

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LIST OF ABBREVIATIONS THAT MAY BE USED IN THIS PERMIT

ACDP	Air Contaminant Discharge Permit
Act	Federal Clean Air Act
ASTM	American Society of Testing and Materials
Btu	British thermal unit
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO _{2e}	carbon dioxide equivalent
CPMS	Continuous parameter monitoring system
DEQ	Department of Environmental Quality
dscf	Dry standard cubic feet
EF	Emission factor
EPA	US Environmental Protection Agency
EU	Emissions Unit
FCAA	Federal Clean Air Act
FSA	Fuel sampling and analysis
GHG	greenhouse gas
gr/dscf	Grain per dry standard cubic feet (1 pound = 7000 grains)
HAP	Hazardous Air Pollutant as defined by OAR 340-244-0040
HCFC	Halogenated Chloro-Fluoro-Carbons
ID	Identification number or label
I&M	Inspection and maintenance
NA	Not applicable
NO _x	Nitrogen oxides
O ₂	Oxygen
OAR	Oregon Administrative Rules
ODEQ	Oregon Department of Environmental Quality
ORS	Oregon Revised Statutes
O&M	Operation and maintenance
Pb	Lead
PCD	Pollution Control Device
PM	Particulate matter
PM ₁₀	Particulate matter less than 10 microns in size
PM _{2.5}	Particulate matter less than 2.5 microns in size
ppm	Parts per million
PSEL	Plant Site Emission Limit
psia	pounds per square inch, actual
SERP	Source emissions reduction plan
SO ₂	Sulfur dioxide
ST	Source test
VE	Visible emissions
VMT	Vehicle miles traveled
VOC	Volatile organic compounds

Opacity must be measured in accordance with EPA Method 9 unless DEQ approves and alternate method. For all standards, the minimum observation period must be six minutes, though longer periods may be required by a specific rule or permit condition.

PERMITTED ACTIVITIES

1. Until such time as this permit expires or is modified or revoked, the permittee is allowed to discharge air contaminants from those processes and activities directly related to or associated with air contaminant source(s) in accordance with the requirements, limitations, and conditions of this permit. [OAR 340-218-0010 and 340-218-0120(2)]
2. All conditions in this permit are federally enforceable, meaning that they are enforceable by DEQ, EPA, and citizens under the Clean Air Act, except Conditions 5, 6, 7, G5, and G9 (OAR 340-248-0005 through 340-248-0180) are only enforceable by the state. [OAR 340-218-0060]

EMISSIONS UNIT (EU) AND POLLUTION CONTROL DEVICE (PCD) IDENTIFICATION

3. The emissions units regulated by this permit are the following [OAR 340-218-0040(3)]:

Emission Unit Description	EU ID	Pollution Control Device Description*	PCD ID
Caterpillar 3516 Landfill Gas Engines 1-3	EU1	None	NA
Caterpillar 3520 Landfill Gas Engines 4-5	EU2	None	NA
Crankcase Exhaust	EU3	Filter	
Aggregate Insignificant Emissions (PM/PM ₁₀ /PM _{2.5} from unpaved roads)	AI		

EMISSION LIMITS AND STANDARDS, TESTING, MONITORING, AND RECORDKEEPING REQUIREMENTS

The following tables and conditions contain the applicable requirements along with testing, monitoring, and recordkeeping requirements for the emissions units to which those requirements apply.

Summary of Facility Wide Emission Limits and Standards

Applicable Requirement	Condition Number	Pollutant/Parameter	Limit/Standard	Averaging Time	Testing Condition	Monitoring Condition
340-208-0210(2)	4	Fugitive emissions	Minimize	NA	NA	7
340-208-0300	5	Air contaminants	No nuisance	NA	NA	7
340-208-0450	6	PM >250μ	No fallout	NA	NA	7

4. Applicable Requirement: The permittee must not allow or permit any materials to be handled, transported, or stored; or a building, its appurtenances, or a road to be used, constructed, altered, repaired or demolished; or any equipment to be operated, without taking reasonable precautions to prevent particulate matter from becoming airborne.
 - 4.a. Such reasonable precautions must include, but not be limited to the following: [OAR 340-208-0210(1)]
 - 4.a.i. Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land;

- 4.a.ii. Application of water, or other suitable chemicals on unpaved roads, materials stockpiles, and other surfaces which can create airborne dusts;
 - 4.a.iii. Full or partial enclosure of materials stockpiles in cases where application of water or chemicals are not sufficient to prevent particulate matter from becoming airborne;
 - 4.a.iv. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials;
 - 4.a.v. Adequate containment during sandblasting or other similar operations;
 - 4.a.vi. Covering, at all times when in motion, open bodied trucks transporting materials likely to become airborne; and
 - 4.a.vii. Prompt removal from paved streets of earth or other material that does or may become airborne.
- 4.b. Upon request by DEQ, the permittee must develop a fugitive emission control plan for approval by DEQ if the above precautions are not adequate, and implement the plan whenever fugitive emissions leave the property for more than 18 seconds in a six-minute period.

Nuisance Conditions

- 5. Applicable Requirement: The permittee must not cause or allow air contaminants from any source to cause a nuisance. Nuisance conditions will be verified by DEQ personnel. [OAR 340-208-0300] This condition is enforceable only by the State.
- 6. Applicable Requirement: The permittee must not cause or permit the deposition of any particulate matter larger than 250 microns in size at sufficient duration or quantity, as to create an observable deposition upon the real property of another person. [OAR 340-208-0450] This condition is enforceable only by the State.
- 7. Monitoring Requirement: The permittee must maintain a log of each nuisance complaint received by the permittee during the operation of the facility. Documentation must include date of contact, time of observed nuisance condition, description of nuisance condition, location of receptor, status of plant operation during the observed period, and time of response to complainant. A plant representative must immediately investigate the condition following the receipt of the nuisance complaint and a plant representative must provide a response to the complainant within 24 hours, if possible. This condition is only enforceable by the state. [OAR 340-218-0050(3)(a)]

ENGINE SETS 1 and 2 (EU1 and EU2)

Summary of Requirements for Emissions Units EU1 and EU2

Applicable Requirement	Condition Number	Pollutant/Parameter	Limit/Standard	Averaging Time	Testing Condition	Monitoring Condition
340-208-0110(4)	8	Visible emissions	20% opacity	6-minute block average	14	14,15
340-228-0210(2)(b)(B)	9	PM	0.14 gr/dscf @ 12%CO ₂	avg. of 3 test runs	14	14,15
40 CFR Part 63, Subpart ZZZ	10	HAP	work practices	NA	NA	13
OAR-340-212-120	14,15	PM, formaldehyde NO _x , CO, SO ₂ VOC	Emission Factor Verification	avg. of 3 test runs	14,15	NA

8. Applicable Requirement : The permittee must comply with the following visible emission limits: [OAR 340-208-0110(4)]
 - 8.a. Visible emissions may not equal or exceed an average of 20 percent opacity; and
 - 8.b. The visible emissions standards in this condition are based on the average of 24 consecutive observations recorded at 15-second intervals, or more frequently as allowed under Condition 8.b.iii, which comprise a six-minute block. Six-minute blocks need not be consecutive in time and in no case may two blocks overlap. For each set of 24 observations, the six-minute block average is calculated by summing the opacity of the 24 observations and dividing the sum by 24. Six-minute block averages are measured by:
 - 8.b.i. EPA Method 9; or
 - 8.b.ii. A continuous opacity monitoring system (COMS) installed and operated in accordance with the DEQ Continuous Monitoring Manual or 40 CFR part 60; or
 - 8.b.iii. An alternative monitoring method approved by DEQ that is equivalent to EPA Method 9.
9. Applicable Requirement: The permittee must not cause or allow the emissions of particulate matter in excess of 0.14 gr/dscf corrected to 12% CO₂ or 50% excess air from emissions unit EU1 and EU2. [OAR 340-228-0210(2)(b)]
10. Applicable Requirement [40 CFR Part 63, Subpart ZZZZ §63.6603, §63.6625, § 63.6605, §63.6640], §63.6655

The permittee must comply with the following:

 - 10.a. change the oil/filter, inspect spark plugs and inspect hoses every 1,440 hour of operation or annually or in accordance with owner developed maintenance plan
 - 10.b. operate/maintain engines per manufacturer's instructions or owner-developed maintenance plan at all times
 - 10.c. minimize the engines time spent at idle during startup and minimize the engines' startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.
11. Monitoring and Recordkeeping Requirement: No visible emissions monitoring is required for EU1 or EU2 while operating on landfill gas except as specifically required during required emission source testing.
12. Monitoring and Recordkeeping Requirement: The permittee must maintain the internal combustion engines according to manufacturer specifications and keep air and fuel (landfill gas) within the proper engine operational parameters. The permittee must maintain records of all maintenance performed.
13. Monitoring and Recordkeeping Requirement: The permittee must maintain records demonstrating compliance with Conditions 10.a -10.c.
14. Testing Requirement(s): Within one year after date of issuance the permittee must conduct an emission factor verification test for particulate matter on one representative engine from emission units EU1 and EU2 and all engines must be tested for particulate matter and formaldehyde. Testing must be conducted with an approved source test plan in accordance with the DEQ Source Test Sampling Manual.[OAR-340-212-120] The source test plan is due at least 30 days prior to the testing date, and the source test report is due within 60 days of the test date, unless DEQ approves alternative dates.

