

Lane Regional Air Protection Agency Standard Air Contaminant Discharge Permit

Review Report

University of Oregon

Permit No. 208557

Campus Planning and Facilities Management 1260 University of Oregon Eugene, Oregon 97403-1260 Website: http://uoregon.edu

Source Information:

Primary SIC	8221 – Colleges, Universities,	
1 minary oro	and Professional Schools	
NAICS	611310 - Colleges, Universities,	
INAICS	and Professional Schools	
Source B: 12. Boilers and other fuel		
Categories	burning equipment over 10	
(LRAPA title	MMBtu/hr heat input	
37, Table 1)	B: 25. Electrical power	
	generation from combustion	

	C: 3. All sources electing to maintain the source's netting basis C: 4. All sources that request a PSEL equal to or greater than the SER for a regulated pollutant
Public Notice Category	Ш

Compliance and Emissions Monitoring Requirements:

Unassigned Emissions	Y
Emission Credits	N
Compliance Schedule	N
Source Test [date(s)]	See Permit

 ·=	
COMS	N
CEMS	N
Ambient monitoring	N

Reporting Requirements

Annual Report (due date)	February 15
Semi-Annual Report (due date)	N
GHG Report (due date)	March 31
Monthly Report (due date)	N
Quarterly Report (due date)	N

Excess Emissions Report	Υ
Other Reports (due date)	
 NSPS Fuel Oil Report 	Postmarked by
•	February 15,
	August 15

Air Programs

NSPS (list subparts)	A, Dc, IIII, JJJJ, KKKK
NESHAP (list subparts)	A, ZZZZ
CAM	N
Regional Haze (RH)	N
Synthetic Minor (SM)	N
SM-80	Υ
Title V	N
Part 68 Risk Management	N
Major FHAP Source	N
Federal Major Source	N
NA New Source Review (NSR)	N
Prevention of Significant	N
Deterioration (PSD)	

Acid Rain	N
Clean Air Mercury Rule	N
(CAMR)	
TACT	N
>20 Megawatts	N

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Permittee Identification

1. University of Oregon ("the facility" or "U of O") operates a state university. The main campus is located in Eugene, Oregon.

General Background

2. This facility operates a state university. In support of university operations, the facility operates a central power station for electrical power generation, utilizing two (2) boilers and a combined cycle cogeneration system with a combustion turbine and duct burner. The power station serves the heating and cooling needs of the University of Oregon campus and educational facilities, as well as implementing a market-based approach to the production and sale of power. The central power station utilizes primarily natural gas with fuel oil as a back-up fuel. Along with the central power station, the facility operates several small boilers in campus buildings that are either significant emission units or categorically insignificant activities. The facility also operates a number of both gas-fired and diesel-fired emergency generators. The facility has three (3) emission units that are considered aggregate insignificant activities.

This facility is considered a synthetic minor source under Title V of the Clean Air Act. The facility is considered an area source of federal hazardous air pollutants.

Reasons for Permit Actions and Fee Basis

- 3. This permit action is a renewal for an existing Standard Air Contaminant Discharge Permit (Standard ACDP) which was issued on May 30, 2017 and expired on May 30, 2022. As the facility submitted a timely renewal application on November 29, 2021, the current permit will remain in effect until final action has been taken on the renewal application. The renewed Standard ACDP will be valid for up to five (5) years.
- 4. As part of this renewal, the facility PSELs will be changed from generic PSELs to source specific PSELs based on potential-to-emit (PTE). As of March 1, 2023, DEQ removed the ability to use generic PSELs from their regulations. By state statute, LRAPA cannot be less restrictive than DEQ.
- 5. As part of this renewal, LRAPA is performing an Agency-initiated Type 3 change and associated permit modification to correct the PSELs for PM, PM₁₀, PM_{2.5}, NO_x and GHGs. In the previous permit, LRAPA incorrectly set the PSELs as part of establishing a limit on natural gas and fuel oil usage for emission units EU-1, EU-2, and EU-3. The proposed PSELs for all criteria pollutants and GHGs now reflect potential emissions assuming the worst case scenario up to the usage limitations in the proposed permit. See the PSEL section for more discussion on this issue.

Attainment Status

6. The facility is located inside the Eugene-Springfield Air Quality Management Area. The facility is located in an area that has been designated attainment/unclassified for PM_{2.5}, ozone (VOC), NO₂, SO₂, and Pb and a maintenance area for CO and PM₁₀. The facility is located within 100 kilometers of two (2) Class I air quality protection areas: Diamond Peak Wilderness and Three Sisters Wilderness area.

Permitting History

7. LRAPA has reviewed and issued the following permitting actions to this facility:

Date Approved	Permit Action Type	Description
07/01/1977	ACDP	Initial
02/20/1987	Modified ACDP	Increase Boiler #4 steaming limitation

Date Approved	Permit Action Type	Description	
01/19/1990	Modified ACDP	Add a PSEL	
02/01/1990	Modified ACDP	Permitted source, electric power, generation or cogeneration	
05/01/1992	ACDP	Renewal	
01/07/1993	Modified ACDP	Terminate the use of Boilers #1, #2, and #3 effective June 1, 1993	
08/19/1993	Modified ACDP	Permit modification	
04/06/2000	NC-208557-A00	Installation of two diesel-fired 750 kW emergency generators at the Central Power Station	
04/07/2000	Synthetic Minor (SM) ACDP	Renewal	
06/29/2001	Administrative Amendment	Allow non-emergency operation of two diesel-fired 750 kW emergency generators at the Central Power Station	
04/07/2005	Standard ACDP	Renewal	
05/08/2009	Addendum 1	Establish expiration date for unassigned emissions and change permit from SM ACDP to Standard ACDP	
12/10/2009	Addendum 2	Authorization for 54 MMBtu/hr temporary boiler	
01/14/2011	Standard ACDP	Renewal	
04/30/2012	ACDP	Installation of Baker Center Boiler	
04/16/2013	NC-208557-A13	Installation of 2.1 MMBtu/hr Weil-McLain boiler	
03/16/2016	NC-208557-A16	80 kw diesel-fired emergency generator for Emergency Operations Center	
05/30/2017	Standard ACDP	Renewal	
05/13/2021	Addendum 1	100 kW and 350 kW diesel-fired emergency generator	
04/25/2023	NC-208557-A23	Maintenance paint booth	
Upon Issuance	Standard ACDP	Renewal	

Emission Unit Descriptions8. The emission units regulated by this permit are the following:

Emission Unit ID	Description	Pollution Control Device (PCD ID)	Installed / Last Modified
Significant	t Emission Units		
EU-1	Boiler #1, Central Power Station, Nebraska, 79 MMBtu/hr, natural gas/diesel	None	1994
EU-2	Boiler #2, Central Power Station, Babcock & Wilcox, 78 MMBtu/hr, natural gas/diesel	None	2011
EU-3	8.6 MW combined cycle cogeneration plant, Central Power Station: Combustion turbine, Solar Taurus 70, 78 MMBtu/hr, natural gas/diesel and Duct Burner, 45 MMBtu/hr, natural gas and Rentec HRSG	None	2011
EU-5	Unpaved Roads (primarily Autzen Stadium)	None	<1978
EU-10 EU-11	Emergency Generators: CP Station, Caterpillar, 2.2 MW, diesel CP Station, Caterpillar, 2.2 MW, diesel	None None	2009 2009

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Emission Unit ID	Description	Pollution Control Device (PCD ID)	Installed / Last Modified	
EU-12	CP Station, Caterpillar, 2.2 MW, diesel	None	2009	
EU-13	Safety & Risk Services, Caterpillar, 80 kW, diesel (2015 model)	None	2016	
EU-14	Knight Law, Cummins, 65 kW, natural gas	None	1988	
EU-15	Mac Court, Kohler, 30 kW, LPG	None	1973	
EU-16	UOPD, Olympian, 55 kW, natural gas (3/2010 model)	None	2012	
EU-17	Rainier Building, Cummins, 80 kW, diesel (5/1998 model)	None	2013	
EU-18	Willamette Hall, Waukesha, 325 kW, natural gas (1987 model)	None	1988	
EU-19	Hatfield-Dowlin Complex, Kohler, 400 kW, diesel	None	2013	
EU-20	Autzen-PK Park, Deere, 80 kW, diesel	None	2009	
EU-21	Autzen, Caterpillar, 750 kW, diesel	None	2002	
EU-22	Autzen-Moshofsky, Onan, 80 kW, diesel	None	1998	
EU-23	Millrace Garage, 100 kW, diesel	None	2021	
EU-24	Central Kitchen (Housing), 350 kW, diesel	None	2021	
	Small Boilers:			
EU-30	Boiler, Casanova Center, Kewanee, 8.38 MMBtu/hr, natural gas	None	1990	
EU-31	Boiler, Casanova Center, Kewanee, 4.18 MMBtu/hr, natural gas	None	1990	
EU-32	Boiler, Agate Hall, Cleaver Brooks, 2.5 MMBtu/hr, natural gas	None	1993	
EU-33	Boiler, Agate Hall, Cleaver Brooks, 2.5 MMBtu/hr, natural gas	None	1993	
EU-34	Boiler, Practice Facility, A.O. Smith, 3.9 MMBtu/hr, natural gas	None	2013	
EU-35	Make-up air heater, Practice Facility, 3.0 MMBtu/hr, natural gas	None	1998	
EU-36	Boiler, Baker Center Downtown, 2.04 MMBtu/hr, natural gas	None	2012	
EU-37	Boiler, Hatfield Dowlin Complex, Lochinvar Crest Model	None	2012	
	FBN2500, 2.3 MMBtu/hr, natural gas			
EU-38	Boiler, Hatfield Dowlin Complex, Lochinvar Crest Model	None	2012	
	FBN2500, 2.3 MMBtu/hr, natural gas			
Aggregate	Aggregate Insignificant Emissions			
AIE-4	Printing services, Baker Center Downtown	None	<1978	
AIE-6	GDF, Autzen Stadium, 300-gal AST gasoline	None	2002	
AIE-7	GDF, Central Power Station, 6,000-gal gasoline	None	1993	

Significant Emission Units

9. Emission Unit EU-1

The facility operates a boiler with a heat input rating of 79 MMBtu per hour to provide for the heating and cooling needs of the facility. This boiler operates on natural gas with fuel oil backup. The PM, PM₁₀ and PM_{2.5} emissions are based on stack testing performed in 2011 on both natural gas and fuel oil. The NO_x emissions are based on stack testing performed in 2001, 2011, 2017, and 2019 on both natural gas and fuel oil. The CO emissions are based on stack testing performed in 2011, 2017, and 2019 on both natural gas and fuel oil. The VOC emissions are based on vendor specification. The other criteria pollutant and GHG emissions are based on emission factors derived from DEQ AQ-EF05 – Emission Factors Gas Fired Boilers, DEQ AQ-EF04 – Emission Factors Oil Fired Boilers, and US EPA 40 CFR part 98, Tables C-1 and C-2. The federal HAP or CAO TAC emissions are based on emission factors from DEQ's 2020 Air Toxics Emission Inventory Combustion Emission Factor Tool. This emission unit is subject to a combined fuel limit with EU-2 and EU-3 for natural gas and fuel oil.

10. Emission Unit EU-2

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The facility operates a boiler with a heat input rating of 78 MMBtu per hour to provide for the heating and cooling needs of the facility. This boiler operates on natural gas with fuel oil backup. The PM, PM₁₀ and PM_{2.5} emissions are based on stack testing performed in 2011 on both natural gas and fuel oil. The NO_X emissions are based on stack testing performed in 2001, 2011, 2017, and 2019 on both natural gas and fuel oil. The CO emissions are based on stack testing performed in 2011, 2017, and 2019 on both natural gas and fuel oil. The other criteria pollutant and GHG emissions are based on emission factors derived from DEQ AQ-EF05 – Emission Factors Gas Fired Boilers, DEQ AQ-EF04 – Emission Factors Oil Fired Boilers, and US EPA 40 CFR part 98, Tables C-1 and C-2. The federal HAP or CAO TAC emissions are based on emission factors from DEQ's 2020 Air Toxics Emission Inventory Combustion Emission Factor Tool. This emission unit is subject to a combined fuel limit with EU-1 and EU-3 for natural gas and fuel oil.

11. Emission Unit EU-3

This emission unit generates electricity as part of a market-based approach to the production and sale of power and consists of a combustion turbine, a duct burner and a heat recovery steam generator (HRSG). Electrical output from the system is rated at 7.5 MW. The combustion turbine has a maximum fuel use of 0.078 MMcf per hour on natural gas and 520 gallons per hour with fuel backup. The duct burner has a maximum fuel use of 0.045 MMcf per hour on natural gas only. The NO_x emissions are based on stack testing performed in 2013, 2015, 2017, and 2019 on both natural gas and fuel oil. As the duct burner and HRSG are required to be operating during NO_x testing of the combustion turbine, the NO_x emissions from the duct burner are included in the results of the NO_X testing for the combustion turbine. The PM, PM₁₀, PM_{2.5}, CO, and VOC emissions from the combustion turbine or duct burner are based on vendor specifications. The SO₂ pollutant emissions from these sources are based on emission factors derived from DEQ AQ-EF05 – Emission Factors Gas Fired Boilers and US EPA 40 CFR part 98, Tables C-1 and C-2. The GHG pollutant emissions from this emission unit are based on emission factors derived from US EPA 40 CFR part 98, Tables C-1 and C-2. The federal HAP or CAO TAC emissions from this emission unit are based on emission factors from DEQ's 2020 Air Toxics Emission Inventory Combustion Emission Factor Tool. This emission unit is subject to a combined fuel limit with EU-1 and EU-2 for natural gas and fuel oil.

12. Emission Unit EU-5

This facility has a number of unpaved roads. Unpaved road emissions are calculated based on the methodology presented in US EPA AP-42, Section 13.2.2. Based on vehicle miles traveled (VMT), the unpaved areas of Autzen Stadium represent 87% of the total potential particulate matter.

13. Emission Units EU-10 through EU-24

These emission units provide emergency electrical power for various buildings around campus. These emission units vary in size and operate on fuel oil, natural gas, or liquified petroleum gas (LPG). The criteria pollutant emissions from the emission units that combust fuel oil or natural gas are based on emission factors derived from DEQ AQ-EF07 – Emission Factors – Power (Electric) Generators. The criteria pollutant emissions from the emission units that combust LPG are based on emission factors derived from US EPA AP-42, Section 1.5. The GHG pollutant emissions from these emission units are based on emission factors derived from US EPA 40 CFR part 98, Tables C-1 and C-2. The federal HAP or CAO TAC emissions from these emission units are based on emission factors from DEQ's 2020 Air Toxics Emission Inventory Combustion Emission Factor Tool.

14. Emission Units EU-30 through EU-38

These emission units provide convenience space heating and water heating in various buildings around campus. The criteria pollutant and GHG emissions from these emission units are based on emission factors derived from DEQ AQ-EF05 – Emission Factors Gas Fired Boilers and US

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EPA 40 CFR part 98, Tables C-1 and C-2. The federal HAP or CAO TAC emissions from these emission units are based on emission factors from DEQ's 2020 Air Toxics Emission Inventory Combustion Emission Factor Tool.

Aggregate Insignificant Emissions (AIE)

15. Emission Unit AIE-4

This emission unit provides printing services for the university using offset printing. This process was previously known as EU-4, and was considered a significant emission unit. However, the facility more closely tracked VOC emissions in calendar year 2022 to determine that total VOC emissions were 0.012 tons per year. LRAPA has reclassed this emission unit to be an AIE unit. AIE and categorically insignificant activities are considered to be insignificant activities as defined under LRAPA title 12.

16. Emission Unit AIE-6

At Autzen Stadium, the facility has one (1) 300-gallon gasoline tank that was installed in 2002. This tank represents one (1) gasoline dispensing facility (GDF) subject to the requirements under LRAPA sections 44-170 through 44-280. Under this regulation, the GDF is considered an existing GDF. Based on 2022 data, the amount of gasoline dispensed at the GDF was approximately 2,192 gallons per year. The GDF is subject to the requirements for an existing GDF whose annual throughput is less than 480,000 gallons in any 12 consecutive months and the monthly throughput is less than 100,000 gallons as calculated on a rolling 30 day basis. This location also has a 300-gallon diesel tank.

17. Emission Unit AIE-7

At the Central Power Station, the facility has one (1) 6,000-gallon gasoline tank that was installed in 1993. This tank represents one (1) gasoline dispensing facility (GDF) subject to the requirements under LRAPA sections 44-170 through 44-280. Under this regulation, the GDF is considered an existing GDF. Based on 2022 data, the amount of gasoline dispensed at the GDF was approximately 35,000 gallons per year. The GDF is subject to the requirements for an existing GDF whose annual throughput is less than 480,000 gallons in any 12 consecutive months and the monthly throughput is less than 100,000 gallons as calculated on a rolling 30 day basis. This location also has a 2,500-gallon diesel tank.

Production Limitations

18. The facility has previously requested that Emission Units EU-1, EU-2, and EU-3 be subject to group fuel use restrictions when combusting natural gas or fuel oil. The fuel usage in emission units EU-1, EU-2 and EU-3 is limited to 1,165 million standard cubic feet of natural gas (MMscf) and 329 thousand gallons of fuel oil (kgal) on a 12-month rolling basis. This fuel use limit acts to limit the potential to emit for criteria and HAP/TAC emissions from these emission units. The fuel use limit also establishes the facility as a SM source for compliance purposes.

Nuisance, Deposition and Other Emission Limitations

- 19. Under LRAPA 49-010(1), the permittee must not cause or allow air contaminants from any source subject to regulation by LRAPA to cause a nuisance. Compliance is demonstrated through documentation of all complaints received by the facility from the general public and following procedures to notify LRAPA of receipt of these complaints.
- 20. Under LRAPA 32-055, the permittee must not cause or permit the emission of particulate matter which is larger than 250 microns in size at sufficient duration or quantity as to create an observable deposition upon the real property of another person. Compliance is demonstrated through documentation of all complaints received by the facility from the general public and following procedures to notify LRAPA of receipt of these complaints.

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21. Under LRAPA 32-090(1), the permittee must not discharge from any source whatsoever such quantities of air contaminants which cause injury or damage to any persons, the public, business or property; such determination is to be made by LRAPA. Compliance is demonstrated through documentation of all complaints received by the facility from the general public and following procedures to notify LRAPA of receipt of these complaints.

General Emission Limitations

- 22. LRAPA 32-008(1) requires an existing unit at a facility prior to January 1, 1994, meet TACT if the emission unit meets the following criteria: The emission unit is not already subject to emission standards for the regulated pollutant under LRAPA title 30, title 32, title 33, title 38, title 39 or title 46 at the time TACT is required; the source is required to have a permit; the emission unit has emissions of criteria pollutants equal to or greater than five (5) tons per year of particulate or ten (10) tons per year of any gaseous pollutant; and LRAPA determines that air pollution control devices and emission reduction processes in use for the emissions do not represent TACT and that further emission control is necessary to address documented nuisance conditions, address an increase in emissions, ensure that the source is in compliance with other applicable requirements, or to protect public health or welfare, or the environment.
 - 22.a. The following emission units are not subject to TACT because they do not have emissions of criteria pollutants equal to or greater than five (5) tons per year of particulate or ten (10) tons per year of any gaseous pollutant: EU-14, EU-15, EU-18, EU-21, EU-22, and EU-30 through EU-33.
 - 22.b. The following emission unit is subject to TACT because it has emissions of criteria pollutants equal to or greater than five (5) tons per year of particulate matter: EU-5. While a formal TACT analysis has not been conducted, TACT for this emission unit would likely be the development of an Operations and Maintenance Plan (O&M Plan) that documents the activities that will be conducted to reduce fugitive emissions, when these activities are conducted, and who is conducting these activities.
- 23. LRAPA 32-008(2) requires new units installed or existing emission units modified on or after January 1, 1994, meet TACT if the emission unit meets the following criteria: The emission unit is not subject to Major NSR in title 38, Type A State NSR in LRAPA title 38, an applicable Standard of Performance for New Stationary Sources in title 46, or any other standard applicable only to new or modified sources in title 32, title 33, or title 39 for the regulated pollutant emitted; the source is required to have a permit; if new, the emission unit has emissions of any criteria pollutant equal to or greater than one (1) ton per year of any criteria pollutant equal to or greater than one (1) ton per year of any criteria pollutant; and LRAPA determines that the proposed air pollution control devices and emission reduction processes do not represent TACT.
 - 23.a. The following emission units are not subject to TACT because they are subject to an applicable Standard of Performance for New Stationary Sources in title 46: EU-1 through EU-3, EU-10 through EU-13, EU-16, EU-17, EU-19, EU-20, EU-23, and EU-24.
 - 23.b. The following emission units are not subject to TACT because they do not have emissions of criteria pollutants equal to or greater than one (1) ton per year: EU-36 through EU-38.
 - 23.c. The following emission unit are subject to TACT because they have emissions of criteria pollutants equal to or greater than one (1) ton per year: EU-34 and EU-35. While a formal TACT analysis has not been conducted, TACT for these emission units would likely be the development and use of an O&M plan and documentation of inspections and maintenance on these emission units. Controls are not considered economically feasible for such small boilers.

Conditions Specific to Emission Units EU-1 and EU-2

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- 24. These emission units are subject to the visible emission requirements under LRAPA 32-010(3). The permittee must not emit or allow to be emitted any visible emissions from Emission Unit EU-1 or EU-2 that equal or exceed an average of 20 percent opacity for a period or periods aggregating more than three (3) minutes in any one (1) hour. Compliance demonstration for visible emissions when combusting natural gas will be based on the use of an Operation and Maintenance plan and documentation of inspections and maintenance. Additionally, the compliance demonstration requirements under 40 CFR part 60 subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (NSPS) to perform scheduled visible emissions testing when combusting fuel oil will also serve as the compliance demonstration requirements for this emission limitation when either Emission Unit EU-1 or EU-2 are combusting fuel oil.
- 25. These emission units are subject to the particulate matter emission requirements under LRAPA 32-030(1)(a). For fuel burning equipment sources installed, constructed, or modified after June 1, 1970, but prior to April 16, 2015, for except solid fuel burning devices that have been certified under OAR 340-262-0500, the permittee must not cause, suffer, allow, or permit particulate matter emissions in excess of 0.10 grains per dry standard cubic foot provided that all representative compliance source test results prior to April 16, 2015 demonstrate emissions no greater than 0.080 grains per dry standard cubic foot. The particulate matter emission testing in 2011 performed on these emission units on both natural gas and fuel oil demonstrated both emission units met this requirement on both fuels. Compliance demonstration for visible emissions when combusting natural gas will be based on the use of an Operation and Maintenance plan and documentation of inspections and maintenance.
- 26. Both of these boilers are subject to 40 CFR part 60 subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (NSPS). See the NSPS section of this review report for more information.
- 27. Neither of these boilers are subject to 40 CFR part 63 subpart JJJJJJ National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources (NESHAP). See the NESHAP section of this review report for more information.

Conditions Specific to Emission Unit EU-3

- 28. This emission unit is subject to the visible emission requirements under LRAPA 32-010(3). The permittee must not emit or allow to be emitted any visible emissions from Emission Unit EU-3 that equal or exceed an average of 20 percent opacity for a period or periods aggregating more than three (3) minutes in any one (1) hour. Compliance demonstration for visible emissions when combusting natural gas will be based on the use of an Operation and Maintenance plan and documentation of inspections and maintenance. Additionally, when the permittee is performing compliance testing as required under 40 CFR part 60 subpart KKKK Standards of Performance for Stationary Combustion Turbines (NSPS) the permittee must perform visible emissions testing when combusting fuel oil as compliance demonstration for this emission limitation.
- 29. This emission unit is subject to the particulate matter emission requirements under LRAPA 32-015(2)(b). For any air contaminant sources installed, constructed or modified on or after June 1, 1970 but prior to April 16, 2015, for which there are no representative compliance source test results prior to April 16, 2015, the permittee must not cause, suffer, allow, or permit particulate matter emissions in excess of 0.14 grains per dry standard cubic foot. This emission unit is subject to LRAPA 32-015 rather than LRAPA 32-020 and 32-030 because the principal purpose of this emission unit is not to produce heat or power by indirect heat transfer based on the definition of 'fuel burning equipment' under LRAPA title 12. Compliance demonstration for visible emissions when combusting natural gas will be based on the use of an Operation and Maintenance plan and documentation of inspections and maintenance.

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30. This emission unit is subject to 40 CFR part 60 subpart KKKK – Standards of Performance for Stationary Combustion Turbines (NSPS). See the NSPS section of this review report for more information.

31. This emission unit is not subject to 40 CFR part 63 subpart YYYY – National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines (NESHAP). See the NESHAP section of this review report for more information.

Conditions Specific to Emission Unit EU-5

32. The facility is subject to the general requirements for fugitive emissions under LRAPA 48-015 which primarily result from unpaved roads. The facility must not have visible emissions that leave the plant site boundary for a period or periods totaling more than 18 seconds in a six (6) minute period. The facility must follow, but is not limited to, the list of reasonable precautions under LRAPA 48-015(1)(a)-(g). Compliance will be demonstrated through development of an Operations and Maintenance Plan (O&M Plan) that documents the activities that will be conducted to reduce fugitive emissions, when these activities are conducted, and who is conducting these activities. If requested by LRAPA, the facility must develop a fugitive emission control plan.

Typically, LRAPA would also require a facility to perform visual inspections of visible emissions at the property line periodically. However, the unpaved roads at this facility are not directly related to any production activities. The unpaved roads with the highest potential to emit particulate matter are related to the use of Autzen Stadium and occur during relatively infrequent game days. LRAPA believes it is more appropriate to perform activities to reduce the potential for fugitive emissions proactively prior to these infrequent periods of use.

Conditions Specific to Emission Units EU-14, EU-15, EU-16, and EU-18

- 33. These emission units are subject to the visible emission requirements under LRAPA 32-010(3). The permittee must not emit or allow to be emitted any visible emissions from these emission units that equal or exceed an average of 20 percent opacity for a period or periods aggregating more than three (3) minutes in any one (1) hour. Compliance for these emergency generators will be based on the use of an O&M plan and documentation of inspections and maintenance.
- 34. These emission units are subject to the particulate matter emission requirements under LRAPA 32-015(2)(B)(b). For any air contaminant sources installed, constructed or modified on or after June 1, 1970 but prior to April 16, 2015, for which there are no representative compliance source test results prior to April 16, 2015, the permittee must not cause, suffer, allow, or permit particulate matter emissions in excess of 0.14 grains per dry standard cubic foot. These emission units are subject to LRAPA 32-015 rather than LRAPA 32-020 and 32-030 because internal combustion engines are excluded from the definition of 'fuel burning equipment' under LRAPA title 12. Compliance for these emergency generators will be based on the use of an O&M plan and documentation of inspections and maintenance.
- 35. Emission Unit EU-16 is subject to 40 CFR part 60 subpart JJJJ Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (NSPS). See the NSPS section of this review report for more information.
- 36. Emission Unit EU-16 is subject to 40 CFR part 63 subpart ZZZZ National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (NESHAP). Emission Units EU-14, EU-16, and EU-18 are not subject to 40 CFR part 63 subpart ZZZZ. See the NESHAP section of this review report for more information.

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Conditions Specific to Emission Units EU-10 through EU-13, EU-17, EU-19 through EU-24

37. These emission units are subject to the visible emission requirements under LRAPA 32-010(3). The permittee must not emit or allow to be emitted any visible emissions from these emission units that equal or exceed an average of 20 percent opacity for a period or periods aggregating more than three (3) minutes in any one (1) hour. Compliance for these emergency generators will be based on the use of an O&M plan and documentation of inspections and maintenance.

