

Air Case ID: 12886 Permit Id: 4734

FIN No.:	A2622		
Company Name:	PR RNO PROPERTY OWNER 1, LLC		
HA Basin No: N/A	Increment Tracked ☐		
Permit No:	AP73745097 *	Select a Permit No ▼	
Date App. Received:	03/06/2026		*
Permit Writer:	Not Assigned (NA) ▼	*	
Case Type:	Class 1 OPTC New ▼ *		
Default ODS Date:	04/20/2026		*
Actual ODS Date:			
Date App. to be Closed:	10/17/2026		*
Stop Days:		Actual Date App. to be Closed:	10/17/2026
App. Incomplete?	☐		
Date App. Closed:			
Fee Paid (\$):	60000 *		
Case Description:			
Comments:			
Flag (For Class 4) :	None ▼		
Update Cancel			



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RECEIVED

MAR 06 2026

BAPC/BAQP

March 5, 2026

Jaimie Mara
Major Source Permitting Supervisor | Bureau of Air Pollution Control
Nevada Department of Environmental Protection
9805 Double R Road, Suite 200
Reno, NV 89521

Subject: New Class I OPTC Air Permit Application Package and Insignificant Activity Determination Package for Construction of the Peru Ridge Technology Facility located in Sparks, Nevada

Dear Ms. Mara:

On behalf of PR RNO Property Owner 1, LLC, BlueScape Environmental (BlueScape) has prepared a Class I Operating Permit to Construct (OPTC) permit application package to construct and operate a new stationary source and an Application for Determination of Insignificant Activities as defined under NAC 445B.288(4). The proposed Peru Ridge Technology Center (Facility) will be located within the Tahoe-Reno Industrial Center (TRIC) near Sparks, Nevada. This permit application, including the required permit application forms provided in Attachment A, is being submitted to the Nevada Division of Environmental Protection (NDEP) Bureau of Air Pollution Control (BAPC).

The Facility will be installing a P1 Power Plant consisting of natural gas-fueled prime engines with combined rating estimated at 218 megawatts (MW); 12 x compressed natural gas (CNG) pressure reducing system (PRS, only 6 operating at any time); diesel-fueled emergency black start engine (BSE) gensets with combined rating of 8.2 MW; diesel-fueled emergency backup data center (DC) engines with a combined rating estimated at 246 MW serving as backup power for a data center; Substation diesel-fueled emergency backup engines; fire pump engines; and associated diesel storage tanks, on a portion of an approximately 1,204-acre parcel. Aggreko will be the owner and operator of the prime engines and BSE gensets. Certarus will be the owner and operator of the CNG PRS units.

Specifically, as detailed in the provided specifications of Attachment B, the Facility design includes 136 x 2,146 bhp Aggreko Jenbacher J420 engines, 12 x CNG PRS units (only 6 units will ever run simultaneously), 6 x 1,370 kW diesel-fueled BSE gensets, 82 x 3.0 MW (4,393 bhp) Tier 4 Caterpillar 3516E engines, 2 x 1.25 MW Tier 2 Caterpillar C32 Substation engines, and 2 x 488 bhp Tier 3 Clarke C13H0-UFAD50

fire pump engines. The location of the facility and the proposed engine installation locations are also provided in Attachment B.

Each data center and Substation engine will have an associated 150-gallon diesel tank; the BSE gensets will each have a 1,240-gallon diesel tank; and the fire pumps will each have a 400-gallon diesel tank, for a total of 92 engine-associated tanks. The 92 engine-associated diesel storage tank units and PRS units are considered Insignificant Activities (IAs) by NDEP, exempt from permit requirements but required to be included in the Class I application. There will also be twelve (12) 40,000-gallon diesel storage tanks that will feed engine-associated tanks (especially data center engines), each of which exceeds the exemption threshold in NAC 445B.288(2)(d); however, the Facility is submitting a separate Application for Determination of Insignificant Activities under NAC 445B.288(4), requesting that the 40,000-gallon tanks be formally designated as Insignificant Activities due to very low emissions.

This application is proposing a combined facility-wide permit limitation of 1,757,060 gallons/year of diesel fuel for all the emergency diesel engines, and a limitation of 16,964,636 MMBtu per year of natural gas for the P1 gas engines and PRS units, with a rolling 12-month sum for each. The application is also requesting an emissions limitation of 250 tons/year for each criteria pollutant, rolling 12-month sum.

Maximum potential to emit (PTE) was calculated for NO_x, CO, VOC, SO_x, PM₁₀, PM_{2.5}, and CO_{2e}. For all criteria pollutants, the PTE will be below the PSD threshold of 250 TPY, but PTE of CO and NO_x will be above the Class I Title V threshold of 100 TPY, and hazardous air pollutants (HAPs) will exceed the thresholds of 10 TPY for individual HAP emissions and 25 TPY for all HAPs combined, due to formaldehyde emissions.

This application packages contains the following attachments:

- **Class I Operating Permit to Construct (OPTC) Package**
 - Attachment A: Class I OPTC Forms:
 - Permit Application General Information Form
 - Combustion Equipment Permit Application Forms:
 - P1 Power Plant Engines - 2,146 bhp (1.6 MW) Jenbacher J420 Gas-Fired Generators
 - Black Start Engine Gensets – 1,864 bhp (1,370 kW) Tier 4 Volvo Penta Diesel Black Start Engine Gensets
 - Data Center Emergency Backup Engines - 4,393 bhp (3.0 MW) Tier 4 Caterpillar 3516E (EM4718-02) Diesel-Fired Backup Generators
 - Substation Engines – 1,676 bhp (1.25 MW) Tier 2 Caterpillar C32 Diesel-Fired Backup Generators
 - Fire Pump Engines - 488 bhp (364 kW) Tier 3 Clarke C18H0-UFAD12 Diesel-Fired Generators
 - Industrial Process Application Form:
 - Certarus CNG PRS Units
 - Liquid Storage Tank Application Forms:

- 150-Gallon Tanks
 - 400-Gallon Tanks
 - 1,240-Gallon Tanks
 - Combustion Equipment, Greenhouse Gases, HAPs and Facility-wide PTE Forms
 - Surface Area Disturbance Application
 - Equipment Location (UTM Coordinates) Form
 - Property Line and Building Location Coordinates Form
- Attachment B: Permit Application Report:
 - Project Description
 - Emission Summary
 - Regulatory Review
 - Site Drawings
 - Detailed Emissions Calculations
 - Equipment Specifications
- Attachment C: Air Dispersion Modeling Report
- **Application for Determination of Insignificant Activities as Defined Under NAC 445B.288(4) Package**
 - Attachment A: Determination of Insignificant Activities Forms
 - General Company Information Form
 - Liquid Storage Tank Application Form
 - Attachment B: TANKS Modeling Output

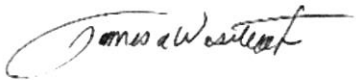
Electronic air dispersion modeling files will be submitted electronically separately. The initial permit processing fee payments of \$60,000 for the Class 1 OPTC application and \$1,000 for the Storage Tank IA Application for Determination of Insignificant Activities will be sent electronically.

If you have any questions regarding this permit application package, please contact me at (858) 774-2009.

Best regards,

BLUESCAPE ENVIRONMENTAL

a California Corporation



James A. Westbrook, CCM
President

Enclosures

ATTACHMENT A
CLASS I OPTC FORMS

Class I

**Air Quality Operating Permit (AQOP), Operating Permit to Construct (OPTC), and Prevention of Significant Deterioration (PSD)
Application Form**

Facility Name: Peru Ridge Technology Park
Existing Facility ID: N/A – New Facility
Existing Class I AQOP/OPTC: N/A – New Facility
Type of Facility: Data Center

Number of Units (including IA's) in Facility: 332
Number of Units (including IA's) Affected in Action: 332

Application Type:

- | | |
|--|---|
| ☐ New AQOP | ☐ Rollover OPTC to Existing AQOP |
| ☐ Minor Revision of Existing AQOP | ☐ Administrative Revision of Existing AQOP |
| ☐ Significant Revision of Existing AQOP | ☐ New PSD AQOP |
| ☐ Renewal of Existing AQOP | ☐ Major PSD Revision of AQOP |
| ☒ New OPTC | ☐ New PSD OPTC |
| ☐ Revision of OPTC | ☐ Major PSD Revision of OPTC |
| ☐ Rollover OPTC to a New AQOP | |



Please Submit Application to:

Nevada Division of Environmental Protection
Bureau of Air Pollution Control, Class I Permitting Branch
901 South Stewart Street, Suite 4001
Carson City, Nevada 89701-5249
Phone (775) 687-9349

September 2024
(Ver. 5)

IMPORTANT INFORMATION

- The Application packet contains:
 - General Company Information Form
 - Industrial Process Application Form
 - Combustion Equipment Application Form
 - Storage Silo Application Form
 - Liquid Storage Tanks Application Form
 - Facility-Wide Potential to Emit Table
 - Surface Area Disturbance Form
 - Plant Boundary Coordinates Form
 - Plant Building Parameters Forms
 - Application Certification Document with Required Attachments
- Please see the Guidance Document located at <https://ndep.nv.gov/air/permitting/download-permit-forms> for additional instructions on how to complete the application.
- The application is available from the Nevada Division of Environmental Protection – Bureau of Air Pollution Control (BAPC) in a Microsoft Word file, or on the internet at <https://ndep.nv.gov/air/permitting/download-permit-forms>. A printed copy of the application must be submitted (mailed or hand delivered), along with an electronic version.
- The application filing fee required by Nevada Administrative Code (NAC) 445B.327 must be submitted with the completed application. Checks must be made payable to the “Nevada State Treasurer, Environmental Protection” with “BAPC” noted in the memo line. Fees may also be submitted electronically at <https://epayments.ndep.nv.gov/>.
- This application shall be used for a new, renewal, and revision of Class I sources, including AQOP, OPTC, rollover OPTC, and PSD actions.
- An application for a Class I AQOP, OPTC, and PSD must be signed by the Responsible Official, as defined in NAC 445B.156. The certification document (signature page) is the last page of the application and the original “wet” signature must be provided.
- All items in the application must be addressed. If an item does not apply “N/A” or similar notation must be entered in the appropriate blank. All other information must be provided. Incomplete applications will be returned to the Responsible Official within:
 - 45 days for a new or revision of Class I OPTC. (NAC 445B.3364(1))
 - 30 days for sources subject to permitting requirements set forth in 40 CFR 52.21 applying for a new or revision of Class I PSD OPTC. (NAC 445B.3364(2))
 - 60 days for a new, significant revision, or renewal of Class I AQOP. (NAC 445B.3395(1), NAC 445B.3443(3))
 - 10 working days for a minor revision of Class I AQOP. (NAC 445B.3395(5))
 - 30 days for sources subject to permitting requirements set forth in 40 CFR 52.21 applying for a new of Class I PSD. (NAC 445B.3395(2))
 - 45 days for an administrative revision of Class I OPTC. (NAC 445B.3441(2) and NAC 445B.3364(1))

IMPORTANT INFORMATION (continued)

- For the renewal of a Class I Operating Permit, a **complete** application and corresponding processing fee must be submitted in accordance with NAC 445B.3443(2) at least 240 days prior to the expiration date of the current permit but not earlier than 18 months. The BAPC suggests that the application be submitted well in advance of the timeline outlined in NAC 445B.3443 to ensure the application is deemed complete. The BAPC has 60 days to deem the application complete or incomplete. As stated above, incomplete applications will be returned within 60 days of the receipt of the application. Therefore, the BAPC recommends the application be submitted at least 300 days prior to expiration of the current permit.
- For stationary sources subject to the provisions regarding new source review set forth in United States Code (U.S.C.) Title 42 7501 through 7515, inclusive (nonattainment areas), include all information required by U.S.C. Title 42 7503 pursuant to NAC 445B.3363(2)(b)(3).
- For a proposed new major source or a proposed major modification to an existing stationary source that is subject to the provisions of 40 CFR 52.21, include all information required by 40 CFR 52.21 pursuant to NAC 445B.3368(3)(a).
- For a proposed new major source, or a proposed significant revision to an existing stationary source which is not subject to the provisions of 40 CFR 52.21, include all information as required by NAC 445B.308 through 445B.313, inclusive, pursuant to NAC 445B.3368(3)(b).
- For a proposed new major source or a proposed significant revision to an existing stationary source which is subject to the requirements of U.S.C. Title 42 7412 regarding hazardous air pollutants, include all information required by NAC 445B.308 through 445B.313, inclusive, pursuant to NAC 445B.3368(3)(c).