15. Testing Requirement(s): At least once during the permit term, the permittee must conduct an emission factor verification source test on all engines emission units EU1 and EU2 for carbon monoxide (CO), nitrogen oxides (NO_x), VOC and SO₂. Testing must be conducted with an approved source test plan in accordance with the DEQ Source Test Sampling Manual.[OAR-340-212-120]] The source test plan is due at least 30 days prior to the testing date, and the source test report is due within 60 days of the test date, unless DEQ approves alternative dates.

CRANKCASE EXHAUSTS (EU3)

Summary of Requirements for Emissions Unit EU3

Applicable Requirement	Condition Number	Pollutant/Parameter	Limit/Standard	Averaging Time	Testing Condition	Monitoring Condition
340-208-0110(4)	16	Visible emissions	20% opacity	6-minute block average	NA	18
340-226-0210(2)(b)(B)	17	PM	0.14 gr/dscf	Avg. of 3 test runs	NA	18

16. Applicable Requirement : Visible emissions may not equal or exceed an average of 20 percent opacity.[OAR 340-208-0110(4)]
17. Applicable Requirement: The permittee must not cause or allow the emissions of particulate matter in excess of 0.14 gr/dscf from emissions unit EU3. [OAR 340-226-0210(2)(b)]
18. Monitoring and Recordkeeping Requirement: There are no testing requirements for Conditions 16 and 17. To demonstrate compliance with Conditions 16 and 17, the permittee must conduct an inspection and maintenance program to keep the air pollution control systems of emissions unit EU3 in proper operating condition by conducting monthly inspections of the oil filters. The permittee must maintain records of all inspections and any corrective actions taken.

Insignificant Activities Requirements

19. DEQ acknowledges that insignificant emissions units (IEUs) identified by rule as either categorically insignificant activities or aggregate insignificant emissions as defined in OAR 340-200-0020 exist at facilities required to obtain an Oregon Title V Operating Permit. IEUs must comply with all applicable requirements. In general, the requirements that could apply to IEUs are incorporated as follows:
- 19.a. OAR 340-208-0110 (20% opacity)
 - 19.b. OAR 340-228-0210 (0.14 gr/dscf corrected to 12% CO₂ or 50% excess air for fuel burning equipment)
 - 19.c. OAR 340-226-0210 (0.14 gr/dscf for non-fugitive, non-fuel burning equipment)
 - 19.d. OAR 340-226-0310 (process weight limit for non-fugitive, non-fuel burning process equipment)
20. Testing, Monitoring, and Recordkeeping Requirements Unless otherwise specified in this permit or an applicable requirement, DEQ is not requiring any testing, monitoring, recordkeeping, or reporting for the applicable emissions limits and standards that apply to IEUs. However, if testing were performed for compliance purposes, the permittee would be required to use the test methods identified in and perform the testing in accordance with DEQ's Source Sampling Manual.

PLANT SITE EMISSION LIMITS

21. The permittee must not cause or allow plant site emissions to exceed the following limits for any 12 consecutive calendar month period: [OAR 340-222-0035 through OAR 340-222-0041]

Pollutant	Plant Site Emission Limit (tons/yr)	Unassigned Emissions (tons/yr)
PM	24	0
PM ₁₀	14	0
PM _{2.5}	9	0
SO ₂	39	0
NO _x	95	0
CO	249	0
VOC	57	0
GHG (CO ₂ e)	74,000	0

22. Recordkeeping Requirement: [OAR 340-218-0050(3)] The permittee must determine compliance with the Plant Site Emission Limits established in Condition 21 of this permit by conducting calculations for each 12-month period in accordance with the following procedures, test methods, and frequencies except for GHGs:

- 22.a. The permittee must maintain records of the following process parameters on a monthly and annual basis:

Emissions Unit(s)/Process	Process Parameter	Units
EU1 Engines (3)	Operating Time	Hours
	LFG Methane Combusted	MM ft ³
EU2 Engines (2)	Operating Time	Hours
	LFG Methane Combusted	MM ft ³
EU3 Crankcase Exhaust	Total Operating Time of EU1 and EU2	Hours

- 22.b. The permittee must calculate pollutant mass emissions on a monthly and annual basis using the following equation :

$$E = \Sigma(P_{eu} \times EF_{eu}) \times Z$$

where:

- E = pollutant emissions (lbs/month, tons/year);
- P_{eu} = process parameters identified in Condition 22.a;
- EF_{eu} = emission factor identified for each emissions unit and pollutant in Condition 22.c;
- Z = conversion constant: 1 ton/2000 lbs.

Note: 1 ton/year should be added for AI activities for PM, PM₁₀, PM_{2.5} and in the annual calculation.

- 22.c. The emission factors for calculating pollutant emissions are as follows:

Emission Unit/Device	Pollutant	Emission Factor	Units
EU1 Engines	PM/PM ₁₀ / PM _{2.5}	0.10	gm/hp-hr
	NO _x	1.12	gm/hp-hr
	CO	2.32	gm/hp-hr
	SO ₂	0.485	gm/hp-hr
	VOC	0.53	gm/hp-hr
EU2 Engines	PM/PM ₁₀ /PM _{2.5}	0.10	gm/hp-hr
	NO _x	0.71	gm/hp-hr
	CO	3.36	gm/hp-hr
	SO ₂	0.485	gm/hp-hr
	VOC	0.81	gm/hp-hr
Crankcase Exhaust	VOC	1.455 E-06	Lb/hp-hr

- 22.d. The emission factors listed in Condition 22.c are not enforceable limits unless otherwise specified in this permit. Compliance with PSEs must only be determined by the calculations contained in Condition 22.b. of this permit using the measured process parameters recorded during the reporting period and the emission factors contained in Condition 22.c.
- 22.e. Monthly calculations must be completed within 30 days of the end of each month and annual calculations must be completed by March 15 of each year this permit is in effect.

EMISSION FEES

23. Emission fees will be based on the Plant Site Emissions Limits, unless permittee elects to report actual emissions for one or more permitted processes/pollutants. [OAR 340-220-0090]

GENERAL TESTING REQUIREMENTS

24. Unless otherwise specified in this permit, the permittee must conduct all testing in accordance with DEQ's Source Sampling Manual. [OAR 340-212-0120]
- 24.a. Unless otherwise specified by a state or federal regulation, the permittee must submit a source test plan to DEQ at least 30 days prior to the date of the test. The test plan must be prepared in accordance with the Source Sampling Manual and address any planned variations or alternatives to prescribed test methods. Permittee should be aware, if significant variations are requested, it may require more than 30 days for DEQ to grant approval and may require EPA approval in addition to approval by DEQ.
- 24.b. Only regular operating staff may adjust the processes or emission control device parameters during a compliance source test and within two (2) hours prior to the tests. Any operating adjustments made during a compliance source test, which are a result of consultation during the tests with source testing personnel, equipment vendors, or consultants, may render the source test invalid.
- 24.c. Unless otherwise specified by permit condition or DEQ approved source test plan, all compliance source tests must be performed as follows:
- 24.c.i. At least 90% of the design capacity for new or modified equipment;
 - 24.c.ii. At least 90% of the maximum operating rate for existing equipment; or
 - 24.c.iii. At 90 to 110% of the normal maximum operating rate for existing equipment. For

purposes of this permit, the normal maximum operating rate is defined as the 90th percentile of the average hourly operating rates during a 12 month period immediately preceding the source test. Data supporting the normal maximum operating rate must be included with the source test report.

- 24.d. Each source test must consist of at least three (3) test runs and the emissions results must be reported as the arithmetic average of all valid test runs. If for reasons beyond the control of the permittee a test run is invalid, DEQ may accept two (2) test runs for demonstrating compliance with the emission limit or standard.
- 24.e. Source test reports prepared in accordance with DEQ's Source Sampling Manual must be submitted to DEQ within 60 days of completing any required source test, unless a different time period is approved in the source test plan submitted prior to the source test.

GENERAL MONITORING AND RECORDKEEPING REQUIREMENTS

General Monitoring Requirements:

- 25. The permittee must not knowingly render inaccurate any required monitoring device or method. [OAR 340-218-0050(3)(a)(E)]
- 26. The permittee must use the same methods to determine compliance as those used to determine actual emissions for fee purposes and can be no less rigorous than the requirements of OAR 340-218-0080. [OAR 340-218-0050(3)(a)(F)]
- 27. The permittee must comply with the monitoring requirements on the date of permit issuance unless otherwise specified in the permit or an applicable requirement. [OAR 340-218-0050(3)(a)(G)]
- 28. Monitoring is not required on an emission unit if that emission unit has not operated at any time during the specified monitoring time period.