- 38. Except for Emission Units EU-13, EU-23, and EU-24, these emission units are subject to the particulate matter emission requirements under LRAPA 32-015(2)(B)(b). For any air contaminant sources installed, constructed or modified on or after June 1, 1970 but prior to April 16, 2015, for which there are no representative compliance source test results prior to April 16, 2015, the permittee must not cause, suffer, allow, or permit particulate matter emissions in excess of 0.14 grains per dry standard cubic foot. These emission units are subject to LRAPA 32-015 rather than LRAPA 32-020 and 32-030 because internal combustion engines are excluded from the definition of 'fuel burning equipment' under LRAPA title 12. Compliance for these emergency generators will be based on the use of an O&M plan and documentation of inspections and maintenance.
- 39. Emission Units EU-13, EU-23, and EU-24 are subject to the particulate matter emission requirements under LRAPA 32-015(2)(c). For sources installed, constructed or modified after April 16, 2015, the permittee must not cause, suffer, allow, or permit particulate matter emissions in excess of 0.10 grains per dry standard cubic foot. These emission units are subject to LRAPA 32-015 rather than LRAPA 32-020 and 32-030 because internal combustion engines are excluded from the definition of 'fuel burning equipment' under LRAPA title 12. Compliance for these emergency generators will be based on the use of an O&M plan and documentation of inspections and maintenance.
- 40. Emission Units EU-10 through EU-13, EU-19, EU-20, EU-23, and EU-24 are subject to 40 CFR part 60 subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS). See the NSPS section of this review report for more information.
- 41. Emission Units EU-10 through EU-13, EU-19, EU-20, EU-23, and EU-24 are subject to 40 CFR part 63 subpart ZZZZ National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (NESHAP). Emission Units EU-17, EU-21, and EU-22 are not subject to 40 CFR part 63 subpart ZZZZ. See the NESHAP section of this review report for more information.

Conditions Specific to Emission Units EU-30 through EU-38

- 42. These emission units are subject to the visible emission requirements under LRAPA 32-010(3). The permittee must not emit or allow to be emitted any visible emissions from these emission units that equal or exceed an average of 20 percent opacity for a period or periods aggregating more than three (3) minutes in any one (1) hour. Compliance for these emission units will be based on the use of an O&M plan and documentation of inspections and maintenance.
- 43. These emission units are subject to the particulate matter emission requirements under LRAPA 32-030(1)(b). For any air contaminant sources installed, constructed or modified on or after June 1, 1970 but prior to April 16, 2015, for which there are no representative compliance source test results prior to April 16, 2015, the permittee must not cause, suffer, allow, or permit particulate matter emissions in excess of 0.14 grains per dry standard cubic foot. Compliance for these emission units will be based on the use of an O&M plan and documentation of inspections and maintenance.

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New Source Performance Standards (NSPS)

44. Emission Unit EU-1 and EU-2 are subject to 40 CFR part 60 subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units because these emission units are steam generating units for which construction commenced after June 9, 1989, and these emission units have a maximum design heat input of 100 MMBtu per hour or less, but greater than or equal to 10 MMBtu per hour.

45. The 40 CFR part 60 subpart Dc requirements that are applicable to Emission Units EU-1 and EU-2 are identified in the following table:

40 CFR part 60 subpart Dc Citation	Description	Applicable to Source (Yes/No)	Comments	Permit Condition
60.40c	Applicability and delegation of authority	Yes	Each boiler has a maximum heat input capacity between 10 and 100 MMBtu per hour.	NA
60.41c	Definitions	Yes	Each boiler meets the definition of a steam generating unit.	NA
60.42c	Standards for sulfur dioxide (SO ₂)	Yes	The facility elected to limit the sulfur weight percent of the fuel oil.	15, 16
60.43c	Standard for particulate matter (PM)	Yes	Each boiler is subject to the opacity requirements.	17, 18
60.44c	Compliance and performance test methods and procedures for sulfur dioxide	No		NA
60.45c	Compliance and performance test methods and procedures for particulate matter	Yes		19
60.46c	Emission monitoring for sulfur dioxide	No		NA
60.47c	Emission monitoring for particulate matter	Yes	The facility is required to perform visible emission testing on a schedule when combusting fuel oil.	20, 21
60.48c	Reporting and recordkeeping requirements	Yes	Under the authority of 40 CFR 60.19(c), LRAPA has moved the postmark deadlines to align with the February 15 reporting.	22 – 28

- 46. Emission Unit EU-3 is subject to 40 CFR part 60 subpart KKKK Standards of Performance for Stationary Combustion Turbines because this emission unit is a steam generating unit for which construction commenced after February 18, 2005, and the emission unit has a heat input at peak load equal to or greater than 10 MMBtu per hour, based on the higher heating value of the fuel.
- 47. The 40 CFR part 60 subpart KKKK requirements that are applicable to Emission Unit EU-3 are identified in the following table:

40 CFR part 60 subpart KKKK Citation	Description	Applicable to Source (Yes/No)		Permit Condition	
60.4300	Purpose	Yes		NA	
60.4305	Applicability	Yes		NA	
60.4310	Operations that are exempt from this NSPS	No		NA	
60.4315	Pollutants regulated by this subpart	Yes		NA	
60.4320	Nitrogen oxides (NO _x) emission limits	Yes	The turbine has a heat input at peak load between > 50 MMBtu/hr and ≤ 850 MMBtu/hr	33	
60.4325	NO _x emission limits for turbines that burn both natural gas and distillate oil (or some other combination of fuels)	Yes		34	
60.4330	Sulfur dioxide (SO ₂) emission limits	Yes		35	
60.4333	General requirements	Yes		36	
60.4335	Demonstrating compliance for NO _X if using water or steam injection	No		NA	
60.4340	Demonstrating continuous compliance for NO _X if not using water or steam injection	Yes	This turbine is using annual performance testing to demonstrate compliance.	37	
60.4345	Requirements for continuous emission monitoring system equipment options	No		NA	
60.4350	Using data from the continuous emission monitoring equipment to identify excess emissions	No		NA	
60.4355	Establishing and documenting a proper parameter monitoring plan	No		NA	
60.4360	Determining the total sulfur content of the turbine's combustion fuel	No		NA	
60.4365	Exemptions from monitoring the total sulfur content of the fuel	Yes	The turbine is using contracts or tariff sheets to demonstrate compliance.	38	
60.4370	Determining the sulfur content of the fuel	No		NA	
60.4375	Reports to submit	Yes		39	
60.4380	Excess emissions and monitoring downtime for NO _X	No		NA	
60.4385	Excess emissions and monitoring downtime for SO ₂	No	No		

40 CFR part 60 subpart KKKK Citation	Description	Applicable to Source (Yes/No)	Comments	Permit Condition
60.4390	Reporting requirements for an emergency combustion turbine or research and development turbine	No		NA
60.4395	When to submit reports	No		NA
60.4400	How to conduct initial and subsequent performance tests for NO _X	Yes		40
60.4405	How to perform the initial performance test if installing a NO _x diluent CEMS	No		NA
60.4410	Establishing a valid parameter range if choosing to continuously monitor parameters	No		NA
60.4415	Conducting initial and subsequent performance tests for sulfur	Yes		41
60.4420	Definitions	Yes		NA

- 48. Emission Units EU-10 through EU-13, EU-19, EU-20, EU-23, and EU-24 are subject to 40 CFR part 60 subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS) because the facility commenced construction of these emission units after July 11, 2005 where the stationary CI ICE are manufactured after April 1, 2006 and are not fire pump engines.
- 49. The 40 CFR part 60 subpart IIII requirements that are applicable to Emission Units EU-10 through EU-13, EU-19, EU-20, EU-23, and EU-24 are identified in the following table:

40 CFR part 60 subpart IIII Citation	Description	Applicable to Source (Yes/No)	Comments	Permit Condition
60.4200	Subpart applicability	Yes		49
60.4201	Emission standards (non-emergency engines)	No		NA
60.4202	Emissions standards (emergency engine)	Yes		NA
60.4203	Emission standards (manufacturer)	No		NA
60.4204	Emission (non- emergency engine)	No		NA
60.4205	Emission standards (emergency engines)	Yes	Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder must comply with the	50

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40 CFR part 60 subpart IIII Citation	Description	Applicable to Source (Yes/No)	Comments	Permit Condition
			emission standards in 40 CFR 89.112 and 40 CFR 89.113.	
60.4206	Emission standards	Yes	The emission standards are applicable for the life of the engine.	51
60.4207	Fuel requirements	Yes	Must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel.	52
60.4208	Requirements	No		NA
60.4209	Monitoring requirements	Yes	Installation of a non-resettable hour meter.	53
60.4210	Compliance requirements (manufacturer)	No		NA
60.4211	Compliance requirements	Yes		54
60.4212	Testing requirements	No		NA
60.4213	Testing methods	No		NA
60.4214	Notification, reporting, and recordkeeping requirements	Yes		55
60.4215	Special requirements	No	Engine is not located in the listed geographic areas.	NA
60.4216	Special requirements	No	Engine is not located in the listed geographic areas.	NA
60.4217	Special requirements	No	Engine does not use special fuels.	NA
60.4218	General provisions	Yes		NA
60.4219	Definitions	Yes		NA

- 50. Emission Unit EU-16 is subject to 40 CFR part 60 subpart JJJJ Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (NSPS) because the facility commenced construction of this emission unit after June 12, 2006, where the stationary SI ICE is manufactured on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 KW (25 Hp).
- 51. The 40 CFR part 60 subpart JJJJ requirements that are applicable to Emission Unit EU-16 are identified in the following table:

40 CFR part 60 subpart JJJJ Citation	Description	Applicable to Source (Yes/No)	Comments	Permit Condition
60.4230	Subpart applicability	Yes		56
60.4231	Emission standards (manufacturer)	No		NA
60.4232	How long to meet emission standards (manufacturer)	No		NA
60.4233	Emission standards (owner or operator)	Yes	EU-16 is subject to 40 CFR 60.4233(d).	57

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40 CFR part 60 subpart JJJJ Citation	Description	Applicable to Source (Yes/No)	Comments	Permit Condition
60.4234	How long to meet emission standards (owner or operator)	Yes		58
60.4235	Fuel requirements for gasoline (owner or operator)	No		NA
60.4236	Deadline for importing or installing (owner or operator)	Yes		NA
60.4237	Monitoring requirements for emergency SI ICE (owner or operator)	Yes		59
60.4238	Compliance requirements ≤19 KW (25 Hp) (manufacturer)	No		NA
60.4239	Compliance requirements >19 KW (25 Hp) gasoline (manufacturer)	No		NA
60.4240	Compliance requirements >19 KW (25 Hp) LPG (manufacturer)	No		NA
60.4241	Compliance requirements voluntary certification (manufacturer)	No		NA
60.4242	Other requirements (manufacturer)	No		NA
60.4243	Compliance requirements (owner or operator)	Yes		60
60.4244	Testing requirements (owner or operator)	No		NA
60.4245	Notification, reporting and recordkeeping (owner or operator)	Yes		61
60.4246	General provisions	Yes		NA
60.4247	Mobile source provisions (manufacturer only)	No		NA
60.4248	Definitions	Yes		NA

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 52. Emission Unit EU-1 and EU-2 are not subject to 40 CFR part 63 subpart DDDDD National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters because this facility is not considered to be a major source of federal HAPs.
- 53. Emission Unit EU-1 and EU-2 are not subject to 40 CFR part 63 subpart JJJJJJ National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources because both of these emission units meet the definition of a gas-fired boiler under 40 CFR 63.11237. Under 40 CFR 63.11195(e), gas-fired boilers as defined under 40 CFR 63.11237 are not subject to this NESHAP. The permittee is required to document that each boiler does not operate more than 48 hours per calendar year for periodic testing, maintenance, or operator training on fuel oil in order to remain classified as a gas-fired boiler under this regulation.

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54. Emission Unit EU-3 is not subject to 40 CFR part 63 subpart YYYY – National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines because this facility is not considered to be a major source of federal HAPs.

- 55. Emission Units EU-14, EU-15, EU-17, EU-18, EU-21, and EU-22 are not subject to 40 CFR part 63 subpart ZZZZ National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines because existing institutional emergency stationary RICE located at an area source of federal HAP emissions that do not operate for up to 50 hours per year in on-emergency situations to supply power as part of a financial arrangement with another entity are exempt under 40 CFR 63.6585(f)(3). *Institutional emergency stationary RICE* is defined as an emergency stationary RICE used in institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police stations, and fire stations.
- 56. Emission Units EU-10 through EU-13, EU-16, EU-19, EU-20, EU-23, and EU-24 are subject to 40 CFR part 63 subpart ZZZZ National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines because these emission units are considered new stationary RICE under this regulation. However, under 40 CFR 63.6590(c)(1), a new or reconstructed stationary RICE at an area source of federal HAP emissions must meet the requirements of 40 CFR part 63 subpart ZZZZ by meeting the requirements of 40 CFR part 60 subpart IIII or 40 CFR part 60 subpart JJJJ, as applicable. No further requirements apply for these engines under 40 CFR part 63 subpart ZZZZ.
- 57. AIE-6 and AIE-7 are subject to 40 CFR part 63 subpart CCCCC (6C) National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities. This facility is an area source of federal HAPs. The facility includes on-site storage tanks (diesel and gasoline). The facility has one (1) 300-gallon gasoline tank located at Autzen Stadium and one (1) 6,000-gallon gasoline tank located at the Central Power Station that each represent a gasoline dispensing facility (GDF). Under the regulation, each GDF is considered an existing GDF because the GDFs started up prior to the applicable date of a new source of November 9, 2006. 40 CFR part 63 subpart 6C has not been adopted by LRAPA. Under LRAPA paragraph 37-066(3)(a), Standard ACDPs exclude federal requirements not adopted by the LRAPA Board of Directors. The 40 CFR part 63 subpart 6C requirements that are applicable to the existing GDF at the facility are identified in the following table:

40 CFR part 63 subpart 6C Citation	Description	Applicable to Source (Yes/No)	Comments	Permit Condition
63.11110	Purpose	Yes		
63.11111	Applicability	Yes	The facility is a GDF and has a monthly throughput of less 10,000 gallons per month.	
63.11112	Emission sources covered	Yes		
63.11113	Compliance dates	Yes	The compliance date for an existing source is no later than January 10, 2008.	
63.11115	General duties	Yes		
63.11116	Requirements: <10,000 gallons per month	Yes		
63.11117	Requirements: ≥ 10,000 gallons per month	No		

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40 CFR part 63 subpart 6C Citation	Description	Applicable to Source (Yes/No)	Comments	Permit Condition
63.11118	Requirements: ≥ 100,000 gallons per month	No		
63.11120	Testing and monitoring	No		
63.11124	Notifications	No		
63.11125	Recordkeeping	Yes	Keep records of malfunctions as listed under 40 CFR 63.11125(d)	
63.11126	Reporting	Yes	Report any malfunctions.	
63.11130	General provisions	Yes		
63.11131	Implementation and enforcement	Yes		
63.11132	Definitions	Yes		

Plant Site Emission Limits (PSELs)

58. Provided below is a summary of the baseline emissions rate, netting basis, plant site emission limit, and potential-to-emit:

	Baseline Netting		I Racie		Emission (PSEL)	DTE
Pollutant	Emission Rate (TPY)	Previous (TPY)	Proposed (TPY)	Previous PSEL (TPY)	Proposed PSEL (TPY)	PTE (TPY)
PM	279	76	73	44	48	47.7
PM ₁₀	230	36	35	17	20	20.5
PM _{2.5}	NA	19	19	9	13	12.8
CO	226	199	199	99	53	53.1
NO _x	116	89	89	53	83	82.8
SO ₂	34	34	34	39	14	14.0
VOC	49	49	49	39	19	17.8
GHG (CO ₂ eq)	21,880	21,880	21,880	74,000	92,069	92,069

- 59. The baseline emission rates for PM, PM₁₀, CO, NO_x, SO₂, and VOC represent estimated actual emissions from 1978 as determined under previous permit actions. A baseline emission rate is not established for PM_{2.5} in accordance with subsection 42-0048(3). The facility baseline for GHGs is based upon actual emissions from the 2009 calendar year in accordance with subsection 42-0048(4).
- 60. Based on the 2017 ACDP permit review report, the netting basis for PM, PM₁₀, CO, and NO_X were reduced in 2010 and 2017 as required by section 42-0055 because the unassigned emissions for these regulated pollutants exceeded the SER. The proposed netting basis also includes a reduction for PM and PM₁₀ because the unassigned emissions for these regulated pollutants exceeded the SER after the LRAPA-initiated modification. See item 64 for more discussion on this reduction.
- 61. Under paragraph 42-0046(2)(b), a source's initial netting basis for PM_{2.5} is equal to the overall PM_{2.5} fraction of the PM₁₀ PSEL in effect on May 1, 2011 multiplied by the PM₁₀ netting basis in effect on May 1, 2011. Based on the 2017 ACDP permit emission details, the fraction of PM₁₀ in the netting basis that is PM_{2.5} is assumed to be 52.84%.

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62. The netting basis for SO₂, VOC and GHG are equivalent to the baseline emission rate for the given regulated pollutant in accordance with paragraph 42-0046(2)(a).

- 63. In accordance with OAR 340-222-0041(3), the PSEL for CO, SO₂ and VOC are set at the PTE for the source. In prior ACDPs, the PSEL for these pollutants were set at the generic PSEL level for the regulated pollutant. DEQ removed the ability to set generic PSELs in permits as part of a rule change that took effect on March 1, 2023.
- 64. As part of the LRAPA initiated modification, the PSELs for PM, PM₁₀, PM_{2.5}, NO_x and GHGs are increasing to reflect the PTE of this facility. Prior to this modification, the netting basis and unassigned emissions for PM and PM₁₀ were to be reduced by seven (7) and four (4) tons per year, respectively, under the authority of section 42-0055 as part of the next renewal. As part of LRAPA-initiated modification, the PM PSEL increase is using four (4) tons per year of unassigned emissions and the PM₁₀ PSEL increase is using three (3) tons per year of unassigned emissions. After performing the LRAPA-initiated modification, the netting basis for PM and PM₁₀ and the unassigned emissions are being reduced by three (3) tons per year and one (1) tons per year, respectively, in accordance with section 42-0055 as part of this renewal.

Pollutant	2017 Netting Basis (TPY)	2017 PSEL (TPY)	2017 Unassigned Emissions (TPY)	2017 Unassigned Reduction (TPY)	Proposed PSEL (TPY)	2023 Unassigned Reduction (TPY)	SER (TPY)
PM	76	44	32	7	48	3	25
PM ₁₀	36	17	19	4	20	1	15
PM _{2.5}	19	9	10	0	13	0	10
CO	199	99	100	0	53	0	100
NOx	89	53	36	0	83	0	40
SO ₂	34	39	0	0	14	0	40
VOC	49	39	10	0	19	0	40
GHGs	21,880	74,000	0	0	92,069	0	75,000

Unassigned Emissions and Emission Reduction Credits

65. The facility has unassigned emissions as shown in the table below. Unassigned emissions are equal to the netting basis minus the source's current PTE, minus any banked emission reduction credits. The facility has zero (0) tons of emission reduction credits. In accordance with section 42-0055, any unassigned emissions that exceed the SER shall be reduced upon the following permit renewal to no more than the SER for each regulated pollutant.

Pollutant	Proposed Netting Basis (TPY)	PTE (TPY)	2023 Unassigned Emissions (TPY)	Emission Reduction Credits (TPY)	SER (TPY)	Future Unassigned Reduction (TPY)
PM	73	48	25	0	25	0
PM ₁₀	35	20	15	0	15	0
PM _{2.5}	19	13	6	0	10	0
CO	199	53	146	0	100	46
NO _X	89	83	6	0	40	0
SO ₂	34	14	20	0	40	0
VOC	49	19	30	0	40	0
GHGs	21,880	92,069	0	0	75,000	0

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New Source Review (NSR) and Prevention of Significant Deterioration (PSD)

66. This source is located in an area that is designated attainment or unclassified for all regulated pollutants other than CO and PM₁₀. For pollutants other than CO and PM₁₀, the proposed PSELs are less than the federal major source threshold for non-listed sources of 250 TPY per regulated pollutant and are not subject to Major NSR. For CO and PM₁₀, the source is located in a maintenance area. The proposed PSELs for CO and PM₁₀ are less than the 100 TPY threshold that determines the applicability of Major NSR in a maintenance area.

67. The LRAPA-initiated modification is considered a Type 3 change under title 34 because the modification would increase emissions from the source above the PSEL by more than the de minimis emission level defined in title 12 before applying unassigned emissions but less than the SER after applying unassigned emissions. The LRAPA-initiated modification is not subject to NSR under title 38 because none of the regulated pollutants will increase by an amount that is equal to or greater than the SER over the netting basis.

Pollutant	Proposed PSEL (TPY)	PSEL Increase Over Netting Basis (TPY)	PSEL Increase Due to Utilizing Existing Baseline Period Capacity (TPY)	PSEL Increase Due to Modification (TPY)	SER (TPY)
PM	48	0	NA	NA	25
PM ₁₀	20	0	NA	NA	15
PM _{2.5}	13	0	NA	NA	10
CO	53	0	NA	NA	100
NOx	83	0	NA	NA	40
SO ₂	14	0	NA	NA	40
VOC	19	0	NA	NA	40
GHGs	92,069	70,189	NA	70,189	75,000

Federal Hazardous Air Pollutants/Toxic Air Contaminants

- 68. Potential annual federal hazardous air pollutant emissions (FHAP) are based on the potential to emit of the facility operating under permit limitations. Formaldehyde has the highest single FHAP emissions at approximately 0.58 tons per year. The potential total FHAP emissions are 1.22 tons per year. A major source of FHAPs is defined as having potential FHAP emissions of at least 10 tons per year of any single HAP and 25 tons per year of the aggregate of all FHAPs. This facility does not have potential FHAP emissions exceeding these thresholds and is considered a minor or area source of FHAPs.
- 69. Under the Cleaner Air Oregon program, only existing sources that have been notified by LRAPA and new sources are required to perform risk assessments. This source has not been notified by LRAPA and, therefore, is not yet required to perform a risk assessment or report annual emissions of toxic air contaminants. LRAPA required reporting of approximately 600 toxic air contaminants in 2016 and regulates approximately 260 toxic air contaminants (TAC) that have Risk Based Concentrations established in rule. All FHAPs are on the list of approximately 600 TACs. The FHAPs and TACs listed below are based upon safety data sheets and standard emission factors for the types of emission units at this facility. After the source is notified by LRAPA, they must update their inventory and perform a risk assessment to see if they must reduce risk from their TACs. Until then, this source will be required to report TAC emissions triennially.
- 70. The table below represents the potential emissions of federal HAPs/TACs from this facility assuming operation at the permit allowable limitations:

CAS/DEQ Number	Pollutant	PTE (TPY)	FHAP	CAO TAC
Organics				
79-34-5	1,1,2,2-Tetrachloroethane	2.7E-06	Yes	Yes
79-00-5	1,1,2-Trichloroethane	1.6E-06	Yes	Yes
78-87-5	1,2-Dichloropropane	1.4E-06	Yes	Yes
542-75-6	1,3-Dichloropropene	1.4E-06	Yes	Yes
75-07-0	Acetaldehyde	1.7E-01	Yes	Yes
107-02-8	Acrolein	1.0E-02	Yes	Yes
71-43-2	Benzene	4.3E-02	Yes	Yes
50-32-8	Benzo(a)pyrene	4.5E-07	Yes	Yes
106-99-0	1,3-Butadiene	4.3E-02	Yes	Yes
56-23-5	Carbon Tetrachloride	1.9E-06	Yes	Yes
67-66-3	Chloroform	1.5E-06	Yes	Yes
200	Diesel PM	1.2E-02	No	Yes
100-41-4	Ethyl Benzene	1.5E-02	Yes	Yes
106-93-4	Ethylene Dibromide	2.3E-06	Yes	Yes
107-06-2	Ethylene Dichloride	1.2E-06	Yes	Yes
50-00-0	Formaldehyde	5.8E-01	Yes	Yes
110-54-3	Hexane	7.0E-03	Yes	Yes
67-56-1	Methanol	3.3E-04	Yes	Yes
75-09-2	Methylene Chloride	4.4E-06	Yes	Yes
91-20-3	Naphthalene	4.4E-03	Yes	Yes
401	POM (inc. PAHs)	7.4E-03	Yes	Yes
75-56-9	Propylene Oxide	2.0E-01	Yes	Yes
100-42-5	Styrene	1.3E-06	Yes	Yes
108-88-3	Toluene	7.3E-02	Yes	Yes
75-01-4	Vinyl Chloride	7.7E-07	Yes	Yes
1330-20-7	Xylenes	3.6E-02	Yes	Yes
Inorganic Gase		0.02 02	100	100
7664-41-7	Ammonia	7.5E+00	No	Yes
7647-01-0	Hydrochloric Acid	3.7E-02	Yes	Yes
Metals	Try dice inche / told	0.72 02	. 55	
7440-38-2	Arsenic	3.9E-04	Yes	Yes
7440-39-3	Barium	1.6E-03	No	Yes
7440-41-7	Beryllium	4.5E-06	Yes	Yes
7440-43-9	Cadmium	7.1E-04	Yes	Yes
18540-29-9	Chromium, Hexavalent	5.4E-04	Yes	Yes
7440-48-4	Cobalt	3.1E-05	Yes	Yes
7440-50-8	Copper	1.1E-03	No	Yes
7439-92-1	Lead Compounds	1.8E-03	Yes	Yes
7439-96-5	Manganese	7.5E-04	Yes	Yes
7439-96-5	Mercury	4.9E-04	Yes	Yes
1313-27-5	Molybdenum	6.2E-04	No	Yes
365	Nickel	1.6E-03	Yes	Yes
7782-49-2	Selenium	4.4E-04	Yes	Yes

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CAS/DEQ Number	Pollutant	PTE (TPY)	FHAP	CAO TAC
7440-66-6	Zinc	1.1E-02	No	Yes
		Total (TPY) =	1.22	8.72

Toxic Release Inventory

- 71. The Toxics Release Inventory (TRI) is a federal program that tracks the management of certain toxic chemicals that may pose a threat to human health and the environment. It is a resource for learning about toxic chemical releases and pollution prevention activities reported by certain industrial facilities. Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) created the TRI Program. In general, chemicals covered by the TRI Program are those that cause:
 - Cancer or other chronic human health effects;
 - Significant adverse acute human health effects; or
 - Significant adverse environmental effects.

There are currently over 650 chemicals covered by the TRI Program. Facilities that manufacture, process or otherwise use these chemicals in amounts above established levels must submit annual TRI reports on each chemical. NOTE: The TRI Program is a federal program over which LRAPA has no regulatory authority. LRAPA does not guarantee the accuracy of any information copied from EPA's TRI website.

In order to report emissions to the TRI program, a facility must operate under a reportable NAICS code, meet a minimum employee threshold, and manufacture, process, or otherwise use chemicals in excess of the applicable reporting threshold for the chemical. This facility does not operate under a reportable NAICS code.

Compliance History

72. This facility is regularly inspected by LRAPA and occasionally by other regulatory agencies. The following table indicates the inspection history of this facility since 1993:

Type of Inspection	Date	Results
LRAPA - Full Compliance Evaluation	07/21/1993	No areas of non-compliance discovered
LRAPA - Full Compliance Evaluation	12/09/1994	No areas of non-compliance discovered
LRAPA - Full Compliance Evaluation	06/20/1995	No areas of non-compliance discovered
LRAPA - Full Compliance Evaluation	11/22/1996	No areas of non-compliance discovered
LRAPA - Full Compliance Evaluation	09/25/1997	No areas of non-compliance discovered
LRAPA - Full Compliance Evaluation	03/30/1998	No areas of non-compliance discovered
LRAPA - Full Compliance Evaluation	04/18/2003	No areas of non-compliance discovered
LRAPA - Full Compliance Evaluation	05/01/2008	No areas of non-compliance discovered
LRAPA - Full Compliance Evaluation	04/24/2013	No areas of non-compliance discovered
LRAPA - Full Compliance Evaluation	08/30/2018	No areas of non-compliance discovered

- 73. LRAPA has issued the following violation notices and/or taken the following enforcement actions against this facility since the facility began operation:
 - 73.a. On December 9, 2009, the facility informed LRAPA that EU-1 in the central power station had failed and, as a result, they had operated a newly installed, 54 MMBtu/hr temporary boiler. The temporary boiler installation began on October 28, 2009 and was completed on November 25, 2009. The Notice of Intent to Construct for the temporary boiler was received by LRAPA on December 8, 2009, therefore; a permit had not been issued for

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the new emission unit before its operation. On December 10, 2009, LRAPA issued Notice of Non-Compliance No. 3162 (NON 3162) to the facility for operating a boiler without a permit. The violation was resolved with the issuance of an addendum to the permit for the temporary boiler and a fine of \$2250 was assessed. The facility paid the full amount of the fine, \$2250, on April 16, 2010 and the case was closed.