GENERAL COMPANY INFORMATION FORM

1. **Briefly describe the permitted facility's process and include the Standard Industrial Classification (SIC) number and North American Industry Classification System (NAICS). Add details in the attached Process Narrative.**

The Peru Ridge Technology Center will operate both prime and emergency power systems. Prime power will be supplied by 136 Jenbacher J420 natural gas engines, supported by 12 compressed natural gas (CNG) pressure reducing system (PRS) units (only 6 will operate simultaneously), and six 1,370-kW Tier 4 black start diesel engine gensets. Emergency power will be provided by 82 Tier 4 Caterpillar 3516E diesel generators. Additional backup equipment includes two Tier 2 Caterpillar C32 substation diesel engines (limited to 100 hours per year) and two Tier 3 Clark C18H0-UFAD12 diesel fire pump engines (limited to 40 hours per year). All of the diesel-fueled emergency engines, except for the fire pump engines, will be routinely used for equipment maintenance and testing purposes, and will be available for NV Energy's emergency demand-response program under Energy Emergency Alert (EEA) Levels 1 and 2, up to total 100 hours/year. Emergency engines will run at full load only during utility power instability or outages, or when called upon to operate under the DR program. The facility's SIC code is 7374 and NAICS code is 518210.

2. **Company Name and Address that are to appear on the operating permit [NAC 445B.295(1)]:**

Name: PR RNO Property Owner 1, LLC
Address: 3200 Cherry Creek S Drive, Suite 700
City: Denver
State: Colorado Zip Code: 80209

3. **Owner's Name and Address [NAC 445B.295(1)]:**

Name: PR RNO Property Owner 1, LLC
Address: 3200 Cherry Creek S Drive, Suite 700
City: Denver
State: Colorado Zip Code: 80209

4. **Facility Name and Physical Address, if different from #2 [NAC 445B.295(1)]:**

Name: Peru Ridge Technology Park
Address: 2220 Peru Drive
City: Sparks
State: NV Zip Code: 89437

5. **If records required under the operating permit will be kept at a location other than the facility, specify that location [NAC 445B.295(7)]:**

Name: _____
Address: _____
City: _____
State: _____ Zip Code: _____

GENERAL COMPANY INFORMATION FORM (continued)

6. Responsible Official Name, Title and Mailing Address [NAC 445B.295(1)]:

Name: Chris Vonderhaar
Title: President, Fleet
Address: 7525 SE 24th Street, Suite 420
City: Mercer Island
State: WA Zip Code: 98040
Phone Number: 1-303-313-3010
Fax Number: _____
E-mail Address: _____

Is this a new Responsible Official? ☒ Yes ☐ No

If yes, and the Responsible Official (RO) does not meet the definition under NAC 445B.156 then please fill out the "Responsible Official Identification/Designation/Change Request Form" and mail it in.

(<https://ndep.nv.gov/air/permitting/download-permit-forms>)

7. Plant Manager or other appropriate Contact Name, Title and Address [NAC 445B.295(1)]:

Name: Michiel Versteeg
Title: Vice President, Health, Safety and Environmental
Address: 7525 SE 24th Street, Suite 420
City: Mercer Island
State: WA Zip Code: 98040
Phone Number: 1-720-552-9182
Fax Number: _____
E-mail Address: _____

8. Location and Driving Directions to the Facility (For Example: From Elko, Nevada, 4 miles south of I-80 at xx Interchange) [NAC 445B.295(8)]:

Hydrographic Basin (HA) Number: 83
HA Basin Name: Tracy Segment of Truckee River Basin
/ Storey County
Township(s): 19 N; Range(s): 22 E; Section(s): 10
19 22 03

UTM Coordinates for the Front Gate of the Facility (NAD 83, Zone 11):

4,378,859.92 m North; 285,446.49 m East;

Nearest City: Reno, NV

County: Storey

Driving Directions from nearest city to the Facility:

From Reno head east on I-80 and take the right exit for Exit 32- NV 439/USA Pkwy. Turn right onto Denmark Drive and left onto Peru Drive. The site location will be on the right-hand side.

GENERAL COMPANY INFORMATION FORM (continued)

9. **Emission Cap Requested [NAC 445B.070, NAC 445B.296(2), NAC 445B.296(3)]:**
☒ Yes ☐ No (If yes, provide details in the attached Process Narrative) Fleet is requesting a facility-wide natural gas combustion limit applied to the 136 P1 engines and 12 PRS units (only 6 operating at one time) of 16,964,636 MMBtu/yr HHV. PR RNO is requesting a facility-wide diesel fuel limit applied to the 82 data center engines for non-emergency operations, 6 dual engine black start engine gensets, 2 Substation engines, and 2 fire pump engines, of 1,757,060 gallons/year, 12-month rolling sum, and a limit to below 250 tons/year of each criteria pollutant, 12-month rolling sum.
10. **Important note** for completing the Industrial Process, Combustion Equipment, Storage Silo, and Liquid Storage Tank Application Forms: forms need to be included for all permitted emission units and insignificant activities. Provide additional forms as needed. All items in the application must be addressed. If an item does not apply, then "N/A" or similar notation (TDB, unknown, etc.) must be entered in the appropriate blank.
11. **Check one that applies:**
☐ Major Stationary Source [40 CFR 52.21]
☐ Minor Source [40 CFR 71.2]
☒ New Source Review (NSR) Synthetic Minor Source [40 CFR 49.167]
12. **Is the Facility subject to 40 CFR 51.307 and 52.21(p) (i.e., located within 100 km of a Class I Federal Area within Nevada and any adjacent states, for example Jarbidge Wilderness Area) protected by the Regional Haze Program (40 CFR Part 81)?**
☐ Yes ☒ No
13. **Check any of the following that apply to this application:**
☐ Involve significant changes to the existing requirements for monitoring, reporting, or recordkeeping.
☐ Require or change a determination of an emission limitation or other standard on a case-by-case basis.
☒ Require or change a visibility or increment analysis.
☐ Require or change a determination of ambient impact for any temporary source.
☐ Establish or change a condition of the operating permit for which there is no federally enforceable emissions cap and/or an alternative emission limitation pursuant to U.S.C. Title 42 7412(i)(5).
☐ Result in an increase in allowable emissions that exceeds any of the following specified thresholds: Carbon monoxide, 100 tons per year; Nitrogen oxides, 40 tons per year; Sulfur dioxide (SO₂), 40 tons per year; Particulate Matter less than or equal to 10 microns in diameter (PM₁₀), 15 tons per year; Ozone (O₃), 40 tons per year of volatile organic compounds (VOC); Sulfuric acid mist, 7 tons per year; and Hydrogen sulfide (H₂S), 10 tons per year.
☐ Modification pursuant to any provision of U.S.C. Title 42 7401 to 7515, inclusive, or a major modification at an existing major stationary source.
- If any of the boxes were checked above, a minor revision may not be made to the Class I Operating Permit pursuant to NAC 445B.3425.**

14. Will the Facility be constructed in more than one phase [NAC 445B.3395(17)]?

☐ Yes ☒ No (If yes, provide details in the attached Process Narrative)

GENERAL COMPANY INFORMATION FORM (continued)

15. Will the facility violate any "Applicable requirement" pursuant to NAC 445B.019?

☐ Yes ☒ No

16. Verify facility's compliance status for the following regulations and describe the reason for exemption if applicable:

FEDERALLY ENFORCEABLE REQUIREMENTS			
NAC 445B.225	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption
NAC 445B.315(3)(h)	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption
NAC 445B.315(3)(i)	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption
NAC 445B.315(3)(k)	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption
40 CFR 52.21(r)(4)	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption
NAC 445B.252	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption
NAC 445B.22067	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption
NAC 445B.22093	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption
NAC 445B.22037	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption
NAC 445B.227	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption
40 CFR Parts 60.1-60.19, 61.01-61.19, 61.140-61.157, 63.1-63.15, and 70	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption
40 CFR Part 82	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption
NAC 445B.230	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption
NAC 445B.22017	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption

STATE REQUIREMENTS			
NRS 445B.470	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption
NAC 445B.22013	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption
NAC 445B.326(1)	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption
NAC 445B.22087	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption
NAC 459.952-459.95528	☒ Compliant	☐ Not Compliant	☐ Exempt, Reason for Exemption

17. Has the facility provided modeling for each non-combustion baghouse individually? (See Testing Determination System for Baghouses Guidance Document)

☐ Yes ☐ No ☒ N/A

COMBUSTION EQUIPMENT APPLICATION FORM CLASS I OPERATING PERMIT

System Number and Name: **System 1: P1 Power Plant Engines (136)**

Emission Unit Description: **2,146 bhp Jenbacher J420 Gas-Fired Generators**

Alternative Operating Scenario: ☐ Yes ☒ No

Insignificant Activity: ☐ Yes ☒ No If yes, identify exemption regulation: _____

Description			Data
Equipment Description	BAPC Emission Unit ID Applicable for Renewal or Revision	eg. Unit ID: S2.001	See attached table.
	Source Classification Code (SCC)	e.g. 3-03-024-04 for Conveyors	
	Manufacturer	Jenbacher	
	Date Manufactured	TBD	
	Model and Serial Number	J420	
	Emissions Released Inside building?	yes/no	
For Reciprocating Internal Combustion Engines (RICE) Only	Type of Engine Code (See Notes*)		SI4SLB
	Date Constructed	month/day/yr	TBD
	Cylinder Displacement	liter/cylinder	3.06
	EPA Tier #		N/A
Location of Emission Source	UTM Northing (NAD 83, Zone 11)	m	See attached table.
	UTM Easting (NAD 83, Zone 11)	m	See attached table.
Operating Parameters /Fuel Usage	Fuel Type		Natural Gas
	Fuel Flow Meter Installed?	yes/no/NA	Yes
	Sulfur Content	%	0.0017
	Heat Content	Btu/scf	1020
	Start Time if operating less than 24 hours/day	hour:minute	N/A
	End Time if operating less than 24 hours/day	hour:minute	N/A
Control Equipment	Manufacturer		Miratech
	Manufacturer's Guarantee Included? If "yes", attach manufacturer's sheets immediately after these forms.	yes/N/A	Yes
Stack Parameters	Stack Height	feet	33.1
	Stack Inside Diameter	feet	1.67
	Stack Temperature	°F	819
	Stack Exit Velocity	feet/second	144.587
	Actual Gas Volume Flow Rate	acfm	19,000.9
	Dry Gas Volume Flow Rate If not included in detailed calculations.	dscfm	Not available
	Stack Release Type	☒ vertical ☐ capped ☐ horizontal	

Notes*

Code	Description	Code	Description
LU	Limited Use	E-SI	Emergency Spark Ignition
LDG	Landfill/Digester Gas	SI4SRB	Spark Ignition 4-Stroke Rich Burn
NECI	Non-Emergency Compression Ignition	SI4SLB	Spark Ignition 4-Stroke Lean Burn
ECI	Emergency Compression Ignition	SI2SLB	Spark Ignition 2-Stroke Lean Burn

COMBUSTION EQUIPMENT APPLICATION FORM CLASS I OPERATING PERMIT (continued)

Emission Unit Description: 2,146 bhp Jenbacher J420 Gas-Fired Generators

1. Subject to a Federal Regulation specific to the emission unit (e.g. 40 CFR Part 60, 61, 63, 64, 76, or other):
☒ **Yes** ☐ **No** If yes, identify regulation and applicability and include required analysis or plans (e.g. siting analysis or Continuous Assurance Monitoring (CAM) plans).
NSPS 40 CFR Part 60, Subpart JJJJ - Spark Ignition Engines
NESHAP Subpart ZZZZ – Stationary Reciprocating Internal Combustion Engines

2. Subject to a State Regulation specific to the emission unit (e.g. NAC 445B.2203, NAC 445B.22047, NAC 445B.22017):
☒ **Yes** ☐ **No** If yes, identify regulation and applicability.
NAC 445B.2203(1)(b): Emission unit has a heat input greater than 10 MMBtu/hr but less than 4,000 MMBtu/hr
NAC 445B.2204, 445B.22043, 445.22047(2) and SIP Article 8.1 and 8.2: Equipment – Unit has a heat input less than 250 MMBtu/hr
NAC 445B.22017: Maximum Opacity of Emissions not to exceed 20 percent

3. Identify standards for work practices which affect emissions for all regulated air pollutants (e.g. At all times, including startup, shutdown and malfunction).
 1. At all times, including startup, shutdown and malfunction, operation of the generators will be consistent with good air pollution control practices.
 2. Periodic maintenance on a weekly, monthly, quarterly and annual basis will be conducted to meet or exceed manufacturer's recommendations.

4. Identify and describe compliance and performance testing with reference to any applicable test methods, monitoring devices, compliance plan, or other activities required to determine compliance with an applicable requirement (e.g. Emissions from this unit will be monitored by CEMS and/or COMS for the specific pollutant(s) (NO_x, CO, etc.)).
The generators will be equipped with fuel flow monitoring equipment.