General Recordkeeping Requirements

- 29. The permittee must maintain the following general records of testing and monitoring required by this permit: [OAR 340-218-0050(3)(b)(A)]
 - 29.a. The date, place as defined in the permit, and time of sampling or measurements;
 - 29.b. The date(s) analyses were performed;
 - 29.c. The company or entity that performed the analyses;
 - 29.d. The analytical techniques or methods used;
 - 29.e. The results of such analyses;
 - 29.f. The operating conditions as existing at the time of sampling or measurement; and
 - 29.g. The records of quality assurance for continuous monitoring systems (including but not limited to quality control activities, audits, calibration drift checks).
- 30. Unless otherwise specified by permit condition, the permittee must make every effort to maintain 100 percent of the records required by the permit. If information is not obtained or recorded for legitimate reasons (e.g., the monitor or data acquisition system malfunctions due to a power outage), the missing record(s) will not be considered a permit deviation provided the amount of data lost does not exceed 10% of the averaging periods in a reporting period or 10% of the total operating hours in a reporting period, if no averaging time is specified. Upon discovering a required record is missing, the permittee must document the reason for the missing record. In addition, any missing record that can be recovered from other available information will not be considered a missing record. [OAR 340-214-0110, 340-214-0114, and 340-218-0050(3)(b)]

31. The permittee must comply with the recordkeeping requirements on the date of permit issuance unless otherwise specified in the permit or an applicable requirement. [OAR 340-218-0050(3)(b)(C)]
32. Unless otherwise specified, the permittee must retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings (or other original data) for continuous monitoring instrumentation, and copies of all reports required by the permit. All existing records required by the previous Air Contaminant Discharge Permit or Oregon Title V Operating Permit must also be retained for five (5) years from the date of the monitoring sample, measurement, report, or application. [OAR 340-218-0050(b)(B)]

REPORTING REQUIREMENTS

General Reporting Requirements

33. Excess Emissions Reporting: The permittee must report all excess emissions as follows: [OAR 340-214-0300 through 340-214-0360]
 - 33.a. Immediately (by 9 am the next operating day of the event) notify DEQ of an excess emission event by phone, email, or facsimile; and
 - 33.b. Within 15 days of the excess emissions event, submit a written report that contains the following information: [OAR 340-214-0340(1)]
 - 33.b.i. 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 operation;
 - 33.b.ii. The date and time the permittee notified DEQ of the event;
 - 33.b.iii. The equipment involved;
 - 33.b.iv. Whether the event occurred during planned startup, planned shutdown, scheduled maintenance, or as a result of a breakdown, malfunction, or emergency;
 - 33.b.v. Steps taken to mitigate emissions and corrective action taken, including whether the approved procedures for a planned startup, shutdown, or maintenance activity were followed;
 - 33.b.vi. 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 best estimate (supported by operating data and calculations);
 - 33.b.vii. The final resolution of the cause of the excess emissions; and
 - 33.b.viii. Where applicable, evidence supporting any claim that emissions in excess of technology-based limits were due to any emergency pursuant to OAR 340-214-0360.
 - 33.c. 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 must immediately notify DEQ by calling the Oregon Accident Response System (OARs). The current number is 1-800-452-0311.
 - 33.d. If startups, shutdowns, or scheduled maintenance may result in excess emissions, the permittee must submit startup, shutdown, or scheduled maintenance procedures used to minimize excess emissions to DEQ for prior authorization, as required in OAR 340-214-0310 and 340-214-0320. New or modified procedures must be received by DEQ in writing at least 72 hours prior to the first occurrence of the excess emission event. The permittee must abide by the approved procedures and have a copy available at all times.
 - 33.e. The permittee must notify DEQ of planned startup/shutdown or scheduled maintenance events.
 - 33.f. The permittee must continue to maintain a log of all excess emissions in accordance with OAR 340-214-0340(3). However, the permittee is not required to submit the detailed log with the semi-annual and annual monitoring reports. The permittee is only required to submit a brief summary listing the date, time, and the affected emissions units for each excess emission that occurred during the reporting period. [OAR 340-218-0050(3)(c)]

34. **Permit Deviations Reporting:** The permittee must promptly report deviations from permit requirements that do not cause excess emissions, including those attributable to upset conditions, as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. "Prompt" means within 15 days of the deviation. Deviations that cause excess emissions, as specified in OAR 340-214-0300 through 340-214-0360 must be reported in accordance with Condition 33.
35. All required reports must be certified by a responsible official consistent with OAR 340-218-0040(5); [OAR 340-218-0050(3)(c)(D)]
36. Reporting requirements must commence on the date of permit issuance unless otherwise specified in the permit. [OAR 340-218-0050(3)(c)(E)]

Addresses of regulatory agencies are the following, unless otherwise instructed:

Submit all Notices and applications that do not include payment to the Western Region's Permit Coordinator.

Submit payments for invoices, applications to modify the permit, and any other payments to DEQ's Business Office:

Submit all reports for EPA requirements to:

Submit all reports (annual reports, source test plans and reports, etc.) to DEQ's Northwest Region. If you know the name of the Air Quality staff member responsible for your permit, please include it.

DEQ – Air Quality Division
811 SW Sixth Avenue
Portland, OR 97204
503-229-5359

Air Operating Permits
US Environmental Protection Agency
Mail Stop OAQ-108
1200 Sixth Avenue
Seattle, WA 98101

Western Region
4026 Fairview Industrial Drive
Salem, OR 97302
503-378-8240

Semi-annual and Annual Reports

37. The permittee must submit three (3) copies of reports of any required monitoring at least every 6 months, completed on forms approved by DEQ. Six month periods are January 1 to June 30, and July 1 to December 31. One copy of the report must be submitted to the EPA and two copies to the DEQ regional office. All instances of deviations from permit requirements must be clearly identified in such reports: [OAR 340-218-0050(3)(c)(A) and 340-218-0080(6)(d)]
- 37.a. The first semi-annual report is due on July 30 and must include the semi-annual compliance certification, OAR 340-218-0080.
- 37.b. The annual report is due on March 15 and must consist of the following:
- 37.b.i. the emission fee report; [OAR 340-220-0100]
 - 37.b.ii. a summary of the excess emissions upset log; [OAR 340-214-0340]
 - 37.b.iii. the second semi-annual compliance certification; and [OAR 340-218-0080]
 - 37.b.iv. the annual emission inventory report for the prior calendar year:
38. The semi-annual compliance certification must include the following (provided that the identification of applicable information may cross-reference the permit or previous reports, as applicable): [OAR 340-218-0080(6)(c)]

- 38.a. The identification of each term or condition of the permit that is the basis of the certification;
- 38.b. The identification of the method(s) or other means used by the permittee for determining the compliance status with each term and condition during the certification period, and whether such methods or other means provide continuous or intermittent data. Such methods and other means must include, at a minimum, the methods and means required under OAR 340-218-0050(3). *Note: Certification of compliance with the monitoring conditions in the permit is sufficient to meet this requirement, except when the permittee must certify compliance with new applicable requirements that are incorporated by reference into the permit. When certifying compliance with new applicable requirements that are not yet in the permit, the permittee must provide the information required by this condition.* If necessary, the permittee must identify any other material information that must be included in the certification to comply with section 113(c)(2) of the FCAA, which prohibits knowingly making a false certification or omitting material information;
- 38.c. The status of compliance with terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification must be based on the method or means designated in Condition 38.b of this rule. The certification must identify each deviation and take it into account in the compliance certification. The certification must also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion or exceedance, as defined under OAR 340-200-0020, occurred; and
- 38.d. Such other facts as DEQ may require to determine the compliance status of the source.
39. Greenhouse Gas Registration and Reporting: If the calendar year emission rate of greenhouse gases (CO₂e) is greater than or equal to 2,756 tons (2,500 metric tons), the permittee must register and report its greenhouse gas emissions with DEQ in accordance with OAR 340-215. The greenhouse gas report must be certified by the responsible official consistent with OAR 340-218-0040(5).
40. Notwithstanding any other provision contained in any applicable requirement, the permittee may use monitoring as required under OAR 340-218-0050(3) and incorporated into the permit, in addition to any specified compliance methods, for the purpose of submitting compliance certifications. [OAR 340-218-0080(6)(e)]

NON-APPLICABLE REQUIREMENTS

41. The following State and Federal air quality requirements are not applicable to this facility for the reasons stated. [OAR 340-218-0110]