- 73.b. The facility was issued a Stipulated Final Penalty and Stipulated Final Order (SFO No. 91-47) on March 5, 1992 for asbestos abatement violations at the University of Oregon Knight Library. The facility paid a civil penalty in the amount of \$4,000 and the file was closed.
- 73.c. The facility was issued a Notice of Civil Penalty (NCP 91-43) on November 25, 1991, for exceeding the opacity limit for Boiler #1 at the Central Power Station. The facility paid a civil penalty in the amount of \$1,200 and the file was closed.
- 73.d. The facility was issued a Notice of Non-Compliance (NON 90-10) for exceeding the opacity limit for Boiler #3 at the Central Power Station.
- 73.e. On November 19, 1990, visible emissions in excess of the permitted limits were observed from the stack of Boiler #3 at the University of Oregon Physical Plant. Opacity was observed and documented by an LRAPA employee at 90% black smoke, which violated the permitted opacity limitation of 40%. Once made aware of the situation, the facility made adjustments to Boiler #3 to remedy the low oxygen conditions that were causing inefficient combustion. The facility was issued Notice of Non-Compliance No. 90-13 (NON 90-13) on December 3, 1990. The facility was required to repair and calibrate the opacity meters and to ensure that an alarm system was in place to indicate when the system was operating incorrectly. No penalty was assessed for this violation and the case was closed.

Performance Test Results

74. Emission Units EU-1 and EU-2 have been tested for PM, CO and NO_X emissions. Emission Unit EU-3 has been tested repeatedly for NO_X emissions. Please see the Emission Details for a summary of the results of this testing for each emission unit.

Recordkeeping Requirements

75. The permittee must keep and maintain records for a period of at least five (5) years from the date of entry of the following information:

Activity	Units	Minimum Recording Frequency
PSEL Recordkeeping		
The amount of natural gas combusted by each Emission Unit EU-1 and EU-2.	Therms or MMcf	Monthly
The amount of fuel oil combusted by each Emission Unit EU-1 and EU-2.	1000 Gallons	Monthly
The amount of natural gas combusted by Emission Unit EU-3.	Therms or MMcf	Monthly
The amount of fuel oil combusted by Emission Unit EU-3.	1000 Gallons	Monthly
The total amount of fuel oil combusted by Emission Units EU-10 through EU-24, other than EU-13, EU-14, EU-16 and EU-18.	1000 Gallons	Monthly
The total amount of natural gas combusted by Emission Units EU-14, EU-16 and EU-18.	Therms or MMcf	Monthly
The total amount of LPG combusted by Emission Unit EU-13.	1000 Gallons	Monthly
The total amount of natural gas combusted by Emission Units EU-30 through EU-39.	Therms or MMcf	Monthly
General Limitation Recordkeeping		

Activity	Units	Minimum Recording Frequency
Operation and Maintenance Plan for Emission Unit EU-1 and EU-2.	NA	Maintain current documentation
Operation and Maintenance Plan for Emission Unit EU-3.	NA	Maintain current documentation
Operation and Maintenance Plan for Emission Unit EU-5.	NA	Maintain current documentation
Operation and Maintenance Plan for Emission Units EU-10 through EU-24.	NA	Maintain current documentation
Operation and Maintenance Plan for Emission Units EU-30 through EU-38.	NA	Maintain current documentation
Records of how many hours Emission Unit EU-1 and EU-2 are individually operated on fuel oil. The records must also indicate how many of the hours were for periodic testing, maintenance, or operator training on fuel oil and how many hours were for periods of gas curtailment, gas supply interruptions or startups.	Hours	Monthly
Visible emission testing records for Emission Unit EU-3, as required under Condition 30.	NA	Each occurrence
40 CFR part 60 subpart Dc Recordkeeping		
The amount of natural gas combusted by each Emission Unit EU-1 and EU-2.	Therms or MMcf	Monthly
The amount of fuel oil combusted by each Emission Unit EU-1 and EU-2.	1000 Gallons	Monthly
Fuel oil supplier certifications for Emission Unit EU-1 and EU-2.	NA	Each delivery of fuel oil
Visible emission testing records for Emission Unit EU-1 and EU-2, as required under Conditions 22 and 23.	NA	Each occurrence
40 CFR par 63 subpart KKKK Recordkeeping		
Maintenance performed for Emission Unit EU-3.	NA	Each occurrence
Performance test results for Emission Unit EU-3.	NA	Each performance test
A current, valid purchase contract, tariff sheet or transportation contract for each fuel, specifying the maximum total sulfur content.	Weight percent (ppmw) and grains of sulfur per 100 scf	Annually
40 CFR part 60 subpart IIII Recordkeeping		
Documentation of maintenance performed on each engine.	NA	Each occurrence
Documentation that each engine combusts diesel fuel that meets the specifications in Condition 52.	NA	Maintain current documentation
Records of how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation for each engine.	Hours	Monthly
40 CFR part 60 subpart JJJJ Recordkeeping		

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Activity	Units	Minimum Recording Frequency
Documentation of maintenance performed on each engine.	NA	Each occurrence
Documentation from the manufacturer that each engine is certified to meet the applicable emission standards.	NA	Maintain documentation
Records of how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation for each engine.	Hours	Monthly
LRAPA Title 44 Recordkeeping		
Initial notification.	NA	One time
The monthly gasoline throughput of each GDF.	1000 Gallons	Monthly
The annual gasoline throughput of each GDF in any 12 consecutive months.	1000 Gallons	Monthly
Documentation of the distance the submerged fill pipe extends from the bottom of each gasoline storage tank.	NA	Documentation
Records of permanent changes made at each GDF which may affect emissions.	NA	Each occurrence
Records of the occurrence and duration of each malfunction of	NA	Each
operation at each GDF.	INA	occurrence
Records of actions taken during periods of malfunction to	NA	Each
minimize emissions at each GDF.	14/-1	occurrence

Reporting Requirements

76. The facility must submit to LRAPA the following reports by no later than the dates indicated in the table below:

Report	Reporting Period	Due Date
Excess emission reports as required by 40 CFR part 60 subpart Dc for Emission Units EU-1 and EU-2	Semiannual	Postmarked by February 15, August 15
Semiannual fuel oil report as required by 40 CFR part 60 subpart Dc for Emission Unit EU-1 and EU-2.	Semiannual	Postmarked by February 15, August 15
Results of each performance test as required by 40 CFR part 60 subpart KKKK for Emission Unit EU-3.	Annual / Biennial	COB 60 days from the test date
Title 44 Report, if monthly gasoline throughput is greater than or equal to 10,000 gallons in a calendar year for any GDF.	Annual	February 15
The upset log information required by Condition G14 of the proposed permit, if required by Condition G14.	Annual	February 15
PSEL pollutant emissions as calculated according to Conditions 6 and 7 of the proposed permit, including supporting calculations.	Annual	February 15
GHG Report, if required by Condition 86 of the proposed permit.	Annual	March 31

Public Notice

77. Pursuant to LRAPA 37-0066(4)(a)(A), issuance of renewed Standard Air Contaminant Discharge Permit requires public notice in accordance with LRAPA 31-0033(3)(c), which requires LRAPA to

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provide notice off the proposed permit action and a minimum of 35 days for interested persons to submit written comments.

The draft permit was on public notice January 4, 2024 to February 8, 2024. No written comments were submitted during the 35-day comment period.

JJW/cmw 01/09/2024

Em	iss	ion	De	etail	ls
_,,,	100	1011	$\boldsymbol{\mathcal{L}}$	Juli	J

Emission Details								
University of Oregon 208	557							
Emission Details								
Facility Potential Emission	ons Summary							
,								
Criteria Pollutant Emissi	one							
Criteria i Gildiani Emissi	PM (TPY)	PM10 (TPY)	PM2.5 (TPY)	CO (TPY)	NOx (TPY)	SO ₂ (TPY)	VOC (TPY)*	GHGs (TPY)
Canacity	` ,	· ,	· · ·	· , ,	124	164	· · ·	172,466
Capacity	55.5	28.3	20.6	73.6		_	20.6	
PTE	47.7	20.5	12.8	53.1	82.8	14.0	17.8	92,069
Aggregate Insignificant	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0
FHAP/TAC Emissions								
				Total HAP	Total HAP			
	CAS/DEQ	Federal	CAO	Capacity	PTE			
Pollutant	Number	HAP	Air Toxic	(TPY)	(TPY)			
Organics				•	, ,			
1,1,2,2-Tetrachloroethane	79-34-5	Yes	Yes	2.7E-06	2.7E-06			
1,1,2-Trichloroethane	79-00-5	Yes	Yes	1.6E-06	1.6E-06			
1,2-Dichloropropane	78-87-5	Yes	Yes	1.4E-06	1.4E-06			
1,3-Dichloropropene		Yes	Yes	1.4E-06	1.4E-06			
	542-75-6 75.07.0							
Acetaldehyde	75-07-0	Yes	Yes	3.6E+00	1.7E-01			
Acrolein	107-02-8	Yes	Yes	1.8E+00	1.0E-02			
Benzene	71-43-2	Yes	Yes	4.6E-01	4.3E-02			
Benzo(a)pyrene	50-32-8	Yes	Yes	9.6E-07	4.5E-07			
1,3-Butadiene	106-99-0	Yes	Yes	5.8E-01	4.3E-02			
Carbon Tetrachloride	56-23-5	Yes	Yes	1.9E-06	1.9E-06			
Chloroform	67-66-3	Yes	Yes	1.5E-06	1.5E-06			
Diesel PM	200	No	Yes	1.2E-02	1.2E-02			
Ethyl Benzene	100-41-4	Yes	Yes	3.7E-02	1.5E-02			
Ethylene Dibromide	106-93-4	Yes	Yes	2.3E-06	2.3E-06			
Ethylene Dichloride	107-06-2	Yes	Yes	1.2E-06	1.2E-06			
Formaldehyde	50-00-0	Yes	Yes	5.9E+00	5.8E-01			
Hexane	110-54-3	Yes	Yes	8.0E-02	7.0E-03			
Methanol	67-56-1	Yes	Yes	3.3E-04	3.3E-04			
Methylene Chloride		Yes	Yes		4.4E-06			
	75-09-2			4.4E-06				
Naphthalene	91-20-3	Yes	Yes	7.2E-02	4.4E-03			
POM (inc. PAHs)	401	Yes	Yes	3.1E-01	7.4E-03			
Propylene Oxide	75-56-9	Yes	Yes	4.3E-01	2.0E-01			
Styrene	100-42-5	Yes	Yes	1.3E-06	1.3E-06			
Toluene	108-88-3	Yes	Yes	3.0E-01	7.3E-02			
Vinyl Chloride	75-01-4	Yes	Yes	7.7E-07	7.7E-07			
Xylenes	1330-20-7	Yes	Yes	1.3E-01	3.6E-02			
Inorganic Gases								
Ammonia	7664-41-7	No	Yes	2.5E+01	7.5E+00			
Hydrochloric Acid	7647-01-0	Yes	Yes	1.4E+00	3.7E-02			
Metals					-			
Arsenic	7440-38-2	Yes	Yes	1.2E-02	3.9E-04			
Barium	7440-39-3	No	Yes	3.5E-03	1.6E-03			
Beryllium	7440-41-7	Yes	Yes	9.6E-06	4.5E-06			
Cadmium	7440-43-9	Yes	Yes	1.1E-02	7.1E-04			
Chromium, Hexavalent	18540-29-9	Yes	Yes	1.4E-03	5.4E-04			
Cobalt	7440-48-4	Yes	Yes	6.7E-05	3.1E-05			
Copper	7440-50-8	No	Yes	3.0E-02	1.1E-03			
Lead Compounds	7439-92-1	Yes	Yes	6.1E-02	1.8E-03			
Manganese	7439-96-5	Yes	Yes	2.3E-02	7.5E-04			
Mercury	7439-97-6	Yes	Yes	1.5E-02	4.9E-04			
Molybdenum	1313-27-5	No	Yes	1.3E-03	6.2E-04			
Nickel	365	Yes	Yes	2.9E-02	1.6E-03			
Selenium	7782-49-2	Yes	Yes	1.6E-02	4.4E-04			
Vanadium	7440-62-2	No	Yes	1.8E-03	8.6E-04			
Zinc	7440-66-6	No	Yes	2.3E-02	1.1E-02			
LITO	1 770-00-0	140	Total HAPs =	15.17	1.22			
		May	Single HAP =					
		iviax		5.88	0.58			
			Total TACs =	40.4	8.72			

University of Oregon	200557											
University of Oregon Emission Details	20033/											
Small Boilers												
oman boners												
Avg. Natural Gas Hea	t Value											
	MMBtu/MMcf											
1020	IVIIVIDIU/IVIIVICI			Max								
				Heat Input			Criteria Pollu	tant Emission Esti	nates (tons/vr)			
EU-ID	Location	Source	Fuel Type	(MMBtu/hr)	PM	PM10	PM2.5	со	NOx	SO ₂	voc	GHGs
EU-30	Casanova Center	Boiler #1	Natural Gas	8.38	0.09	0.09	0.09	3.01	3.58	0.06	0.20	4,298
EU-31	Casanova Center	Boiler #2	Natural Gas	4.18	0.04	0.04	0.04	1.50	1.78	0.03	0.10	2,144
EU-32	Agate Hall	Boiler #1	Natural Gas	2.5	0.03	0.03	0.03	0.90	1.07	0.02	0.06	1,282
EU-33	Agate Hall	Boiler #2	Natural Gas	2.5	0.03	0.03	0.03	0.90	1.07	0.02	0.06	1,282
EU-34	Practice Facility	Boiler	Natural Gas	3.9	0.04	0.04	0.04	1.40	1.66	0.03	0.09	2,000
EU-35	Practice Facility	MAU	Natural Gas	3.0	0.03	0.03	0.03	1.08	1.28	0.02	0.07	1,539
EU-36	Baker Center	Boiler #1	Natural Gas	2.04	0.02	0.02	0.02	0.73	0.87	0.01	0.05	1,046
EU-37	Hatfield Dowlin Complex	Boiler #1	Natural Gas	2.3	0.02	0.02	0.02	0.82	0.98	0.02	0.05	1,180
EU-38	Hatfield Dowlin Complex		Natural Gas	2.3	0.02	0.02	0.02	0.82	0.98	0.02	0.05	1,180
L0 00	riatricia Downii Compiex	Doller #2	Total =	31.10	0.33	0.33	0.33	11.15	13.28	0.23	0.73	15,951
Criteria Pollutant Emi	ission Factors		Total =	31.10	0.00	0.00	0.00	11.10	10.20	0.23	0.75	10,551
Pollutant	Emission Factor	Units										
PM/PM10/PM2.5	2.5	lb/MMcf										
CO	84	lb/MMcf		Groonhouse Gas	Emission Factors							
NOx	100	lb/MMcf		Pollutant	Emission Factor	Units	GWP					
SOx	1.7	lb/MMcf		CO2	53.06	kg CO2/MMBtu	1					
VOC	5.5	lb/MMcf		CH4	1.00E-03	kg CH4/MMBtu	25					
GHG	117	lb/MMBtu		N2O	1.00E-04	kg N2O/MMBtu	298					
UIU	11/	IU/IVIIVIDLU		INZU	1.00E-04	NY INZO/IVIIVIDIU	230	1				
FHAP/TAC Emissions												
I HAFTIAG EIIIISSIONS			i	Potential								
		NG Emission	FO Emission	Annual								
		Factor	Factor	Emissions	Federal	CAO						
Pollutant	CAS/DEQ Number	(lbs/MMCF)	(lbs/1000 Gal)	(TPY)	HAP	Air Toxic						
Organics	CAS/DEQ Nullibel	(IDSIMINICI)	(iba iooo Gai)	(11-1)	HAF	All TOXIC						
1,1,2,2-Tetrachloroetha	79-34-5			0.0E+00	Yes	Yes						
1,1,2-Trichloroethane	79-00-5			0.0E+00	Yes	Yes						
1,2-Dichloropropane	78-87-5			0.0E+00	Yes	Yes						
1,3-Dichloropropene	542-75-6			0.0E+00	Yes	Yes						
		0.0031	0.3506	4.1E-04								
Acetaldehyde	75-07-0 107-02-8	0.0031		3.6E-04	Yes	Yes						
Acrolein			0.3506		Yes	Yes						
Benzene	71-43-2	0.0058	0.0044	7.7E-04	Yes	Yes						
Benzo(a)pyrene	50-32-8	1.2E-06	0.0440	1.6E-07	Yes	Yes						
1,3-Butadiene	106-99-0		0.0148	0.0E+00	Yes	Yes						
Carbon Tetrachloride	56-23-5			0.0E+00	Yes	Yes						
Chloroform	67-66-3			0.0E+00	Yes	Yes						
Diesel PM	200			0.0E+00	No	Yes						
Ethyl Benzene	100-41-4	0.0069	0.0002	9.2E-04	Yes	Yes						
Ethylene Dibromide	106-93-4			0.0E+00	Yes	Yes						
Ethylene Dichloride	107-06-2			0.0E+00	Yes	Yes						
Formaldehyde	50-00-0	0.0123	0.3506	1.6E-03	Yes	Yes						
Hexane	110-54-3	0.0046	0.0035	6.1E-04	Yes	Yes						
Methanol	67-56-1			0.0E+00	Yes	Yes						
Methylene Chloride	75-09-2			0.0E+00	Yes	Yes						
Naphthalene	91-20-3	0.0003	0.0053	4.0E-05	Yes	Yes						
POM (inc. PAHs)	401	0.0001	0.0445	1.3E-05	Yes	Yes						
Propylene Oxide	75-56-9	0.5300		7.0E-02	Yes	Yes						
Styrene	100-42-5	0.0005	0.0044	0.0E+00	Yes	Yes						
Toluene Vinyl Chlorida	108-88-3	0.0265	0.0044	3.5E-03	Yes	Yes						
Vinyl Chloride	75-01-4	0.0107	0.0010	0.0E+00	Yes	Yes						
Xylenes	1330-20-7	0.0197	0.0016	2.6E-03	Yes	Yes						
Inorganic Gases	7001117	0.0000	0.0	4.05.04	h:	V						
Ammonia	7664-41-7 7647-01-0	3.2000	2.9 0.1863	4.2E-01	No Yes	Yes						
Hydrochloric Acid	/04/-01-0	 	0.1863	0.0E+00	Yes	Yes						
Metals	7440.00.0	2.05.04	0.0040	0.75.05	V	V						
Arsenic	7440-38-2	2.0E-04	0.0016	2.7E-05	Yes	Yes						
Barium	7440-39-3 7440-41-7	4.4E-03	 	5.8E-04	No Yes	Yes						
Beryllium		1.2E-05	0.0045	1.6E-06	Yes	Yes						
Cadmium Havasalant	7440-43-9 18540-29-9	1.1E-03	0.0015	1.5E-04	Yes	Yes						
Chromium, Hexavalent		1.4E-03	0.0001	1.9E-04	Yes	Yes						
Cobalt	7440-48-4	8.4E-05	0.0044	1.1E-05	Yes	Yes						
Copper	7440-50-8	8.5E-04	0.0041	1.1E-04	No	Yes						
Lead Compounds	7439-92-1	5.0E-04	0.0083	6.6E-05	Yes	Yes						
Manganese Maraun	7439-96-5	3.8E-04	0.0031	5.0E-05	Yes	Yes						
Mercury	7439-97-6	2.6E-04	0.002	3.5E-05	Yes	Yes						
Molybdenum	1313-27-5	1.7E-03	0.0000	2.2E-04	No Yes	Yes						
Nickel	365	2.1E-03	0.0039	2.8E-04	Yes	Yes						
Selenium	7782-49-2	2.4E-05	0.0022	3.2E-06	Yes	Yes						
Vanadium	7440-62-2	2.3E-03	 	3.1E-04	No No	Yes						
Zinc	7440-66-6	2.9E-02	1	3.9E-03	No 0.05.00	Yes						
			Total Emissions =	0.51	8.2E-02	0.51						
Notes:				L								
	emission factors from Ol		ncontrolled medium	boilers.								
	are from 40 CFR 98, Table											
	s from DEQ 2020 Air Toxio	s Emission Invento	ry Combustion Emis	ssion Factor Tool.								
Chromium assumed to	be nexavalent. re from ODEQ Fuel Comb											