5. How will fuel consumption be monitored for this emission unit? (e.g. maximum fuel consumption rate supplied by manufacturer, fuel flow meter).
The generators will be equipped with fuel flow equipment to monitor fuel consumption.

6. Does this unit have the capability to bypass air pollution controls in an emergency situation as defined under NAC 445B.056?:
☐ **Yes** ☒ **No**

INDUSTRIAL PROCESS APPLICATION FORM CLASS I OPERATING PERMIT

System Number and Name: System 2: CNG PRS Units – Insignificant Activity

Emission Unit Description: Certarus Compressed Natural Gas Pressure Reducing System

Alternative Operating Scenario: ☐ Yes ☒ No

Insignificant Activity: ☒ Yes ☐ No If yes, identify exemption regulation: NAC 445B.288(2)(e)(I)

Description			Data
Equipment Description	BAPC Emission Unit ID <i>Applicable for Renewal or Revision</i>	eg. Unit ID: S2.001, PF1.001	See attached table.
	Source Classification Code (SCC)	e.g. 3-03-024-04 for Conveyors	
	Manufacturer		Certarus
	Date Manufactured		TBD
	Model Number		TBD
	Equipment Dimensions (LxWxH)	feet	6x24x12
	Drop Length <i>if applicable</i>	feet	N/A
	Drop Height <i>if applicable</i>	feet	N/A
	The Drop Height is measured from the ☐ top of the drop length ☐ middle of the drop length ☐ bottom of the Drop Length, in reference to the ground. <i>Choose one, if applicable</i>		
	Drop Horizontal Dimension 1 <i>if applicable</i>	feet	N/A
	Drop Horizontal Dimension 2 <i>if applicable</i>	feet	N/A
	Emissions Released Inside building?	yes/no	No
Location of Emission Source	UTM Northing (NAD 83, Zone 11)	m	See attached table.
	UTM Easting (NAD 83, Zone 11)	m	See attached table.
Operating Parameters	Material Type Processed		CNG
	Batch Process <i>if applicable</i>	unit/batch	N/A
	Start Time <i>if operating less than 24 hours/day</i>	hour:minute	24 hrs/day
	End Time <i>if operating less than 24 hours/day</i>	hour:minute	24 hrs/day
Control Equipment	Manufacturer		N/A
	Manufacturer's Guarantee included? <i>If "yes", attach manufacturer's sheets immediately after these forms.</i>	yes/N/A	N/A
Stack Parameters	Stack Height	Feet	N/A
	Stack Inside Diameter	Feet	N/A
	Stack Temperature	°F	N/A
	Stack Exit Velocity	feet/second	N/A
	Actual Gas Volume Flow Rate	Acfm	N/A
	Dry Gas Volume Flow Rate <i>If not included in detailed calculations.</i>	dscfm	N/A
	Stack Release Type	☐ vertical ☐ capped ☐ horizontal	

INDUSTRIAL PROCESS APPLICATION FORM CLASS I OPERATING PERMIT (continued)

Emission Unit Description: Certarus Compressed Natural Gas Pressure Reducing System

1. Subject to a Federal Regulation specific to the emission unit (e.g. 40 CFR Part 60, 61, 63, 64, 76, or other):
☐ Yes ☒ No If yes, identify regulation and applicability and include required analysis or plans (e.g. siting analysis or Continuous Assurance Monitoring (CAM) plans).

2. Subject to a State Regulation specific to the emission unit (e.g. NAC 445B.22033, NAC 445B.22017):
☒ Yes ☐ No If yes, identify regulation and applicability.
NAC 445B.22017: Maximum Opacity of Emissions not to exceed 20 percent
NAC 445B.22087 – Prohibits emissions that cause objectionable odors

3. Identify standards for work practices which affect emissions for all regulated air pollutants (e.g. At all times, including startup, shutdown and malfunction).
 1. Proper Operation of Pressure Regulators and Control Valves

 2. Leak Prevention and Prompt Repair

 3. Relief Valve and Safety System Maintenance

4. Identify and describe compliance and performance testing with reference to any applicable test methods, monitoring devices, compliance plan, or other activities required to determine compliance with an applicable requirement (e.g. Emissions from this unit will be monitored by CEMS and/or COMS for the specific pollutant(s) (NO_x, CO, etc.)).
N/A

5. How will throughput be monitored for this emission unit? Identify if the throughput will be monitored at this emission unit or at another emission unit and the method (e.g. weigh belt).
N/A

COMBUSTION EQUIPMENT APPLICATION FORM CLASS I OPERATING PERMIT

System Number and Name: **System 3: Black Start Engine Gensets (6 with dual engines)**

Emission Unit Description: **1,370 kW Tier 4 Volvo Penta Diesel Black Start Engine Gensets**

Alternative Operating Scenario: ☐ Yes ☒ No

Insignificant Activity: ☐ Yes ☒ No If yes, identify exemption regulation: _____

Description			Data
Equipment Description	BAPC Emission Unit ID Applicable for Renewal or Revision	eg. Unit ID: S2.001	See attached table.
	Source Classification Code (SCC)	e.g. 3-03-024-04 for Conveyors	2-02-001-02
	Manufacturer		Volvo
	Date Manufactured		TBD
	Model and Serial Number		TWD1683GE
	Emissions Released Inside building?	yes/no	No
For Reciprocating Internal Combustion Engines (RICE) Only	Type of Engine Code (See Notes*)		ECI
	Date Constructed	month/day/yr	TBD
	Cylinder Displacement	liter/cylinder	2.69
	EPA Tier #		4
Location of Emission Source	UTM Northing (NAD 83, Zone 11)	m	See attached table.
	UTM Easting (NAD 83, Zone 11)	m	See attached table.
Operating Parameters /Fuel Usage	Fuel Type		Ultra Low Sulfur Diesel
	Fuel Flow Meter Installed?	yes/no/NA	Yes
	Sulfur Content	%	0.0015
	Heat Content	Btu/gal	140,000
	Start Time if operating less than 24 hours/day	hour:minute	N/A
	End Time if operating less than 24 hours/day	hour:minute	N/A
Control Equipment	Manufacturer		Volvo
	Manufacturer's Guarantee Included? If "yes", attach manufacturer's sheets immediately after these forms.	yes/N/A	Yes
Stack Parameters	Stack Height	feet	9.6
	Stack Inside Diameter	feet	0.667 ft per stack
	Stack Temperature	°F	810
	Stack Exit Velocity	feet/second	58.02
	Actual Gas Volume Flow Rate	acfm	7758.4
	Dry Gas Volume Flow Rate If not included in detailed calculations.	dscfm	Not available
	Stack Release Type		☒ vertical ☐ capped ☐ horizontal

Notes*

Code	Description	Code	Description
LU	Limited Use	E-SI	Emergency Spark Ignition
LDG	Landfill/Digester Gas	SI4SRB	Spark Ignition 4-Stroke Rich Burn
NECI	Non-Emergency Compression Ignition	SI4SLB	Spark Ignition 4-Stroke Lean Burn
ECI	Emergency Compression Ignition	SI2SLB	Spark Ignition 2-Stroke Lean Burn

COMBUSTION EQUIPMENT APPLICATION FORM CLASS I OPERATING PERMIT (continued)

Emission Unit Description: 1,370 kW Tier 4 Volvo Penta Diesel Black Start Engine Gensets

1. Subject to a Federal Regulation specific to the emission unit (e.g. 40 CFR Part 60, 61, 63, 64, 76, or other):
☒ **Yes** ☐ **No** If yes, identify regulation and applicability and include required analysis or plans (e.g. siting analysis or Continuous Assurance Monitoring (CAM) plans).
NSPS Subpart IIII – Stationary Compression Ignition Internal Combustion Engines
NESHAP Subpart ZZZZ – Stationary Reciprocating Internal Combustion Engines
2. Subject to a State Regulation specific to the emission unit (e.g. NAC 445B.2203, NAC 445B.22047, NAC 445B.22017):
☒ **Yes** ☐ **No** If yes, identify regulation and applicability.
NAC 445B.2203(1)(b): Emission unit has a heat input greater than 10 MMBtu/hr but less than 4,000 MMBtu/hr
NAC 445B.2204, 445B.22043, 445.22047(2) and SIP Article 8.1 and 8.2: Equipment – Unit has a heat input less than 250 MMBtu/hr
NAC 445B.22017: Maximum Opacity of Emissions not to exceed 20 percent
3. Identify standards for work practices which affect emissions for all regulated air pollutants (e.g. At all times, including startup, shutdown and malfunction).
 1. At all times, including startup, shutdown and malfunction, operation of the generators will be consistent with good air pollution control practices.
 2. Periodic maintenance on a weekly, monthly, quarterly and annual basis will be conducted to meet or exceed manufacturer's recommendations.
4. Identify and describe compliance and performance testing with reference to any applicable test methods, monitoring devices, compliance plan, or other activities required to determine compliance with an applicable requirement (e.g. Emissions from this unit will be monitored by CEMS and/or COMS for the specific pollutant(s) (NO_x, CO, etc.)).
The generators will be equipped with fuel flow monitoring equipment.
5. How will fuel consumption be monitored for this emission unit? (e.g. maximum fuel consumption rate supplied by manufacturer, fuel flow meter).
The generators will be equipped with fuel flow equipment to monitor fuel consumption.
6. Does this unit have the capability to bypass air pollution controls in an emergency situation as defined under NAC 445B.056?:
☐ **Yes** ☒ **No**

COMBUSTION EQUIPMENT APPLICATION FORM CLASS I OPERATING PERMIT

System Number and Name: System 4: Data Center Emergency Backup Engines (82)
Emission Unit Description: 4,393 bhp Tier 4 Caterpillar 3516E (EM4718-02) Diesel-Fired Backup Generator

Alternative Operating Scenario: ☐ Yes ☒ No

Insignificant Activity: ☐ Yes ☒ No If yes, identify exemption regulation: _____

Description			Data
Equipment Description	BAPC Emission Unit ID Applicable for Renewal or Revision	eg. Unit ID: S2.001	See attached table.
	Source Classification Code (SCC)	e.g. 3-03-024-04 for Conveyors	2-02-004-01
	Manufacturer		Caterpillar
	Date Manufactured		TBD
	Model and Serial Number		3516E
	Emissions Released Inside building?	yes/no	No
For Reciprocating Internal Combustion Engines (RICE) Only	Type of Engine Code (See Notes*)		ECI
	Date Constructed	month/day/yr	TBD
	Cylinder Displacement	liter/cylinder	4.88
	EPA Tier #		4
Location of Emission Source	UTM Northing (NAD 83, Zone 11)	m	See attached table.
	UTM Easting (NAD 83, Zone 11)	m	See attached table.
Operating Parameters /Fuel Usage	Fuel Type		Ultra Low Sulfur Diesel
	Fuel Flow Meter Installed?	yes/no/NA	Yes
	Sulfur Content	%	0.0015
	Heat Content	Btu/gal	140,000
	Start Time if operating less than 24 hours/day	hour:minute	No start time limit
	End Time if operating less than 24 hours/day	hour:minute	No end time limit
Control Equipment	Manufacturer		Caterpillar
	Manufacturer's Guarantee Included? If "yes", attach manufacturer's sheets immediately after these forms.	yes/N/A	Yes
Stack Parameters	Stack Height	feet	60
	Stack Inside Diameter	feet	1
	Stack Temperature	°F	902
	Stack Exit Velocity	feet/second	483.96
	Actual Gas Volume Flow Rate	acfm	22,806.2
	Dry Gas Volume Flow Rate If not included in detailed calculations.	dscfm	Not available
	Stack Release Type	☒ vertical ☐ capped ☐ horizontal	

Notes*

Code	Description	Code	Description
LU	Limited Use	E-SI	Emergency Spark Ignition
LDG	Landfill/Digester Gas	SI4SRB	Spark Ignition 4-Stroke Rich Burn
NECI	Non-Emergency Compression Ignition	SI4SLB	Spark Ignition 4-Stroke Lean Burn
ECI	Emergency Compression Ignition	SI2SLB	Spark Ignition 2-Stroke Lean Burn

COMBUSTION EQUIPMENT APPLICATION FORM CLASS I OPERATING PERMIT (continued)

Emission Unit Description: **4,393 bhp Tier 4 Caterpillar 3516E (EM4718-02) Diesel-Fired Backup Generator**