OAR Chapter 340:									
Division 202				Division 222					
All rules	I			0042	C			All rules	C
				0060	H				
Division 204				Division 224				Division 242	
All rules	I			0050	C			All rules	C
				0060	C				
Division 206				Division 225				Division 244	
0050	C			0045	C			0110 through 0180	H
0060 through 0070	I			Division 226				Division 248	
				0400	H			0210 through 0230	B
Division 208				Division 228				Division 250	
0500 through 0610	D			0100 through 0130	F			All rules	I
				0300 through 0530	B			Division 252	
Division 210				0600 through 0678	B			All rules	I
0100 through 0120	B			Division 230				Division 254	
				All rules	E			All rules	E
Division 212				Division 232				Division 256	
0200 through 0280	J			All rules	C			All rules	B
				Division 234				Division 257	
Division 214				All rules	B			All rules	E
0200 and 0220	C			Division 236				Division 258	
0400 through 0430	B			All rules	B			All rules	B
				Division 238				Division 260	
Division 218				0100	E			All rules	B
0050(4)	B			Division 240				Division 262	
0050(8)	H							All rules	B
0060	I							Division 264	
0070	I							0100	D
0090	B							0120 through 0170	D
0100	B								
0250	I								

Reason code definitions:

- A this pollutant is not emitted by the facility
- B the facility is not in this source category
- C the facility is not in a special control/nonattainment area
- D the facility is not in this county
- E the facility does not have this emissions unit
- F the facility does not use this fuel type
- G the rule does not apply because no changes have been made at the facility that would trigger these procedural requirements
- H this method/procedure is not used by the facility
- I this rule applies only to DEQ and regional authorities
- J there are no emissions units with add-on control devices or the pre-controlled potential emissions are less than 100 tons per year or the emissions units with add-on control devices and pre-controlled emissions greater than 100 tons per year are subject to emissions standards promulgated after November of 1990

GENERAL CONDITIONS

G1. General Provision

Terms not otherwise defined in this permit have the meaning assigned to such terms in the referenced regulation.

G2. Reference materials

Where referenced in this permit, the versions of the following materials are effective as of the dates noted unless otherwise specified in this permit:

- a. Source Sampling Manual; April 16, 2015 - State Implementation Plan Volume 3, Appendix A4;
- b. Continuous Monitoring Manual; April 16, 2015 - State Implementation Plan Volume 3, Appendix A6; and
- c. All state and federal regulations as in effect on the date of issuance of this permit.

G3. Applicable Requirements [OAR 340-218-0010(3)(b)]

Oregon Title V Operating Permits do not replace requirements in Air Contaminant Discharge Permits (ACDP) issued to the source even if the ACDP(s) have expired. For a source operating under a Title V permit, requirements established in an earlier ACDP remain in effect notwithstanding expiration of the ACDP or Title V permit, unless a provision expires by its terms or unless a provision is modified or terminated following the procedures used to establish the requirement initially. Source specific requirements, including, but not limited to TACT, RACT, BACT, and LAER requirements, established in an ACDP must be incorporated into the Oregon Title V Operating Permit and any revisions to those requirements must follow the procedures used to establish the requirement initially.

G4. Compliance [OAR 340-218-0040(3)(n)(C), 340-218-0050(6), and 340-218-0080(4)]

- a. The permittee must comply with all conditions of this permit. Any permit condition noncompliance constitutes a violation of the Federal Clean Air Act and/or state rules and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application. Any noncompliance with a permit condition specifically designated as enforceable only by the state constitutes a violation of state rules only and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application.
- b. Any schedule of compliance for applicable requirements with which the source is not in compliance at the time of permit issuance is supplemental to, and does not sanction noncompliance with the applicable requirements on which it is based.
- c. For applicable requirements that will become effective during the permit term, the source must meet such requirements on a timely basis unless a more detailed schedule is expressly required by the applicable requirement.

G5. Masking Emissions:

The permittee must not install or use any device or other means designed to mask the emission of an air contaminant that causes or is likely to cause detriment to health, safety, or welfare of any person or otherwise violate any other regulation or requirement. [OAR 340-208-0400] This condition is enforceable only by the State.

G6. Credible Evidence:

Notwithstanding any other provisions contained in any applicable requirement, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any such applicable requirements. [OAR 340-214-0120]

G7. Certification [OAR 340-214-0110, 340-218-0040(5), 340-218-0050(3)(c)(D), and 340-218-0080(2)]

Any document submitted to DEQ or EPA pursuant to this permit must contain certification by a responsible official of truth, accuracy and completeness. All certifications must state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and, complete. The permittee must promptly, upon discovery, report to DEQ a material error or omission in these records, reports, plans, or other documents.

G8. Open Burning [OAR Chapter 340, Division 264]

The permittee is prohibited from conducting open burning, except as may be allowed by OAR 340-264-0020 through 340-264-0200.

G9. Asbestos [40 CFR Part 61, Subpart M (federally enforceable), OAR Chapter 340-248-0005 through 340-248-0180 (state-only enforceable) and 340-248-0205 through 340-248-0280]

The permittee must comply with OAR Chapter 340, Division 248, and 40 CFR Part 61, Subpart M when conducting any renovation or demolition activities at the facility.

G10. Stratospheric Ozone and Climate Protection [40 CFR 82 Subpart F, OAR 340-260-0040]

The permittee must comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, Recycling and Emissions Reduction.

G11. Permit Shield [OAR 340-218-0110]

- a. Compliance with the conditions of the permit is deemed compliance with any applicable requirements as of the date of permit issuance provided that:
 - i. Such applicable requirements are included and are specifically identified in the permit, or
 - ii. DEQ, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the permit includes the determination or a concise summary thereof.
- b. Nothing in this rule or in any federal operating permit alters or affects the following:
 - i. The provisions of ORS 468.115 (enforcement in cases of emergency) and ORS 468.035 (function of department);
 - ii. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
 - iii. The applicable requirements of the national acid rain program, consistent with section 408(a) of the FCAA; or
 - iv. The ability of DEQ to obtain information from a source pursuant to ORS 468.095 (investigatory authority, entry on premises, status of records).
- c. Sources are not shielded from applicable requirements that are enacted during the permit term, unless such applicable requirements are incorporated into the permit by administrative amendment, as provided in OAR 340-218-0150(1)(h), significant permit modification, or reopening for cause by DEQ.

G12. Inspection and Entry [OAR 340-218-0080(3)]

Upon presentation of credentials and other documents as may be required by law, the permittee must allow DEQ, or an authorized representative (including an authorized contractor acting as a representative of the EPA Administrator), to perform the following:

- a. Enter upon the permittee's premises where an Oregon Title V Operating Permit program source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under conditions of the permit;
- c. Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
- d. As authorized by the FCAA or state rules, sample or monitor, at reasonable times, substances or parameters, for the purposes of assuring compliance with the permit or applicable requirements.

G13. Fee Payment [OAR 340-220-0010, and 340-220-0030 through 340-220-0190]

The permittee must pay an annual base fee and an annual emission fee for particulates, sulfur dioxide, nitrogen oxides, and volatile organic compounds. The permittee must submit payment to the Department of Environmental Quality, Financial Services, 811 SW 6th Ave., Portland, OR 97204, within 30 days of date DEQ mails the fee invoice or August 1 of the year following the calendar year for which emission fees are paid, whichever is later. Disputes must be submitted in writing to DEQ. Payment must be made regardless of the dispute. User-based fees will be charged for specific activities (e.g., computer modeling review, ambient monitoring review, etc.) requested by the permittee.

G14. Off-Permit Changes to the Source [OAR 340-218-0140(2)]

- a. The permittee must monitor for, and record, any off-permit change to the source that:
 - i. Is not addressed or prohibited by the permit;
 - ii. Is not a Title I modification;
 - iii. Is not subject to any requirements under Title IV of the FCAA;
 - iv. Meets all applicable requirements;
 - v. Does not violate any existing permit term or condition; and
 - vi. May result in emissions of regulated air pollutants subject to an applicable requirement but not otherwise regulated under this permit or may result in insignificant changes as defined in OAR 340-200-0020.
- b. A contemporaneous notification, if required under OAR 340-218-0140(2)(b), must be submitted to DEQ and the EPA.
- c. The permittee must keep a record describing off-permit changes made at the facility that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those off-permit changes.
- d. The permit shield of Condition G11 does not extend to off-permit changes.

G15. Section 502(b)(10) Changes to the Source [OAR 340-218-0140(3)]

- a. The permittee must monitor for, and record, any section 502(b)(10) change to the source, which is defined as a change that would contravene an express permit term but would not:
 - i. Violate an applicable requirement;
 - ii. Contravene a federally enforceable permit term or condition that is a monitoring, recordkeeping, reporting, or compliance certification requirement; or
 - iii. Be a Title I modification.
- b. A minimum 7-day advance notification must be submitted to DEQ and the EPA in accordance with OAR 340-218-0140(3)(b).
- c. The permit shield of Condition G11 does not extend to section 502(b)(10) changes.