EU-10 CP Statio EU-11 CP Statio EU-11 CP Statio EU-12 CP Statio EU-13 SARS EU-17 Rainier BL EU-13 SARS EU-17 Rainier BL EU-19 Haffield-D EU-20 Autzen-P EU-21 Autzen EU-22 Millzen-G EU-24 Central Ki EU-23 Millzen-G EU-24 Central Ki EU-23 Millzen-G EU-24 Mutzen-B EU-25 Millzen-G EU-26 Mac Court EU-16 UOPD EU-18 Williamett EU-16 UOPD EU-18 Williamett PML G-16 UOPD EU-18 Williamett PML G-16 UOPD EU-18 Williamett PML G-17 G-18 G-18 G-18 G-18 G-18 G-18 G-18 G-18	BRU/1000 gal (d BRU/MEC) (and L BRU/MEC) (and	isesel) ral gas) PG) Source Caterpillar Caterpillar Caterpillar Caterpillar Cummins Kohler Deere	Fuel Type Diesel	Max Rating 2200 2200 2200 80 80 400 90 100 350 65 55 325 8,995	Max. Rating Units kW Total = kW kW kW Total =	Max Fuel 157.5 157.5 157.5 6.5 6.6 6.1 6.1 6.2 24 635.53 7.05 7.05 1.1 1.51	Max Fuel Units gathr MBstuhr MMBstuhr MMBstuhr MMBstuhr	PM 0.33 0.33 0.33 1.4E-02 0.11 0.01 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 1.4E-04 1.35	PM10 0.33 0.33 0.33 1.4E-02 0.01 0.01 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04 1.35	Criteria Pollut PM2.5 0.33 0.33 0.33 1.4E-02 0.01 0.01 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04 1.35	ant Emission Estin CO 1.02 1.02 1.02 4.2E-02 0.04 0.34 0.04 0.05 0.16 2.6E-03 4.3E-03 3.7E-03 2.1E-02 4.16	mates (tons/yr) NOx 4.76 4.76 4.76 0.20 0.20 1.57 0.19 1.62 0.18 0.25 0.72 4.6E-03 3.0E-02 2.6E-02 1.5E-01 19.41	\$02 0.31 0.31 1.3E-02 0.01 0.10 0.01 0.01 0.01 0.05 7.1E-06 6.4E-06 5.6E-06 1.26	VOC 0.39 0.39 1.6E-02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 1.2E-03 1.1E-03 6.2E-03 1.5E-04	GHGs 178 178 178 7 7 7 9 9 27 4 4 1 1 1 6 7 31 7
Inputs	BRU/1000 gal (d BRU/MEC) gal (b BRU/MEC) gal (L BRU/MEC) gal (Jiesel) Jiral gas) Jen gas Jen	Diesel LPG Total = LPG Emission Factor is/1000 gal 0.7 0.7 1.5 13 0.02 1.0 Ib/MMBtu 139	Rating 2200 2200 2200 80 80 80 400 80 100 350 350 30 65 55 325 8,995	Units kW	157.5 157.5 157.5 6.5 6.6 52 6.13 53.5 6.1 8.2 24 635.53 7.05 7.05 0.22 0.19	gal/hr MMBtu/hr MMBtu/hr MMBtu/hr	0.33 0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.33 0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04	PM2.5 0.33 0.33 0.33 1.4E-02 0.01 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	CO 1.02 1.02 1.02 4.2E-02 0.04 0.34 0.04 0.35 0.04 0.05 0.16 2.6E-03 4.3E-03 3.7E-03 2.1E-02	NOx 4.76 4.76 4.76 0.20 0.20 0.20 1.57 0.19 1.62 0.18 0.25 0.72 4.6E-03	0.31 0.31 1.3E-02 0.01 0.10 0.01 0.01 0.01 0.01 0.02 0.05 7.1E-06 6.4E-06 5.6E-06 3.2E-05	0.39 0.39 0.39 1.6E-02 0.02 0.13 0.02 0.13 0.02 0.02 0.06 3.5E-04	178 178 178 7 7 7 59 7 60 7 9 27 4
100 Maximum 138 MMBut/1 1,028 MMBtu/1 1,028 MBtu/1 1,028 M	BRU/1000 gal (d BRU/MEC) gal (b BRU/MEC) gal (L BRU/MEC) gal (Jiesel) Jiral gas) Jen gas Jen	Diesel LPG Total = LPG Emission Factor is/1000 gal 0.7 0.7 1.5 13 0.02 1.0 Ib/MMBtu 139	Rating 2200 2200 2200 80 80 80 400 80 100 350 350 30 65 55 325 8,995	Units kW	157.5 157.5 157.5 6.5 6.6 52 6.13 53.5 6.1 8.2 24 635.53 7.05 7.05 0.22 0.19	gal/hr MMBtu/hr MMBtu/hr MMBtu/hr	0.33 0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.33 0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04	PM2.5 0.33 0.33 0.33 1.4E-02 0.01 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	CO 1.02 1.02 1.02 4.2E-02 0.04 0.34 0.04 0.35 0.04 0.05 0.16 2.6E-03 4.3E-03 3.7E-03 2.1E-02	NOx 4.76 4.76 4.76 0.20 0.20 0.20 1.57 0.19 1.62 0.18 0.25 0.72 4.6E-03	0.31 0.31 1.3E-02 0.01 0.10 0.01 0.01 0.01 0.01 0.02 0.05 7.1E-06 6.4E-06 5.6E-06 3.2E-05	0.39 0.39 0.39 1.6E-02 0.02 0.13 0.02 0.13 0.02 0.02 0.06 3.5E-04	178 178 178 7 7 59 7 60 7 9 27
100 Maximum 138 MMBut/1 1,028 MMBtu/1 1,028 MBtu/1 1,028 M	BRU/1000 gal (d BRU/MEC) gal (b BRU/MEC) gal (L BRU/MEC) gal (Jiesel) Jiral gas) Jen gas Jen	Diesel LPG Total = LPG Emission Factor is/1000 gal 0.7 0.7 1.5 13 0.02 1.0 Ib/MMBtu 139	Rating 2200 2200 2200 80 80 80 400 80 100 350 350 30 65 55 325 8,995	Units kW	157.5 157.5 157.5 6.5 6.6 52 6.13 53.5 6.1 8.2 24 635.53 7.05 7.05 0.22 0.19	gal/hr MMBtu/hr MMBtu/hr MMBtu/hr	0.33 0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.33 0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04	PM2.5 0.33 0.33 0.33 1.4E-02 0.01 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	CO 1.02 1.02 1.02 4.2E-02 0.04 0.34 0.04 0.35 0.04 0.05 0.16 2.6E-03 4.3E-03 3.7E-03 2.1E-02	NOx 4.76 4.76 4.76 0.20 0.20 0.20 1.57 0.19 1.62 0.18 0.25 0.72 4.6E-03	0.31 0.31 1.3E-02 0.01 0.10 0.01 0.01 0.01 0.01 0.02 0.05 7.1E-06 6.4E-06 5.6E-06 3.2E-05	0.39 0.39 0.39 1.6E-02 0.02 0.13 0.02 0.13 0.02 0.02 0.06 3.5E-04	178 178 178 7 7 7 59 7 60 7 9 27 4
1,025 MMBtu/M 91.5 MMBtu/M 91.5 MMBtu/M 91.5 MMBtu/M 10	Bru/MMG (natu. Bru/mord (natu. Bru/mord)	ural gas) _PG) Source Caterpillar Caterpi	Diesel LPG Total = LPG Emission Factor is/1000 gal 0.7 0.7 1.5 13 0.02 1.0 Ib/MMBtu 139	Rating 2200 2200 2200 80 80 80 400 80 100 350 350 30 65 55 325 8,995	Units kW	157.5 157.5 157.5 6.5 6.6 52 6.13 53.5 6.1 8.2 24 635.53 7.05 7.05 0.22 0.19	gal/hr MMBtu/hr MMBtu/hr MMBtu/hr	0.33 0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.33 0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04	PM2.5 0.33 0.33 0.33 1.4E-02 0.01 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	CO 1.02 1.02 1.02 4.2E-02 0.04 0.34 0.04 0.35 0.04 0.05 0.16 2.6E-03 4.3E-03 3.7E-03 2.1E-02	NOx 4.76 4.76 4.76 0.20 0.20 0.20 1.57 0.19 1.62 0.18 0.25 0.72 4.6E-03	0.31 0.31 1.3E-02 0.01 0.10 0.01 0.01 0.01 0.01 0.02 0.05 7.1E-06 6.4E-06 5.6E-06 3.2E-05	0.39 0.39 0.39 1.6E-02 0.02 0.13 0.02 0.13 0.02 0.02 0.06 3.5E-04	178 178 178 7 7 7 59 7 60 7 9 27 4
## BL4D Loca ## Loca	Location Station Stati	Source Caterpillar Caterpillar Caterpillar Caterpillar Caterpillar Caterpillar Caterpillar Caterpillar Caterpillar Cummins Kohler Cummins Cummins Kohler Cummins Maukesha Natural Gas Emission Factor Is/MMCt 10 10 10 10 10 399 2,840 0,6 116 117 Natural Gas (kg/MMBtu) 53.06 1.0E-03	Diesel LPG Total = LPG Emission Factor is/1000 gal 0.7 0.7 1.5 13 0.02 1.0 Ib/MMBtu 139	Rating 2200 2200 2200 80 80 80 400 80 100 350 350 30 65 55 325 8,995	Units kW	157.5 157.5 157.5 6.5 6.6 52 6.13 53.5 6.1 8.2 24 635.53 7.05 7.05 0.22 0.19	gal/hr MMBtu/hr MMBtu/hr MMBtu/hr	0.33 0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.33 0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04	PM2.5 0.33 0.33 0.33 1.4E-02 0.01 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	CO 1.02 1.02 1.02 4.2E-02 0.04 0.34 0.04 0.35 0.04 0.05 0.16 2.6E-03 4.3E-03 3.7E-03 2.1E-02	NOx 4.76 4.76 4.76 0.20 0.20 0.20 1.57 0.19 1.62 0.18 0.25 0.72 4.6E-03	0.31 0.31 1.3E-02 0.01 0.10 0.01 0.01 0.01 0.01 0.02 0.05 7.1E-06 6.4E-06 5.6E-06 3.2E-05	0.39 0.39 0.39 1.6E-02 0.02 0.13 0.02 0.13 0.02 0.02 0.06 3.5E-04	178 178 178 7 7 7 59 7 60 7 9 27 4
EU-ID Loca	Location Station Diesel Station Statio	Source Caterpillar 10 10 10 399 2,840 0.6 116 1b/MMBtu 117 Natural Gas (kg/MMBtu) 53.06	Diesel LPG Total = LPG Emission Factor is/1000 gal 0.7 0.7 1.5 13 0.02 1.0 Ib/MMBtu 139	Rating 2200 2200 2200 80 80 80 400 80 100 350 350 30 65 55 325 8,995	Units kW	157.5 157.5 157.5 6.5 6.6 52 6.13 53.5 6.1 8.2 24 635.53 7.05 7.05 0.22 0.19	gal/hr MMBtu/hr MMBtu/hr MMBtu/hr	0.33 0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.33 0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04	PM2.5 0.33 0.33 0.33 1.4E-02 0.01 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	CO 1.02 1.02 1.02 4.2E-02 0.04 0.34 0.04 0.35 0.04 0.05 0.16 2.6E-03 4.3E-03 3.7E-03 2.1E-02	NOx 4.76 4.76 4.76 0.20 0.20 0.20 1.57 0.19 1.62 0.18 0.25 0.72 4.6E-03	0.31 0.31 1.3E-02 0.01 0.10 0.01 0.01 0.01 0.01 0.02 0.05 7.1E-06 6.4E-06 5.6E-06 3.2E-05	0.39 0.39 0.39 1.6E-02 0.02 0.13 0.02 0.13 0.02 0.02 0.06 3.5E-04	178 178 178 7 7 59 7 60 7 9 27
EU-10 CP Station EU-11 CP Station EU-12 CP Station EU-13 S&RS EU-17 Rainier BL EU-17 Rainier BL EU-19 Haffield-D EU-20 Autzen-Pl EU-21 Autzen-Pl EU-21 Autzen-Pl EU-22 Millrace EU-23 Millrace EU-24 Central Ki EU-23 Millrace EU-24 Central Ki EU-15 Mac Court EU-16 UOPD EU-18 Willamett EU-16 UOPD EU-18 Willamett EU-18 Willamett EU-18 Willamett PM EU-19 Willamett EM-19 CO PM EU-19 Willamett EM-19 CO PM EU-19 CO PM EM-19 CO PM E	Station Statio	Catepillar Catepillar Catepillar Catepillar Catepillar Catepillar Catepillar Cummins Kohler Deere Catepillar Cummins Kohler Cummins Olympian Waukesha Natural Gas Emission Factor Ib/MMGt 10 10 10 10 10 10 10 10 110 117 117 118 Natural Gas (kg/MMBtu) 53.06 1.0E-03	Diesel LPG Total = LPG Emission Factor is/1000 gal 0.7 0.7 1.5 13 0.02 1.0 Ib/MMBtu 139	Rating 2200 2200 2200 80 80 80 400 80 100 350 350 30 65 55 325 8,995	Units kW	157.5 157.5 157.5 6.5 6.6 52 6.13 53.5 6.1 8.2 24 635.53 7.05 7.05 0.22 0.19	gal/hr MMBtu/hr MMBtu/hr MMBtu/hr	0.33 0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.33 0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04	PM2.5 0.33 0.33 0.33 1.4E-02 0.01 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	CO 1.02 1.02 1.02 4.2E-02 0.04 0.34 0.04 0.35 0.04 0.05 0.16 2.6E-03 4.3E-03 3.7E-03 2.1E-02	NOx 4.76 4.76 4.76 0.20 0.20 0.20 1.57 0.19 1.62 0.18 0.25 0.72 4.6E-03	0.31 0.31 1.3E-02 0.01 0.10 0.01 0.01 0.01 0.01 0.02 0.05 7.1E-06 6.4E-06 5.6E-06 3.2E-05	0.39 0.39 0.39 1.6E-02 0.02 0.13 0.02 0.13 0.02 0.02 0.06 3.5E-04	178 178 178 7 7 7 59 7 60 7 9 27 4
EU-10 CP Station EU-11 CP Station EU-12 CP Station EU-13 SARS EU-17 Rainier BL EU-19 Haffeld-D EU-20 Autzen-P EU-21 Autzen-P EU-21 Autzen-P EU-22 Millrace EU-23 Millrace EU-24 Central Ki EU-23 Millrace EU-24 Central Ki EU-15 Mac Court EU-16 UOPD EU-16 UOPD EU-18 Willamett EU-18 Willamett EU-18 Willamett EU-19 Willamett EM-19 Willamett Emission Ibrio PM - 22 PMI-10 - 24 PMI-10	Station Statio	Catepillar Catepillar Catepillar Catepillar Catepillar Catepillar Catepillar Cummins Kohler Deere Catepillar Cummins Kohler Cummins Olympian Waukesha Natural Gas Emission Factor Ib/MMGt 10 10 10 10 10 10 10 10 110 117 117 118 Natural Gas (kg/MMBtu) 53.06 1.0E-03	Diesel LPG Total = LPG Emission Factor is/1000 gal 0.7 0.7 1.5 13 0.02 1.0 Ib/MMBtu 139	2200 2200 2200 80 80 80 80 80 90 100 350 65 55 325 8,995	KW KW KW KW KW KW KW KW	157.5 157.5 157.5 6.5 6.6 52 6.13 53.5 6.1 8.2 24 635.53 7.05 7.05 0.22 0.19	gal/hr MMBtu/hr MMBtu/hr MMBtu/hr	0.33 0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.33 0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04	0.33 0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	1.02 1.02 1.02 4.2E-02 0.04 0.34 0.04 0.35 0.05 0.16 2.6E-03 4.3E-03 3.7E-03 2.1E-02	4.76 4.76 4.76 0.20 0.20 1.57 0.19 1.62 0.18 0.25 0.72 4.6E-03 3.0E-02 2.6E-02 1.5E-01	0.31 0.31 1.3E-02 0.01 0.10 0.01 0.01 0.01 0.01 0.02 0.05 7.1E-06 6.4E-06 5.6E-06 3.2E-05	0.39 0.39 0.39 1.6E-02 0.02 0.13 0.02 0.13 0.02 0.02 0.06 3.5E-04	178 178 178 7 7 59 7 60 7 9 27
EU-11	Station Statio	Caterpillar Caterpillar Caterpillar Caterpillar Caterpillar Caterpillar Cummins Kohler Deere Caterpillar Cummins Kohler Kohler Kohler Kohler Kohler Kohler Kohler Kohler	Diesel	2200 2200 80 80 400 80 750 80 100 350 350 30 65 55 8,995	KW KW KW KW KW KW KW KW	157.5 157.5 6.5 6.6 52 6.13 53.5 6.1 8.2 24 635.53 7.05 0.22 0.19	gal/hr MMBtu/hr MMBtu/hr MMBtu/hr	0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.01 0.02 0.05 2.5E-04	0.33 0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	1.02 1.02 4.2E-02 0.04 0.34 0.04 0.05 0.06 0.16 2.6E-03 3.7E-03 2.1E-02	4.76 4.76 0.20 0.20 0.15 1.57 0.19 1.62 0.18 0.25 0.72 4.6E-03	0.31 0.31 1.3E-02 0.01 0.10 0.01 0.01 0.01 0.01 0.02 0.05 7.1E-06 6.4E-06 5.6E-06	0.39 0.39 1.6E-02 0.02 0.13 0.02 0.13 0.02 0.02 0.02 0.02 1.2E-03	178 178 7 7 59 7 60 7 4 11 1 6
EU-12 CP Station EU-13 SARS EU-17 Rainier Br EU-19 Haffeld-D EU-20 Autzen-P EU-21 Autzen-P EU-21 Autzen-P EU-22 Millrace G EU-24 Central Ki EU-23 Millrace G EU-24 Central Ki EU-25 Millrace G EU-24 Central Ki EU-15 Mac Court EU-16 UOPD EU-18 Willamett EU-18 Willamett EU-18 Willamett EU-19 CO 13 Millrace G EU-19 Mac Court EU-19 Millrace G EM-19 Mills Willamett EU-19 Mills Willamett EU-19 Mills Willamett EU-19 Mills Willamett Emission Ib/10 PM EM-5 42 PM10 42 PM10 42 PM10 42 PM10 42 PM10 70 13 Mills Mill	Station RS Side	Catepillar Catepillar Cummins Kohler Deere Catepillar Cummins Cotatepillar Cummins Cummins Cummins Waukesha Natural Gas Emission Factor Ib/MMGt 10 10 10 10 10 10 10 10 110 117 118 Ib/MMBtu 117 Natural Gas (kg/MMBtu) 53.06	Diesel	2200 80 80 400 80 750 80 100 350 35 65 55 55 5,995	kW	157.5 6.5 6.6 52 6.13 53.5 6.1 8.2 24 635.53 7.05 7.05 0.22 0.19	gal/hr MMBtu/hr MMBtu/hr MMBtu/hr	0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.33 1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	1.02 4.2E-02 0.04 0.34 0.04 0.05 0.05 0.16 2.6E-03 3.7E-03 2.1E-02	4.76 0.20 0.20 1.57 0.19 1.62 0.18 0.25 0.72 4.6E-03 3.0E-02 2.6E-02 1.5E-01	0.31 1.3E-02 0.01 0.10 0.01 0.01 0.01 0.02 0.05 7.1E-06 6.4E-06 5.6E-06 3.2E-05	0.39 1.6E-02 0.02 0.13 0.02 0.13 0.02 0.02 0.02 0.06 3.5E-04	178 7 7 59 7 60 7 9 27 4
EU-13 SARS EU-17 Rainier BL EU-19 Hatflied-D- EU-20 Autzen-M EU-21 Autzen-M EU-22 Autzen-M EU-23 Autzen-M EU-23 Autzen-M EU-24 Central K EU-34 Central K EU-35 Millirace G EU-24 Central K EU-15 Mac Courl EU-15 Mac Courl EU-16 UOPD EU-18 Williamett EU-18 Williamett EU-18 Williamett PM 42 PM-10 Autzen-M PM 42 PM-10 Autzen-M PM-10 Autzen-	RS inier Building ileid-Dowlin ier Building ileid-Dowlin	Catepillar Cummins Kohler Deere Catepillar Cummins Kohler Kohler Kohler Kohler Kohler	Diesel Di	80 80 400 80 750 80 100 350 350 30 65 55 325 8,995	kW	6.5 6.6 52 6.13 53.5 6.1 8.2 24 635.53 7.05 7.05 0.22 0.19	gal/hr MMBtu/hr MMBtu/hr	1.4E-02 0.01 0.11 0.01 0.11 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	1.4E-02 0.01 0.11 0.01 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	4.2E-02 0.04 0.34 0.04 0.35 0.04 0.05 0.16 2.6E-03 4.3E-03 3.7E-03 2.1E-02	0.20 0.20 1.57 0.19 1.62 0.18 0.25 0.72 4.6E-03 3.0E-02 2.6E-02 1.5E-01	1.3E-02 0.01 0.10 0.01 0.01 0.01 0.02 0.05 7.1E-06 6.4E-06 3.2E-05	1.6E-02 0.02 0.13 0.02 0.13 0.02 0.02 0.02 0.06 3.5E-04	7 7 59 7 60 7 9 27 4
EU-17 Raniner BL EU-18 Harfield-OLD EU-20 Autzen-PI EU-21 Autzen EU-22 Autzen-MI EU-22 Autzen-MI EU-23 Milliane G EU-24 Central Ki EU-23 Milliane G EU-24 Central Ki EU-25 Milliane G EU-24 Central Ki EU-25 Milliane G EU-26 Milliane G EU-27 Milliane G EU-28 Milliane G EU-29 Milliane G EU-20 Milli	nier Building fleid-Dowlin felid-Dowlin zen-Pk Park zen Zen-Moshofsky zan-Aushofsky zen zen-Moshofsky zen zen-Moshofsky zen zen-Moshofsky zen Leiter Diesel Leiter	Cummins Kohler	Diesel	80 400 80 750 80 100 350 350 65 55 325 8,995	kW kW kW kW kW kW KW Total = kW KW KW	6.6 52 6.13 53.5 6.1 8.2 24 635.53 7.05 7.05 0.22 0.19	gal/hr mmBtu/hr MMBtu/hr MMBtu/hr	0.01 0.11 0.01 0.11 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.01 0.11 0.01 0.11 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.01 0.11 0.01 0.11 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.04 0.34 0.04 0.35 0.04 0.05 0.16 2.6E-03 4.3E-03 3.7E-03 2.1E-02	0.20 1.57 0.19 1.62 0.18 0.25 0.72 4.6E-03 3.0E-02 2.6E-02 1.5E-01	0.01 0.10 0.01 0.11 0.01 0.02 0.05 7.1E-06 6.4E-06 5.6E-06 3.2E-05	0.02 0.13 0.02 0.13 0.02 0.02 0.06 3.5E-04 1.2E-03 6.2E-03	7 59 7 60 7 9 27 4
EU-19	ielel-Dowlin zen-PK Park zen zen-PK Park zen zen-Moshofsky zrace Garage trattal Kirchen c Court ght Law PD Diesel sission Factor tb/1000 gal 42.6 42.6 42.6 42.6 40.0 100 100 100 100 100 100 100 100 100	Kohler Deere Caterpillar Cummins Kohler Cummins Natural Gas Emission Factor 10 10 10 2,840 0.6 116 1bMM6t 117 Natural Gas (kg/MM8tu) 53.06 1.06-03	Diesel Di	400 80 750 80 100 350 30 65 55 3225 8,995	kW kW kW kW kW KW Total = kW Total = kW kW	52 6.13 53.5 6.1 8.2 24 635.53 7.05 7.05 0.22 0.19	gal/hr MMBtu/hr MMBtu/hr MMBtu/hr	0.11 0.01 0.11 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.11 0.01 0.11 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.11 0.01 0.11 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.34 0.04 0.35 0.04 0.05 0.16 2.6E-03 4.3E-03 3.7E-03 2.1E-02	1.57 0.19 1.62 0.18 0.25 0.72 4.6E-03 3.0E-02 2.6E-02 1.5E-01	0.10 0.01 0.11 0.01 0.02 0.05 7.1E-06 6.4E-06 5.6E-06 3.2E-05	0.13 0.02 0.13 0.02 0.02 0.06 3.5E-04 1.2E-03 1.1E-03 6.2E-03	59 7 60 7 9 27 4
EU-20 Autzen-P EU-21 Autzen EU-22 Autzen EU-23 Millrace EU-24 Central Ki EU-23 Millrace EU-24 Central Ki EU-24 Central Ki EU-15 Mac Court EU-16 UOPD EU-18 Willamett EU-16 UOPD EU-18 Willamett PM-19 42 PM-19 42 PM-19 42 PM-25 42 PM-35 42	zen-PK Park zen Zen Zen Zen Zen-Moshofsky zen-Moshofsky zen-Moshofsky zen-Moshofsky zen-Moshofsky zen Zen-Moshofsky zen Zen-Moshofsky zen Z	Deere Caterpillar Cummins Kohler Cummins Olympian Waukesha Natural Gas Emission Factor Ib/MM6t 10 10 10 10 10 399 2,840 2,840 116 117 Natural Gas (kg/MM8tu) 53.06 1.06-03	Diesel	80 750 80 100 350 350 65 55 325 8,995	kW kW kW kW Total = kW Total = kW kW	6.13 53.5 6.1 8.2 24 635.53 7.05 7.05 0.22 0.19 1.1	gal/hr MBtu/hr MMBtu/hr MMBtu/hr	0.01 0.11 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.01 0.11 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.01 0.11 0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.04 0.35 0.04 0.05 0.16 2.6E-03 4.3E-03 3.7E-03 2.1E-02	0.19 1.62 0.18 0.25 0.72 4.6E-03 3.0E-02 2.6E-02 1.5E-01	0.01 0.11 0.01 0.02 0.05 7.1E-06 6.4E-06 5.6E-06 3.2E-05	0.02 0.13 0.02 0.02 0.06 3.5E-04 1.2E-03 1.1E-03 6.2E-03	7 60 7 9 27 4 1 1 6
EU-22 Multrace G EU-24 Central Ki EU-25 Millrace G EU-24 Central Ki EU-15 Mac Court EU-16 UOPD EU-18 Willamett EU-18 Willamett Politutant Ib/100 PM 42 PM10 42 PM2 5 42 PM2 5 42 PM2 5 42 PM2 5 42 PM2 6 42 PM2 6 43 PM3 6 66 SO2 93 VOC 149 VOC 149 FOR 100 SO2 93 VOC 140 SO2 93 VOC 140 SO2 93 VOC 160 SO3 9	zen-Moshofsky zen-Zen-Moshofsky zen-Zen-Zen-Zen-Zen-Zen-Zen-Zen-Zen-Zen-Z	Cummins	Diesel Diesel Diesel Diesel Diesel LPG Natural Gas Natural Gas Natural Gas Natural Gas On 101 Diesel LPG Emission Factor 10-7 0.7 0.7 1.0 1.0 1.0 1.0 1.9 LPG (kg/MMBtu) 62.87	750 80 100 350 330 65 55 325 8,995	kW kW kW Total = kW Total = kW kW KW	53.5 6.1 8.2 24 635.53 7.05 7.05 0.22 0.19	gal/hr gal/hr gal/hr gal/hr gal/hr gal/hr gal/hr gal/hr gal/hr MMBtw/hr MMBtw/hr	0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.01 0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.35 0.04 0.05 0.16 2.6E-03 4.3E-03 3.7E-03 2.1E-02	1.62 0.18 0.25 0.72 4.6E-03 3.0E-02 2.6E-02 1.5E-01	0.01 0.02 0.05 7.1E-06 6.4E-06 5.6E-06 3.2E-05	0.13 0.02 0.02 0.06 3.5E-04 1.2E-03 1.1E-03 6.2E-03	7 9 27 4 1 1 6
EU-22 Mullrace G EU-23 Millrace G EU-24 Central Ki EU-15 Mac Court EU-16 Mac Court EU-16 UOPD EU-18 Willamett EU-18 Willamett Politutant Ib/100 PM 42 PM10 42 PM10 42 PM10 42 PM2.5 42 PM3.6 40 PM3.6	zen-Moshofsky zen-Zen-Moshofsky zen-Zen-Zen-Zen-Zen-Zen-Zen-Zen-Zen-Zen-Z	Cummins	Diesel Diesel LPG Natural Gas Natural Gas Natural Gas Natural Gas Total = LPG Emission Factor 10.7 0.7 0.7 1.5 1.0 1.0 1b/MMBtu 139 LPG (kg/MMBtu) 62.87	80 100 350 30 65 55 325 8,995	kW kW Total = kW Total = kW kW	8.2 24 635.53 7.05 7.05 0.22 0.19 1.1	gal/hr gal/hr gal/hr gal/hr gal/hr gal/hr gal/hr MBtu/hr MMBtu/hr MMBtu/hr	0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.02 0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.05 0.16 2.6E-03 4.3E-03 3.7E-03 2.1E-02	0.25 0.72 4.6E-03 3.0E-02 2.6E-02 1.5E-01	0.02 0.05 7.1E-06 6.4E-06 5.6E-06 3.2E-05	0.02 0.06 3.5E-04 1.2E-03 1.1E-03 6.2E-03	7 9 27 4 1 1 6
EU-24 Central Ki EU-15 Mac Cour EU-16 UOPD EU-18 Willamett EU-18 Willamett EU-18 Willamett Die: Emission Pollutant Ib/100 PM 42 PM10 42 PM2.5 42 PM10 42 PM2.5 42 PM2.5 42 CO 13 NOx 60 SO2 39 VOC 149 FOR 100 SO2 39 VOC 149 FOR 100 SO2 39 VOC 149 FOR 100 SHOWN GHG (CO2 eq.) 16 SHOWN GHG (CO2 eq.) 16 SHOWN GHG (CO2 eq.) 6 SHOWN GHG (CO2 eq.) 6 SHOWN GHG (CO2 eq.) 73.3 Control of the control	trial kitchen Court ght Law PD Diesel amette Hall Diesel aission Facility1000 gal 42.5 42.5 42.5 42.5 130 604 39.7 49.3 Ib/MMBtu 164 rs Diesel (kg/MMBtu) 73.96	Cummins Olympian Waukesha Waukesha Waukesha Natural Gas Emission Factor Ib/MMcf 10 10 10 399 2,840 0.6 116 Ib/MMBtu 117 Natural Gas (kg/MMBtu) 53.06	Diesel LPG Natural Gas Natural Gas Natural Gas Natural Gas Total = LPG Emission Factor 10.7 0.7 0.7 7.5 13 0.02 1.0 1b/MMBtu 139 LPG (kg/MMBtu) 62.87	350 30 65 55 325 8,995	kW Total = kW Total = kW kW kW	24 635.53 7.05 7.05 0.22 0.19 1.1	gal/hr gal/hr gal/hr gal/hr gal/hr MMBtu/hr MMBtu/hr MMBtu/hr	0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.05 2.5E-04 1.1E-04 9.3E-05 5.4E-04	0.16 2.6E-03 4.3E-03 3.7E-03 2.1E-02	0.72 4.6E-03 3.0E-02 2.6E-02 1.5E-01	0.05 7.1E-06 6.4E-06 5.6E-06 3.2E-05	0.06 3.5E-04 1.2E-03 1.1E-03 6.2E-03	27 4 1 1 6
EU-15 Mac Cour EU-14 Knight La EU-16 UOPD EU-18 Willamett Politutant PM 42 PM10 42 PM2 PM10 42 PM2 PM2 5 CO 13 NOX 60 SO2 39 VOC 49 BIN/MI GHG (CO2 eq.) 16 GHG-Related Emission Factors Die Politutant (kg/MI GHG (CO2 eq.) 16 SHG-Related Emission Factors Die Politutant (kg/MI Carbon Dioxide (No.) 6.0E POlitutant (Rg/MI Carbon Dioxide (No.) 6.0E PHAP/TAC Emissions Pagnics 1.1.2.2 Fetrachloroethane 7-9-9- 1.3.2 Dichtoropropene 7-8-8- 1.3.2 Charbon Politutant 7-9-9- 1.3.3 Entanglemen 106-5- 2 Chorologina 106-5-2 Restored 106-5-2 Restore	Court Co	Cummins Olympian Waukesha Waukesha Waukesha Natural Gas Emission Factor Ib/MMcf 10 10 10 399 2,840 0.6 116 Ib/MMBtu 117 Natural Gas (kg/MMBtu) 53.06	LPG Natural Gas Natural Gas Natural Gas Natural Gas Total = LPG Emission Factor ib/1000 gal 0.7 0.7 7.5 13 0.02 10.01 ib/MMBtu 139 LPG (kg/MMBtu) 62.87	30 65 55 325 8,995	Total = kW Total = kW kW kW	635.53 7.05 7.05 0.22 0.19 1.1	gal/hr gal/hr gal/hr MMBtu/hr MMBtu/hr MMBtu/hr	2.5E-04 1.1E-04 9.3E-05 5.4E-04	2.5E-04 1.1E-04 9.3E-05 5.4E-04	2.5E-04 1.1E-04 9.3E-05 5.4E-04	2.6E-03 4.3E-03 3.7E-03 2.1E-02	4.6E-03 3.0E-02 2.6E-02 1.5E-01	7.1E-06 6.4E-06 5.6E-06 3.2E-05	3.5E-04 1.2E-03 1.1E-03 6.2E-03	1 1 6
EU-14	Diesel (kg/MMBtu) 73.96 3.0E-03	Cummins Olympian Waukesha Waukesha Waukesha Natural Gas Emission Factor Ib/MMcf 10 10 10 399 2,840 0.6 116 Ib/MMBtu 117 Natural Gas (kg/MMBtu) 53.06	Natural Gas Natural Gas Natural Gas Natural Gas Total = LPG Emission Factor ib/1000 gal 0.7 0.7 0.7 7.5 13 10.02 10/MMBtu 139 LPG (kg/MMBtu) 62.87	65 55 325 8,995	kW Total = kW kW kW	7.05 7.05 0.22 0.19 1.1	gal/hr gal/hr MMBtu/hr MMBtu/hr MMBtu/hr	1.1E-04 9.3E-05 5.4E-04	1.1E-04 9.3E-05 5.4E-04	1.1E-04 9.3E-05 5.4E-04	4.3E-03 3.7E-03 2.1E-02	3.0E-02 2.6E-02 1.5E-01	6.4E-06 5.6E-06 3.2E-05	1.2E-03 1.1E-03 6.2E-03	1 1 6
EU-14	Diesel (kg/MMBtu) 73.96 3.0E-03	Cummins Olympian Waukesha Waukesha Waukesha Natural Gas Emission Factor Ib/MMcf 10 10 10 399 2,840 0.6 116 Ib/MMBtu 117 Natural Gas (kg/MMBtu) 53.06	Natural Gas Natural Gas Natural Gas Natural Gas Total = LPG Emission Factor ib/1000 gal 0.7 0.7 0.7 7.5 13 10.02 10/MMBtu 139 LPG (kg/MMBtu) 62.87	65 55 325 8,995	Total = kW kW kW	7.05 0.22 0.19 1.1	gal/hr MMBtu/hr MMBtu/hr MMBtu/hr	1.1E-04 9.3E-05 5.4E-04	1.1E-04 9.3E-05 5.4E-04	1.1E-04 9.3E-05 5.4E-04	4.3E-03 3.7E-03 2.1E-02	3.0E-02 2.6E-02 1.5E-01	6.4E-06 5.6E-06 3.2E-05	1.2E-03 1.1E-03 6.2E-03	1 1 6
EU-16 UOPD EU-18 Willamett EU-18 Willamett Poliutant Phi	Diesel (kg/mMBtu) 73.96 3.0E-03 30.0E-03	Olympian Waukesha Natural Gas Emission Factor IsoMMcf 10 10 2,840 0.6 116 IboMMBtu 117 Natural Gas (kg/MMBtu) 53.06 1.0E-03	Natural Gas Natural Gas Total = LPG Emission Factor Ib/1000 gal 0.7 0.7 7.5 13 0.02 110 Ib/MMBtu 139 LPG (kg/MMBtu) 62.87	55 325 8,995	kW kW kW	0.22 0.19 1.1	MMBtu/hr MMBtu/hr MMBtu/hr	9.3E-05 5.4E-04	9.3E-05 5.4E-04	9.3E-05 5.4E-04	3.7E-03 2.1E-02	2.6E-02 1.5E-01	5.6E-06 3.2E-05	1.1E-03 6.2E-03	1 6
EU-16 UOPD EU-18 Willamett EU-18 Willamett Poliutant PhM 42 PM10 42 PM10 42 PM2 5 42 CO 13 NOX 66 SO2 39 VOC 49 BIDMM GHG (CO2 eq.) 16 GHG-Related Emission Factors Die Pollutant (kg/M) GHG (CO2 eq.) 17 Sarbon Dioxide (CO2) William (Rg/M) Carbon Dioxide (CO2) Nitrous Oxide (Ng-0) 6.0E FHAP/TAC Emissions Pollutant Organics 11,12,21-grichrocethane 7-93 11,22-11-grichrocethane 7-93 11,22-11-grichrocethane 7-93 11,23-bidnopropene 5-8-8 Benzolajbyrene 106-5 Benzolajbyrene 106-6 Benzolajbyre	Diesel (kg/mMBtu) 73.96 3.0E-03 30.0E-03	Olympian Waukesha Natural Gas Emission Factor IsoMMcf 10 10 2,840 0.6 116 IboMMBtu 117 Natural Gas (kg/MMBtu) 53.06 1.0E-03	Natural Gas Natural Gas Total = LPG Emission Factor Ib/1000 gal 0.7 0.7 7.5 13 0.02 110 Ib/MMBtu 139 LPG (kg/MMBtu) 62.87	55 325 8,995	kW kW	0.19 1.1	MMBtu/hr MMBtu/hr	9.3E-05 5.4E-04	9.3E-05 5.4E-04	9.3E-05 5.4E-04	3.7E-03 2.1E-02	2.6E-02 1.5E-01	5.6E-06 3.2E-05	1.1E-03 6.2E-03	
Die	Diesel alssion Factor ib/1000 gal 42.5 42.5 42.5 130 604 39.7 49.3 1b/MMBtu 164 rs Diesel (kg/MMBtu) 73.96 3.0E-03	Natural Gas Emission Factor ib/MMcf 10 10 10 10 0.6 116 117 117 Natural Gas (kg/MMBtu) 530 0.6 1.0E-03	Total = LPG Emission Factor ib/1000 gal 0.7 0.7 0.7 7.5 13 0.02 1.0 1b/MMBtu 139	8,995					5.4E-04 1.35					6.2E-03 1.58	
Poliutant Poliutant PM 42 PM10 42 PM10 42 PM10 42 PM2.5 42 42 PM2.5 42 42 PM2.5 42 42 PM2.5 42 42 42 43 43 44 44 44	nission Factor ib/1000 gal 42.5 42.5 42.5 130 604 39.7 49.3 Ib/MMBtu 164 rs Diesel (kg/MMBtu) 73.96 3.0E-03	Emission Factor ib/MMcf 10 10 10 399 2,840 0.6 116 ib/MMBtu 117 Natural Gas (kg/MMBtu) 5 1.0 Natural Gas (kg/MMBtu) 1.0 Natural G	LPG Emission Factor Ib/1000 gal 0.7 0.7 0.7 7.5 13 0.02 1.0 Ib/MBtu 139 LPG (kg/MMBtu) 62.87	GWP	Total =	1.51	MMBtu/hr	1.35	1.35	1.35	4.16	19.41	1.26	1.58	731
Poliutant Poliutant PM 42 PM10 42 PM10 42 PM10 42 PM2.5 42 42 PM2.5 42 42 PM2.5 42 42 PM2.5 42 42 42 43 43 44 44 44	nission Factor ib/1000 gal 42.5 42.5 42.5 130 604 39.7 49.3 Ib/MMBtu 164 rs Diesel (kg/MMBtu) 73.96 3.0E-03	Emission Factor ib/MMcf 10 10 10 399 2,840 0.6 116 ib/MMBtu 117 Natural Gas (kg/MMBtu) 5 1.0 Natural Gas (kg/MMBtu) 1.0 Natural G	Emission Factor Ib/1000 gal 0.7 0.7 7.5 13 0.02 1.0 Ib/MMBtu LPG (kg/MMBtu) 62.87												
Pollutant Poll	nission Factor ib/1000 gal 42.5 42.5 42.5 130 604 39.7 49.3 Ib/MMBtu 164 rs Diesel (kg/MMBtu) 73.96 3.0E-03	Emission Factor ib/MMcf 10 10 10 399 2,840 0.6 116 ib/MMBtu 117 Natural Gas (kg/MMBtu) 5 1.0 Natural Gas (kg/MMBtu) 1.0 Natural G	Emission Factor Ib/1000 gal 0.7 0.7 7.5 13 0.02 1.0 Ib/MMBtu LPG (kg/MMBtu) 62.87												
Pollutant III-100	Ib/1000 gal 42.5 42.5 42.5 130 604 39.7 49.3 Ib/MMBtu 164 rs Diesel (kg/MMBtu) 73.96 3.0E-03	Ib/MMcf 10 10 10 10 399 2,840 0.6 116 Ib/MMBtu 117 Natural Gas (kg/MMBtu) 53.06 1.0E-03	Ib/1000 gal 0.7 0.7 0.7 7.5 13 0.02 1.0 Ib/MMBtu 139 LPG (kg/MMBtu) 62.87												
PM 42 PM10 42 PM10 42 PM25 42 PM25 42 PM2.5 42 PM2.6 42	42.5 42.5 42.5 130 604 39.7 49.3 Ib/MMBtu 164 rs Diesel (kg/MMBtu) 73.96 3.0E-03	10 10 10 399 2,840 0.6 116 Ib/MMBtu 117 Natural Gas (kg/MMBtu) 53.06	0.7 0.7 7.5 13 0.02 1.0 1b/MMBtu 139												
PM10	42.5 42.5 130 604 39.7 49.3 Ib/MMBtu 164 rs Diesel (kg/MMBtu) 73.96 3.0E-03	10 10 399 2,840 0.6 116 Ib/MMBtu 117 Natural Gas (kg/MMBtu) 53.06 1.0E-03	0.7 0.7 7.5 13 0.02 1.0 Ib/MMBtu 139												
CO 13 NOx 650 SO2 39 VOC 48 GHG (CO2 eq.) 16 FPOIlutant (kg/M) Rethane (CH, 1) 3.00 Rethane (CH, 1) 3.00 Rethane (CH, 1) 3.00 Rethane (CH, 1) 3.00 Rethane (CH, 2) 6.00 FHAP/TAC Emissions CAS/ POllutant 7.33 POllutant 7.33 Rethane (CH, 2) 7.33 Rethane (CH, 2) 7.33 Rethane (CH, 2) 7.33 Rethane 7.33	130 604 39.7 49.3 Ib/MMBtu 164 rs Diesel (kg/MMBtu) 73.96 3.0E-03	399 2,840 0.6 116 1b/MMBtu 117 Natural Gas (kg/MMBtu) 53.06 1.0E-03	7.5 13 0.02 1.0 1b/MMBtu 139 LPG (kg/MMBtu) 62.87												
NOx 60	604 39.7 49.3 Ib/MMBtu 164 rs Diesel (kg/MMBtu) 73.96 3.0E-03	2,840 0.6 116 Ib/MMBtu 117 Natural Gas (kg/MMBtu) 53.06 1.0E-03	13 0.02 1.0 1b/MMBtu 139 LPG (kg/MMBtu) 62.87												
SO2 38	39.7 49.3 Ib/MMBtu 164 rs Diesel (kg/MMBtu) 73.96 3.0E-03	0.6 116 1b/MMBtu 117 Natural Gas (kg/MMBtu) 53.06 1.0E-03	0.02 1.0 Ib/MMBtu 139 LPG (kg/MMBtu) 62.87												
VOC	49.3 Ib/MMBtu 164 rs Diesel (kg/MMBtu) 73.96 3.0E-03	116 Ib/MMBtu 117 Natural Gas (kg/MMBtu) 53.06 1.0E-03	1.0 Ib/MMBtu 139 LPG (kg/MMBtu) 62.87												
Birth Color Birth	Ib/MMBtu 164 rs Diesel (kg/MMBtu) 73.96 3.0E-03	Ib/MMBtu	Ib/MMBtu 139 LPG (kg/MMBtu) 62.87												
GHG (CO2 eq.) 16	73.96 3.0E-03	Natural Gas (kg/MMBtu) 53.06 1.0E-03	139 LPG (kg/MMBtu) 62.87												
District	Diesel (kg/MMBtu) 73.96 3.0E-03	(kg/MMBtu) 53.06 1.0E-03	(kg/MMBtu) 62.87												
District	Diesel (kg/MMBtu) 73.96 3.0E-03	(kg/MMBtu) 53.06 1.0E-03	(kg/MMBtu) 62.87												
Pollutant CapM	73.96 3.0E-03	(kg/MMBtu) 53.06 1.0E-03	(kg/MMBtu) 62.87												
Carbon Dioxide (CO ₂) 73.	73.96 3.0E-03	53.06 1.0E-03	62.87												
Methane (CH ₄) 3.0E	3.0E-03	1.0E-03													
Nitrous Oxide (N ₂ O) 6.0E			3.0E-03												
CASR Pollutant	6.0E-04	1.0E-04		25											
Pollutant CAS/			6.0E-04	298											
Pollutant CAS/															
Pollutant Num Pollutant Num Pollutant Poll															
Pollutant Num Pollutant Num Pollutant Poll		NG Emission	FO Emission	LPG Emission	PTE										
Organics 1.1,2-Tetrachloroethane 79-3 1.1,2-Tichloropethane 79-3 79-3 1.1,2-Tichloropropane 78-8 78-5 1.3-Dichloropropane 54-2 Acetaldehyde 75-5 Acetaldehyde 75-5 Acetaldehyde 75-5 Acetaldehyde 75-6 Acetaldehyde 75-6 Acetaldehyde 75-6 Acetaldehyde 50-3 1,3-Butadisne 105-6 105-6 Chlorobam 56-2 Chlorobam 45-6 20-2 Ethyl Benzene 100-2 Ethylene Dibromide 105-6 Ethylene Dibromide 107-7 Hoxane 110-4 Hoxane 110-6 Hoxane 110-6 Methylene Chloride 75-0 Methylene Chloride 75-0 POM (nc. PAHs) 40-9 POM (nc. PAHs)	CAS/DEQ	Factor	Factor	Factor	Emissions	Federal	CAO								
1.1.2,2-Tertachloroethane 79-3 1.1.2-Tichloroethane 79-3 1.2-Dichloropropane 78-8 1.2-Dichloropropene 78-8 1.2-Dichloropropene 54-2 1.2-Dichloropropene 54-2 1.2-Dichloropropene 54-2 1.2-Dichloropropene 54-2 1.2-Dichloropropene 54-2 1.2-Dichloropropene 54-2 1.3-Dichloropropene 100-4 1.3-Dichloropr	Number	(lbs/MMCF)	(lbs/1000 Gal)	(lbs/1000 gal)	(TPY)	HAP	Air Toxic								
1.1,2-Tinchloroethane 79-0 1.2-Dichloropropane 78-0 1.3-Dichloropropane 78-0 1.3-Dichloropropane 78-0 1.3-Dichloropropene 54-2 3-Dichloropropene 54-2 4-Dichloropropene 79-1 5-Dichloropropene 79-1 5-	70.24 E	0.0258		0.00229	2.7E-06	Yes	Yes								
1.2-Obchloropropene 78-8 1.3-Obchloropropene 78-8 1.3-Obchloropropene 78-8 1.3-Obchloropropene 78-9	79-34-5	0.0258		0.00229	1.6E-06	Yes	Yes								
1,3-Dichloropropene	78-87-5	0.0133		0.00118	1.4E-06	Yes	Yes								
Acetalchyde 75-5 Acrolein 107-7 Benzene 71-4 Benzene 71-4 Benzene 71-4 Benzene 105-7 Eithyl Benzene 100-7 Eithyl Benzene 100-8 Eithylene Dichloride 107-7 Eithylene Dichloride 107-7 Formaldehyde 50-0 Hexane 110-7 Methylene Chloride 75-5 Methylene Chloride 75-5 Methylene Chloride 75-5 POM (mc. PAHs) 40 Propylene Oxide 75-5	542-75-6	0.013		0.00115	1.4E-06	Yes	Yes								
Benzene 71-4 Benzo(a)pyrene 50-3 1,3-Butadene 106-6 Carbon Tetrachloride 56-2 Chiorotom 67-6 Diesel Particulate Matter 20 Ethyl Benzene 100-6 Ethylene Dibriomide 107-6 Fernadlethyde 50-0 Hexane 110-0 Methylene Chloride 75-5 Methylene Chloride 75-5 Maphthalene 91-2 POM (m.; PAHs) 40 Propylene Oxide 75-5	75-07-0	2.8500	0.7833	0.252	2.5E-02	Yes	Yes								
Benzolajpyrene 50-3 1,3-Butadiene 106-6 Carbon Tetrachloride 56-2 Chloroform 67-8 Diesel Particulate Matter 20 Eithylene Distromide 106-6 Eithylene Distromide 107-7 Formaldehyde 50-0 Hexane 110-0 Methylene Chloride 75-5 Methylene Chloride 79-1 POM (inc. PAHs) 40 Propylene Oxide 75-5	107-02-8	2.6800	0.0339	0.238	1.4E-03	Yes	Yes								
1,3-Butadene	71-43-2	1.6100	0.1863	0.143	6.1E-03 0.0E+00	Yes Yes	Yes Yes								
Carbon Tetrachloride	106-99-0	0.6760	0.2174	0.06	7.0E-03	Yes	Yes								
Chloroform 67-6 Chloroform 67-6 Chloroform 67-6 Chloroform 67-6 Chlys Benzene 100-6 Ethylene Dixhloride 107-7 Chromaldehyde 50-7 Methylene Chloride 75-7 Methy	56-23-5	0.0181	7.2.1.	0.0016	1.9E-06	Yes	Yes								
Ethyl Benzene 100- Ethylene Dibomide 106-6 Ethylene Dichloride 107-4 Formaldelyde 5-0 Hexane 1110-4 Methanol 67-5 Methylene Chloride 75-0 Naphthalene 91-2 POM (Inc. PAHs) 40	67-66-3	0.0140		0.00124	1.5E-06	Yes	Yes								
Ethylene Dibromide 106-5. Ethylene Dichloride 107-4. Formaldehyde 50-0 Hexane 110-0. Methanol 67-5. Methylene Chloride 75-0 Naphthalene 91-2. POM (inc. PAHs) 40. OPropylene Oxide 75-5	200			33.5	1.2E-02	No	Yes								
Ethylene Dichloride 107-4 Formaldehyde 50-0 Hebxane 110-4 Methanol 67-5 Methylene Chloride 75-0 Naphthalene 91-2 POM (inc. PAHs) 40 Propylene Oxide 75-5	100-41-4	0.0253	0.0109	0.00224	3.5E-04	Yes	Yes								
Formaldehyde 50-0 Hexane 110-3 Methanol 67-5 Methylene Chloride 75-0 Naphthalene 91-2 POM (inc. PAHs) 40 Propylene Oxide 75-5	106-93-4	0.0217 0.0115		0.00193 0.00102	2.3E-06	Yes	Yes Yes								
Hexane	107-06-2 50-00-0	20.9000	1.7261	1.86	1.2E-06 5.7E-02	Yes Yes	Yes								
Methanol 67-5 Methylene Chloride 75-0 Naphthalene 91-2 POM (inc. PAHs) 40 Propylene Oxide 75-5	110-54-3		0.0269		8.5E-04	Yes	Yes								
Naphthalene 91-2 POM (inc. PAHs) 40 Propylene Oxide 75-5	67-56-1	3.1200		0.277	3.3E-04	Yes	Yes								
POM (inc. PAHs) 40 Propylene Oxide 75-5	75-09-2	0.0420		0.00373	4.4E-06	Yes	Yes								
Propylene Oxide 75-5	91-20-3	0.0990	0.0197	0.00879	6.4E-04	Yes	Yes								
10pyletie Oxide /5%	401 75-56-9		0.0362		1.2E-03 0.0E+00	Yes Yes	Yes Yes								
Styrene 100-4	100-42-5	0.0121		0.00108	1.3E-06	Yes	Yes								
	108-88-3	0.5690	0.1054	0.0505	3.4E-03	Yes	Yes								
Vinyl Chloride 75-0	75-01-4	0.0073		0.00065	7.7E-07	Yes	Yes								
	1330-20-7	0.1990	0.0424	0.0176	1.4E-03	Yes	Yes								
Inorganic Gases	7004 44 7	2 2000	2.0	0.0	0.25.00	N1-	V								
	7664-41-7 7647-01-0	3.2000	2.9 0.1863	0.3	9.2E-02 5.9E-03	No Yes	Yes Yes								
Metals 7647-	. 047-01-0		0.1003		3.82*03	1 62	162								
	7440-38-2		0.0016		5.1E-05	Yes	Yes								
Barium 7440-	7440-39-3				0.0E+00	No	Yes								
	7440-41-7				0.0E+00	Yes	Yes								
	7440-43-9		0.0015		4.8E-05	Yes	Yes								
	18540-29-9		0.0001		3.2E-06 0.0E+00	Yes Yes	Yes Yes								
	(44I)-4R-A		0.0041		1.3E-04	No	Yes								
ead Compounds 7439-	7440-48-4 7440-50-8		0.0083		2.6E-04	Yes	Yes								
Manganese 7439-	7440-48-4 7440-50-8 7439-92-1		0.0031		9.9E-05	Yes	Yes								
Mercury 7439-	7440-50-8 7439-92-1 7439-96-5		0.002		6.4E-05	Yes	Yes								
	7440-50-8 7439-92-1 7439-96-5 7439-97-6				0.0E+00	No	Yes								
Nickel 36 Selenium 7782-	7440-50-8 7439-92-1 7439-96-5 7439-97-6 1313-27-5		0.0039 0.0022		1.2E-04 7.0E-05	Yes Yes	Yes Yes								
	7440-50-8 7439-92-1 7439-96-5 7439-97-6 1313-27-5 365		0.0022		7.0E-05 0.0E+00	Yes No	Yes								
Zinc 7440-	7440-50-8 7439-92-1 7439-96-5 7439-97-6 1313-27-5 365 7782-49-2				0.0E+00	No No	Yes								
7440	7440-50-8 7439-92-1 7439-96-5 7439-97-6 1313-27-5 365 7782-49-2 7440-62-2				0.022	1.1E-01	0.22								
Notes:	7440-50-8 7439-92-1 7439-96-5 7439-97-6 1313-27-5 365 7782-49-2														
	7440-50-8 7439-92-1 7439-96-5 7439-97-6 1313-27-5 365 7782-49-2 7440-62-2 7440-66-6				- Footom D		rs (08/01/2011).								
or diesel, the emission factors are fro	7440-50-8 7439-92-1 7439-96-5 7439-97-6 1313-27-5 365 7782-49-2 7440-62-2 7440-66-6														
For diesel, the emission factors are from the formatural gas, the emission factors are from LPG, the emission factors are from the format from	7440-50-8 7439-96-5 7439-96-5 7439-97-6 1313-27-5 365 7782-49-2 7440-66-6 are from the er-	Oregon DEQ AQ-EF	707 - Emission Fac	tors - Power (Electri	ric) Generators (08/0										