1. Subject to a Federal Regulation specific to the emission unit (e.g. 40 CFR Part 60, 61, 63, 64, 76, or other):
☒ **Yes** ☐ **No** If yes, identify regulation and applicability and include required analysis or plans (e.g. siting analysis or Continuous Assurance Monitoring (CAM) plans).
NSPS Subpart IIII – Stationary Compression Ignition Internal Combustion Engines
NESHAP Subpart ZZZZ – Stationary Reciprocating Internal Combustion Engines
2. Subject to a State Regulation specific to the emission unit (e.g. NAC 445B.2203, NAC 445B.22047, NAC 445B.22017):
☒ **Yes** ☐ **No** If yes, identify regulation and applicability.
NAC 445B.2203(1)(b): Emission unit has a heat input greater than 10 MMBtu/hr but less than 4,000 MMBtu/hr
NAC 445B.2204, 445B.22043, 445.22047(2) and SIP Article 8.1 and 8.2: Equipment – Unit has a heat input less than 250 MMBtu/hr
NAC 445B.22017: Maximum Opacity of Emissions not to exceed 20 percent
3. Identify standards for work practices which affect emissions for all regulated air pollutants (e.g. At all times, including startup, shutdown and malfunction).
 1. At all times, including startup, shutdown and malfunction, operation of the generators will be consistent with good air pollution control practices.
 2. Periodic maintenance will be conducted to meet manufacturer's recommendations.
4. Identify and describe compliance and performance testing with reference to any applicable test methods, monitoring devices, compliance plan, or other activities required to determine compliance with an applicable requirement (e.g. Emissions from this unit will be monitored by CEMS and/or COMS for the specific pollutant(s) (NO_x, CO, etc.)).
The generators will be equipped with non-resettable fuel flow meters.
5. How will fuel consumption be monitored for this emission unit? (e.g. maximum fuel consumption rate supplied by manufacturer, fuel flow meter).
The generators will be equipped with non-resettable fuel flow meters to monitor fuel consumption.
6. Does this unit have the capability to bypass air pollution controls in an emergency situation as defined under NAC 445B.056?:
☐ **Yes** ☒ **No**

COMBUSTION EQUIPMENT APPLICATION FORM CLASS I OPERATING PERMIT

System Number and Name: **System 5: Substation Engines (2)**

Emission Unit Description: **1.25 MW Tier 2 Caterpillar C32 Diesel-Fired Backup Generator**

Alternative Operating Scenario: ☐ Yes ☒ No

Insignificant Activity: ☐ Yes ☒ No If yes, identify exemption regulation: _____

Description			Data
Equipment Description	BAPC Emission Unit ID Applicable for Renewal or Revision	eg. Unit ID: S2.001	See attached table.
	Source Classification Code (SCC)	eg. 3-03-024-04 for Conveyors	
	Manufacturer	Caterpillar	
	Date Manufactured	TBD	
	Model and Serial Number	C32	
	Emissions Released Inside building?	yes/no	
For Reciprocating Internal Combustion Engines (RICE) Only	Type of Engine Code (See Notes*)		ECI
	Date Constructed	month/day/yr	TBD
	Cylinder Displacement	liter/cylinder	2.68
	EPA Tier #		2
Location of Emission Source	UTM Northing (NAD 83, Zone 11)	m	See attached table.
	UTM Easting (NAD 83, Zone 11)	m	See attached table.
Operating Parameters /Fuel Usage	Fuel Type		Ultra Low Sulfur Diesel
	Fuel Flow Meter Installed?	yes/no/NA	Yes
	Sulfur Content	%	0.0015
	Heat Content	Btu/gal	140,000
	Start Time if operating less than 24 hours/day	hour:minute	No start time limit
	End Time if operating less than 24 hours/day	hour:minute	No end time limit
Control Equipment	Manufacturer		N/A
	Manufacturer's Guarantee Included? If "yes", attach manufacturer's sheets immediately after these forms.	yes/N/A	N/A
Stack Parameters	Stack Height	feet	15
	Stack Inside Diameter	feet	1.0
	Stack Temperature	°F	806.6
	Stack Exit Velocity	feet/second	212.329
	Actual Gas Volume Flow Rate	acfm	10,005.8
	Dry Gas Volume Flow Rate If not included in detailed calculations.	dscfm	Not available
	Stack Release Type	☒ vertical ☐ capped ☐ horizontal	

Notes*

Code	Description	Code	Description
LU	Limited Use	E-SI	Emergency Spark Ignition
LDG	Landfill/Digester Gas	SI4SRB	Spark Ignition 4-Stroke Rich Burn
NECI	Non-Emergency Compression Ignition	SI4SLB	Spark Ignition 4-Stroke Lean Burn
ECI	Emergency Compression Ignition	SI2SLB	Spark Ignition 2-Stroke Lean Burn

COMBUSTION EQUIPMENT APPLICATION FORM CLASS I OPERATING PERMIT (continued)

Emission Unit Description: 1.25 MW Tier 2 Caterpillar C32 Diesel-Fired Backup Generator

1. Subject to a Federal Regulation specific to the emission unit (e.g. 40 CFR Part 60, 61, 63, 64, 76, or other):
☒ **Yes** ☐ **No** If yes, identify regulation and applicability and include required analysis or plans (e.g. siting analysis or Continuous Assurance Monitoring (CAM) plans).
NSPS Subpart IIII – Stationary Compression Ignition Internal Combustion Engines
NESHAP Subpart ZZZZ – Stationary Reciprocating Internal Combustion Engines
2. Subject to a State Regulation specific to the emission unit (e.g. NAC 445B.2203, NAC 445B.22047, NAC 445B.22017):
☒ **Yes** ☐ **No** If yes, identify regulation and applicability.
NAC 445B.2203(1)(b): Emission unit has a heat input greater than 10 MMBtu/hr but less than 4,000 MMBtu/hr
NAC 445B.2204, 445B.22043, 445.22047(2) and SIP Article 8.1 and 8.2: Equipment – Unit has a heat input less than 250 MMBtu/hr
NAC 445B.22017: Maximum Opacity of Emissions not to exceed 20 percent
3. Identify standards for work practices which affect emissions for all regulated air pollutants (e.g. At all times, including startup, shutdown and malfunction).
 1. At all times, including startup, shutdown and malfunction, operation of the generators will be consistent with good air pollution control practices.
 2. Periodic maintenance will be conducted to meet manufacturer's recommendations.
4. Identify and describe compliance and performance testing with reference to any applicable test methods, monitoring devices, compliance plan, or other activities required to determine compliance with an applicable requirement (e.g. Emissions from this unit will be monitored by CEMS and/or COMS for the specific pollutant(s) (NO_x, CO, etc.)).
The generators will be equipped with non-resettable fuel flow monitoring equipment.
5. How will fuel consumption be monitored for this emission unit? (e.g. maximum fuel consumption rate supplied by manufacturer, fuel flow meter).
The generators will be equipped with non-resettable fuel flow meters to monitor fuel consumption.
6. Does this unit have the capability to bypass air pollution controls in an emergency situation as defined under NAC 445B.056?:
☐ **Yes** ☒ **No**

COMBUSTION EQUIPMENT APPLICATION FORM CLASS I OPERATING PERMIT

System Number and Name: System 6: Fire Pump Engines (2)

Emission Unit Description: 488 bhp Tier 3 Clarke C18H0-UFAD12 Diesel-Fired Generator

Alternative Operating Scenario: ☐ Yes ☒ No

Insignificant Activity: ☐ Yes ☒ No If yes, identify exemption regulation: _____

Description			Data
Equipment Description	BAPC Emission Unit ID Applicable for Renewal or Revision	eg. Unit ID: S2.001	See attached table.
	Source Classification Code (SCC)	e.g. 3-03-024-04 for Conveyors	2-01-001-02
	Manufacturer		Clark
	Date Manufactured		TBD
	Model and Serial Number		C18H0-UFAD12
	Emissions Released Inside building?	yes/no	No
For Reciprocating Internal Combustion Engines (RICE) Only	Type of Engine Code (See Notes*)		ECI
	Date Constructed	month/day/yr	TBD
	Cylinder Displacement	liter/cylinder	3.02
	EPA Tier #		3
Location of Emission Source	UTM Northing (NAD 83, Zone 11)	m	See attached table.
	UTM Easting (NAD 83, Zone 11)	m	See attached table.
Operating Parameters /Fuel Usage	Fuel Type		Ultra Low Sulfur Diesel
	Fuel Flow Meter Installed?	yes/no/NA	Yes
	Sulfur Content	%	0.0015
	Heat Content	Btu/gal	140,000
	Start Time if operating less than 24 hours/day	hour:minute	No start time limit
	End Time if operating less than 24 hours/day	hour:minute	No end time limit
Control Equipment	Manufacturer		Clark
	Manufacturer's Guarantee Included? If "yes", attach manufacturer's sheets immediately after these forms.	yes/N/A	N/A
Stack Parameters	Stack Height	feet	20.5
	Stack Inside Diameter	feet	0.667
	Stack Temperature	°F	953
	Stack Exit Velocity	feet/second	182.7
	Actual Gas Volume Flow Rate	acfm	3,830
	Dry Gas Volume Flow Rate If not included in detailed calculations.	dscfm	Not available
	Stack Release Type	☒ vertical ☐ capped ☐ horizontal	

Notes*

Code	Description	Code	Description
LU	Limited Use	E-SI	Emergency Spark Ignition
LDG	Landfill/Digester Gas	SI4SRB	Spark Ignition 4-Stroke Rich Burn
NECI	Non-Emergency Compression Ignition	SI4SLB	Spark Ignition 4-Stroke Lean Burn
ECI	Emergency Compression Ignition	SI2SLB	Spark Ignition 2-Stroke Lean Burn

COMBUSTION EQUIPMENT APPLICATION FORM CLASS I OPERATING PERMIT (continued)

Emission Unit Description: 488 bhp Tier 3 Clarke C18H0-UFAD12 Diesel-Fired Generator

1. Subject to a Federal Regulation specific to the emission unit (e.g. 40 CFR Part 60, 61, 63, 64, 76, or other):
☒ **Yes** ☐ **No** If yes, identify regulation and applicability and include required analysis or plans (e.g. siting analysis or Continuous Assurance Monitoring (CAM) plans).
NSPS Subpart IIII – Stationary Compression Ignition Internal Combustion Engines
NESHAP Subpart ZZZZ – Stationary Reciprocating Internal Combustion Engines
2. Subject to a State Regulation specific to the emission unit (e.g. NAC 445B.2203, NAC 445B.22047, NAC 445B.22017):
☒ **Yes** ☐ **No** If yes, identify regulation and applicability.
NAC 445B.2203(1)(b): Emission unit has a heat input greater than 10 MMBtu/hr but less than 4,000 MMBtu/hr
NAC 445B.2204, 445B.22043, 445.22047(2) and SIP Article 8.1 and 8.2: Equipment – Unit has a heat input less than 250 MMBtu/hr
NAC 445B.22017: Maximum Opacity of Emissions not to exceed 20 percent
3. Identify standards for work practices which affect emissions for all regulated air pollutants (e.g. At all times, including startup, shutdown and malfunction).
 1. At all times, including startup, shutdown and malfunction, operation of the generators will be consistent with good air pollution control practices.
 2. Periodic maintenance on a weekly, monthly, quarterly and annual basis will be conducted to meet or exceed manufacturer's recommendations.
4. Identify and describe compliance and performance testing with reference to any applicable test methods, monitoring devices, compliance plan, or other activities required to determine compliance with an applicable requirement (e.g. Emissions from this unit will be monitored by CEMS and/or COMS for the specific pollutant(s) (NO_x, CO, etc.)).
The generators will be equipped with non-resettable fuel flow meters.
5. How will fuel consumption be monitored for this emission unit? (e.g. maximum fuel consumption rate supplied by manufacturer, fuel flow meter).
The generators will be equipped with non-resettable fuel flow meters to monitor fuel consumption.
6. Does this unit have the capability to bypass air pollution controls in an emergency situation as defined under NAC 445B.056?:
☐ **Yes** ☒ **No**

LIQUID STORAGE TANK APPLICATION FORM CLASS I OPERATING PERMIT

System Number and Name: 150-gallon Tanks (84) – Insignificant Activity

Emission Unit Description: 150-gallon diesel fuel storage tank

Alternative Operating Scenario: ☐ Yes ☒ No

Insignificant Activity: ☒ Yes ☐ No If yes, identify exemption regulation: NAC 445B.288 2(d)

Description		Data	
Equipment Description	BAPC Emission Unit ID <i>Applicable for Renewal or Revision</i>	eg. Unit ID: S2.001, PF1.001 See attached table.	
	Source Classification Code (SCC)	e.g. 3-03-024-04 for Conveyors 4-04-001-22	
	Manufacturer		TBD
	Date Manufactured		TBD
	Model Number		TBD
	Heated Tank	yes/no	No
	Shell Height	feet	2.7
	Shell Length	feet	2.7
	Shell Width	feet	2.7
	Maximum Liquid Height	feet	2.7
	Average Liquid Height	feet	2
	Capacity of Tank	gallons	150
	Shell Color		Aluminum
	Shell Condition	good/poor	Good
	Roof Type (Cone, Dome, External, or Internal Floating Roof)		External
	Roof Height	feet	N/A
	Roof Color		N/A
	Cone Roof Slope		N/A
	Dome Roof Radius	feet	N/A
	True Vapor Pressure of Liquid	psig	0.006
	Reid Vapor Pressure of Liquid	psig	0.1
	Orientation of Tank	Horizontal/Vertical	Vertical
	Submerged Fill [NAC 445B.22093(3)]	yes/no	Yes
	Equipment Dimensions (LxWxH)	feet	2.7 x 2.7 x 2.7
Location of Emission Source	UTM Northing (NAD 83, Zone 11)	m See attached table.	
	UTM Easting (NAD 83, Zone 11)	m See attached table.	