G16. Administrative Amendment [OAR 340-218-0150]

Administrative amendments to this permit must be requested and granted in accordance with OAR 340-218-0150. The permittee must promptly submit an application for the following types of administrative amendments upon becoming aware of the need for one, but no later than 60 days of such event:

- a. Legal change of the registered name of the company with the Corporations Division of the State of Oregon, or
- b. Sale or exchange of the activity or facility.

G17. Minor Permit Modification [OAR 340-218-0170]

The permittee must submit an application for a minor permit modification in accordance with OAR 340-218-0170.

G18. Significant Permit Modification [OAR 340-218-0180]

The permittee must submit an application for a significant permit modification in accordance with OAR 340-218-0180

G19. Staying Permit Conditions [OAR 340-218-0050(6)(c)]

Notwithstanding Conditions G16 and G17, the filing of a request by the permittee for a permit modification, revocation and re-issuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

G20. Construction/Operation Modification [OAR 340-218-0190]

The permittee must obtain approval from DEQ prior to construction or modification of any stationary source or air pollution control equipment in accordance with OAR 340-210-0200 through OAR 340-210-0250.

G21. New Source Review Modification [OAR 340-224-0010]

The permittee may not begin construction of a major source or a major modification of any stationary source without having received an Air Contaminant Discharge Permit (ACDP) from DEQ and having satisfied the requirements of OAR 340, Division 224.

G22. Need to Halt or Reduce Activity Not a Defense [OAR 340-218-0050(6)(b)]

The need to halt or reduce activity will not be a defense. It will not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

G23. Duty to Provide Information [OAR 340-218-0050(6)(e) and OAR 340-214-0110]

The permittee must furnish to DEQ, within a reasonable time, any information that DEQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the permittee must also furnish to DEQ copies of records required to be retained by the permit or, for information claimed to be confidential, the permittee may furnish such records to DEQ along with a claim of confidentiality.

G24. Reopening for Cause [OAR 340-218-0050(6)(c) and 340-218-0200]

- a. The permit may be modified, revoked, reopened and reissued, or terminated for cause as determined by DEQ.
- b. A permit must be reopened and revised under any of the circumstances listed in OAR 340-218-0200(1)(a).
- c. Proceedings to reopen and reissue a permit must follow the same procedures as apply to initial permit issuance and affect only those parts of the permit for which cause to reopen exists.

G25. Severability Clause [OAR 340-218-0050(5)]

Upon any administrative or judicial challenge, all the emission limits, specific and general conditions, monitoring, recordkeeping, and reporting requirements of this permit, except those being challenged, remain valid and must be complied with.

G26. Permit Renewal and Expiration [OAR 340-218-0040(1)(a)(D) and 340-218-0130]

- a. This permit expires at the end of its term, unless a timely and complete renewal application is submitted as described below. Permit expiration terminates the permittee's right to operate.
- b. Applications for renewal must be submitted at least 12 months before the expiration of this permit, unless DEQ requests an earlier submittal. If more than 12 months is required to process a permit renewal application, DEQ must provide no less than six (6) months for the owner or operator to prepare an application.
- c. Provided the permittee submits a timely and complete renewal application, this permit will remain in effect until final action has been taken on the renewal application to issue or deny the permit.

G27. Permit Transference [OAR 340-218-0150(1)(d)]

The permit is not transferable to any person except as provided in OAR 340-218-0150(1)(d).

G28. Property Rights [OAR 340-200-0020 and 340-218-0050(6)(d)]

The 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, except as provided in OAR 340-218-0110.

G29. Permit Availability [OAR 340-200-0020 and 340-218-0120(2)]

The permittee must have available at facility at all times a copy of the Oregon Title V Operating Permit and must provide a copy of the permit to DEQ or an authorized representative upon request.

ALL INQUIRIES SHOULD BE DIRECTED TO:

Western Region
4026 Fairview Industrial Drive
Salem, OR 97302
503-378-8240



State of Oregon
Department of
Environmental
Quality

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
OREGON TITLE V OPERATING PERMIT
REVIEW REPORT

Western Region
4026 Fairview Industrial Drive SE
Salem, OR 97302

Source Information:

SIC	4911
NAICS	221118

Source Categories (Part and code)	
-----------------------------------	--

Compliance and Emissions Monitoring Requirements:

Unassigned emissions	
Emission credits	
Compliance schedule	
Source test [date(s)]	Conditions 14 and 15

COMS	
CEMS	
PEMS	
Ambient monitoring	

Reporting Requirements

Annual report (due date)	March 15
Emission fee report (due date)	March 15
SACC (due date)	March 15, July 30
Quarterly report (due dates)	

Monthly report (due dates)	
Excess emissions report	X
Other reports (type)	

Air Programs

NSPS (list subparts)	
NESHAP (list subparts)	A, ZZZZ
CAM	
Regional Haze (RH)	
Synthetic Minor (SM)	
Part 68 Risk Management	
CFC	
RACT	
TACT	X

Title V	X
ACDP (SIP)	
Major HAP source	
Federal major source	
NSR	
PSD (1994 for NOx)	X
GHG	X

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LIST OF ABBREVIATIONS USED IN THIS REVIEW REPORT

AQMA	Air Quality Management Area	N ₂ O	nitrous oxide (greenhouse gas)
ASTM	American Society of Testing and Materials	NA	not applicable
BDT	bone dry ton	NESHAP	National Emission Standard for Hazardous Air Pollutants
CEMS	continuous emissions monitoring system	NO _x	oxides of nitrogen
CFR	Code of Federal Regulations	NSPS	New Source Performance Standard
CH ₄	methane (greenhouse gas)	NSR	New Source Review
CMS	continuous monitoring system	O ₂	oxygen
CO	carbon monoxide	OAR	Oregon Administrative Rules
CO ₂ e	carbon dioxide equivalent	ORS	Oregon Revised Statutes
COMS	continuous opacity monitoring system	O&M	operation and maintenance
DEQ	Oregon Department of Environmental Quality	Pb	lead
dscf	dry standard cubic feet	PCD	pollution control device
EF	emission factor	PEMS	predictive emissions monitoring system
EPA	United State Environmental Protection Agency	PM	particulate matter
EU	emissions unit	PM ₁₀	particulate matter less than 10 microns in size
FCAA	Federal Clean Air Act	PM _{2.5}	particulate matter less than 2.5 microns in size
GHG	greenhouse gas	PSD	Prevention of Significant Deterioration
gr/dscf	grains per dry standard cubic feet	PSEL	Plant Site Emission Limit
HAP	hazardous air pollutant	SO ₂	sulfur dioxide
ID	identification code	ST	source test
I&M	inspection and maintenance	VE	visible emissions
MB	material balance	VMT	vehicle mile traveled
Mlb	1000 pounds	VOC	volatile organic compound
MM	million		

INTRODUCTION

1. This permitting action is for Oregon Title V Operating Permit 02-9503-TV-01 renewal which was issued on 4/1/09 and scheduled to expire on 1/1/14. The permittee submitted a timely permit renewal application on 12/26/12. Therefore, the current permit remains in effect until the renewal permit is issued.
2. In accordance with OAR 340-218-0120(1)(f), this review report is intended to provide the legal and factual basis for the draft permit conditions. In most cases, the legal basis for a permit condition is included in the permit by citing the applicable regulation. In addition, the factual basis for the requirement may be the same as the legal basis. However, when the regulation is not specific and only provides general requirements, this review report is used to provide a more thorough explanation of the factual basis for the draft permit conditions.'
3. Since the last Title V permit issuance, DEQ issued the following permitting actions below. No construction notices have been submitted since the last permit issuance.

Date	Permit revision or notification	Brief explanation
3/12/12	Administrative Amendment No.1	changed the title for the Responsible Official
4/20/15	Administrative Amendment No. 2	change of ownership name, and the Responsible Official Title was changed to President and CEO.

4. The following changes have been made to the permit:
 - Administrative Amendments as outlined above
 - Emission factor verification stack testing for PM, SO₂, and VOC is being added (CO and NO_x emission factor testing are retained as testing requirements)
 - The production rates and emission calculations have been updated to reflect current operations.
 - Due to DEQ rule changes the following changes are included:
 - Greenhouse gas (GHG) baseline emission rate, netting basis, and plant site emission limit (PSEL) are being established for the first time.
 - PM_{2.5} netting basis and PSEL are also being established in this permitting action.
 - The grain loading and opacity standards are updated.
 - Nuisance and fugitive emission condition requirements are updated.
 - Rule references are updated as needed.

PERMITTEE IDENTIFICATION

5. Pacific Northwest Generation Cooperative currently operates a 5.7 MW power generation facility located at the Coffin Butte Landfill. The landfill is owned and operated by Valley Landfills, Inc.