Max Hrs Operation - NG	MMBtu/MMcf MMBtu/1000 Gal hr/yr hr/yr hr/yr hr/yr NG EF Units lb/MMcf	FO Emission Factor 0.59 0.59 0.59 0.17 18.3 71 0.6 164 FO Emission Factor (lbs/1000 Gal) 0.3506 0.03506 0.0044 0.0148	FO EF Units Ib/1000 Gal Ib	NG Capacity (TPY) 3.10 3.10 3.10 0.25 37.40 0.57 1.35 40,518 FO Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00	FO Capacity (TPY) 1.48 1.48 1.48 0.43 45.95 178.02 1.50 56,613 Federal HAP	Unit PTE (TPY) 3.09 3.09 0.25 37.45 1.55 1.35 40,606
Alax Hrs Operation - NG	hr/yr hr/yr hr/yr hr/yr NG EF Units Ib/MMcf	Factor 0.59 0.59 0.59 0.17 18.3 71 0.6 164 FO Emission Factor (lbs/1000 Gal) 0.3506 0.3506 0.0044	Ib/1000 Gal Ib/MMBtu NG Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00 0.0E+00 1.0E-03	Capacity (TPY) 3.10 3.10 3.10 0.25 37.40 0.57 1.35 40,518 FO Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00	Capacity (TPY) 1.48 1.48 1.48 0.43 45.95 178.02 1.50 56,613 Federal	PTE (TPY) 3.09 3.09 3.09 0.25 37.45 1.55 1.35 40,606
Axx Hrs Operation - FO	hr/yr NG EF Units Ib/MMcf Ib/	Factor 0.59 0.59 0.59 0.17 18.3 71 0.6 164 FO Emission Factor (lbs/1000 Gal) 0.3506 0.3506 0.0044	Ib/1000 Gal Ib/MMBtu NG Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00 0.0E+00 1.0E-03	Capacity (TPY) 3.10 3.10 3.10 0.25 37.40 0.57 1.35 40,518 FO Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00	Capacity (TPY) 1.48 1.48 1.48 0.43 45.95 178.02 1.50 56,613 Federal	PTE (TPY) 3.09 3.09 3.09 0.25 37.45 1.55 1.35 40,606
NG Emission Factor PM 9.2 PM10 9.2 PM2.5 9.2 CO 0.7 NOX 111 SO2 1.7 VOC 4.0 GHG (CO2 eq) 117 HAP/TAC Emissions CAS/DEQ Number Pollutant Programs Pollutant Programs Pollutant Programs Pollutant Programs Pollutant Programs Pollutant Programs	Ib/MMcf NG Emission Factor (Ibs/MMCF) 0.0031 0.0027 0.0058 1.2E-06	Factor 0.59 0.59 0.59 0.17 18.3 71 0.6 164 FO Emission Factor (lbs/1000 Gal) 0.3506 0.3506 0.0044	Ib/1000 Gal Ib/MMBtu NG Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00 0.0E+00 1.0E-03	Capacity (TPY) 3.10 3.10 3.10 0.25 37.40 0.57 1.35 40,518 FO Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00	Capacity (TPY) 1.48 1.48 1.48 0.43 45.95 178.02 1.50 56,613 Federal	PTE (TPY) 3.09 3.09 3.09 0.25 37.45 1.55 1.35 40,606
NG Emission Factor PM 9.2 PM10 9.2 PM2.5 9.2 CO 0.7 NOX 111 SO2 1.7 VOC 4.0 GHG (CO2 eq) 117 PMAP/TAC Emissions CAS/DEQ Number Pollutant Pol	Ib/MMcf NG Emission Factor (Ibs/MMCF) 0.0031 0.0027 0.0058 1.2E-06	Factor 0.59 0.59 0.59 0.17 18.3 71 0.6 164 FO Emission Factor (lbs/1000 Gal) 0.3506 0.3506 0.0044	Ib/1000 Gal Ib/MMBtu NG Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00 0.0E+00 1.0E-03	Capacity (TPY) 3.10 3.10 3.10 0.25 37.40 0.57 1.35 40,518 FO Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00	Capacity (TPY) 1.48 1.48 1.48 0.43 45.95 178.02 1.50 56,613 Federal	PTE (TPY) 3.09 3.09 3.09 0.25 37.45 1.55 1.35 40,606
Pollutant PM 9.2 PM10 9.2 PM25 9.2 CO 0.7 NOX 1111 SO2 1.7 VOC 4.0 GHG (CO2 eq) 117 POSTAIR	Ib/MMcf NG Emission Factor (Ibs/MMCF) 0.0031 0.0027 0.0058 1.2E-06	Factor 0.59 0.59 0.59 0.17 18.3 71 0.6 164 FO Emission Factor (lbs/1000 Gal) 0.3506 0.3506 0.0044	Ib/1000 Gal Ib/MMBtu NG Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00 0.0E+00 1.0E-03	(TPY) 3.10 3.10 3.10 3.10 0.25 37.40 0.57 1.35 40,518 FO Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00	(TPY) 1.48 1.48 1.48 0.43 45.95 178.02 1.50 56,613 Federal HAP	(TPY) 3.09 3.09 3.09 0.25 37.45 1.55 1.35 40,606
PM 9.2	Ib/MMcf NG Emission Factor (Ibs/MMCF) 0.0031 0.0027 0.0058 1.2E-06	0.59 0.59 0.59 0.17 18.3 71 0.6 164 FO Emission Factor (lbs/1000 Gal) 0.3506 0.3506 0.0044	Ib/1000 Gal Ib/MMBtu NG Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00 0.0E+00 1.0E-03	3.10 3.10 3.10 3.10 0.25 37.40 0.57 1.35 40,518 FO Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00	1.48 1.48 1.48 0.43 45.95 178.02 1.50 56,613 Federal HAP	3.09 3.09 3.09 0.25 37.45 1.55 1.35 40,606
PM2.5 9.2 CO	Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMbtu NG Emission Factor (Ibs/MMCF) 0.0031 0.0027 0.0058 1.2E-06	0.59 0.17 18.3 71 0.6 164 FO Emission Factor (lbs/1000 Gal) 0.3506 0.3506 0.0044	Ib/1000 Gal Ib/MMBtu NG Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00 1.0E-03	3.10 0.25 37.40 0.57 1.35 40,518 FO Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00	1.48 0.43 45.95 178.02 1.50 56,613	3.09 0.25 37.45 1.55 1.35 40,606
CO	Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMBtu NG Emission Factor (Ibs/MMCF) 0.0031 0.0027 0.0058 1.2E-06 0.0069	0.17 18.3 71 0.6 164 FO Emission Factor (lbs/1000 Gal)	Ib/1000 Gal Ib/1000 Gal Ib/1000 Gal Ib/1000 Gal Ib/1000 Gal Ib/1000 Gal Ib/MMBtu NG Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00 1.0E-03	0.25 37.40 0.57 1.35 40,518 FO Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00	0.43 45.95 178.02 1.50 56,613	0.25 37.45 1.55 1.35 40,606
SO2	Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMBtu NG Emission Factor (Ibs/MMCF) 0.0031 0.0027 0.0058 1.2E-06	71 0.6 164 FO Emission Factor (lbs/1000 Gal) 0.3506 0.3506 0.0044	Ib/1000 Gal Ib/1000 Gal Ib/1000 Gal Ib/MMBtu NG Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00 0.0E+00 1.0E-03	0.57 1.35 40,518 FO Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00	178.02 1.50 56,613 Federal	1.55 1.35 40,606
VOC 4.0 GHG (CO2 eq) 117 HAP/TAC Emissions CAS/DEQ Pollutant Number Poganics 1,1,2,2-Tetrachloroethane 79-34-5 1,1,2-Trichloroethane 79-00-5 1,2-Dichloropropane 78-87-5 1,2-Trichloropropane 78-87-5 1,2-Trichloropropane 78-87-5 2,3-Dichloropropane 107-02-8 3-Butadiene 106-99-0 2-Butadiene 106-99-0 2-Butadiene 106-99-0 2-Butadiene 100-41-4 2-Butadiene 100-41-4 2-Butadiene 107-06-2 2-Buta	Ib/MMcf Ib/MMBtu NG Emission Factor (Ibs/MMCF) 0.0031 0.0027 0.0058 1.2E-06 0.0069	0.6 164 FO Emission Factor (lbs/1000 Gal) 0.3506 0.3506 0.0044	Ib/1000 Gal Ib/MMBtu NG Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00 1.0E-03	1.35 40,518 FO Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00	1.50 56,613 Federal HAP	1.35 40,606
CAS/DEQ Pollutant Number Draganics 1,1,2-Trichloroethane 79-34-5 1,1,2-Trichloroethane 79-00-5 1,2-Dichloropropane 78-87-5 3,3-Dichloropropane 542-75-6 3,2-Dichloropropene 542-75-6 3,3-Dichloropropene 542-75-6 3,3-Dichloropropene 542-75-6 3,3-Dichloropropene 542-75-6 3,3-Dichloropropene 542-75-6 3,3-Dichloropropene 50-32-8 3,3-Butadiene 106-99-0 3,3-Butadiene 106-99-0 3,3-Butadiene 106-99-0 3,3-Butadiene 106-99-0 3,3-Butadiene 106-99-0 3,3-Butadiene 100-41-4 3,3-2-3-5 3,3-Butadiene 100-41-4 3,3-3-3-5 3,3-Butadiene 100-41-4 3,3-3-3-5 3,3-Butadiene 100-41-4 3,3-3-3-5 3,3-Butadiene 100-41-4 3,3-3-3-3-5 3,3-Butadiene 100-42-3 3,3-Butadiene 100-42-3 3,3-Butadiene 100-42-3 3,3-Butadiene 100-42-3 3,3-Butadiene 100-42-3 3,3-Butadiene 100-42-5 3,3-Butadiene	NG Emission Factor (lbs/MMCF) 0.0031 0.0027 0.0058 1.2E-06	FO Emission Factor (lbs/1000 Gal) 0.3506 0.3506 0.0044	NG Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00 0.0E+00 1.0E-03	FO Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00	Federal HAP	CAO
Pollutant Poganics 1,1,2,2-Tetrachloroethane 1,2-Dichloropropane 1,2-Dichloropropane 1,3-Dichloropropane 1,3-Dichloropropene 1,2-Dichloropropene 1,2-Dichloropropene 1,2-Dichloropropene 1,2-Trichloroethane 1,3-Dichloropropene 1,3-Dichloropropene 1,3-Dichloropropene 1,3-Dichloropropene 1,3-Dichloropropene 1,3-Dichloropropene 1,3-Butadiene 1,3-Butadi	0.0031 0.0027 0.0058 1.2E-06	0.3506 0.0044	Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00 0.0E+00 1.0E-03	Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00	HAP	
Pollutant Number Organics ,1,2,2-Tetrachloroethane ,1,2,2-Tirchloroethane ,1,2-Trichloroethane ,2-Dichloropropane ,3-Dichloropropene ,3-Dichloropropene ,3-Dichloropropene ,3-Dichloropropene ,3-Dichloropropene ,3-Dichloropropene ,3-Dichloropropene ,3-Butadiene ,3-Buta	0.0031 0.0027 0.0058 1.2E-06	0.3506 0.0044	Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00 0.0E+00 1.0E-03	Capacity (TPY) 0.0E+00 0.0E+00 0.0E+00	HAP	
Pollutant Number	0.0031 0.0027 0.0058 1.2E-06	0.3506 0.0044	0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 1.0E-03	0.0E+00 0.0E+00 0.0E+00 0.0E+00	HAP	
1,1,2,2-Tetrachloroethane	0.0027 0.0058 1.2E-06 0.0069	0.3506 0.0044	0.0E+00 0.0E+00 0.0E+00 1.0E-03	0.0E+00 0.0E+00	Yes	
.1,2-Trichloroethane .2-Dichloropropane .3-Dichloropropane .3-Dichlor	0.0027 0.0058 1.2E-06 0.0069	0.3506 0.0044	0.0E+00 0.0E+00 0.0E+00 1.0E-03	0.0E+00 0.0E+00	Yes	
1,2-Dichloropropane 78-87-5 1,3-Dichloropropene 542-75-6 1,3-Dichloropropene 542-75-6 1,3-Dichloropropene 542-75-6 1,3-Dichloropropene 542-75-6 1,3-Dichloropropene 71-43-2 1,3-Butadiene 107-02-8 1,3-Butadiene 106-99-0 1,3-Butadiene 106-99-0 1,3-Butadiene 106-99-0 1,3-Butadiene 106-99-0 1,3-Butadiene 106-93-4 1,3-Butadiene 100-41-4 1,3-Butylene Dichloride 107-06-2 1,3-Butylene Dichloride 107-06-2 1,3-Butylene Dichloride 107-06-2 1,3-Butylene Dichloride 107-06-2 1,3-Butylene Dichloride 1,3-Butylene	0.0027 0.0058 1.2E-06 0.0069	0.3506 0.0044	0.0E+00 0.0E+00 1.0E-03	0.0E+00	Yes	Yes Yes
Accelaldehyde 75-07-0 Acrolein 107-02-8 Acrolein 107-02-8 Benzene 71-43-2 Benzene 50-32-8 J.3-Butadiene 106-99-0 Carbon Tetrachloride 56-23-5 Chloroform 67-66-3 Diesel PM 200 Ethyl Benzene 100-41-4 Ethylene Dibromide 106-93-4 Ethylene Dichloride 107-06-2 Formaldehyde 50-00-0 Hexane 110-54-3 Methanol 67-56-1 Methylene Chloride 75-09-2 Naphthalene 91-20-3 Porpylene Oxide 75-56-9 Styrene 100-42-5 Forluene 108-88-3 Armonia 7664-41-7 Hydrochloric Acid 7647-01-0 Metals Arsenic 7440-38-2 Barrium 7440-39-3 Beryllium 7440-41-7 Cadmium 7440-48-4 Copper 7440-50-8 Lead Compounds 7439-92-1 Manganese 7439-96-5 Mercury 7439-97-6 Molybdenum 1313-27-5 Mickel 36- Belenium 7782-49-2 Arnadium 77440-66-6 Methane (CH ₄) 1.0E-03 Methane (CH ₄) 1.0E-03 Methane (CH ₄) 1.0E-03 Methane (CH ₄) 1.0E-04 Methane (CH ₄) 1.0E-04 Methane (CH ₄) 1.0E-04 Methane (CH ₄) 1.0E-03 Methane (CH ₄) 1.0E-04 Methane (CH ₄) 1.0E-03 Methane (CH ₄) 1.0E-04	0.0027 0.0058 1.2E-06 0.0069	0.3506 0.0044	1.0E-03		Yes	Yes
Acrolein 107-02-8 3enzene 71-43-2 3enzene 71-43-2 3enzo(a)pyrene 50-32-8 1,3-Butadiene 106-99-0 2arbon Tetrachloride 56-23-5 Chloroform 67-66-3 Diesel PM 200 Ethyl Benzene 100-41-4 Ethylene Dibromide 106-93-4 Ethylene Dibromide 107-06-2 Formaldehyde 50-00-0 4exane 110-54-3 Methanol 67-56-1 Methylene Chloride 75-09-2 Vaphthalene 91-20-3 POM (inc. PAHs) 401 Propylene Oxide 75-56-9 Styrene 100-42-5 Tolluene 108-88-3 Arsenic 75-01-4 Gylenes 1330-20-7 Ammonia 7664-41-7 Aydrochloric Acid 7647-01-0 Metals Arsenic 7440-38-2 Barrium 7440-43-9 Chromium, Hexavalent 18540-29-9 Cobalt 7440-48-4 Dopper 7440-60-8 Mercury 7439-97-6 Molybdenum 1313-27-5 Mickel 365 Selenium 77440-66-6 Methane (CH4) 1.0E-03 Methane Oxide (N2O) 1.0E-04 Stack Test Data Pollutant Vatural Gas Values Oxide (N2O) 1.0E-04	0.0027 0.0058 1.2E-06 0.0069	0.3506 0.0044		0.0E+00	Yes	Yes Yes
Senzo(a)pyrene 50-32-8 (3-Butadiene 106-99-0 Carbon Tetrachloride 56-23-5 Chloroform 67-66-3 Diesel PM 200 Ethyl Benzene 100-41-4 Ethylene Dibromide 106-93-4 Ethylene Dibromide 107-06-2 Commaldehyde 50-00-0 Detamane 110-54-3 Methylene Chloride 75-09-2 Alaphthalene 91-20-3 Propylene Oxide 75-56-9 Styrene 100-42-5 Columne 108-88-3 Columne 108-88-3 Chloride 75-01-4 Cylenes 1330-20-7 Columne 108-88-3 Chromiomia 7664-41-7 Cylenes 7440-39-3 Seryllium 7440-41-7 Cadmium 7440-43-9 Chromium, Hexavalent 18540-29-9 Cholybdenum 1313-27-5 Molybdenum 1313-27-5 Molybdenum 1313-27-5 Molybdenum 1313-27-5 Molybdenum 1313-27-5 Molybdenum 7782-49-2 Manganese Marcula 7840-66-6 Carbon Dioxide (CO ₂) 53.06 Methane Chl ₄) 1.0E-03 Methane Carbon Dioxide (N ₂ O) 1.0E-04 Stack Test Data Pollutant Carbon Dioxide (N ₂ O) 1.0E-04	1.2E-06 0.0069 0.0123		9.1E-04	8.8E-01 8.8E-01	Yes Yes	Yes Yes
3Butadiene 106-99-0 Carbon Tetrachloride 56-23-5 Chloroform 67-66-3 Diesel PM 200 Ethyl Benzene 100-41-4 Ethylene Dibromide 106-93-4 Ethylene Dibromide 107-06-2 Cormaldehyde 50-00-0 Hexane 110-54-3 Methylene Chloride 75-09-2 Naphthalene 91-20-3 POM (inc. PAHs) 401 Porpylene Oxide 75-56-9 Styrene 100-42-5 Foliuene 108-88-3 Vinyl Chloride 76-01-4 Mylenes 1330-20-7 More and a companie 7440-38-2 Sarium 7440-38-2 Sarium 7440-39-3 Chromium, Hexavalent 18540-29-9 Cadmium 7440-48-4 Copper 7440-50-8 Lead Compounds 7782-49-2 Vanadium 7782-49-2 Va	0.0069	0.0148	2.0E-03	1.1E-02	Yes	Yes
Carbon Tetrachloride 56-23-5 Chloroform 67-66-3 Diesel PM 200 Ethyl Benzene 100-41-4 Ethylene Dibromide 106-93-4 Ethylene Dibromide 107-06-2 Formaldehyde 50-00-0 Hexane 110-54-3 Methylene Chloride 75-50-1 Methylene Chloride 91-20-3 POM (inc. PAHs) 401 Propylene Oxide 75-56-9 Stylene 100-42-5 Foluene 108-88-3 Polluene 108-88-3 Polluene 108-88-3 Polluene 7440-39-3 Polluene 7440-39-3 Polluene 7440-41-7 Polypene 7440-48-4 Polyper 7440-66-6 Polyper 7440-66-6 Pollutant (kg/MMBtu) Polyper 95-30-6 Pollutant (N2O) 1.0E-04 Pollutant Pollutant Units	0.0123		4.0E-07 0.0E+00	0.0E+00 3.7E-02	Yes Yes	Yes Yes
Diesel PM 200	0.0123		0.0E+00	0.0E+00	Yes	Yes
Ethyl Benzene 100-41-4 Ethylene Dibromide 106-93-4 Ethylene Dibromide 106-93-4 Ethylene Dibromide 107-06-2 Formaldehyde 50-00-0 Formaldehyde 50-00-0 Methanol 67-56-1 Methylene Chloride 75-09-2 Methylene Chloride 75-09-2 Maphthalene 91-20-3 POM (inc. PAHs) 401 Propylene Oxide 75-56-9 Etyrene 100-42-5 Foluene 108-88-3 Folluene 108-88-3 Folluene 108-88-3 Folluene 1330-20-7 Forgorial Gases Formorial 7664-41-7 Folydrochloric Acid 7647-01-0 Forgorial Metals Forgorial 7440-38-2 Forgorial 7440-39-3 Forgorial 7440-43-9 Forgorial 7440-43-9 Forgorial 7440-48-4 Folluene 18540-29-9 Forgorial 7440-50-8 Forgorial 7440-50-8 Forgorial 7440-50-8 Forgorial 7440-50-8 Forgorial 7440-50-8 Forgorial 7440-60-6 Forgorial	0.0123		0.0E+00 0.0E+00	0.0E+00 0.0E+00	Yes No	Yes Yes
Ethylene Dibromide		0.0002	2.3E-03	5.0E-04	Yes	Yes
Formaldehyde 50-00-0 lexane 110-54-3 Methanol 67-56-1 Methylene Chloride 75-09-2 Vaphthalene 91-20-3 POM (inc. PAHs) 401 Propylene Oxide 75-66-9 Styrene 100-42-5 Toluene 108-88-3 Vinyl Chloride 75-01-4 Kylenes 1330-20-7 Inorganic Gases Ammonia 7664-41-7 Hydrochloric Acid 7647-01-0 Metals Arsenic 7440-38-2 Barrum 7440-39-3 Beryllium 7440-41-7 Cadmium 7440-43-9 Chromium, Hexavalent 18540-29-9 Cobalt 7440-48-4 Copper 7440-50-8 Jead Compounds 7439-96-5 Mercury 7439-97-6 Molybdenum 1313-27-5 Mickel 365 Selenium 77440-66-6 Methane (CH ₄) 1.0E-03 Nitrous Oxide (N ₂ O) 1.0E-04 Stack Test Data Pollutant Vatural Gas Values 100-20 Valu			0.0E+00	0.0E+00	Yes	Yes
Hexane		0.3506	0.0E+00 4.1E-03	0.0E+00 8.8E-01	Yes Yes	Yes Yes
Methylene Chloride 75-09-2 Naphthalene 91-20-3 POM (inc. PAHs) 401 Porpylene Oxide 75-56-9 Porpylene Oxide 75-56-9 Porpylene Oxide 75-56-9 Porpylene 100-42-5 Foluene 108-88-3 Pollutant (kg/mMBtu) Pollutant	U.UU4b	0.0035	1.6E-03	8.8E-03	Yes	Yes
Valor Valo			0.0E+00 0.0E+00	0.0E+00 0.0E+00	Yes Yes	Yes Yes
Propylene Oxide 75-56-9 Styrene 100-42-5 Foluene 108-88-3 Foluene 108-88-3 Foluene 1330-20-7 Forganic Gases Forganic Gas	0.0003	0.0053	1.0E-04	1.3E-02	Yes	Yes
Styrene 100-42-5 Foluene 108-88-3 Zinyl Chloride 75-01-4 Ziylenes 1330-20-7 Ammonia 7664-41-7 Advidrochloric Acid 7647-01-0 Metals Arsenic 7440-38-2 Barium 7440-39-3 Beryllium 7440-41-7 Cadmium 7440-43-9 Chromium, Hexavalent 18540-29-9 Chobalt 7440-48-4 Copper 7440-50-8 Lead Compounds 7439-92-1 Manganese 7439-96-5 Mercury 7439-97-6 Molybdenum 1313-27-5 Nickel 365 Selenium 7440-62-2 Zinc 7440-66-6 GHG-Related Emission Factors Natural Gas Pollutant (kg/MMBtu) Carbon Dioxide (CO ₂) 53.06 Methane (CH ₄) 1.0E-03 Nitrous Oxide (N ₂ O) 1.0E-04 Stack Test Data Pollutant Vatural Gas Vinits	0.0001	0.0445	3.4E-05	1.1E-01	Yes	Yes
Toluene	0.5300		1.8E-01 0.0E+00	0.0E+00 0.0E+00	Yes Yes	Yes Yes
Managanese 1330-20-7	0.0265	0.0044	8.9E-03	1.1E-02	Yes	Yes
Norganic Gases	0.0197	0.0016	0.0E+00 6.6E-03	0.0E+00 4.0E-03	Yes Yes	Yes Yes
Hydrochloric Acid	0.0137	0.0010	0.0L-03	4.0L-03	103	103
Metals 7440-38-2 Arsenic 7440-39-3 Barium 7440-43-9 Beryllium 7440-41-7 Cadmium 7440-43-9 Chromium, Hexavalent 18540-29-9 Cobalt 7440-48-4 Copper 7440-50-8 Lead Compounds 7439-92-1 Manganese 7439-96-5 Mercury 7439-97-6 Molybdenum 1313-27-5 Nickel 365 Selenium 7782-49-2 Zanadium 7440-66-6 Zanc 7440-66-6 GHG-Related Emission Factors Natural Gas Pollutant (kg/MMBtu) Carbon Dioxide (CO ₂) 53.06 Methane (CH ₄) 1.0E-03 Nitrous Oxide (N ₂ O) 1.0E-04 Stack Test Data Pollutant Vatural Gas Units	3.2000	2.9 0.1863	1.1E+00	7.3E+00	No Yes	Yes Yes
340-39-3 340-39-3		0.1863	0.0E+00	4.7E-01	Yes	Yes
Recyllium	2.0E-04	0.0016	6.7E-05	4.0E-03	Yes	Yes
Cadmium 7440-43-9 Chromium, Hexavalent 18540-29-9 Cobalt 7440-48-4 Copper 7440-50-8 Lead Compounds 7439-92-1 Manganese 7439-96-5 Mercury 7439-97-6 Molybdenum 1313-27-5 Nickel 365 Selenium 7782-49-2 Zinc 7440-66-6 GHG-Related Emission Factors Natural Gas Pollutant (kg/MMBtu) Carbon Dioxide (CO2) 53.06 Methane (CH4) 1.0E-03 Nitrous Oxide (N2O) 1.0E-04 Stack Test Data Pollutant Vatural Gas Units	4.4E-03 1.2E-05		1.5E-03 4.0E-06	0.0E+00 0.0E+00	No Yes	Yes Yes
Cobalt 7440-48-4 Copper 7440-50-8 .ead Compounds 7439-92-1 Manganese 7439-96-5 Mercury 7439-97-6 Molybdenum 1313-27-5 Nickel 365 Selenium 7782-49-2 Zinc 7440-66-6 GHG-Related Emission Factors Natural Gas Pollutant (kg/MMBtu) Carbon Dioxide (CO ₂) 53.06 Methane (CH ₄) 1.0E-03 Nitrous Oxide (N ₂ O) 1.0E-04 Stack Test Data Pollutant Vatural Gas Units	1.1E-03	0.0015	3.7E-04	3.8E-03	Yes	Yes
Copper 7440-50-8 Lead Compounds 7439-92-1 Manganese 7439-96-5 Mercury 7439-97-6 Molybdenum 1313-27-5 Nickel 365 Selenium 7782-49-2 Zanadium 7440-62-2 Zinc 7440-66-6 Autural Gas (kg/MMBtu) Carbon Dioxide (CO2) 53.06 Methane (CH4) 1.0E-03 Nitrous Oxide (N2O) 1.0E-04 Stack Test Data Pollutant Vatural Gas Units	1.4E-03 8.4E-05	0.0001	4.7E-04 2.8E-05	2.5E-04 0.0E+00	Yes Yes	Yes Yes
Manganese 7439-96-5 Mercury 7439-97-6 Molybdenum 1313-27-5 Nickel 365 Selenium 7782-49-2 Zanc 7440-62-2 Zinc 7440-66-6 SHG-Related Emission Factors Natural Gas Pollutant (kg/MMBtu) Carbon Dioxide (CO2) 53.06 Methane (CH4) 1.0E-03 Nitrous Oxide (N2O) 1.0E-04 Stack Test Data Pollutant Vatural Gas Units	8.5E-04	0.0041	2.9E-04	1.0E-02	No	Yes
Mercury 7439-97-6 Molybdenum 1313-27-5 Nickel 365 Selenium 7782-49-2 Zanadium 7440-62-2 Zinc 7440-66-6 GHG-Related Emission Factors Natural Gas Pollutant (kg/MMBtu) Carbon Dioxide (CO ₂) 53.06 Methane (CH ₄) 1.0E-03 Nitrous Oxide (N ₂ O) 1.0E-04 Stack Test Data Pollutant Pollutant Units	5.0E-04	0.0083	1.7E-04	2.1E-02	Yes	Yes
Molybdenum	3.8E-04 2.6E-04	0.0031 0.002	1.3E-04 8.8E-05	7.8E-03 5.0E-03	Yes Yes	Yes Yes
Transparent	1.7E-03		5.6E-04	0.0E+00	No	Yes
Vanadium	2.1E-03 2.4E-05	0.0039 0.0022	7.1E-04 8.1E-06	9.8E-03 5.5E-03	Yes Yes	Yes Yes
GHG-Related Emission Factors Natural Gas	2.3E-03	2.0022	7.8E-04	0.0E+00	No	Yes
Natural Gas (kg/MMBtu)	2.9E-02 Total	HAP Emissions =	9.8E-03 0.21	0.0E+00 3.36	No	Yes
Natural Gas (kg/MMBtu)	TOTAL	בוווספוטווס =	V.Z I	5.50		
Pollutant (kg/MMBtu) Carbon Dioxide (CO2) 53.06 Methane (CH4) 1.0E-03 Nitrous Oxide (N2O) 1.0E-04 Stack Test Data Pollutant Natural Gas Units	Fuel Oil					
Carbon Dioxide (CO2) 53.06 Methane (CH4) 1.0E-03 Nitrous Oxide (N2O) 1.0E-04 Stack Test Data Pollutant Natural Gas Units	(kg/MMBtu)	GWP				
1.0E-04	73.96	1				
Stack Test Data Pollutant Natural Gas Units	3.0E-03	25				
Pollutant Natural Gas Units	6.0E-04	298				
Pollutant Natural Gas Units						
	40/40/005	DISTORT	AIFIDO 17	4/0.0/00:0	A	
PM lb/MMcf	12/13/2001 NA	9/7/2011 9.2	4/5/2017 NA	4/2-3/2019 NA	Average 9.20	
CO lb/MMcf	NA	0.22	1	1	0.74	
NOx Ib/MMcf	101.4	113	131	98.2	111	
PM lb/1000 gal	NA	0.59	NA	NA	0.59	
CO lb/1000 gal	NA 10.8	0.12	0.2	0.2	0.17	
NOx lb/1000 gal	19.8	18.5	18.3	16.7	18.3	
Notes:						
PM, PM10, PM2.5, CO and NOx emission fac		-		10 and PM2.5 a	ssumed to be equal t	o PM.
/OC emission factors for both natural gas and Other natural gas emissions factors, except G				ers, AQ-EF05 (08/01/2011).	
Other fuel oil emissions factors, except GHGs GHG emission factors are from 40 CFR 98, Ta	fuel oil are based	Q Emission Factors				