LIQUID STORAGE TANK APPLICATION FORM CLASS I OPERATING PERMIT (continued)

Emission Unit Description: 150-gallon diesel fuel storage tank

Description			Data
Operating Parameters	Material Type		Diesel Fuel
	Operating Time per Year	hour/year	100
	Maximum Throughput	gallon/month	1,703
	Maximum Throughput	gallon/year	20,430
Control Equipment	Type of Control		Submerged Fill
	Control Efficiency	%	N/A
	Pollutant(s) Controlled		VOC
	Manufacturer		N/A
	Manufacturer's Guarantee Included?	yes/NA	N/A
Volatile Organic Compounds (VOC) Emissions	Emission Limit	ton/year	N/A
Other Pollutants	Emission Factor (with units)	(insert unit)	N/A
	Emission Factor Reference		N/A
	Emission Limit	pound/hour	N/A
	Emission Limit	ton/year	N/A

LIQUID STORAGE TANKS APPLICATION FORM CLASS I OPERATING PERMIT (continued)

Emission Unit Description: 150-gallon diesel fuel storage tank

1. Subject to a Federal Regulation specific to the emission unit (e.g. 40 CFR Part 60, 61, 63, 64, 76, or other):
☐ Yes ☒ No If yes, identify regulation and applicability and include required analysis or plans (e.g. siting analysis or Continuous Assurance Monitoring (CAM) plans).
NSPS (40 CFR Part 60) Subpart K and Ka will not apply because the tank is not greater than 40,000-gallon capacity. For NSPS Subpart Kb, there is an exemption for storage tanks that store volatile organic liquids with a maximum true vapor pressure (TVP) that is less than 3.5 kPa (about 0.51 psia). For NSPS Subpart Kc, there is an exemption for storage tanks with TVP less than 1.7 kPa (about 0.25 psia). Based upon EPA AP-42 Table 7.1-2, the TVP of diesel fuel at standard 60F is 0.006. Diesel will be stored at ambient temperature. Therefore, diesel storage will be exempted from NSPS Kb and Kc NSPS.

2. Subject to a State Regulation specific to the emission unit (e.g. NAC 445B.2203, NAC 445B.22047, NAC 445B.22033, NAC 445B.22017, NAC 445B.3363(1)(g):
☐ Yes ☒ No If yes, identify regulation and applicability.

3. Identify standards for work practices which affect emissions for all regulated air pollutants (e.g. At all times, including startup, shutdown and malfunction).
Use submerged filling techniques or bottom loading to reduce vapor displacement.
Minimize tank turnover and avoid unnecessary transfers

4. Identify and describe compliance and performance testing with reference to any applicable test methods, monitoring devices, compliance plan, or other activities required to determine compliance with an applicable requirement (e.g. Emissions from this unit will be monitored by CEMS and/or COMS for the specific pollutant(s) (NO_x, CO, etc.)).
The facility will maintain records of tank filling and throughput.

LIQUID STORAGE TANK APPLICATION FORM CLASS I OPERATING PERMIT

System Number and Name: 400-gallon Tanks (2) – Insignificant Activity

Emission Unit Description: 400-gallon diesel fuel storage tank

Alternative Operating Scenario: ☐ Yes ☒ No

Insignificant Activity: ☒ Yes ☐ No If yes, identify exemption regulation: NAC 445B.288 2(d)

Description		Data	
Equipment Description	BAPC Emission Unit ID <i>Applicable for Renewal or Revision</i>	eg. Unit ID: S2.001, PF1.001 See attached table.	
	Source Classification Code (SCC)	eg. 3-03-024-04 for Conveyors 4-04-001-22	
	Manufacturer		TBD
	Date Manufactured		TBD
	Model Number		TBD
	Heated Tank	yes/no	No
	Shell Height	feet	4.5
	Shell Length	feet	4.83
	Shell Width	feet	2.83
	Maximum Liquid Height	feet	4.5
	Average Liquid Height	feet	2.5
	Capacity of Tank	gallons	400
	Shell Color		Aluminum
	Shell Condition	good/poor	Good
	Roof Type (Cone, Dome, External, or Internal Floating Roof)		External
	Roof Height	feet	N/A
	Roof Color		N/A
	Cone Roof Slope		N/A
	Dome Roof Radius	feet	N/A
	True Vapor Pressure of Liquid	psig	0.006
	Reid Vapor Pressure of Liquid	psig	0.1
	Orientation of Tank	Horizontal/Vertical	Vertical
	Submerged Fill [NAC 445B.22093(3)]	yes/no	Yes
	Equipment Dimensions (LxWxH)	feet	4.83 x 2.83 x 4.5
Location of Emission Source	UTM Northing (NAD 83, Zone 11)	m See attached table.	
	UTM Easting (NAD 83, Zone 11)	m See attached table.	

LIQUID STORAGE TANK APPLICATION FORM CLASS I OPERATING PERMIT (continued)

Emission Unit Description: 400-gallon diesel fuel storage tank

Description			Data
Operating Parameters	Material Type		Diesel Fuel
	Operating Time per Year	hour/year	40
	Maximum Throughput	gallon/month	105
	Maximum Throughput	gallon/year	1,260
Control Equipment	Type of Control		Submerged Fill
	Control Efficiency	%	N/A
	Pollutant(s) Controlled		VOC
	Manufacturer		N/A
	Manufacturer's Guarantee Included?	yes/NA	N/A
Volatile Organic Compounds (VOC) Emissions	Emission Limit	ton/year	N/A
Other Pollutants	Emission Factor (with units)	(insert unit)	N/A
	Emission Factor Reference		N/A
	Emission Limit	pound/hour	N/A
	Emission Limit	ton/year	N/A

LIQUID STORAGE TANKS APPLICATION FORM CLASS I OPERATING PERMIT (continued)

Emission Unit Description: 400-gallon diesel fuel storage tank

1. Subject to a Federal Regulation specific to the emission unit (e.g. 40 CFR Part 60, 61, 63, 64, 76, or other):
☐ Yes ☒ No If yes, identify regulation and applicability and include required analysis or plans (e.g. siting analysis or Continuous Assurance Monitoring (CAM) plans).

NSPS (40 CFR Part 60) Subpart K and Ka will not apply because the tank is not greater than 40,000-gallon capacity. For NSPS Subpart Kb, there is an exemption for storage tanks that store volatile organic liquids with a maximum true vapor pressure (TVP) that is less than 3.5 kPa (about 0.51 psia). For NSPS Subpart Kc, there is an exemption for storage tanks with TVP less than 1.7 kPa (about 0.25 psia). Based upon EPA AP-42 Table 7.1-2, the TVP of diesel fuel at standard 60F is 0.006. Diesel will be stored at ambient temperature. Therefore, diesel storage will be exempted from NSPS Kb and Kc NSPS.

2. Subject to a State Regulation specific to the emission unit (e.g. NAC 445B.2203, NAC 445B.22047, NAC 445B.22033, NAC 445B.22017, NAC 445B.3363(1)(g)):

☐ Yes ☒ No If yes, identify regulation and applicability.

3. Identify standards for work practices which affect emissions for all regulated air pollutants (e.g. At all times, including startup, shutdown and malfunction).

Use submerged filling techniques or bottom loading to reduce vapor displacement.

Minimize tank turnover and avoid unnecessary transfers

4. Identify and describe compliance and performance testing with reference to any applicable test methods, monitoring devices, compliance plan, or other activities required to determine compliance with an applicable requirement (e.g. Emissions from this unit will be monitored by CEMS and/or COMS for the specific pollutant(s) (NO_x, CO, etc.)).

The facility will maintain records of tank filling and throughput.

LIQUID STORAGE TANK APPLICATION FORM CLASS I OPERATING PERMIT

System Number and Name: 1,240-gallon Tanks (6) - Insignificant Activity

Emission Unit Description: 1,240-gallon diesel fuel storage tank

Alternative Operating Scenario: ☐ Yes ☒ No

Insignificant Activity: ☒ Yes ☐ No If yes, identify exemption regulation: NAC 445B.288 2(d)

Description		Data	
Equipment Description	BAPC Emission Unit ID <i>Applicable for Renewal or Revision</i>	eg. Unit ID: S2.001, PF1.001 See attached table.	
	Source Classification Code (SCC)	eg. 3-03-024-04 for Conveyors 4-04-001-22	
	Manufacturer		TBD
	Date Manufactured		TBD
	Model Number		TBD
	Heated Tank	yes/no	No
	Shell Height	feet	7
	Shell Length	feet	6
	Shell Width	feet	4
	Maximum Liquid Height	feet	7
	Average Liquid Height	feet	3.5
	Capacity of Tank	gallons	1240
	Shell Color		Aluminum
	Shell Condition	good/poor	Good
	Roof Type (Cone, Dome, External, or Internal Floating Roof)		External
	Roof Height	feet	N/A
	Roof Color		N/A
	Cone Roof Slope		N/A
	Dome Roof Radius	feet	N/A
	True Vapor Pressure of Liquid	psig	0.006
	Reid Vapor Pressure of Liquid	psig	0.1
	Orientation of Tank	Horizontal/Vertical	Vertical
	Submerged Fill [NAC 445B.22093(3)]	yes/no	Yes
	Equipment Dimensions (LxWxH)	feet	6 x 4 x 7
Location of Emission Source	UTM Northing (NAD 83, Zone 11)	m See attached table.	
	UTM Easting (NAD 83, Zone 11)	m See attached table.	

LIQUID STORAGE TANK APPLICATION FORM CLASS I OPERATING PERMIT (continued)

Emission Unit Description: 1,240-gallon diesel fuel storage tank

Description			Data
Operating Parameters	Material Type		Diesel Fuel
	Operating Time per Year	hour/year	100
	Maximum Throughput	gallon/month	429
	Maximum Throughput	gallon/year	5,150
Control Equipment	Type of Control		Submerged Fill
	Control Efficiency	%	N/A
	Pollutant(s) Controlled		VOC
	Manufacturer		N/A
	Manufacturer's Guarantee Included?	yes/NA	N/A
Volatile Organic Compounds (VOC) Emissions	Emission Limit	ton/year	N/A
Other Pollutants	Emission Factor (with units)	(insert unit)	N/A
	Emission Factor Reference		N/A
	Emission Limit	pound/hour	N/A
	Emission Limit	ton/year	N/A

LIQUID STORAGE TANKS APPLICATION FORM CLASS I OPERATING PERMIT (continued)

Emission Unit Description: 1,240-gallon diesel fuel storage tank

1. Subject to a Federal Regulation specific to the emission unit (e.g. 40 CFR Part 60, 61, 63, 64, 76, or other):
☐ Yes ☒ No If yes, identify regulation and applicability and include required analysis or plans (e.g. siting analysis or Continuous Assurance Monitoring (CAM) plans).
NSPS (40 CFR Part 60) Subpart K and Ka will not apply because the tank is not greater than 40,000-gallon capacity. For NSPS Subpart Kb, there is an exemption for storage tanks that store volatile organic liquids with a maximum true vapor pressure (TVP) that is less than 3.5 kPa (about 0.51 psia). For NSPS Subpart Kc, there is an exemption for storage tanks with TVP less than 1.7 kPa (about 0.25 psia). Based upon EPA AP-42 Table 7.1-2, the TVP of diesel fuel at standard 60F is 0.006. Diesel will be stored at ambient temperature. Therefore, diesel storage will be exempted from NSPS Kb and Kc NSPS.

2. Subject to a State Regulation specific to the emission unit (e.g. NAC 445B.2203, NAC 445B.22047, NAC 445B.22033, NAC 445B.22017, NAC 445B.3363(1)(g):
☐ Yes ☒ No If yes, identify regulation and applicability.

3. Identify standards for work practices which affect emissions for all regulated air pollutants (e.g. At all times, including startup, shutdown and malfunction).
Use submerged filling techniques or bottom loading to reduce vapor displacement.
Minimize tank turnover and avoid unnecessary transfers

4. Identify and describe compliance and performance testing with reference to any applicable test methods, monitoring devices, compliance plan, or other activities required to determine compliance with an applicable requirement (e.g. Emissions from this unit will be monitored by CEMS and/or COMS for the specific pollutant(s) (NO_x, CO, etc.)).
The facility will maintain records of tank filling and throughput.