FACILITY DESCRIPTION

6. The facility uses the gas collected from Coffin Butte Landfill to generate electric power while at the same time providing an acceptable method of gas control for the landfill. The landfill itself is owned by Valley Landfills, Inc., who installs the wells and piping for the gas collection system. The landfill gas is drawn through the main underground gas lines to the gas collection skid located at the west end of the plant building. The negative pressure maintained on the gas wells is provided by two 100 hp gas blowers. Prior to compression, the gas is pre-filtered through a 10 micron media filter. After compression, the gas is

cooled, flows through a water removal filter, and then through a 1.0 micron coalescing media filter. The cleaned and compressed gas is then delivered to the five spark ignition internal combustion engines.

Pacific Northwest Generation Cooperative owns and operates only the electrical generating facilities. The landfill life is expected to continue until at least 2036 and would be supplying gas until at least that time. As the landfill expands, additional gas will be generated which will likely require additional collection and combustion in the future. The original Power Resources facility was built in 1995 and began commercial operation on 10/1/95 using three engine/generator units. Two additional larger engine/generator units were installed in 2006-2007 and began commercial operation on 10/1/07.

EMISSIONS UNIT AND POLLUTION CONTROL DEVICE IDENTIFICATION

7. The emissions units at this facility are the following:

Emission Unit Description	EU ID	Pollution Control Device Description	PCD ID
Caterpillar 3516 Landfill Gas Engines 1-3 1,140 hp each, 820 kW each, 4,160 volt induction generators)\ <i>Constructed 11/1/94</i>	EU1	None	NA
Caterpillar 3520 Landfill Gas Engines 4-5 2,233 hp each, 1600 kW each, 4,160 volt induction generators <i>Constructed 1/24/06</i>	EU2	None	NA
2 Crankcase Exhausts	EU3	Filters (99.97% removal of VOC)	
Aggregate Insignificant Emissions (PM/PM ₁₀ /PM _{2.5} from unpaved roads)	AI		

8. Categorically insignificant activities include the following:

- Evaporative and tail pipe emissions from on-site motor vehicle operation
- Distillate oil, kerosene, and gasoline fuel burning equipment rated at less than or equal to 0.4 million Btu/hr
- Office activities
- Janitorial activities
- Personal care activities
- Groundskeeping activities including, but not limited to building painting and road and parking lot maintenance
- Instrument calibration
- Maintenance and repair shop
- Automotive repair shops or storage garages
- Air cooling or ventilating equipment not designed to remove air contaminants generated by or released from associated equipment
- Refrigeration systems with less than 50 pounds of charge of ozone depleting substances regulated under Title VI, including pressure tanks used in refrigeration systems but excluding any combustion equipment associated with such systems
- Accidental fires
- Air vents from air compressors

- Electrical charging stations
- Routine maintenance, repair, and replacement such as anticipated activities most often associated with and performed during regularly scheduled equipment outages to maintain a plant and its equipment in good operating condition, including but not limited to steam cleaning, abrasive use, and woodworking
- Electric motors
- Storage tanks, reservoirs, transfer and lubricating equipment used for ASTM grade distillate or residual fuels, lubricants, and hydraulic fluids
- Hazardous air pollutant emissions of fugitive dust from paved and unpaved roads except for those sources that have processes or activities that contribute to the deposition and entrainment of hazardous air pollutants from surface soils
- Health, safety, and emergency response activities

EMISSION LIMITS AND STANDARDS, TESTING, MONITORING, AND RECORDKEEPING

STATE REQUIREMENTS

9. The following Chapter 340 Oregon Administrative Rules that have specific requirements (e.g., emission limits or standards, monitoring, recordkeeping, or reporting requirements) have been determined to be applicable to this facility. The “Oregon Title V Monitoring and Testing Guidance” was used to determine the periodicity of the monitoring and testing requirements. The activities that will be performed by the permittee to assure compliance with the rules are discussed below.

208-0110 [General Visible Emission Limit]

- 9.a. The 20% opacity (6-minute block average) standard applies to all emissions units and activities at the facility, including the categorically and aggregate insignificant activities. DEQ is not requiring monitoring for insignificant activities.

Engines 1-5

For the five spark ignition internal combustion engines, the facility is not required to conduct visible emissions monitoring (except during emission factor verification stack testing). DEQ personnel have not observed any significant visible emissions from the engines during on-site compliance inspections.

Crankcase Exhausts

At least once per month, the facility is required to conduct an inspection of the exhaust filters and replace the filters as needed. The facility is required to maintain records of all inspections and corrective actions taken.

208-0210 [Fugitive Emissions]

- 9.b. The facility is required to take reasonable precautions to prevent particulate matter from becoming airborne. The source is required to investigate and determine the validity of any fugitive emission complaint within 24-hours and take corrective action as needed. The facility is required to maintain a complaint log that details the complaint, investigation results, and corrective actions taken.

208-0300 [Nuisance Rule]

- 9.c. Air contaminants from this facility must not cause a nuisance. This rule is only enforceable by the state. The facility is required to investigate and determine the validity of any air quality nuisance complaint within 24-hours and take corrective action as needed. The facility is required to maintain a complaint log that details the complaint, investigation results, and corrective actions taken.

208-0450 [PM Fallout]

- 9.d. The facility is not allowed to emit particulate matter that is greater than 250 microns in size at sufficient duration or quantity as to create an observable deposition upon the real property of another person. This rule is only enforceable by the state. The facility is required to investigate and determine the validity of any particulate matter fallout complaint within 24-hours and take corrective action as needed. The facility is required to maintain a complaint log that details the complaint, investigation results, and corrective actions taken.

Division 222 [PSEL]

- 9.e. PSELs are required for all regulated pollutants that are emitted at levels exceeding the de minimis level. For this facility there will be PSELs for PM, PM₁₀, PM_{2.5}, SO₂, CO, NO_x, VOC and GHG. Compliance with the PSELs (except for GHG) will be demonstrated by calculating the facility wide emissions for each pollutant for each 12-month rolling period within 30 days of the end of each month. PM_{2.5} and GHG area new regulated pollutants since the last permit issuance and are being added for the first time in this permitting action. GHG are calculated and reported in accordance with OAR 340, Division 215.

Emission factor verification testing for particulate matter and formaldehyde are added in this permit renewal. Testing for these pollutants must be conducted within one year from the date of issuance of the permit. Emission factor verification testing for CO, NO_x, SO₂, and VOC must be conducted once during the permit term.

Division 224- [Net Air Quality Benefit Emission Offsets and State New Source Review for Sources in Attainment Areas]

- 9.f. The permittee has conducted air quality analysis for the following pollutants: VOC, NO_x, and CO. A description of the analyses is provided below.

VOC:

Ozone Impact Analysis - Division 224-0520

Sources with emission greater than the significant emission rate over the netting basis for ozone precursor pollutants (NO_x and VOC) and are located less than 100 km from the Portland Ozone Air Quality Maintenance Area (AQMA) must demonstrate they are not a significant contributor of ozone precursors. The source has the potential to emit 57 tons/year of VOC over the netting basis, and is located 67 km from the Portland AQMA boundary.

Therefore the following air quality analysis is provided:

$$D = (Q/40) * 30 \text{ km}$$

D= ozone impact distance in km
Q= is VOC emission increase being requested above netting basis (0 netting basis in this case)

$$D = (57/40) * 30 \text{ km}$$

$$D = 43 \text{ km} < 67 \text{ km}$$

For the proposed emissions, the formula demonstrates that the source is located at a sufficient distance relative the boundary of the Portland AQMA such that the emissions do not have the potential to significantly affect the designated maintenance area. Therefore, no further air quality analysis is required.

NO_x and CO:

Requirements for Sources in Attainment and Unclassified Areas - Division 224-0270

NO_x:

Although the NO_x increase is less than the SER over the netting basis, the DEQ required the source to perform an air quality analysis during a previous permitting action. That analysis showed that the emissions from the facility (94 tons/year) would not exceed the PSD increments for NO_x (4.36 ug/m³ vs. 25 ug/m³ for the PSD increment). Assuming a background NO_x value of 20 ug/m³, the proposed emissions would also not cause the NAAQS to be exceeded (24.36 ug/m³ vs. 100 ug/m³ for the NAAQS). The increase in NO_x of 1 ton/year (95 ton/yr proposed PSEL) from the previously modeled value will not change the above conclusions.