Max Heat Input Heat Value - Natural Gas	78 1,026	MMBtu/hr MMBtu/MMcf		Max NG Use = Max FO Use =	666 4,951	MMcf/yr 1000 Gal/yr	
leat Value - Fuel Oil	138	MMBtu/1000 Gal		ax	1,001		
Max Hrs Operation - NG	8,712	hr/yr					
Max Hrs Operation - FO	48	hr/yr					
Criteria Pollutants							
	NG Emission		FO Emission		NG Capacity	FO Capacity	Unit PTE
Pollutant	Factor	NG EF Units	Factor	FO EF Units	(TPY)	(TPY)	(TPY)
PM	2.20	lb/MMcf	0.55	lb/1000 Gal	0.73	1.36	0.74
PM10 PM2.5	2.20	lb/MMcf lb/MMcf	0.55 0.55	lb/1000 Gal lb/1000 Gal	0.73 0.73	1.36 1.36	0.74 0.74
CO	14.8	lb/MMcf	0.19	lb/1000 Gal	4.94	0.47	4.91
NOX	11.8	lb/MMcf	10.8	lb/1000 Gal	3.93	26.61	4.05
SO ₂ VOC	1.7 5.5	lb/MMcf lb/MMcf	71 0.2	lb/1000 Gal lb/1000 Gal	0.57 1.83	175.77 0.50	1.53 1.82
GHG (CO2 eq)	117	lb/MMBtu	164	lb/MMBtu	40,005	55,897	40,092
FHAP/TAC Emissions		NG Emission	FO Emission	NG	FO		
	CAS/DEQ	Factor	Factor	Capacity	Capacity	Federal	CAO
Pollutant	Number	(lbs/MMCF)	(lbs/1000 Gal)	(TPY)	(TPY)	HAP	Air Toxic
Organics ,1,2,2-Tetrachloroethane	79-34-5			0.0E+00	0.0E+00	Yes	Yes
1,1,2-Trichloroethane	79-00-5			0.0E+00	0.0E+00	Yes	Yes
1,2-Dichloropropane	78-87-5			0.0E+00	0.0E+00	Yes	Yes
,3-Dichloropropene Acetaldehyde	542-75-6 75-07-0	0.0031	0.3506	0.0E+00 1.0E-03	0.0E+00 8.7E-01	Yes Yes	Yes Yes
Acetaldehyde Acrolein	75-07-0 107-02-8	0.0031 0.0027	0.3506	1.0E-03 9.0E-04	8.7E-01 8.7E-01	Yes Yes	Yes Yes
Benzene	71-43-2	0.0058	0.0044	1.9E-03	1.1E-02	Yes	Yes
Benzo(a)pyrene	50-32-8	1.2E-06	2011	4.0E-07	0.0E+00	Yes	Yes
I,3-Butadiene Carbon Tetrachloride	106-99-0 56-23-5		0.0148	0.0E+00 0.0E+00	3.7E-02 0.0E+00	Yes Yes	Yes Yes
Chloroform	67-66-3			0.0E+00 0.0E+00	0.0E+00	Yes	Yes
Diesel PM	200			0.0E+00	0.0E+00	No	Yes
Ethyl Benzene	100-41-4	0.0069	0.0002	2.3E-03	5.0E-04	Yes	Yes
Ethylene Dibromide Ethylene Dichloride	106-93-4 107-06-2			0.0E+00 0.0E+00	0.0E+00 0.0E+00	Yes Yes	Yes Yes
Formaldehyde	50-00-0	0.0123	0.3506	4.1E-03	8.7E-01	Yes	Yes
Hexane	110-54-3	0.0046	0.0035	1.5E-03	8.7E-03	Yes	Yes
Methanol Methylene Chloride	67-56-1 75-09-2			0.0E+00 0.0E+00	0.0E+00 0.0E+00	Yes Yes	Yes Yes
Naphthalene	91-20-3	0.0003	0.0053	1.0E-04	1.3E-02	Yes	Yes
POM (inc. PAHs)	401	0.0001	0.0445	3.3E-05	1.1E-01	Yes	Yes
Propylene Oxide	75-56-9	0.5300		1.8E-01	0.0E+00	Yes	Yes
Styrene Foluene	100-42-5 108-88-3	0.0265	0.0044	0.0E+00 8.8E-03	0.0E+00 1.1E-02	Yes Yes	Yes Yes
Vinyl Chloride	75-01-4	0.0200	0.0044	0.0E+00	0.0E+00	Yes	Yes
Kylenes	1330-20-7	0.0197	0.0016	6.6E-03	4.0E-03	Yes	Yes
norganic Gases Ammonia	7664-41-7	3.2000	2.0	1.1E+00	7.2E+00	No	Yes
Hydrochloric Acid	7647-01-0	3.2000	2.9 0.1863	0.0E+00	4.6E-01	Yes	Yes
Metals							
Arsenic	7440-38-2 7440-39-3	2.0E-04 4.4E-03	0.0016	6.7E-05	4.0E-03	Yes	Yes
Barium Beryllium	7440-39-3	1.2E-05		1.5E-03 4.0E-06	0.0E+00 0.0E+00	No Yes	Yes Yes
Cadmium	7440-43-9	1.1E-03	0.0015	3.7E-04	3.7E-03	Yes	Yes
Chromium, Hexavalent	18540-29-9	1.4E-03	0.0001	4.7E-04	2.5E-04	Yes	Yes
Cobalt Copper	7440-48-4 7440-50-8	8.4E-05 8.5E-04	0.0041	2.8E-05 2.8E-04	0.0E+00 1.0E-02	Yes No	Yes Yes
Lead Compounds	7440-50-6	5.0E-04	0.0041	1.7E-04	2.1E-02	Yes	Yes
Manganese .	7439-96-5	3.8E-04	0.0031	1.3E-04	7.7E-03	Yes	Yes
Mercury Melyhdenum	7439-97-6	2.6E-04	0.002	8.7E-05	5.0E-03	Yes	Yes
Molybdenum Nickel	1313-27-5 365	1.7E-03 2.1E-03	0.0039	5.5E-04 7.0E-04	0.0E+00 9.7E-03	No Yes	Yes Yes
Selenium	7782-49-2	2.4E-05	0.0022	8.0E-06	5.4E-03	Yes	Yes
/anadium	7440-62-2	2.3E-03		7.7E-04	0.0E+00	No No	Yes
Zinc	7440-66-6	2.9E-02 Total	HAP Emissions =	9.7E-03 0.21	0.0E+00 3.32	No	Yes
					-		
GHG-Related Emission F		Fire! O!!					
Pollutant	Natural Gas (kg/MMBtu)	Fuel Oil (kg/MMBtu)	GWP				
Carbon Dioxide (CO ₂)	53.06	73.96	1				
Methane (CH ₄)	1.0E-03	3.0E-03	25				
Nitrous Oxide (N ₂ O)	1.0E-04	6.0E-04	298				
Stock Toot Data							
Stack Test Data Natural Gas							
Pollutant	Units	9/7/2011	4/5/2017	4/2-3/2019	Average		
PM	lb/MMcf	2.2	NA 0.7	NA 1.0	2.20		
CO NOx	lb/MMcf lb/MMcf	33.5 9.7	9.7 15.1	1.3 10.6	14.8 11.8		
Fuel OII	1D/ IVIIVIOI	5.1	10.1	10.0	11.0		
PM	lb/1000 gal	0.55	NA	NA	0.55		
CO	lb/1000 gal	0.18	NA NA	0.2	0.19	_	
NOx	lb/1000 gal	10.1	NA	11.4	10.8		
lotes:							
PM, PM10, PM2.5, CO an							o PM.
Other natural gas emission					, ,		
Other fuel oil emissions factors are				Oil Fired Bollers, A	Q-EFU4 (U8/U1/	2011).	