COMBUSTION EQUIPMENT DETAILED CALCULATIONS, PER ENGINE

Area	Unit No.	Unit Description	Operating Hours		Heat Input (MMBtu)		Fuel Usage			Power Output		Controls		Emissions					References	Number of Units
			Daily	Annual	Hourly	Annual	Hourly	Annual	Units	Amount	Units	Type	Efficiency or Dry Volume Flow Rate	Pollutant	Factor	Unit	Hourly Rate (lbs/hr)	Yearly Rate (tons/yr)		
System No. & Name:			System 1: P1 Power Plant Engines												Uncontrolled					
Prime Power Yard	J420_01 - J420_136	Jenbacher J420 1.6 MW Natural Gas-Fueled Engine	24	8,760	14.23	124,646	16,245	142,306,200	SCF	2,146	BHP	OxCat SCR	NO _x : 93.8%, CO: 97.4%, VOC: 80%	PM	0.01	g/bp-hr	0.05	0.21	Vendor	136
														PM ₁₀	0.01	g/bp-hr	0.05	0.21	Vendor	
														PM _{2.5}	0.01	g/bp-hr	0.05	0.21	Vendor	
														SO ₂	0.015	g/bp-hr	0.07	0.31	Vendor	
														NO _x	0.81	g/bp-hr	3.83	16.8	Vendor	
														CO	2.00	g/bp-hr	9.46	41.4	Vendor	
														VOC	0.10	g/bp-hr	0.47	2.07	Vendor	
														Pb	--	--	--	--	--	
														Hg	--	--	--	--	--	
														H ₂ S	--	--	--	--	--	
														Controlled						
														PM	0.01	g/bp-hr	0.05	0.21	Vendor	
														PM ₁₀	0.01	g/bp-hr	0.05	0.21	Vendor	
														PM _{2.5}	0.01	g/bp-hr	0.05	0.21	Vendor	
														SO ₂	0.015	g/bp-hr	0.07	0.31	Vendor	
														NO _x	0.050	g/bp-hr	0.24	1.04	Vendor	
														CO	0.052	g/bp-hr	0.25	1.08	Vendor	
														VOC	0.020	g/bp-hr	0.09	0.41	Vendor	
														Pb	--	--	--	--	--	
														Hg	--	--	--	--	--	
														H ₂ S	--	--	--	--	--	
System No. & Name:			System 2: CNG Pressure Reducing System												Uncontrolled					
Prime Power Yard	PRS_01 - PRS_12	Certarus CNG Pressure Reducing System	24	8,760	0.24	2,129	0.000238	2.09	MMscf	N/A	N/A	None	N/A	PM	N/A	N/A	0.00	0.00	N/A	12
														PM ₁₀	N/A	N/A	0.00	0.00	N/A	
														PM _{2.5}	N/A	N/A	0.00	0.00	N/A	
														SO ₂	N/A	N/A	0.00	0.00	N/A	
														NO _x	N/A	Vendor	0.053	0.23	Vendor	
														CO	N/A	N/A	0.00	0.00	N/A	
														VOC	N/A	N/A	0.00	0.00	N/A	
														Pb	--	--	--	--	--	
														Hg	--	--	--	--	--	
														H ₂ S	--	--	--	--	--	
														Controlled						
														PM	N/A	N/A	0.00	0.00	N/A	
														PM ₁₀	N/A	N/A	0.00	0.00	N/A	
														PM _{2.5}	N/A	N/A	0.00	0.00	N/A	
														SO ₂	N/A	N/A	0.00	0.00	N/A	
														NO _x	N/A	Vendor	0.05	0.23	Vendor	
														CO	N/A	N/A	0.00	0.00	N/A	
														VOC	N/A	N/A	0.00	0.00	N/A	
														Pb	--	--	--	--	--	
														Hg	--	--	--	--	--	
														H ₂ S	--	--	--	--	--	

COMBUSTION EQUIPMENT DETAILED CALCULATIONS, PER ENGINE

Area	Unit No.	Unit Description	Operating Hours		Heat Input (MMBtu)		Fuel Usage			Power Output		Controls		Emissions					References	Number of Units	
			Daily	Annual	Hourly	Annual	Hourly	Annual	Units	Amount	Units	Type	Efficiency or Dry Volume Flow Rate	Pollutant	Factor	Unit	Hourly Rate (lbs/hr)	Yearly Rate (tons/yr)			
System No. & Name:			System 3: Black Start Engine Generators for Prime Power Engines												Uncontrolled						
Prime Power Yard	BSE1 - BSE6	Volvo Penta T4 1,370 kW Diesel-Fueled Black Start Engine Generators	1	100	14.15	1,415	103.0	10,300	Gallons	1,864	BHP	OxCat SCR Particulate Filter	Tier 4 control efficiencies provided by vendor in emission factors	PM	0.014	g/kWh	0.041	0.002	Vendor	6	
														PM ₁₀	0.014	g/kWh	0.041	0.002	Vendor		
														PM _{2.5}	0.014	g/kWh	0.041	0.002	Vendor		
														SO ₂	0.0015	lb/MMBtu	0.021	0.0011	AP-42 3.4		
														NO _x	0.40	g/kWh	1.21	0.06	Vendor		
														CO	0.07	g/kWh	0.20	0.010	Vendor		
														VOC	0.013	g/kWh	0.04	0.002	Vendor		
														Pb	--	--	--	--	--		
														Hg	--	--	--	--	--		
														H ₂ S	--	--	--	--	--		
														Controlled							
														PM	0.014	g/kWh	0.041	0.002	Vendor		
														PM ₁₀	0.014	g/kWh	0.041	0.002	Vendor		
														PM _{2.5}	0.014	g/kWh	0.041	0.002	Vendor		
														SO ₂	0.0015	lb/MMBtu	0.021	0.0011	AP-42 3.4		
														NO _x	0.40	g/kWh	1.21	0.06	Vendor		
														CO	0.07	g/kWh	0.20	0.01	Vendor		
														VOC	0.013	g/kWh	0.04	0.002	Vendor		
Pb	--	--	--	--	--																
Hg	--	--	--	--	--																
H ₂ S	--	--	--	--	--																
System No. & Name:			System 4: Generator Building 1 Engines												Uncontrolled						
DC Generator Building 1	DC1_01 - DC1_21	Tier 4 Caterpillar 3516E 3.0 MW Diesel-Fired Generator	1	100	28.1	2,807	204.3	20,430	Gallons	4,393	BHP	OxCat SCR Particulate Filter	NO _x : 95%, CO: 89%, PM: 66.7%	PM	0.06	g/bp-hr	0.58	0.029	Vendor	21	
														PM ₁₀	0.06	g/bp-hr	0.58	0.029	Vendor		
														PM _{2.5}	0.06	g/bp-hr	0.58	0.029	Vendor		
														SO ₂	0.0015	lb/MMBtu	0.04	0.002	AP-42 3.4		
														NO _x	6.76	g/bp-hr	65.5	3.27	Vendor		
														CO	1.20	g/bp-hr	11.6	0.58	Vendor		
														VOC	0.06	g/bp-hr	0.58	0.03	Vendor		
														Pb	--	--	--	--	--		
														Hg	--	--	--	--	--		
														H ₂ S	--	--	--	--	--		
														Controlled							
														PM	0.02	g/bp-hr	0.19	0.010	Vendor		
														PM ₁₀	0.02	g/bp-hr	0.19	0.010	Vendor		
														PM _{2.5}	0.02	g/bp-hr	0.19	0.010	Vendor		
														SO ₂	0.0015	lb/MMBtu	0.04	0.002	AP-42 3.4		
														NO _x	0.34	g/bp-hr	3.27	0.16	Vendor		
														CO	0.13	g/bp-hr	1.28	0.06	Vendor		
														VOC	0.06	g/bp-hr	0.58	0.03	Vendor		
Pb	--	--	--	--	--																
Hg	--	--	--	--	--																
H ₂ S	--	--	--	--	--																

COMBUSTION EQUIPMENT DETAILED CALCULATIONS, PER ENGINE

Area	Unit No.	Unit Description	Operating Hours		Heat Input (MMBtu)		Fuel Usage			Power Output		Controls		Emissions					References	Number of Units	
			Daily	Annual	Hourly	Annual	Hourly	Annual	Units	Amount	Units	Type	Efficiency or Dry Volume Flow Rate	Pollutant	Factor	Unit	Hourly Rate (lbs/hr)	Yearly Rate (tons/yr)			
System No. & Name:			System 4: Generator Building 2 Engines											Uncontrolled							
DC Generator Building 2	DC2_01 - DC2_20	Tier 4 Caterpillar 3516E 3.0 MW Diesel-Fired Generator	1	100	28.1	2,807	204.3	20,430	Gallons	4,393	BHP	OxCat SCR Particulate Filter	NOx: 95%, CO: 89%, PM: 66.7%	PM	0.06	g/hp-hr	0.58	0.029	Vendor	20	
														PM ₁₀	0.06	g/hp-hr	0.58	0.029	Vendor		
														PM _{2.5}	0.06	g/hp-hr	0.58	0.029	Vendor		
														SO ₂	0.0015	lb/MMBtu	0.04	0.002	AP-42 3.4		
														NOx	6.76	g/hp-hr	65.5	3.27	Vendor		
														CO	1.20	g/hp-hr	11.6	0.58	Vendor		
														VOC	0.06	g/hp-hr	0.58	0.03	Vendor		
														Pb	--	--	--	--	--		
														Hg	--	--	--	--	--		
														H ₂ S	--	--	--	--	--		
														Controlled							
														PM	0.02	g/hp-hr	0.19	0.010	Vendor		
														PM ₁₀	0.02	g/hp-hr	0.19	0.010	Vendor		
														PM _{2.5}	0.02	g/hp-hr	0.19	0.010	Vendor		
														SO ₂	0.0015	lb/MMBtu	0.04	0.002	AP-42 3.4		
														NOx	0.34	g/hp-hr	3.27	0.16	Vendor		
														CO	0.13	g/hp-hr	1.28	0.06	Vendor		
														VOC	0.06	g/hp-hr	0.58	0.03	Vendor		
														Pb	--	--	--	--	--		
														Hg	--	--	--	--	--		
														H ₂ S	--	--	--	--	--		
System No. & Name:			System 4: Generator Building 3 Engines											Uncontrolled							
DC Generator Building 3	DC3_01 - DC3_21	Tier 4 Caterpillar 3516E 3.0 MW Diesel-Fired Generator	1	100	28.1	2,807	204.3	20,430	Gallons	4,393	BHP	OxCat SCR Particulate Filter	NOx: 95%, CO: 89%, PM: 66.7%	PM	0.06	g/hp-hr	0.58	0.029	Vendor	21	
														PM ₁₀	0.06	g/hp-hr	0.58	0.029	Vendor		
														PM _{2.5}	0.06	g/hp-hr	0.58	0.029	Vendor		
														SO ₂	0.0015	lb/MMBtu	0.04	0.002	AP-42 3.4		
														NOx	6.76	g/hp-hr	65.5	3.27	Vendor		
														CO	1.20	g/hp-hr	11.6	0.58	Vendor		
														VOC	0.06	g/hp-hr	0.58	0.03	Vendor		
														Pb	--	--	--	--	--		
														Hg	--	--	--	--	--		
														H ₂ S	--	--	--	--	--		
														Controlled							
														PM	0.02	g/hp-hr	0.19	0.010	Vendor		
														PM ₁₀	0.02	g/hp-hr	0.19	0.010	Vendor		
														PM _{2.5}	0.02	g/hp-hr	0.19	0.010	Vendor		
														SO ₂	0.0015	lb/MMBtu	0.04	0.002	AP-42 3.4		
														NOx	0.34	g/hp-hr	3.27	0.16	Vendor		
														CO	0.13	g/hp-hr	1.28	0.06	Vendor		
														VOC	0.06	g/hp-hr	0.58	0.03	Vendor		
														Pb	--	--	--	--	--		
														Hg	--	--	--	--	--		
														H ₂ S	--	--	--	--	--		