CO:

Because the CO increase is greater than the SER over the netting basis, the DEQ required the source to perform an air quality analysis during a previous permitting action. That analysis showed that the 180 tons/year of CO emissions from the facility would not cause the NAAQS to be exceeded (233 ug/m³ vs. 10,000 ug/m³ for the 8-hr NAAQS and 1071 ug/m³ vs. 40,000 ug/m³ for the 1-hr NAAQS). The company has requested that the CO PSEL be increased to 249 tons/year based on recent source tests on the engines. Because the emission sources are still the same, the simple use of a ratio of emissions to the prior modeled results shows that the 249 tons/year of CO emissions from the facility would still not cause the NAAQS to be exceeded (322 ug/m³ vs. 10,000 ug/m³ for the 8-hr NAAQS and 1482 ug/m³ vs. 40,000 ug/m³ for the 1-hr NAAQS)

226-0130 [TACT]

- 9.g. The facility is meeting the states TACT/Highest and Best Rules by keeping air and fuel within the proper engine operational parameters and by regularly maintaining the engines and replacing the crankcase exhaust filters.

226-0210(1)(b) [0.14 grains/dscf Limit]

- 9.h. Particulate matter emissions from all of the emissions units must not exceed 0.14 grains/dscf.

Engines 1-5

- 9.h.i. The facility must maintain the internal combustion engines according to manufacturer specifications and keep air and fuel (landfill gas) within the proper engine operational

parameters. Records are required to be maintained of all inspections and corrective actions taken.

Crankcase Exhausts

- 9.h.ii. At least once per month, the facility is required to conduct an inspection of the exhaust filters and replace the filters as needed. The facility is required to maintain records of all inspections and corrective actions taken.

Division 232 [RACT]

- 9.i. The RACT rules are not applicable to this facility because it is not in the Portland AQMA, Medford AQMA, or Salem SKATS.

Insignificant Activities

- 9.j. As identified earlier in this Review Report, this facility has insignificant emissions units (IEUs) that include categorically insignificant activities and aggregate insignificant emissions, as defined in OAR 340-200-0020. For the most part, the standards that apply to IEUs are for opacity (20% limit) and particulate matter (0.14 gr/dscf limit). DEQ does not consider it likely that IEUs could exceed an applicable emissions limit or standard because IEUs are generally equipment or activities that do not have any emission controls (e.g., small natural gas fired space heaters) and do not typically have visible emissions. Since there are no controls, no visible emissions, and the emissions are less than one ton per year, DEQ does not believe that monitoring, recordkeeping, or reporting is necessary for assuring compliance with the standards.

FEDERAL REQUIREMENTS

Compliance Assurance Monitoring

10. None of the emission units are subject to Compliance Assurance Monitoring (CAM) rules because there are no pre-control emissions greater 100 tons/year of particulate matter. The engines operate uncontrolled.

New Source Performance Standards (NSPS)

11. There are no sources at the facility for which NSPS have been promulgated. 40 CFR Part 60 Subpart JJJJ does not apply to the engines at this facility because all the engines were manufactured prior to 7/1/07 and construction commenced prior to 6/12/06.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

12. The source is an area source of HAP, therefore there are no applicable major source NESHAP standards. The source is subject to the Stationary Reciprocating Internal Combustion Engine (RICE) NESHAP 40 CFR Part 63, Subpart ZZZZ area source NESHAP. The original owner/operator of all engines entered into a contract for the on-site installation of the engines prior to June 12, 2006. Therefore the engines are existing engines.

There are no operating limits, performance tests, or reporting requirements. The source must comply with the following:

- Management practice in §63.6603(a), Table 2d
- Monitoring, installation, collection, operation, and maintenance requirements in §63.6625
- Continuous compliance §63.605 and 63.6640
- Recordkeeping of maintenance §63.6655

Accidental Release (40 CFR Part 68)

13. The facility is not subject to the accidental release provisions of 40 CFR Part 68 because no substances are stored at the facility which are subject to these rules.

PLANT SITE EMISSION LIMITS

14. Provided below is a summary of the baseline emissions rate, netting basis, plant site emission limits, and emissions capacity.

Pollutant	Baseline Emission Rate (tons/yr)	Netting Basis		Plant Site Emission Limit (PSEL)		
		Previous (tons/yr)	Proposed (tons/yr)	Previous PSEL (tons/yr)	Proposed PSEL (tons/yr)	PSEL Increase (tons/yr)
PM	0	0	0	24	24	0
PM ₁₀	0	0	0	14	14	0
PM _{2.5}	0	0	0	NA	9	NA
CO	0	0	0	249	249	0
NO _x	0	61	61	95	95	0
SO ₂	0	0	0	39	39	0
VOC	0	0	0	57	57	0
GHG (CO ₂ e)	34,400	NA	34,400	NA	74,000	NA

- 14.a. The baseline emission rate for all pollutants except GHG at this facility is zero since it was constructed after 1978.
- 14.b. The GHG baseline emission rate is based upon the emission rate in 2010 in accordance with OAR 340-222-0048(1)(b) as requested by the permittee.
- 14.c. The netting basis for all pollutants except NO_x is zero since the facility has not had any Prevention of Significant Deterioration (PSD) approvals for those pollutants. For NO_x, the facility received a PSD approval at 61 tons/year in the initial ACDP issued to the facility on 12/20/94 under the DEQ rules in place at that time.
- 14.d. The emissions of PM, PM₁₀, PM_{2.5}, SO₂, and GHG are less than the Generic PSEL levels but greater than the de minimis levels so Generic PSEL levels will be established for those pollutants in accordance with OAR 340-222-0040.
- 14.e. The emissions of NO_x, CO, and VOC are greater than the Generic PSEL levels. A source specific PSEL level will be established for these pollutants in accordance with OAR 340-222-0041. The company has requested that the CO PSEL be set at 249 tons/year to allow for operational flexibility while maintaining a non-federal major status. The VOC potential to emit is decreased from 57 ton/year in the previous permit to 52 tons/yr in this proposed permit due to updated emission factors. Because the source conducted an air quality analysis of 57 tons/yr and demonstrated this emission rate is protective, the 57 ton/yr PSEL is retained.
- 14.f. The PSEL is a federally enforceable limit on the potential to emit.

SIGNIFICANT EMISSION RATE

15. The proposed PSEL is/is not greater than the netting basis as shown below.

Pollutant	SER	Requested increase over netting basis	Increase due to utilizing capacity that existed in the baseline period	Increase due to physical changes or changes in the method of operation	Increase due to use of Generic PSEL
PM	25	24	0	8.6	15.4
PM ₁₀	15	14	0	8.6	5.4
PM _{2.5}	10	9	0	8.6	0.4
CO	100	249	0	249	0
NO _x	40	34	0	34	0
SO ₂	40	39	0	36.9	2.1
VOC	40	57	0	57	0
GHG (CO ₂ e)	75,000	40,600	0	0	40,600

- 15.a. For PM, PM₁₀, PM_{2.5}, SO₂, and GHG the proposed PSELs are less than the SER over the netting basis. Therefore, no further air quality analysis is required for those pollutants.
- 15.b. Although the NO_x increase is less than the SER over the netting basis, the Department required the company to perform an air quality analysis during a previous permitting action. The results of analysis demonstrated the 95 ton/yr PSEL is protective of air quality, therefore the PSEL is retained. See the discussion in Section 9.f.
- 15.c. Because the VOC increase is greater than the SER over the netting basis, the Department required the company to perform an air quality analysis during a previous permitting action. The results of analysis demonstrated the 57 ton/yr PSEL is protective of air quality, therefore the PSEL is retained. See the discussion in Section 9.f.
- 15.d. Because the CO increase is greater than the SER over the netting basis, the Department required the company to perform an air quality analysis during the last permitting action. See the discussion in Section 9.f.

HAZARDOUS AIR POLLUTANTS

- 16. This source is not a major source of hazardous air pollutant emissions. Estimated HAP emissions from the facility listed in the table below. Detailed emission calculation are provided in the permit renewal application.

Hazardous Air Pollutant	Emission (tons/year)
1,1,1-Trichloroethane	0.002
1,1,2,2-Tetrachloroethane	0.001
1,1-Dichloroethane	0.007
1,1-Dichloroethene	0.0008
1,2-Dichloroethane	0.001
1,2-Dichloropropane	0.0002
2-Propanol (isopropyl alcohol)	0.089
Acrylonitrile	0.0004
Benzene	0.014
Carbon disulfide	0.005
Carbon tetrachloride	0.0001
Carbonyl sulfide	0.001
Chlorobenzene	0.002
Chlorodifluoromethane (Freon 22)	0.003
Chloroethane	0.002
Chloroform	0.0002
Dichlorobenzene	0.022
Dichloromethane	0.027
Ethylbenzene	0.135
Ethylene dibromide	0.0008
Formaldehyde	1.53
Hexane	0.038
Hydrogen chloride	0.53
Mercury (total)	0.0002
Methyl chloride (chloromethane)	0.034
Methyl ethyl ketone	0.143
Methyl isobutyl ketone	0.007
Perchloroethylene	0.02
Toluene	0.44
Trichloroethene	0.009
Vinyl chloride	0.006
Xylene	0.33
Total	3.4

GENERAL BACKGROUND INFORMATION

17. The source is located in an attainment area for all pollutants.

The source is not located within 10 kilometers of any Class I Air Quality Protection Area. No other permits have been issued or are required by the Department of Environmental Quality for this source.