Combustion Turbine - NG	0.078	MMcf/hr		Max NG Use =	683.28	MMcfyr (turbine)	394.2	MMcf/yr (HRSG
Combustion Turbine - FO	520	gal/hr	Max	FO and NG Use =	4555.2	1000 Gal/yr (turbine)	394.2	MMcf/yr (HRSG
IRSG Duct Burner - NG	0.045	MMcf/hr						
leat Value - Natural Gas leat Value - Fuel Oil	1,026 138	MMBtu/MMcf MMBtu/1000 Gal						
riteria Pollutants						Natural Gas	Fuel Oil	
	Turbine	Duct Burner		Turbine		Capacity	Capacity	Unit
Pollutant	NG Emission Factor	NG Emission Factor	NG EF Units	FO Emission Factor	FO EF Units	Emissions (TPY)	Emissions (TPY)	PTE (TPY)
PM	21	10	lb/MMcf	5.4	lb/1000 Gal	9.15	14.3	14.3
PM10	21	10	lb/MMcf	5.4	lb/1000 Gal	9.15	14.3	14.3
PM2.5 CO	21 61	10 73	lb/MMcf lb/MMcf	5.4 17	lb/1000 Gal lb/1000 Gal	9.15 35.23	14.3 53.1	14.3 53.1
NOX	37		lb/MMcf	21.7	lb/1000 Gal	20.1	49.3	49.3
SO2 VOC	1.7 35	1.7	lb/MMcf	69.7 4.9	lb/1000 Gal	0.92	159.1	159
GHG (CO2 eq)	117	16 117	lb/MMcf lb/MMBtu	4.9 164	lb/1000 Gal lb/MMBtu	15.11 64,706	14.3 75,085	15.1 75,085
, , ,							, 	
HAP/TAC Emissions		NG Emission	FO Emission	NG	FO			
	CAS/DEQ	Factor	Factor	Capacity	Capacity	Federal	CAO	
Pollutant	Number	(lbs/MMCF)	(lbs/1000 Gal)	(TPY)	(TPY)	HAP	Air Toxic	
rganics ,1,2,2-Tetrachloroethane	79-34-5			0.0E+00	0.0E+00	Yes	Yes	-
,1,2-Trichloroethane	79-00-5			0.0E+00	0.0E+00	Yes	Yes]
,2-Dichloropropane	78-87-5 542-75-6			0.0E+00	0.0E+00	Yes	Yes	
,3-Dichloropropene .cetaldehyde	542-75-6 75-07-0	0.0408	0.7833	0.0E+00 2.2E-02	0.0E+00 1.8E+00	Yes Yes	Yes Yes	1
crolein	107-02-8	0.00653	0.0339	3.5E-03	7.8E-02	Yes	Yes	1
enzene enzo(a)pyrene	71-43-2 50-32-8	0.0122	0.1863	6.6E-03 0.0E+00	4.3E-01 0.0E+00	Yes Yes	Yes Yes	-
,3-Butadiene	106-99-0	0.000439	0.2174	2.4E-04	5.0E-01	Yes	Yes	
arbon Tetrachloride	56-23-5			0.0E+00	0.0E+00	Yes	Yes	
hloroform Diesel PM	67-66-3 200			0.0E+00 0.0E+00	0.0E+00 0.0E+00	Yes No	Yes Yes	-
thyl Benzene	100-41-4	0.0326	0.0109	1.8E-02	3.1E-02	Yes	Yes	1
thylene Dibromide thylene Dichloride	106-93-4			0.0E+00	0.0E+00 0.0E+00	Yes Yes	Yes Yes	
ormaldehyde	107-06-2 50-00-0	0.724	1.7261	0.0E+00 3.9E-01	4.1E+00	Yes	Yes	
lexane	110-54-3		0.0269	0.0E+00	6.1E-02	Yes	Yes	
1ethanol 1ethylene Chloride	67-56-1 75-09-2			0.0E+00 0.0E+00	0.0E+00 0.0E+00	Yes Yes	Yes Yes	
laphthalene	91-20-3	0.00133	0.0197	7.2E-04	4.5E-02	Yes	Yes	
OM (inc. PAHs)	401	0.000918	0.0362	4.9E-04	8.3E-02	Yes	Yes	
ropylene Oxide	75-56-9 100-42-5			0.0E+00 0.0E+00	0.0E+00 0.0E+00	Yes Yes	Yes Yes	
oluene	108-88-3	0.133	0.1054	7.2E-02	2.7E-01	Yes	Yes	
inyl Chloride	75-01-4	0.0052	0.0424	0.0E+00	0.0E+00	Yes	Yes	4
ylenes norganic Gases	1330-20-7	0.0653	0.0424	3.5E-02	1.1E-01	Yes	Yes	
mmonia	7664-41-7	18	2.9	9.7E+00	1.0E+01	No	Yes	
lydrochloric Acid	7647-01-0		0.1863	0.0E+00	4.2E-01	Yes	Yes	
rsenic	7440-38-2		0.0016	0.0E+00	3.6E-03	Yes	Yes	
arium	7440-39-3			0.0E+00	0.0E+00	No Var	Yes	_
eryllium admium	7440-41-7 7440-43-9		0.0015	0.0E+00 0.0E+00	0.0E+00 3.4E-03	Yes Yes	Yes Yes	
chromium, Hexavalent	18540-29-9		0.0001	0.0E+00	2.3E-04	Yes	Yes	
Cobalt Copper	7440-48-4 7440-50-8		0.0041	0.0E+00 0.0E+00	0.0E+00 9.3E-03	Yes No	Yes Yes	
ead Compounds	7439-92-1		0.0083	0.0E+00	1.9E-02	Yes	Yes	
langanese	7439-96-5		0.0031	0.0E+00	7.1E-03	Yes	Yes	
lercury lolybdenum	7439-97-6 1313-27-5		0.002	0.0E+00 0.0E+00	4.6E-03 0.0E+00	Yes No	Yes Yes	1
lickel	365		0.0039	0.0E+00	8.9E-03	Yes	Yes	
elenium 'anadium	7782-49-2		0.0022	0.0E+00 0.0E+00	5.0E-03 0.0E+00	Yes No	Yes Yes	
anadium inc	7440-62-2 7440-66-6			0.0E+00 0.0E+00	0.0E+00 0.0E+00	No No	Yes	1
		Total Emissic	ns at Capacity =	0.55	7.94		_	
HG-Related Emission I	Factors							
	Natural Gas	Fuel Oil						
Pollutant	(kg/MMBtu)	(kg/MMBtu)	GWP					
Carbon Dioxide (CO ₂)	53.06	73.96	1 25					
litrous Oxide (NaO)	1.0E-03 1.0E-04	3.0E-03 6.0E-04	25 298					
litrous Oxide (N ₂ O)	1.∪⊑-∪4	0.0E-04	290					
tack Test Data								
latural Gas ollutant	Units	5/3/2013	4/14/2015	6/3/2017	12/18/2019	Average		
Fuel Flow	scfh	93,480	117,200	103,333	78,365	98,095		
NO _x Emissions	lb/hr	3.03	4.3	3.8	3.4	3.63		
NOx EF	lb/MMcf	32.4	36.7	36.8	43.4	37.3		
Fuel Flow	gal/hr	595.8	581	546	582	576		
NOx Emissions	lb/hr	9.43	13.7	15.4	11.06	12.4		
NO _x EF	lb/1000 gal	15.8	23.6	28.2	19.0	21.7		
lotes: IOx emission factors bas or natural gas and fuel oi or natural gas in the ductor natural gas, the SO2 of the solution	I in the turbine, PM t burner, PM, CO,	1, CO, and VOC emi and VOC emission fa	ssion factors are b actors are based o	ased on vendor spec n vendor specificatio	cifications. PM10 ns. PM10 and PM	and PM2.5 are assume 12.5 are assumed to be		
or fuel oil, the SO2 emiss	sion lactors is basi	JU OII OO LI A AI 4	<u> </u>	ationary Cao raibine	o, .ab.o oa .	0 0.0		

University of Oreg	gon 208557														
mission Details															
	t PTE - Fuel Limita	itions													
1,165	= EU-1, EU-2, EU-	3 Natural Gas Grou	up Limit (MMcf/vr)		79	= EU-1 Max Heat	Input (MMBtu/hr)								
	= EU-1 Max NG U		.,		78	= EU-2 Max Heat									
	= EU-2 Max NG U														
	= EU-3 Turbine Ma		(r)												
	= EU-3 HRSG Max														
	= NG Heat Value (,												
1,020	- No rical value (iviivibtariviivioi)													
TF for Natural G	Sas Operational S	cenario													
		00110110				NG	Fuel OII	Total							
	EU-1	EU-2	EU-3	EU-3		PTE	PTE	PTE							
	NG Emission	NG Emission	NG Turbine	NG HRSG		Emissions	Emissions	Emissions							
Pollutant	Factor	Factor	Emission Factor		NG EF Units	(TPY)	(TPY)	(TPY)							
PM	9.2	2.2	21	10	lb/MMcf	9.55	1.6E-02	9.56							
РМ РМ10	9.2	2.2	21	10	Ib/MMcf	9.55	1.6E-02 1.6E-02	9.56							
PM10 PM2.5	9.2	2.2	21	10	Ib/MMcf	9.55	1.6E-02	9.56							
CO		14.8			Ib/MMcf	9.55 35.9	1.6E-02 5.0E-03	9.56 35.9							
	0.7		61	73											
NOX	111	12	37		lb/MMcf	46.6	3.56	50.1							
SO ₂	1.7	1.7	1.7	1.7	lb/MMcf	0.99	1.94	2.93							
VOC	4.0	5.5	35	16	lb/MMcf	15.4	1.1E-02	15.4							
GHG (CO2 eq)	117	117	117	117	lb/MMBtu	69,963	616	70,580							
lotes:															
ssumes all natura	al gas to the unit wi	th the highest emis	ssion factor for a reg	gulated pollutant. In	practice this mean	s EU-3 operates fir	st with the balance	of the NG to the wo	rst emitting boiler	, except for NOx.					
				e of natural gas, and	d EU-3 operating o	n fuel oil.									
	 -1 operating on nature 1 operating of fuel of 				d EU-3 operating o	n fuel oil.									
				xcept for NOx.											
All versions assum	ne 48 hours of fuel o	oil operation each o	n the two boilers, e	xcept for NOx.	Info for Pollutant	s Other than NOx			Info for NOx						
All versions assum		oil operation each o	n the two boilers, e	xcept for NOx.	Info for Pollutant				Info for NOx 1,165	= EU-1, EU-2, EU-	3 Natural Gas Gro	up Limit (MMcf/yr)			
All versions assum	ne 48 hours of fuel o	oil operation each o	n the two boilers, e	xcept for NOx.	Info for Pollutant	s Other than NOx	al Gas (MMcf/yr)			= EU-1, EU-2, EU- = EU-1 Max Natura		up Limit (MMcf/yr)			
All versions assum 329 5015	ne 48 hours of fuel c	oil operation each of 3 Fuel Oil Group Li se (1000 gal/yr)	n the two boilers, e	xcept for NOx.	Info for Pollutant 675 666	s Other than NOx = EU-1 Max Natu = EU-2 Max Natu	al Gas (MMcf/yr)		1,165		al Gas (MMcf/yr)				
329 5015 4951	e 48 hours of fuel of E EU-1, EU-2, EU- E EU-1 Max NG U	oil operation each of 3 Fuel Oil Group Li se (1000 gal/yr) se (1000 gal/yr)	n the two boilers, e	xcept for NOx.	Info for Pollutant 675 666 394.2	s Other than NOx = EU-1 Max Natu = EU-2 Max Natu = EU-3 HRSG Ma	ral Gas (MMcf/yr) ral Gas (MMcf/yr)	·)	1,165 675	= EU-1 Max Natura	al Gas (MMcf/yr)				
329 5015 4951 4,555	= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U	oil operation each of 3 Fuel Oil Group Li se (1000 gal/yr) se (1000 gal/yr) ax FO Use (1000 ga	n the two boilers, e imit (1000 gal/yr)	xcept for NOx.	Info for Pollutant 675 666 394.2 634	s Other than NOx = EU-1 Max Natu = EU-2 Max Natu = EU-3 HRSG Ma = EU-3 Remaining	ral Gas (MMcf/yr) ral Gas (MMcf/yr) x NG Use (MMcf/yr	r) bine (MMcf/yr)	1,165 675	= EU-1 Max Natura	al Gas (MMcf/yr)				
329 5015 4951 4,555 394.2	= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Ma = EU-3 Turbine Ma	oil operation each of a Fuel Oil Group Lise (1000 gal/yr) se (1000 gal/yr) ax FO Use (1000 gak NG Use (MMcf/yr	n the two boilers, e imit (1000 gal/yr)	xcept for NOx.	Info for Pollutant 675 666 394.2 634	s Other than NOx = EU-1 Max Natul = EU-2 Max Natul = EU-3 HRSG Ma = EU-3 Remaining = EU-3 Remaining	al Gas (MMcf/yr) al Gas (MMcf/yr) x NG Use (MMcf/yr y NG Capacity - Turk y NG Capacity - HR	bine (MMcf/yr) SG (MMcf/yr)	1,165 675	= EU-1 Max Natura	al Gas (MMcf/yr)				
329 5015 4951 4,555 394.2 1,026	= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Ma	sil operation each of a sil op	n the two boilers, e imit (1000 gal/yr) al/yr)	xcept for NOx.	Info for Pollutant 675 666 394.2 634 366	s Other than NOx = EU-1 Max Natul = EU-2 Max Natul = EU-3 HRSG Ma = EU-3 Remaining = EU-3 Remaining	ral Gas (MMcf/yr) ral Gas (MMcf/yr) x NG Use (MMcf/yr y NG Capacity - Turl	bine (MMcf/yr) SG (MMcf/yr)	1,165 675	= EU-1 Max Natura	al Gas (MMcf/yr)				
329 5015 4951 4,555 394.2 1,026	= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Ma = EU-3 HRSG May = NG Heat Value (sil operation each of a sil op	n the two boilers, e imit (1000 gal/yr) al/yr)	xcept for NOx.	Info for Pollutant 675 666 394.2 634 366	s Other than NOx = EU-1 Max Natul = EU-2 Max Natul = EU-3 HRSG Ma = EU-3 Remaining = EU-3 Remaining	al Gas (MMcf/yr) al Gas (MMcf/yr) x NG Use (MMcf/yr y NG Capacity - Turk y NG Capacity - HR	bine (MMcf/yr) SG (MMcf/yr)	1,165 675	= EU-1 Max Natura	al Gas (MMcf/yr)				
329 5015 4951 4,555 394.2 1,026 138	= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Ma = EU-3 HRSG May = NG Heat Value (3 Fuel Oil Group Li se (1000 gal/yr) se (1000 gal/yr) x FO Use (1000 ga k NG Use (MMct/yr MMBtu/MMCF) lue (MMBtu/1000 0	n the two boilers, e imit (1000 gal/yr) al/yr)	xcept for NOx.	Info for Pollutant 675 666 394.2 634 366	s Other than NOx = EU-1 Max Natul = EU-2 Max Natul = EU-3 HRSG Ma = EU-3 Remaining = EU-3 Remaining	al Gas (MMcf/yr) al Gas (MMcf/yr) x NG Use (MMcf/yr y NG Capacity - Turk y NG Capacity - HR	bine (MMcf/yr) SG (MMcf/yr)	1,165 675	= EU-1 Max Natura	al Gas (MMcf/yr) apacity - Turbine (s Operation		
329 5015 4951 4,555 394.2 1,026 138	= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Ma = EU-3 HRSG May = NG Heat Value (= Fuel Oil Heat Va	3 Fuel Oil Group Li se (1000 gal/yr) se (1000 gal/yr) x FO Use (1000 ga k NG Use (MMct/yr MMBtu/MMCF) lue (MMBtu/1000 0	n the two boilers, e imit (1000 gal/yr) al/yr)	xcept for NOx.	Info for Pollutant 675 666 394.2 634 366	s Other than NOx = EU-1 Max Natul = EU-2 Max Natul = EU-3 HRSG Ma = EU-3 Remaining = EU-3 Remaining	al Gas (MMcf/yr) al Gas (MMcf/yr) x NG Use (MMcf/yr y NG Capacity - Turk y NG Capacity - HR	bine (MMcf/yr) SG (MMcf/yr)	1,165 675	= EU-1 Max Nature = Remaining NG C	al Gas (MMcf/yr) apacity - Turbine (MMct/yr)	s Operation HRSG NG	Boiler NG	Total
329 5015 4951 4,555 394.2 1,026 138	= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Ma = EU-3 HRSG May = NG Heat Value (= Fuel Oil Heat Va	3 Fuel Oil Group Li se (1000 gal/yr) se (1000 gal/yr) x FO Use (1000 ga k NG Use (MMct/yr MMBtu/MMCF) lue (MMBtu/1000 0	n the two boilers, e imit (1000 gal/yr) al/yr)	xcept for NOx.	Info for Pollutant 675 666 394.2 634 366	s Other than NOx = EU-1 Max Natul = EU-2 Max Natul = EU-3 HRSG Ma = EU-3 Remaining = EU-3 Remaining	al Gas (MMcf/yr) al Gas (MMcf/yr) x NG Use (MMcf/yr y NG Capacity - Turk y NG Capacity - HR	bine (MMcf/yr) SG (MMcf/yr)	1,165 675	= EU-1 Max Nature = Remaining NG C	al Gas (MMcf/yr) apacity - Turbine (MMcf/yr) Natural Gas		Boiler NG PTE	Total PTE
329 5015 4951 4,555 394.2 1,026 138	= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Ma = EU-3 HRSG Mas = NG Heat Value (= Fuel Oil Heat Va	3 Fuel Oil Group Lise (1000 gal/yr) se (1000 gal/yr) ix FO Use (1000 gal/yr) ix FO Use (1000 gal/yr) in Gold (n the two boilers, e imit (1000 gal/yr) al/yr)) Gal)	xcept for NOx.	Info for Pollutant 675 666 394.2 634 366 165	s Other than NOx = EU-1 Max Natu = EU-2 Max Natu = EU-3 HRSG Ma = EU-3 Remaining = EU-3 Remaining = Boiler Remainin	al Gas (MMcf/yr) al Gas (MMcf/yr) x NG Use (MMcf/yr) y NG Capacity - Turl y NG Capacity - HR: g NG Capacity (MM) bine (MMct/yr) SG (MMct/yr) Ict/yr)	1,165 675	= EU-1 Max Nature = Remaining NG C Fuel OII C CT Fuel OII	al Gas (MMcf/yr) apacity - Turbine (Operation HRSG NG PTE	MMcf/yr) Natural Gas	HRSG NG PTE	PTE	PTE
329 5015 4951 4,555 394.2 1,026 138 PTE for Fuel Oil (e 48 hours of fuel of EU-1, EU-2, EU- EU-1 Max NG U EU-2 Max NG U EU-3 Turbine Ma EU-3 HRSG May NG Heat Value (Fuel Oil Heat Va Operational Scen: EU-1 FO Emission	3 Fuel Oil Group Li se (1000 gal/yr) se (1000 gal/yr) se (1000 gal/yr) sx FO Use (1000 gal/yr) sx FO Use (1000 gal/yr) iue (MMBtu/1000 Cario	n the two boilers, e imit (1000 gal/yr) al/yr)) Gal) EU-3 FO Emission	xcept for NOx.	Info for Pollutant 675 666 394.2 634 366 165	s Other than NOx = EU-1 Max Natu = EU-2 Max Natu = EU-3 HRSG Ma = EU-3 Remaining = EU-3 Remaining = Boiler Remainin	al Gas (MMcf/yr) al Gas (MMcf/yr) al Gas (MMcf/yr) al Gas (MMcf/yr) NG Capacity - Turl NG Capacity - HR: g NG Capacity (MM	c) bine (MMct/yr) SG (MMct/yr) lct/yr) EU-3 NG HRSG	1,165 675 490	= EU-1 Max Nature = Remaining NG C Fuel Oil C CT Fuel Oil PTE Emissions	al Gas (MMcf/yr) apacity - Turbine (Degration HRSG NG PTE Emissions	MMcf/yr) Natural Gas CT NG PTE Emissions	HRSG NG PTE Emissions	PTE Emissions	PTE Emissions
329 5015 4951 4,555 394.2 1,026 138 PTE for Fuel Oil (= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Ma = EU-3 HRSG Max = NG Heat Value (= Fuel Oil Heat Value (EU-1 FO Emission Factor	3 Fuel Oil Group Lise (1000 gal/yr) se (1000 gal/yr) se (1000 gal/yr) se (1000 gal/yr) se (1000 ga k NG Use (MMcf/yr MMBtu/MMCF) liue (MMBtu/1000 Cario EU-2 FO Emission Factor	n the two boilers, e imit (1000 gal/yr) al/yr) Gal) EU-3 FO Emission Emission Factor	rcept for NOx.	Info for Pollutant 675 666 394.2 634 366 165	s Other than NOx = EU-1 Max Natu = EU-2 Max Natu = EU-3 HRSG Ma = EU-3 Remaining = EU-3 Remaining = Boiler Remaining = Boiler Remaining	al Gas (MMcf/yr) al Gas (MMcf/yr) al Gas (MMcf/yr) al Gas (MMcf/yr) by Gapacity - Turl by Gapacity - HR: g NG Capacity (MM EU-3 NG Turbine Emission Factor	bine (MMct/yr) SG (MMct/yr) Ict/yr) EU-3 NG HRSG Emission Factor	1,165 675 490 NG EF Units	= EU-1 Max Nature = Remaining NG C Fuel Oll C CT Fuel Oil PTE Emissions (TPY)	al Gas (MMcf/yr) apacity - Turbine (Operation HRSG NG PTE Emissions (TPY)	MMcf/yr) Natural Gas CT NG PTE Emissions (TPY)	HRSG NG PTE Emissions (TPY)	PTE Emissions (TPY)	PTE Emissions (TPY)
329 5015 4951 4,555 394.2 1,026 138 PTE for Fuel Oil (= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Ma = EU-3 HRSG Mas = NG Heat Value (= Fuel Oil Heat Value (= Fuel Oil Fuel Value (= Fuel	3 Fuel Oil Group Lise (1000 gal/yr) se (1000 gal/yr) x FO Use (1000 gal/yr) x FO Use (1000 ga k NG Use (MMCf/yr MMBtu/MMCF) llue (MMBtu/1000 Cario EU-2 FO Emission Factor 0.55	n the two boilers, e imit (1000 gal/yr) al/yr) Gal) EU-3 FO Emission Factor 5.4	FO EF Units Ib/1000 gal	Info for Pollutant 675 666 394.2 634 366 165	s Other than NOx = EU-1 Max Natu = EU-2 Max Natu = EU-3 HRSG Ma = EU-3 Remaining = EU-3 Remaining = Boiler Remaining = Boiler Remaining EU-2 NG Emission Factor 2.2	al Gas (MMcf/yr) al Gas (MMcf/yr) al Gas (MMcf/yr) x NG Use (MMcf/yr) x NG Capacity - Turl NG Capacity - HR: g NG Capacity (MM EU-3 NG Turbine Emission Factor 21	bine (MMct/yr) SG (MMct/yr) Ict/yr) EU-3 NG HRSG Emission Factor	1,165 675 490 NG EF Units Ib/MMcf	= EU-1 Max Nature = Remaining NG C Fuel Oil C CT Fuel Oil PTE Emissions (TPY)	Departion HRSG NG PTE Emissions (TPY) 0.14	MMcf/yr) Natural Gas CT NG PTE Emissions (TPY) 6.66	HRSG NG PTE Emissions (TPY) 1.83	PTE Emissions (TPY) 0.76	PTE Emission: (TPY) 10.28
329 5015 4951 4,555 394.2 1,026 138 PTE for Fuel Oil (e 48 hours of fuel of EU-1, EU-2, EU- EU-1 Max NG U EU-2 Max NG U EU-3 Turbine Be EU-3 HRSG May NG Heat Value (Fuel Oil Heat Va Operational Scens EU-1 FO Emission Factor 0.59 0.59	3 Fuel Oil Group Lise (1000 gal/yr) se (1000 gal/yr) se (1000 gal/yr) x FO Use (1000 ga KnG Use (Mmcf/yr MMBtu/MMCF) llue (MMBtu/1000 Cario EU-2 FO Emission Factor 0.55 0.55	n the two boilers, e imit (1000 gal/yr) al/yr) Gal) EU-3 FO Emission Emission Factor 5.4 5.4	FO EF Units Ib/1000 gal	Info for Pollutant 675 666 394.2 634 366 165 EU-1 NG Emission Factor 9.2 9.2	s Other than NOx = EU-1 Max Natu = EU-2 Max Natu = EU-3 HRSG Ma = EU-3 Remaining = EU-3 Remaining = Boiler Remainin EU-2 NG Emission Factor 2.2 2.2	al Gas (MMcf/yr) al Gas (MMcf/yr) x NG Use (MMcf/yr) x NG Use (MMcf/yr) y NG Capacity - Turl y NG Capacity - HR: g NG Capacity (MM EU-3 NG Turbine Emission Factor 21 21	bine (MMct/yr) SG (MMct/yr) Ict/yr) EU-3 NG HRSG Emission Factor 10 10	1,165 675 490 NG EF Units Ib/MMcf	= EU-1 Max Nature = Remaining NG C Fuel Oil C CT Fuel Oil PTE Emissions (TPY) 0.89 0.89	Operation HRSG NG PTE Emissions (TPY) 0.14 0.14	MMct/yr) Natural Gas CT NG PTE Emissions (TPY) 6.66 6.66	HRSG NG PTE Emissions (TPY) 1.83 1.83	PTE Emissions (TPY) 0.76 0.76	PTE Emission: (TPY) 10.28 10.28
329 5015 4951 4,555 394.2 1,026 138 TE for Fuel Oil (Pollutant PM PM10 PM2.5	= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Ma = EU-3 HRSG Mau = NG Heat Value (= Fuel Oil Heat Va Operational Scens EU-1 FO Emission Factor 0.59 0.59	3 Fuel Oil Group Lise (1000 gal/yr) se (n the two boilers, e imit (1000 gal/yr) al/yr) Gal) EU-3 FO Emission Emission Factor 5.4 5.4 5.4	FO EF Units Ib/1000 gal Ib/1000 gal	Info for Pollutant 675 666 394.2 634 366 165 EU-1 NG Emission Factor 9.2 9.2	s Other than NOx = EU-1 Max Natu = EU-2 Max Natu = EU-3 HRSG Ma = EU-3 Remaining = EU-3 Remaining = Boiler Remainin EU-2 NG Emission Factor 2.2 2.2 2.2	al Gas (MMcf/yr) al Gas (MMcf/yr) al Gas (MMcf/yr) al Gas (MMcf/yr) lose (Mmcf/yr) lose (Ampacity - Turl) lose (Ampacity - HR: g NG Capacity - HR: g NG Capacity (MM EU-3 lose Turbine Emission Factor 21 21 21	bine (MMct/yr) SG (MMct/yr) Ict/yr) EU-3 NG HRSG Emission Factor 10 10	1,165 675 490 NG EF Units Ib/MMcf Ib/MMcf	= EU-1 Max Nature = Remaining NG C Fuel Oil C CT Fuel Oil PTE Emissions (TPY) 0.89 0.89	Operation HRSG NG PTE Emissions (TPY) 0.14 0.14	MMct/yr) Natural Gas CT NG PTE Emissions (TPY) 6.66 6.66 6.66 6.66	HRSG NG PTE Emissions (TPY) 1.83 1.83 1.83	PTE Emissions (TPY) 0.76 0.76 0.76	PTE Emission: (TPY) 10.28 10.28
329 5015 4951 4,555 394.2 1,026 138 PTE for Fuel Oil (Pollutant PM PM10 PM2.5 CO	= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Ma = EU-3 HRSG Max = NG Heat Value (= Fuel Oil Heat Value (= Fuel Oil Heat Value (EU-1 FO Emission Factor 0.59 0.59 0.17	3 Fuel Oil Group Lise (1000 gal/yr) se (1000 gal/yr) se (1000 gal/yr) se (1000 gal/yr) se (1000 gal/yr) lue (MMBtu/1000 Cario EU-2 FO Emission Factor 0.55 0.55 0.19	n the two boilers, e imit (1000 gal/yr) al/yr) Gal) EU-3 FO Emission Emission Factor 5.4 5.4 5.4 17	FO EF Units Ib/1000 gal Ib/1000 gal Ib/1000 gal	Info for Pollutant 675 666 394.2 634 366 165 EU-1 NG Emission Factor 9.2 9.2 9.2 0.7	s Other than NOx = EU-1 Max Natu = EU-2 Max Natu = EU-3 HRSG Ma = EU-3 Remaining = Boiler Remaining = Boiler Remaining EU-2 NG Emission Factor 2.2 2.2 2.2 14.8	al Gas (MMcf/yr) al Gas (MMcf/yr) al Gas (MMcf/yr) al Gas (MMcf/yr) Gas (Mmcf/yr) gas (Mmcf/yr) gas (Mmcf/yr) gas (Mmcf/yr) gas (Mmmcf/yr) gas (Mmmmcf/yr) gas (Mmmmmcf/yr) gas (Mmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm	bine (MMct/yr) SG (MMct/yr) Ict/yr) EU-3 NG HRSG Emission Factor 10 10 73	NG EF Units Ib/MMcf Ib/MMcf Ib/MMcf	= EU-1 Max Nature = Remaining NG C Fuel OII C CT Fuel Oil PTE Emissions (TPY) 0.89 0.89 0.89 2.80	Operation HRSG NG PTE Emissions (TPY) 0.14 0.14 1.04	Natural Gas CT NG PTE Emissions (TPY) 6.66 6.66 6.66 19.33	HRSG NG PTE Emissions (TPY) 1.83 1.83 1.83 1.83	PTE Emissions (TPY) 0.76 0.76 0.76 1.23	PTE Emissions (TPY) 10.28 10.28 10.28 37.7
329 5015 4951 4,555 394.2 1,026 138 TE for Fuel Oil (Pollutant PM PM10 PM2.5 CO NOX	= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-2 Max NG U = EU-3 Turbine Ma = NG Heat Value (= Fuel Oil Heat Value (= Fuel Oil Heat Value (= Fuel Oil Feator (FO Emission Factor (0.59 ().59 ().59 ().17 ().18.3	3 Fuel Oil Group Lise (1000 gal/yr) se (1000 gal/yr) xe (1000 gal/yr) x FO Use (1000 gal/yr) x FO Use (1000 gal/yr) y the (100	n the two boilers, e imit (1000 gal/yr) al/yr) Gal) EU-3 FO Emission Factor 5.4 5.4 5.4 17 21.7	FO EF Units Ib/1000 gal b/1000 gal b/1000 gal b/1000 gal b/1000 gal b/1000 gal b/1000 gal b/1000 gal b/1000 gal	Info for Pollutant 675 666 394.2 634 366 165 EU-1 NG Emission Factor 9.2 9.2 9.2 0.7	s Other than NOx = EU-1 Max Natu = EU-2 Max Natu = EU-3 HRSG Ma = EU-3 Remaining = Boiler Remaining = Boiler Remaining EU-2 NG Emission Factor 2.2 2.2 2.2 14.8 11.8	al Gas (MMcf/yr) al Gas (MMcf/yr) al Gas (MMcf/yr) x NG Use (MMcf/yr) x NG Capacity - Turl NG Capacity - HR: g NG Capacity (MM EU-3 NG Turbine Emission Factor 21 21 21 61 37.3	bine (MMct/yr) SG (MMct/yr) Ict/yr) EU-3 NG HRSG Emission Factor 10 10 73	NG EF Units Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf	= EU-1 Max Nature = Remaining NG C Fuel Oil C CT Fuel Oil PTE Emissions (TPY) 0.89 0.89 0.89 2.80 3.56	Operation HRSG NG PTE Emissions (TPY) 0.14 0.14 1.04	MMcf/yr) Natural Gas CT NG PTE Emissions (TPY) 6.66 6.66 6.66 19.33 9.15	HRSG NG PTE Emissions (TPY) 1.83 1.83 1.83 1.83	PTE Emissions (TPY) 0.76 0.76 0.76 1.23 37.40	PTE Emissions (TPY) 10.28 10.28 10.28 37.7 50.1
329 5015 4951 4,555 394.2 1,026 138 TE for Fuel Oil (Pollutant PM PM10 PM2.5 CO NOX SO2	= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Mas = EU-3 HRSG Mas = NG Heat Value (= Fuel Oil Heat Va Operational Scension EU-1 FO Emission Factor 0.59 0.59 0.17 18.3 71	3 Fuel Oil Group Lise (1000 gal/yr) se (NG Use (MMCf)yr MMBtu/MMCF) llue (MMBtu/1000 Cario EU-2 FO Emission Factor 0.55 0.55 0.19 10.8 71	n the two boilers, e imit (1000 gal/yr) al/yr)) Gal) EU-3 FO Emission Factor 5.4 5.4 17 21.7 69.7	FO EF Units Ib/1000 gal	Info for Pollutant 675 666 394.2 634 366 165 EU-1 NG Emission Factor 9.2 9.2 9.2 1111	s Other than NOx = EU-1 Max Natu = EU-2 Max Natu = EU-3 HRSG Ma = EU-3 Remaining = EU-3 Remaining = Boiler Remainin EU-2 NG Emission Factor 2.2 2.2 14.8 11.8	al Gas (MMcf/yr) al Gas (MMcf/yr) al Gas (MMcf/yr) x NG Use (MMcf/yr) x NG Capacity - Turl y NG Capacity - HR: g NG Capacity (MM EU-3 NG Turbine Emission Factor 21 21 21 61 37.3 1.7	EU-3 NG HRSG Emission Factor 10 10 73 7 1.7	NG EF Units Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf	= EU-1 Max Nature = Remaining NG C Fuel Oil C CT Fuel Oil PTE Emissions (TPY) 0.89 0.89 0.89 2.80 3.56 11.46	Operation HRSG NG PTE Emissions (TPY) 0.14 0.14 1.04 0.02	MMct/yr) Natural Gas CT NG PTE Emissions (TPY) 6.66 6.66 19.33 9.15 0.54	HRSG NG PTE Emissions (TPY) 1.83 1.83 1.83 1.335	PTE Emissions (TPY) 0.76 0.76 0.76 1.23 37.40 0.14	PTE Emissions (TPY) 10.28 10.28 10.28 37.7 50.1 12.5
329 5015 4951 4,555 394.2 1,026 138 TE for Fuel Oil 0 PM10 PM10 PM2.5 CO NOX SO2 VOC	= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Ma = EU-3 HRSG Mav = NG Heat Value (= Fuel Oil Heat Va Operational Scensions EU-1 FO Emission Factor 0.59 0.59 0.59 0.59 0.17 18.3 71 0.6	3 Fuel Oil Group Lise (1000 gal/yr) se (n the two boilers, e imit (1000 gal/yr) al/yr) Gal) EU-3 FO Emission Emission Factor 5.4 5.4 17 21.7 69.7 4.9	FO EF Units 1b/1000 gal	Info for Pollutant 675 666 394.2 634 366 165 EU-1 NG Emission Factor 9.2 9.2 9.2 0.7 111 1.7 4.0	s Other than NOx = EU-1 Max Natu = EU-2 Max Natu = EU-3 HRSG Ma = EU-3 Remaining = EU-3 Remaining = Boiler Remainin EU-2 NG Emission Factor 2.2 2.2 2.2 14.8 11.8 11.7 5.5	al Gas (MMcf/yr) Al Gapacity - Turl Al Gapacity - HR: By Gapacity - HR: By Gapacity - HR: By Gapacity (MM EU-3 NG Turbine Emission Factor 21 21 21 61 37.3 1.7 35	EU-3 NG HRSG Emission Factor 10 10 73 1.7 16	NG EF Units Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf	= EU-1 Max Nature = Remaining NG C Fuel Oil C CT Fuel Oil PTE Emissions (TPY) 0.89 0.89 0.89 2.80 3.56 11.46 0.81	Operation HRSG NG PTE Emissions (TPY) 0.14 0.14 1.04 0.02 0.23	MMct/yr) Natural Gas CT NG PTE Emissions (TPY) 6.66 6.66 6.66 19.33 9.15 0.54 11.09	HRSG NG PTE Emissions (TPY) 1.83 1.83 1.83 1.335 0.31 2.93	PTE Emissions (TPY) 0.76 0.76 1.23 37.40 0.14 0.45	PTE Emissions (TPY) 10.28 10.28 10.28 37.7 50.1 12.5 15.5
329 5015 4951 4,555 394.2 1,026 138 TE for Fuel Oil (Pollutant PM PM10 PM2.5 CO NOX SO2	= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Mas = EU-3 HRSG Mas = NG Heat Value (= Fuel Oil Heat Va Operational Scension EU-1 FO Emission Factor 0.59 0.59 0.17 18.3 71	3 Fuel Oil Group Lise (1000 gal/yr) se (NG Use (MMCf)yr MMBtu/MMCF) llue (MMBtu/1000 Cario EU-2 FO Emission Factor 0.55 0.55 0.19 10.8 71	n the two boilers, e imit (1000 gal/yr) al/yr)) Gal) EU-3 FO Emission Factor 5.4 5.4 17 21.7 69.7	FO EF Units Ib/1000 gal	Info for Pollutant 675 666 394.2 634 366 165 EU-1 NG Emission Factor 9.2 9.2 9.2 1111	s Other than NOx = EU-1 Max Natu = EU-2 Max Natu = EU-3 HRSG Ma = EU-3 Remaining = EU-3 Remaining = Boiler Remainin EU-2 NG Emission Factor 2.2 2.2 14.8 11.8	al Gas (MMcf/yr) al Gas (MMcf/yr) al Gas (MMcf/yr) x NG Use (MMcf/yr) x NG Capacity - Turl y NG Capacity - HR: g NG Capacity (MM EU-3 NG Turbine Emission Factor 21 21 21 61 37.3 1.7	EU-3 NG HRSG Emission Factor 10 10 73 7 1.7	NG EF Units Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf	= EU-1 Max Nature = Remaining NG C Fuel Oil C CT Fuel Oil PTE Emissions (TPY) 0.89 0.89 0.89 2.80 3.56 11.46	Operation HRSG NG PTE Emissions (TPY) 0.14 0.14 1.04 0.02	MMct/yr) Natural Gas CT NG PTE Emissions (TPY) 6.66 6.66 19.33 9.15 0.54	HRSG NG PTE Emissions (TPY) 1.83 1.83 1.83 1.335	PTE Emissions (TPY) 0.76 0.76 0.76 1.23 37.40 0.14	PTE Emission: (TPY) 10.28 10.28 10.28 37.7 50.1 12.5
329 5015 4951 4,555 394.2 1,026 138 TE for Fuel Oil 0 PM10 PM10 PM2.5 CO NOX SO2 VOC	= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Ma = EU-3 HRSG Mav = NG Heat Value (= Fuel Oil Heat Va Operational Scensions EU-1 FO Emission Factor 0.59 0.59 0.59 0.59 0.17 18.3 71 0.6	3 Fuel Oil Group Lise (1000 gal/yr) se (n the two boilers, e imit (1000 gal/yr) al/yr) Gal) EU-3 FO Emission Emission Factor 5.4 5.4 17 21.7 69.7 4.9	FO EF Units 1b/1000 gal	Info for Pollutant 675 666 394.2 634 366 165 EU-1 NG Emission Factor 9.2 9.2 9.2 0.7 111 1.7 4.0	s Other than NOx = EU-1 Max Natu = EU-2 Max Natu = EU-3 HRSG Ma = EU-3 Remaining = EU-3 Remaining = Boiler Remainin EU-2 NG Emission Factor 2.2 2.2 2.2 14.8 11.8 11.7 5.5	al Gas (MMcf/yr) Al Gapacity - Turl Al Gapacity - HR: By Gapacity - HR: By Gapacity - HR: By Gapacity (MM EU-3 NG Turbine Emission Factor 21 21 21 61 37.3 1.7 35	EU-3 NG HRSG Emission Factor 10 10 73 1.7 16	NG EF Units Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf Ib/MMcf	= EU-1 Max Nature = Remaining NG C Fuel Oil C CT Fuel Oil PTE Emissions (TPY) 0.89 0.89 0.89 2.80 3.56 11.46 0.81	Operation HRSG NG PTE Emissions (TPY) 0.14 0.14 1.04 0.02 0.23	MMct/yr) Natural Gas CT NG PTE Emissions (TPY) 6.66 6.66 6.66 19.33 9.15 0.54 11.09	HRSG NG PTE Emissions (TPY) 1.83 1.83 1.83 1.335 0.31 2.93	PTE Emissions (TPY) 0.76 0.76 1.23 37.40 0.14 0.45	PTE Emissions (TPY) 10.28 10.28 10.28 37.7 50.1 12.5 15.5
329 5015 4951 4,555 394.2 1,026 138 PTE for Fuel Oil (PMI) PM10 PM2.5 CO NOX SO2 VOC GHG (CO2 eq)	= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Mas = EU-3 HRSG Mas = NG Heat Value (= Fuel Oil Heat Va Operational Scensions EU-1 FO Emission Factor 0.59 0.59 0.59 0.17 18.3 71 0.6 164	3 Fuel Oil Group Lise (1000 gal/yr) se (mit (1000 gal/yr) al/yr) (al/yr) (b) Gal) EU-3 FO Emission Factor 5.4 5.4 17 21.7 69.7 4.9 164	FO EF Units Ib/1000 gal Ib	Info for Pollutant 675 666 394.2 634 366 165 EU-1 NG Emission Factor 9.2 9.2 9.2 0.7 111 1.7 4.0 117	EU-2 NG Emission Factor 2.2 2.2 14.8 1.7 5.5 117	al Gas (MMcf/yr) Al Gapacity - Turl Al Gapacity - HR: Butter of the following of the follow	EU-3 NG HRSG Emission Factor 10 10 73 1.7 16 117	NG EF Units By MMcf By MMcf	= EU-1 Max Nature = Remaining NG C Fuel Oil C CT Fuel Oil PTE Emissions (TPY) 0.89 0.89 0.89 2.80 3.56 11.46 0.81 3,714	Operation HRSG NG PTE Emissions (TPY) 0.14 0.14 1.04 0.02 0.23 1,709	MMct/yr) Natural Gas CT NG PTE Emissions (TPY) 6.66 6.66 6.66 19.33 9.15 0.54 11.09	HRSG NG PTE Emissions (TPY) 1.83 1.83 1.83 1.335 0.31 2.93	PTE Emissions (TPY) 0.76 0.76 1.23 37.40 0.14 0.45	PTE Emissions (TPY) 10.28 10.28 10.28 37.7 50.1 12.5 15.5
329 5015 4951 4,555 394.2 1,026 138 PTE for Fuel Oil (PMI) PM10 PM2.5 CO NOX SO2 VOC GHG (CO2 eq)	= EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Mas = EU-3 HRSG Mas = NG Heat Value (= Fuel Oil Heat Va Operational Scensions EU-1 FO Emission Factor 0.59 0.59 0.59 0.17 18.3 71 0.6 164	3 Fuel Oil Group Lise (1000 gal/yr) se (mit (1000 gal/yr) al/yr) (al/yr) (b) Gal) EU-3 FO Emission Factor 5.4 5.4 17 21.7 69.7 4.9 164	FO EF Units Ib/1000 gal Ib	Info for Pollutant 675 666 394.2 634 366 165 EU-1 NG Emission Factor 9.2 9.2 9.2 0.7 111 1.7 4.0 117	EU-2 NG Emission Factor 2.2 2.2 14.8 1.7 5.5 117	al Gas (MMcf/yr) Al Gapacity - Turl Al Gapacity - HR: Butter of the following of the follow	EU-3 NG HRSG Emission Factor 10 10 73 1.7 16 117	NG EF Units By MMcf By MMcf	= EU-1 Max Nature = Remaining NG C Fuel Oil C CT Fuel Oil PTE Emissions (TPY) 0.89 0.89 0.89 2.80 3.56 11.46 0.81	Operation HRSG NG PTE Emissions (TPY) 0.14 0.14 1.04 0.02 0.23 1,709	MMct/yr) Natural Gas CT NG PTE Emissions (TPY) 6.66 6.66 6.66 19.33 9.15 0.54 11.09	HRSG NG PTE Emissions (TPY) 1.83 1.83 1.83 1.335 0.31 2.93	PTE Emissions (TPY) 0.76 0.76 1.23 37.40 0.14 0.45	PTE Emissions (TPY) 10.28 10.28 10.28 37.7 50.1 12.5 15.5
329 5015 4951 4,555 394.2 1,026 138 TE for Fuel Oil (Pollutant PM PM10 PM2.5 CO NOX SO2 VOC GHG (CO2 eq) lotes: Issumes all fuel o	= EU-1, EU-2, EU- = EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Ma = EU-3 HRSG Max = NG Heat Value (= Fuel Oil Heat Va Operational Scensional Scensi	3 Fuel Oil Group Lise (1000 gal/yr) se (1000 ga k NG Use (MMBtw/1000 Cario EU-2 FO Emission Factor 0.55 0.55 0.19 10.8 71 0.2 164	n the two boilers, e imit (1000 gal/yr) al/yr) Gal) EU-3 FO Emission Emission Factor 5.4 5.4 17 21.7 4.9 164	FO EF Units Ib/1000 gal Ib	Info for Pollutant 675 666 394.2 634 366 165 EU-1 NG Emission Factor 9.2 9.2 0.7 111 1.7 4.0 117	s Other than NOx = EU-1 Max Natu = EU-2 Max Natu = EU-3 HRSG Ma = EU-3 Remaining = EU-3 Remaining = Boiler Remaining = Boiler Remaining EU-2 NG Emission Factor 2.2 2.2 14.8 11.8 1.7 5.5 117	al Gas (MMcf/yr) Al Gapacity - Turl Al Gapacity - HR: Butter of the following of the follow	EU-3 NG HRSG Emission Factor 10 10 73 1.7 16 117	NG EF Units By MMcf By MMcf	= EU-1 Max Nature = Remaining NG C Fuel Oil C CT Fuel Oil PTE Emissions (TPY) 0.89 0.89 0.89 2.80 3.56 11.46 0.81 3,714	Operation HRSG NG PTE Emissions (TPY) 0.14 0.14 1.04 0.02 0.23 1,709	MMct/yr) Natural Gas CT NG PTE Emissions (TPY) 6.66 6.66 6.66 19.33 9.15 0.54 11.09	HRSG NG PTE Emissions (TPY) 1.83 1.83 1.83 1.335 0.31 2.93	PTE Emissions (TPY) 0.76 0.76 1.23 37.40 0.14 0.45	PTE Emissions (TPY) 10.28 10.28 10.28 37.7 50.1 12.5 15.5
329 5015 4951 4,555 394.2 1,026 138 TE for Fuel Oil (Pollutant PM PM10 PM2.5 CO NOX SO2 VOC GHG (CO2 eq) lotes: ssumes all fuel o Ox assumes EU-	= EU-1, EU-2, EU- = EU-1, EU-2, EU- = EU-1 Max NG U = EU-2 Max NG U = EU-3 Turbine Ma = EU-3 HRSG Max = NG Heat Value (= Fuel Oil Heat Va Operational Scensional Scensi	3 Fuel Oil Group Lise (1000 gal/yr) se (n the two boilers, e imit (1000 gal/yr) al/yr) Ballyr) BU-3 FO Emission Emission Factor 5.4 5.4 5.4 17 21.7 69.7 4.9 164 ighest emission factoring on fuel oil, and atting on fuel oil oil, and atting on fuel oil oil oil oil oil oil oil oil oil oi	FO EF Units Ib/1000 gal Compared to the second	Info for Pollutant 675 666 394.2 634 366 165 EU-1 NG Emission Factor 9.2 9.2 0.7 111 1.7 4.0 117	s Other than NOx = EU-1 Max Natu = EU-2 Max Natu = EU-3 HRSG Ma = EU-3 Remaining = EU-3 Remaining = Boiler Remaining = Boiler Remaining EU-2 NG Emission Factor 2.2 2.2 14.8 11.8 1.7 5.5 117	al Gas (MMcf/yr) Al Gapacity - Turl Al Gapacity - HR: Butter of the following of the follow	EU-3 NG HRSG Emission Factor 10 10 73 1.7 16 117	NG EF Units By MMcf By MMcf	= EU-1 Max Nature = Remaining NG C Fuel Oil C CT Fuel Oil PTE Emissions (TPY) 0.89 0.89 0.89 2.80 3.56 11.46 0.81 3,714	Operation HRSG NG PTE Emissions (TPY) 0.14 0.14 1.04 0.02 0.23 1,709	MMct/yr) Natural Gas CT NG PTE Emissions (TPY) 6.66 6.66 6.66 19.33 9.15 0.54 11.09	HRSG NG PTE Emissions (TPY) 1.83 1.83 1.83 1.335 0.31 2.93	PTE Emissions (TPY) 0.76 0.76 1.23 37.40 0.14 0.45	PTE Emissions (TPY) 10.28 10.28 10.28 37.7 50.1 12.5 15.5