COMBUSTION EQUIPMENT DETAILED CALCULATIONS, PER ENGINE

Area	Unit No.	Unit Description	Operating Hours		Heat Input (MMBtu)		Fuel Usage			Power Output		Controls		Emissions					References	Number of Units		
			Daily	Annual	Hourly	Annual	Hourly	Annual	Units	Amount	Units	Type	Efficiency or Dry Volume Flow Rate	Pollutant	Factor	Unit	Hourly Rate (lb/hr)	Yearly Rate (tons/yr)				
System No. & Name:			System 4: Generator Building 4 Engines											Uncontrolled								
DC Generator Building 4	DC4_01 - DC4_20	Tier 4 Caterpillar 3516E 3.0 MW Diesel-Fired Generator	1	100	28.1	2,807	204.3	20,430	Gallons	4,393	BHP	OxCat SCR Particulate Filter	NOx: 95%, CO 89%, PM: 66.7%	PM	0.06	g/hp-hr	0.58	0.029	Vendor	20		
														PM ₁₀	0.06	g/hp-hr	0.58	0.029	Vendor			
														PM _{2.5}	0.06	g/hp-hr	0.58	0.029	Vendor			
														SO ₂	0.0015	lb/MMBtu	0.04	0.002	AP-42.3.4			
														NOx	6.76	g/hp-hr	65.5	3.27	Vendor			
														CO	1.20	g/hp-hr	11.6	0.58	Vendor			
														VOC	0.06	g/hp-hr	0.58	0.03	Vendor			
														Pb	--	--	--	--	--			
														Hg	--	--	--	--	--			
														H ₂ S	--	--	--	--	--			
														Controlled								
														PM	0.02	g/hp-hr	0.19	0.010	Vendor			
														PM ₁₀	0.02	g/hp-hr	0.19	0.010	Vendor			
														PM _{2.5}	0.02	g/hp-hr	0.19	0.010	Vendor			
														SO ₂	0.0015	lb/MMBtu	0.04	0.002	AP-42.3.4			
														NOx	0.34	g/hp-hr	3.27	0.16	Vendor			
														CO	0.13	g/hp-hr	1.28	0.06	Vendor			
														VOC	0.06	g/hp-hr	0.58	0.03	Vendor			
														Pb	--	--	--	--	--			
														Hg	--	--	--	--	--			
														H ₂ S	--	--	--	--	--			
System No. & Name:			System 5: Substation Engines											Uncontrolled								
Substation	C32_1 - C32_2	Tier 2 Caterpillar C32 1.25 MW Diesel-Fired Generator	1	100	12.0	1,197	87.4	8,740	Gallons	1,676	BHP	None	N/A	PM	0.02	g/hp-hr	0.07	0.004	Vendor	2		
														PM ₁₀	0.02	g/hp-hr	0.07	0.004	Vendor			
														PM _{2.5}	0.02	g/hp-hr	0.07	0.004	Vendor			
														SO ₂	0.0015	lb/MMBtu	0.02	0.0009	AP-42.3.4			
														NOx	6.2	g/hp-hr	22.9	1.15	Vendor			
														CO	0.21	g/hp-hr	0.78	0.04	Vendor			
														VOC	0.10	g/hp-hr	0.37	0.02	Vendor			
														Pb	--	--	--	--	--			
														Hg	--	--	--	--	--			
														H ₂ S	--	--	--	--	--			
														Controlled								
														PM	0.02	g/hp-hr	0.07	0.00	Vendor			
														PM ₁₀	0.02	g/hp-hr	0.07	0.00	Vendor			
														PM _{2.5}	0.02	g/hp-hr	0.07	0.00	Vendor			
														SO ₂	0.0015	lb/MMBtu	0.02	0.0009	AP-42.3.4			
														NOx	6.2	g/hp-hr	22.9	1.15	Vendor			
														CO	0.21	g/hp-hr	0.78	0.04	Vendor			
														VOC	0.10	g/hp-hr	0.37	0.02	Vendor			
														Pb	--	--	--	--	--			
														Hg	--	--	--	--	--			
														H ₂ S	--	--	--	--	--			

COMBUSTION EQUIPMENT DETAILED CALCULATIONS, PER ENGINE

Area	Unit No.	Unit Description	Operating Hours		Heat Input (MMBtu)		Fuel Usage			Power Output		Controls		Emissions				References	Number of Units		
			Daily	Annual	Hourly	Annual	Hourly	Annual	Units	Amount	Units	Type	Efficiency or Dry Volume Flow Rate	Pollutant	Factor	Unit	Hourly Rate (lb/hr)			Yearly Rate (tons/yr)	
System No. & Name:			System 6: Fire Pump Engines																		
Fire Command Center	FIRE_1 - FIRE_2	Tier 3 UFAD12 364 kW Clark Diesel-Fired Fire Pump Engine	1	40	4.32	173	31.5	1,260	Gallons	488	BHP	None	N/A	PM	0.199	g/kWh	0.16	0.003	Vendor	2	
														PM ₁₀	0.199	g/kWh	0.16	0.003	Vendor		
														PM _{2.5}	0.199	g/kWh	0.16	0.003	Vendor		
														SO ₂	0.0021	lb/hp-hr	1.00	0.020	AP-42 3.3		
														NO _x	2.94	g/kWh	2.36	0.05	Vendor		
														CO	1.9	g/kWh	1.52	0.03	Vendor		
														VOC	0.17	g/kWh	0.14	0.003	Vendor		
														Pb	--	--	--	--	--		
														Hg	--	--	--	--	--		
														H ₂ S	--	--	--	--	--		
														Controlled							
														PM	0.199	g/kWh	0.16	0.003	Vendor		
														PM ₁₀	0.199	g/kWh	0.16	0.003	Vendor		
														PM _{2.5}	0.199	g/kWh	0.16	0.003	Vendor		
														SO ₂	0.0021	lb/hp-hr	1.00	0.020	AP-42 3.3		
														NO _x	2.94	g/kWh	2.36	0.05	Vendor		
														CO	1.9	g/kWh	1.52	0.03	Vendor		
														VOC	0.17	g/kWh	0.14	0.003	Vendor		
														Pb	--	--	--	--	--		
														Hg	--	--	--	--	--		
														H ₂ S	--	--	--	--	--		

GREENHOUSE GASES (GHG) DETAILED CALCULATIONS, PER UNIT

Area	Unit No.	Unit Description	Operating Hours		Heat Input (MMBtu)		Fuel Usage			Power Output		Controls		Emissions per Unit					References	Number of Units
			Daily	Annual	Hourly (MMBtu/hr)	Annual (MMBtu/yr)	Hourly	Annual	Units	Amount	Units	Type	Efficiency or Dry Volume Flow Rate	Pollutant	Factor	Unit	Hourly Rate (lbs/hr)	Yearly Rate (tons/yr)		
System No. & Name:			System 1: P1 Power Plant Engines																	
Prime Power Yard	J420_01 - J420_136	Jenbacher J420 1.6 MW Natural Gas-Fueled Engine	24	8,760	14.23	124,646	16,245	142,306,200	SCF	2,146	BHP	OxCat SCR	N/A	CO ₂	1.10E+02	lb/MMBtu	1.57E+03	6.86E+03	AP-42 Table 3.2	136
														CH ₄	2.20E-03	lb/MMBtu	3.14E-02	1.37E-01	1	
														N ₂ O	2.20E-04	lb/MMBtu	3.14E-03	1.37E-02	1	
														CO ₂ e			1.57E+03	6.86E+03	1	
System No. & Name:			System 2: CNG Pressure Reducing System																	
Prime Power Yard	PRS_01 - PRS_12	Certarus CNG Pressure Reducing System	24	8,760	0.2	2,129	0.0002	2	MMscf	N/A	N/A	None	N/A	CO ₂	N/A	Vendor	2.44E+02	1.07E+03	Vendor	12
														CH ₄	N/A	N/A	0.00E+00	0.00E+00	N/A	
														N ₂ O	N/A	N/A	0.00E+00	0.00E+00	N/A	
														CO ₂ e			2.44E+02	1.07E+03	N/A	
System No. & Name:			System 3: Black Start Engine Gensets for Prime Power Engines																	
Prime Power Yard	BSE1 - BSE6	Volvo Penta T4 1,370 kW Diesel-Fueled Black Start Engine Gensets	1	100	14.15	1415	103.0	10,300	Gallons	1864	BHP	OxCat SCR Particulate Filter	N/A	CO ₂	1.65E+02	lb/MMBtu	2.33E+03	1.17E+02	AP-42 Table 3.4	6
														CH ₄	6.61E-03	lb/MMBtu	9.36E-02	4.68E-03	1	
														N ₂ O	1.32E-03	lb/MMBtu	1.87E-02	9.36E-04	1	
														CO ₂ e			2.34E+03	1.17E+02	1	
System No. & Name:			System 4: Generator Building 1 Engines																	
DC Generator Building 1	DC1_01 - DC1_21	Tier 4 Caterpillar 3516E 3.0 MW Diesel-Fired Generator	1	100	28.1	2,807	204	20,430	Gallons	4,393	BHP	OxCat SCR Particulate Filter	N/A	CO ₂	1.65E+02	lb/MMBtu	4.63E+03	2.32E+02	AP-42, Table 3.4-1	21
														CH ₄	6.61E-03	lb/MMBtu	1.86E-01	9.28E-03	1	
														N ₂ O	1.32E-03	lb/MMBtu	3.71E-02	1.86E-03	1	
														CO ₂ e			4.65E+03	2.32E+02	1	
System No. & Name:			System 4: Generator Building 2 Engines																	
DC Generator Building 2	DC2_01 - DC2_20	Tier 4 Caterpillar 3516E 3.0 MW Diesel-Fired Generator	1	100	28.1	2,807	204	20,430	Gallons	4,393	BHP	OxCat SCR Particulate Filter	N/A	CO ₂	1.65E+02	lb/MMBtu	4.63E+03	2.32E+02	AP-42, Table 3.4-1	20
														CH ₄	6.61E-03	lb/MMBtu	1.86E-01	9.28E-03	1	
														N ₂ O	1.32E-03	lb/MMBtu	3.71E-02	1.86E-03	1	
														CO ₂ e			4.65E+03	2.32E+02	1	
System No. & Name:			System 4: Generator Building 3 Engines																	
DC Generator Building 3	DC3_01 - DC3_21	Tier 4 Caterpillar 3516E 3.0 MW Diesel-Fired Generator	1	100	28.1	2,807	204	20,430	Gallons	4,393	BHP	OxCat SCR Particulate Filter	N/A	CO ₂	1.65E+02	lb/MMBtu	4.63E+03	2.32E+02	AP-42, Table 3.4-1	21
														CH ₄	6.61E-03	lb/MMBtu	1.86E-01	9.28E-03	1	
														N ₂ O	1.32E-03	lb/MMBtu	3.71E-02	1.86E-03	1	
														CO ₂ e			4.65E+03	2.32E+02	1	

GREENHOUSE GASES (GHG) DETAILED CALCULATIONS, PER UNIT

Area	Unit No.	Unit Description	Operating Hours		Heat Input (MMBtu)		Fuel Usage			Power Output		Controls		Emissions per Unit					References	Number of Units
			Daily	Annual	Hourly (MMBtu/hr)	Annual (MMBtu/yr)	Hourly	Annual	Units	Amount	Units	Type	Efficiency or Dry Volume Flow Rate	Pollutant	Factor	Unit	Hourly Rate (lbs/hr)	Yearly Rate (tons/yr)		
System No. & Name:			System 4: Generator Building 4 Engines																	
DC Generator Building 4	DC4_01 - DC4_20	Tier 4 Caterpillar 3516E 3.0 MW Diesel-Fired Generator	1	100	28.1	2,807	204	20,430	Gallons	4,393	BHP	OxCat SCR Particulate Filter	N/A	CO ₂	1.65E+02	lb/MMBtu	4.63E+03	2.32E+02	AP-42, Table 3.4-1	20
														CH ₄	6.61E-03	lb/MMBtu	1.86E-01	9.28E-03	1	
														N ₂ O	1.32E-03	lb/MMBtu	3.71E-02	1.86E-03	1	
														CO ₂ e			4.65E+03	2.32E+02	1	
System No. & Name:			System 5: Substation Engines																	
Substation	C32_1 - C32_2	Tier 2 Caterpillar C32 1.25 MW Diesel-Fired Generator	1	100	12.0	1,197	87.4	8,740	Gallons	1,676	BHP	None	N/A	CO ₂	1.65E+02	lb/MMBtu	1.98E+03	9.88E+01	AP-42, Table 3.4-1	2
														CH ₄	6.61E-03	lb/MMBtu	7.92E-02	3.96E-03	1	
														N ₂ O	1.32E-03	lb/MMBtu	1.58E-02	7.92E-04	1	
														CO ₂ e			1.98E+03	9.91E+01	1	
System No. & Name:			System 6: Fire Pump Engines																	
Fire Command Center	FIRE_1 - FIRE_2	Tier 3 UFAD12 364 kW Clark Diesel-Fired Fire Pump Engine	1	40	4.32	173	31.5	1260	Gallons	488	BHP	None	N/A	CO ₂	1.64E+02	lb/MMBtu	7.08E+02	1.42E+01	AP-42, Table 3.3-1	2
														CH ₄	6.61E-03	lb/MMBtu	2.85E-02	5.71E-04	1	
														N ₂ O	1.32E-03	lb/MMBtu	5.71E-03	1.14E-04	1	
														CO ₂ e			7.10E+02	1.42E+01	1	