COMPLIANCE HISTORY

18. There have been no complaints recorded for the facility since issuance of the original ACDP in 1994. No formal enforcement actions have ever been taken against the facility.

The facility was most recently inspected on 9/29/11, 9/11/13, and 8/19/15 and found to be in compliance with all permit conditions.

SOURCE TEST RESULTS

19. The results of the most recent source tests are shown below:

Power Resources Source Test Data Summary (average all runs)

Engine ID	NOx (gm/hp-hr)	CO (gm/hp-hr)	VOC (gm/hp-hr)	SO2 (gm/hp-hr)
3 - Caterpillar 3516 Engines				
3/18/1997	1.40	2.00	0.53	
4/29/1999	1.60	2.40		
5/7/2003	0.80	1.90		
5/29/2008	0.89	2.44		
10/11-12/2012	0.90	2.86		0.50
Average 1997-2012	1.12	2.32	0.53	0.50
2 - Caterpillar 3520 Engines				
5/29/2008	0.72	3.20		
10/10/2012	0.70	3.51		0.34
Average 2008-2012	0.71	3.36		0.34

PUBLIC NOTICE

20. This permit will be put on public notice from November 15, 2016, to December 20, 2016. Comments may be submitted in writing during the comment period. DEQ will hold a public hearing if requested by 10 or more individuals or one person representing a group of 10 or more individuals. After the comment period and hearing, if requested, DEQ will review the comments and modify the permit as may be appropriate. A proposed permit will be sent to EPA for a 45 day review period. DEQ may request and EPA may agree to an expedited review of 5 days if there were no substantive or adverse comments during the comment period.

If EPA does not object in writing, any person may petition the EPA within 60 days after the expiration of EPA's 45-day review period to make such objection. Any such petition must be based only on objections to the permit that were raised with reasonable specificity during the public comment period provided for in

OAR 340-218-0210, unless the petitioner demonstrates it was impracticable to raise such objections within such period, or unless the grounds for such objection arose after such period.

EMISSIONS DETAIL SHEETS

**Emission Detail Sheets - Proposed 2016 Renewal
PNGC Power
Permit No. 02-9503-TV-01**

Pollutant: PM/PM₁₀/PM_{2.5}

Emission Unit ID	Emission Unit Description	Annual Production	Units	Emission Factor	Reference	Emissions (tons/yr)
EU1	CAT 3516 (3 - 1140 hp engines)	29,959,200	hp-hr	0.10 gm/hp-hr	ST Data *	3.30
EU2	CAT 3520 (2 - 2233 hp engines)	39,122,160	hp-hr	0.10 gm/hp-hr	ST Data *	4.31
AI	Aggregate Insignificant					1.0

AI = unpaved roads

Total: 8.61

* ST Data - Emissions factor based upon highest results from source testing at Riverbend Landfill on similar engines in April 2011-Permit No. 36-0011-TV-01
Particulate matter source testing required this permit term.

Pollutant: NOx

Emission Unit ID	Emission Unit Description	Annual Production	Units	Emission Factor	Reference	Emissions (tons/yr)
EU1	CAT 3516 (3 - 1140 hp engines)	29,959,200	hp-hr	1.12gm/hp-hr	1997 -2012 ST Data (average all runs)	36.99
EU2	CAT 3520 (2 - 2233 hp engines)	39,122,160	hp-hr	0.71gm/hp-hr	2008 -2012 ST Data (average all runs)	30.62

NOx source testing required this permit term

Total: 67.61

Pollutant: CO

Emission Unit ID	Emission Unit Description	Annual Production	Units	Emission Factor	Reference	Emissions (tons/yr)
EU1	CAT 3516 (3 - 1140 hp engines)	29,959,200	hp-hr	2.32 gm/hp-hr	1997 -2012 ST Data (average all runs)	76.62
EU2	CAT 3520 (2 - 2233 hp engines)	39,122,160	hp-hr	3.36 gm/hp-hr	2008 -2012 ST Data (average all runs)	144.90

CO source testing required this permit term

Total: 221.52

Pollutant: SO₂

Emission Unit ID	Emission Unit Description	Annual Production	Units	Emission Factor	Reference	Emissions (tons/yr)
EU1	CAT 3516 (3 - 1140 hp engines)	29,959,200	hp-hr	0.485 gm/hp-hr	Inlet H ₂ S Data	16.02
EU2	CAT 3520 (2 - 2233 hp engines)	39,122,160	hp-hr	0.485 gm/hp-hr	Inlet H ₂ S Data	20.92

Emissions factor is based upon historical H₂S analyses - 425 ppmv converted to gm/hp-hr.

Total: 36.93

The most recent analysis reported a H₂S concentration at approximately 300 ppmv.

SO₂ source testing required this permit term

Pollutant: VOC

Emission Unit ID	Emission Unit Description	Annual Production	Units	Emission Factor	Reference	Emissions (tons/yr)
EU1	CAT 3516 (3 - 1140 hp engines)	29,959,200	hrs/yr	0.53 gm/hp-hr	1997 ST Data	17.50
EU2	CAT 3520 (2 - 2233 hp engines)	39,122,160	hp-hr	0.81 gm/hp-hr	Mfg. Data	34.90

EU3	Crankcase manifold exhausts (7886 total hp)	69,081,360	hp-hr	1.455 E-06 lb/hp-hr	AP-42 Table 3.3.1 and 99.97% control	0.05
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VOC source testing required this permit

Total: 52.45

Pollutant: GHG

Emission Unit ID	Emission Unit Description	Annual Production	Units	Pollutant	Emission Factor	Reference	Emissions (tons/yr)
EU1	CAT 3516 (3 - 1140 hp engines)	504.576	MMdscf/yr	CO2	116105.1 lb CO2/MMdscf	40 CFR Part 98, Table C-1	29291.92
				CH4	74.99 lb CO2e/MMdscf	40 CFR Part 98, Table C-2	18.92
				N2O	217.93 lb CO2e/MMdscf	40 CFR Part 98, Table C-2	54.98
EU2	CAT 3520 (2 - 2233 hp engines)	536.112	MMdscf/yr	CO2	116105.1 lb CO2/MMdscf	40 CFR Part 98, Table C-1	31122.67
				CH4	74.99 lb CO2e/MMdscf	40 CFR Part 98, Table C-2	20.1
				N2O	217.93 lb CO2e/MMdscf	40 CFR Part 98, Table C-2	58.4
AI	one-site heating devices						2756.0

Total: 63,323

PNGC HAPS - Proposed 2016 Renewal

Hazardous Air Pollutant	Emission (tons/year)
1,1,1-Trichloroethane	0.002
1,1,2,2-Tetrachloroethane	0.001
1,1-Dichloroethane	0.007
1,1-Dichloroethene	0.0008
1,2-Dichloroethane	0.001
1,2-Dichloropropane	0.0002
2-Propanol (isopropyl alcohol)	0.089
Acrylonitrile	0.0004
Benzene	0.014
Carbon disulfide	0.005
Carbon tetrachloride	0.0001
Carbonyl sulfide	0.001
Chlorobenzene	0.002
Chlorodifluoromethane (Freon 22)	0.003
Chloroethane	0.002
Chloroform	0.0002
Dichlorobenzene	0.022
Dichloromethane	0.027
Ethylbenzene	0.135
Ethylene dibromide	0.0008
Formaldehyde	1.533
Hexane	0.038
Hydrogen chloride	0.53
Mercury (total)	0.0002
Methyl chloride (chloromethane)	0.034
Methyl ethyl ketone	0.143
Methyl isobutyl ketone	0.007
Perchloroethylene	0.02
Toluene	0.44
Trichloroethene	0.009
Vinyl chloride	0.006
Xylene	0.33
Total:	3.40

See application for calculation details

Pollutant: GHG

Emission Unit ID	Emission Unit Description	Annual Production	Units	Pollutant	Emission Factor	Reference	CO2e Emissions (tons/yr)
EU1	CAT 3516 (3 - 1140 hp engines)	264.000	MMdscf/yr	CO2	116105.1 lb CO2/MMdscf	40 CFR Part 98, Table C-1	15325.87
				CH4	74.99 lb CO2e/MMdscf	40 CFR Part 98, Table C-2	9.90
				N2O	217.93 lb CO2e/MMdscf	40 CFR Part 98, Table C-2	28.77
EU2	CAT 3520 (2 - 2233 hp engines)	280.000	MMdscf/yr	CO2	116105.1 lb CO2/MMdscf	40 CFR Part 98, Table C-1	16254.71
				CH4	74.99 lb CO2e/MMdscf	40 CFR Part 98, Table C-2	10.5
				N2O	217.93 lb CO2e/MMdscf	40 CFR Part 98, Table C-2	30.5
AI	one-site heating devices						2756.0

Total: 34,416