University of Oregon Permit No. 208557

Expiration Date: February 9, 2029

Emission Details										
HAP PTE Calculation -	Fuel Limitations									
1,165	= EIL1 EIL2 EII	-3 Natural Gas Gro	up Limit (MMcf/yr)		79	= EU-1 Max Heat	nnut (MMRtu/hr)			
329		-3 Fuel Oil Group L			78	= EU-2 Max Heat				
			iiiii (1000 Gai/yi)							
1,026	= NG Heat Value				675	= EU-1 Max NG U				
138	= Fuel Oil Heat Va	alue (MMBtu/1000 (Gal)		666	= EU-2 Max NG U				
					683	= EU-3 Turbine Ma	x NG Use (MMcf/)	/r)		
					394	= EU-3 HRSG Max	NG Use (MMcf/y	r)		
					4,555	= EU-3 Turbine Ma	x FO Use (1000 G	Sal/yr)		
							,			
Total HAP FHAP/TAC E	missions									
	1110010110	Boiler	Boiler	Turbine	Turbine	HRSG				
		NG Emission	FO Emission	NG Emission	FO Emission	NG Emission			Fuel Oil	Natural G
	040/050						F. desert	010		
	CAS/DEQ	Factor	Factor	Factor	Factor	Factor	Federal	CAO	Scenario	Scenari
Pollutant	Number	(lbs/MMCF)	(lbs/1000 Gal)	(lbs/MMCF)	(lbs/1000 Gal)	(lbs/MMCF)	HAP	Air Toxic	(TPY)	(TPY)
Organics										
1,1,2,2-Tetrachloroethane	79-34-5						Yes	Yes	0.0E+00	0.0E+00
1,1,2-Trichloroethane	79-00-5						Yes	Yes	0.0E+00	0.0E+00
1,2-Dichloropropane	78-87-5		1				Yes	Yes	0.0E+00	0.0E+00
1,3-Dichloropropene	542-75-6						Yes	Yes	0.0E+00	0.0E+00
		2 105 02	2 545 04	4.000.00	7 005 04	2 105 02				
Acetaldehyde	75-07-0	3.10E-03	3.51E-01	4.08E-02	7.83E-01	3.10E-03	Yes	Yes	1.4E-01	2.0E-02
Acrolein	107-02-8	2.70E-03	3.51E-01	6.53E-03	3.39E-02	2.70E-03	Yes	Yes	8.3E-03	7.8E-03
Benzene	71-43-2	5.80E-03	4.40E-03	1.22E-02	1.86E-01	5.80E-03	Yes	Yes	3.6E-02	5.6E-03
Benzo(a)pyrene	50-32-8	1.20E-06				1.20E-06	Yes	Yes	2.9E-07	2.9E-07
1,3-Butadiene	106-99-0		1.48E-02	4.39E-04	2.17E-01		Yes	Yes	3.6E-02	3.6E-04
Carbon Tetrachloride	56-23-5						Yes	Yes	0.0E+00	0.0E+00
Chloroform	67-66-3						Yes	Yes	0.0E+00	0.0E+0
Diesel PM	200						No	Yes	0.0E+00	0.0E+0
		0.005.00	0.005.04	0.005.00	4.005.00	0.005.00				
Ethyl Benzene	100-41-4	6.90E-03	2.00E-04	3.26E-02	1.09E-02	6.90E-03	Yes	Yes	1.4E-02	1.3E-02
Ethylene Dibromide	106-93-4						Yes	Yes	0.0E+00	0.0E+00
Ethylene Dichloride	107-06-2						Yes	Yes	0.0E+00	0.0E+00
Formaldehyde	50-00-0	1.23E-02	3.51E-01	7.24E-01	1.73E+00	1.23E-02	Yes	Yes	5.2E-01	2.6E-01
Hexane	110-54-3	4.60E-03	3.50E-03		2.69E-02	4.60E-03	Yes	Yes	5.5E-03	1.2E-03
Methanol	67-56-1						Yes	Yes	0.0E+00	0.0E+00
Methylene Chloride	75-09-2						Yes	Yes	0.0E+00	0.0E+00
Naphthalene	91-20-3	3.00E-04	5.30E-03	1.33E-03	1.97E-02	3.00E-04	Yes	Yes	3.7E-03	6.0E-04
			4.45E-02	9.18E-04	3.62E-02					
POM (inc. PAHs)	401	1.00E-04	4.45E-02	9.18E-04	3.62E-02	1.00E-04	Yes	Yes	6.3E-03	9.6E-04
Propylene Oxide	75-56-9	5.30E-01				5.30E-01	Yes	Yes	1.3E-01	1.3E-01
Styrene	100-42-5						Yes	Yes	0.0E+00	0.0E+0
Toluene	108-88-3	2.65E-02	4.40E-03	1.33E-01	1.05E-01	2.65E-02	Yes	Yes	6.6E-02	5.2E-02
Vinyl Chloride	75-01-4						Yes	Yes	0.0E+00	0.0E+00
Xylenes	1330-20-7	1.97E-02	1.60E-03	6.53E-02	4.24E-02	1.97E-02	Yes	Yes	3.2E-02	2.7E-02
Inorganic Gases										
Ammonia	7664-41-7	3.2	2.9	18	2.9	3.2	No	Yes	7.0E+00	7.0E+00
	7647-01-0	J.2		10	0.1863	J.2			3.1E-02	
Hydrochloric Acid	/64/-01-0		0.1863		0.1863		Yes	Yes	3.1E-02	2.6E-03
Metals										
Arsenic	7440-38-2	2.0E-04	0.0016		0.0016	2.0E-04	Yes	Yes	3.1E-04	7.1E-05
Barium	7440-39-3	4.4E-03				4.4E-03	No	Yes	1.1E-03	1.1E-03
Beryllium	7440-41-7	1.2E-05				1.2E-05	Yes	Yes	2.9E-06	2.9E-06
Cadmium	7440-43-9	1.1E-03	0.0015		0.0015	1.1E-03	Yes	Yes	5.1E-04	2.9E-04
Chromium, Hexavalent	18540-29-9	1.4E-03	0.0001		0.0001	1.4E-03	Yes	Yes	3.5E-04	3.4E-04
Cobalt	7440-48-4	8.4E-05	0.0001		0.0001	8.4E-05	Yes	Yes	2.0E-05	2.0E-05
	7440-46-4	8.5E-04	0.0041		0.0041		No Yes		8.8E-04	
Copper						8.5E-04		Yes		2.6E-04
Lead Compounds	7439-92-1	5.0E-04	0.0083		0.0083	5.0E-04	Yes	Yes	1.5E-03	2.4E-04
Manganese	7439-96-5	3.8E-04	0.0031		0.0031	3.8E-04	Yes	Yes	6.0E-04	1.3E-04
Mercury	7439-97-6	2.6E-04	0.002		0.002	2.6E-04	Yes	Yes	3.9E-04	9.1E-05
Molybdenum	1313-27-5	1.7E-03				1.7E-03	No	Yes	4.0E-04	4.0E-04
Nickel	365	2.1E-03	0.0039		0.0039	2.1E-03	Yes	Yes	1.1E-03	5.6E-04
Selenium	7782-49-2	2.4E-05	0.0022		0.0022	2.4E-05	Yes	Yes	3.7E-04	3.7E-0
Vanadium	7440-62-2	2.4E-03 2.3E-03	0.0022		0.0022	2.4E-03 2.3E-03	No	Yes	5.5E-04	5.5E-0
			+		1					
Zinc	7440-66-6 AP EF (lb/MMBtu) =	2.9E-02 6.0E-04	9.7E-03	9.9E-04	2.5E-02	2.9E-02 6.0E-04	No	Yes Total HAP (TPY) =	7.0E-03 1.03	7.0E-03
										0.52

Fuel oil scenario assumes full operation of the turbine on all fuel oil and the remaining capacity of the turbine using natural gas, the full operation of the HRSG on natural gas, and the balance of natural gas to boilers.

Natural gas scenario assumes full operation of the turbine and HRSG on natural gas with the balance of the natural gas and 48 hours of fuel oil to a boiler.

Fuel high heat values are from ODEQ Fuel Combustion Greenhouse Gas Calculator (6/2021).

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