1 Emission Factors for Greenhouse Gas Inventories, June 2024. <https://www.epa.gov/system/files/documents/2024-02/ghg-emission-factors-hub-2024.pdf>

HAZARDOUS AIR POLLUTANTS (HAPS) DETAILED CALCULATIONS, PER ENGINE

HAZARDOUS AIR POLLUTANTS (HAP) EMISSIONS CALCULATION FOR ENGINE																				
Area	Unit No.	Unit Description	Operating Hours		Heat Input (MMBtu)		Fuel Usage		Power Output		Controls		Emissions					References	Number of Units	
			Daily	Annual	Hourly	Annual	Hourly	Annual	Units	Amount	Units	Type	Efficiency or Dry Volume Flow Rate	Pollutant	Factor	Unit	Hourly Rate (lb/hr)			Yearly Rate (ton/yr)
System No. & Name			System 1: P1 Power Plant Engines																	
Prime Power Yard	J420-01 - J420-136	Jenbacher J420 1.6 MW Natural Gas-Fueled Engine	24	8,760	14.23	124,646	16,245	142,306,200	SCF	2,146	BHP	OxCat SCR	VOC: 80%, Formaldehyde: 90%	1,1,2,2-Tetrachloroethane	4.00E-05	lb/MMBtu	1.14E-04	4.99E-04	AP-42 Table 3.2-2	136
														1,1,2-Trichloroethane	3.18E-05	lb/MMBtu	9.05E-05	3.96E-04	AP-42 Table 3.2-2	
														1,3-Butadiene	2.67E-04	lb/MMBtu	7.60E-04	3.13E-03	AP-42 Table 3.2-2	
														1,3-Dichloropropene	2.64E-05	lb/MMBtu	7.51E-05	3.29E-04	AP-42 Table 3.2-2	
														2,2,4-Trimethylpentane	2.50E-04	lb/MMBtu	7.11E-04	3.12E-03	AP-42 Table 3.2-2	
														2-Methylnaphthalene	3.12E-05	lb/MMBtu	9.45E-05	4.14E-04	AP-42 Table 3.2-2	
														Acenaphthene	1.25E-06	lb/MMBtu	3.56E-06	1.56E-05	AP-42 Table 3.2-2	
														Acenaphthylene	5.53E-06	lb/MMBtu	1.57E-05	6.89E-05	AP-42 Table 3.2-2	
														Benzene	4.40E-04	lb/MMBtu	1.25E-03	5.48E-03	AP-42 Table 3.2-2	
														Benzo(b)fluoranthene	1.66E-07	lb/MMBtu	4.72E-07	2.07E-06	AP-42 Table 3.2-2	
														Benzo(c)pyrene	4.15E-07	lb/MMBtu	1.18E-06	5.17E-06	AP-42 Table 3.2-2	
														Benzo(g,h,i)perylene	4.14E-07	lb/MMBtu	1.18E-06	5.16E-06	AP-42 Table 3.2-2	
														Biphenyl	2.12E-04	lb/MMBtu	6.03E-04	2.64E-03	AP-42 Table 3.2-2	
														Carbon Tetrachloride	3.67E-05	lb/MMBtu	1.04E-04	4.57E-04	AP-42 Table 3.2-2	
														Chlorobenzene	3.04E-05	lb/MMBtu	8.65E-05	3.79E-04	AP-42 Table 3.2-2	
														Chloroform	2.85E-05	lb/MMBtu	8.11E-05	3.55E-04	AP-42 Table 3.2-2	
														Chrysene	6.93E-07	lb/MMBtu	1.97E-06	8.64E-06	AP-42 Table 3.2-2	
														Ethylbenzene	3.97E-05	lb/MMBtu	1.13E-04	4.95E-04	AP-42 Table 3.2-2	
														Ethylene Dichloride	4.43E-05	lb/MMBtu	1.26E-04	5.52E-04	AP-42 Table 3.2-2	
														Fluoranthene	1.11E-06	lb/MMBtu	3.16E-06	1.38E-05	AP-42 Table 3.2-2	
														Fluorene	5.67E-06	lb/MMBtu	1.61E-05	7.07E-05	AP-42 Table 3.2-2	
														Formaldehyde	2.00E-01	g/bp-hr	9.46E-02	4.14E-01	Vendor	
														Methanol	2.50E-03	lb/MMBtu	7.11E-03	3.12E-02	AP-42 Table 3.2-2	
														Methylene Chloride	2.00E-05	lb/MMBtu	5.69E-05	2.49E-04	AP-42 Table 3.2-2	
														n-Hexane	1.11E-03	lb/MMBtu	3.16E-03	1.38E-02	AP-42 Table 3.2-2	
														Naphthalene	7.44E-05	lb/MMBtu	2.12E-04	9.27E-04	AP-42 Table 3.2-2	
														Total PAH	2.69E-05	lb/MMBtu	7.66E-05	3.35E-04	AP-42 Table 3.2-2	
														Phenanthrene	1.04E-05	lb/MMBtu	2.96E-05	1.30E-04	AP-42 Table 3.2-2	
														Phenol	2.40E-05	lb/MMBtu	6.83E-05	2.99E-04	AP-42 Table 3.2-2	
														Pyrene	1.36E-06	lb/MMBtu	3.87E-06	1.70E-05	AP-42 Table 3.2-2	
														Styrene	2.36E-05	lb/MMBtu	6.72E-05	2.94E-04	AP-42 Table 3.2-2	
														Perchloroethylene	2.48E-06	lb/MMBtu	7.06E-06	3.09E-05	AP-42 Table 3.2-2	
														Toluene	4.08E-04	lb/MMBtu	1.16E-03	5.09E-03	AP-42 Table 3.2-2	
														Vinyl Chloride	1.49E-05	lb/MMBtu	4.24E-05	1.86E-04	AP-42 Table 3.2-2	
														Xylenes	1.84E-04	lb/MMBtu	5.24E-04	2.29E-03	AP-42 Table 3.2-2	
System No. & Name			System 2: CNG Pressure Reducing System																	
Prime Power Yard	PRS-01 - PRS-12	Certarus CNG Pressure Reducing System	24	8,760	0.2	2,129	0.0002	2	MMscf	N/A	N/A	None	N/A	No HAPs	N/A	N/A	N/A	N/A	N/A	12
System No. & Name			System 3: Black Start Engine Generators for Prime Power Engines																	
Prime Power Yard	BSE1 - BSE6	Volvo Penta T4 1,370 kW Diesel Fueled Black Start Engine Generators	1	100	14.15	1415.0	103.0	10,300	Gallons	1864	BHP	OxCat SCR Particulate Filter	N/A	Benzene	7.76E-04	lb/MMBtu	1.10E-02	5.49E-04	AP-42 Table 3.4-3	6
														Toluene	2.81E-04	lb/MMBtu	3.98E-03	1.99E-04	AP-42 Table 3.4-3	
														Xylenes	1.93E-04	lb/MMBtu	2.73E-03	1.37E-04	AP-42 Table 3.4-3	
														Formaldehyde	7.89E-05	lb/MMBtu	1.12E-03	5.58E-05	AP-42 Table 3.4-3	
														Acetaldehyde	2.52E-05	lb/MMBtu	3.57E-04	1.78E-05	AP-42 Table 3.4-3	
														Acrolein	7.88E-06	lb/MMBtu	1.12E-04	5.58E-06	AP-42 Table 3.4-3	
														Naphthalene	1.30E-04	lb/MMBtu	1.84E-03	9.20E-05	AP-42 Table 3.4-4	
														Total PAH	2.12E-04	lb/MMBtu	3.00E-03	1.50E-04	AP-42 Table 3.4-4	
System No. & Name			System 4: Generator Building 1 Engines																	
DC Generator Building 1	DC1-01 - DC1-21	Tier 4 Caterpillar 3516E 1.0 MW Diesel-Fueled Generator	1	100	28.1	2,807	204.3	20,430	Gallons	4,393	BHP	OxCat SCR Particulate Filter	N/A	Benzene	7.76E-04	lb/MMBtu	2.18E-02	1.09E-03	AP-42 Table 3.4-3	21
														Toluene	2.81E-04	lb/MMBtu	7.89E-03	3.94E-04	AP-42 Table 3.4-3	
														Xylenes	1.93E-04	lb/MMBtu	5.42E-03	2.71E-04	AP-42 Table 3.4-3	
														Formaldehyde	7.89E-05	lb/MMBtu	2.21E-03	1.11E-04	AP-42 Table 3.4-3	
														Acetaldehyde	2.52E-05	lb/MMBtu	7.07E-04	3.54E-05	AP-42 Table 3.4-3	
														Acrolein	7.88E-06	lb/MMBtu	2.21E-04	1.11E-05	AP-42 Table 3.4-3	
														Naphthalene	1.30E-04	lb/MMBtu	3.65E-03	1.82E-04	AP-42 Table 3.4-4	
														Total PAH	2.12E-04	lb/MMBtu	5.95E-03	2.98E-04	AP-42 Table 3.4-4	

HAZARDOUS AIR POLLUTANTS (HAPS) DETAILED CALCULATIONS, PER ENGINE

HAZARDOUS AIR POLLUTANTS (HAP) DETAILED CALCULATION FOR EMISSIONS																				
Area	Unit No.	Unit Description	Operating Hours		Heat Input (MMBtu)		Fuel Usage		Power Output		Controls		Emissions					References	Number of Units	
			Daily	Annual	Hourly	Annual	Hourly	Annual	Units	Amount	Units	Type	Efficiency or Dry Volume Flow Rate	Pollutant	Factor	Unit	Hourly Rate (lb/hr)			Yearly Rate (ton/yr)
System No. & Name:			System 4: Generator Building 2 Engines																	
DC Generator Building 2	DC 2: 01 - DC 2: 20	Tier 4 Caterpillar 3516E 3.0 MW Diesel-Fired Generator	1	100	28.1	2,807	204.3	20,430	Gallons	4,393	BHP	Ox/Cat SCR Particulate Filter	N/A	Benzene	7.76E-04	lb/MMBtu	2.18E-02	1.09E-03	AP-42 Table 3.4.3	20
														Toluene	2.81E-04	lb/MMBtu	7.89E-03	3.94E-04	AP-42 Table 3.4.3	
														Xylenes	1.93E-04	lb/MMBtu	5.42E-03	2.71E-04	AP-42 Table 3.4.3	
														Formaldehyde	7.89E-05	lb/MMBtu	2.21E-03	1.11E-04	AP-42 Table 3.4.3	
														Acetaldehyde	2.52E-05	lb/MMBtu	7.07E-04	3.54E-05	AP-42 Table 3.4.3	
														Acrolein	7.88E-06	lb/MMBtu	2.21E-04	1.11E-05	AP-42 Table 3.4.3	
														Naphthalene	1.30E-04	lb/MMBtu	3.65E-03	1.82E-04	AP-42 Table 3.4.4	
														Total PAH	2.12E-04	lb/MMBtu	5.95E-03	2.98E-04	AP-42 Table 3.4.4	
System No. & Name:			System 4: Generator Building 3 Engines																	
DC Generator Building 3	DC 3: 01 - DC 3: 21	Tier 4 Caterpillar 3516E 3.0 MW Diesel-Fired Generator	1	100	28.1	2,807	204.3	20,430	Gallons	4,393	BHP	Ox/Cat SCR Particulate Filter	N/A	Benzene	7.76E-04	lb/MMBtu	2.18E-02	1.09E-03	AP-42 Table 3.4.3	21
														Toluene	2.81E-04	lb/MMBtu	7.89E-03	3.94E-04	AP-42 Table 3.4.3	
														Xylenes	1.93E-04	lb/MMBtu	5.42E-03	2.71E-04	AP-42 Table 3.4.3	
														Formaldehyde	7.89E-05	lb/MMBtu	2.21E-03	1.11E-04	AP-42 Table 3.4.3	
														Acetaldehyde	2.52E-05	lb/MMBtu	7.07E-04	3.54E-05	AP-42 Table 3.4.3	
														Acrolein	7.88E-06	lb/MMBtu	2.21E-04	1.11E-05	AP-42 Table 3.4.3	
														Naphthalene	1.30E-04	lb/MMBtu	3.65E-03	1.82E-04	AP-42 Table 3.4.4	
														Total PAH	2.12E-04	lb/MMBtu	5.95E-03	2.98E-04	AP-42 Table 3.4.4	
System No. & Name:			System 4: Generator Building 4 Engines																	
DC Generator Building 4	DC 4: 01 - DC 4: 20	Tier 4 Caterpillar 3516E 3.0 MW Diesel-Fired Generator	1	100	28.1	2,807	204	20,430	Gallons	4,393	BHP	Ox/Cat SCR Particulate Filter	N/A	Benzene	7.76E-04	lb/MMBtu	2.18E-02	1.09E-03	AP-42 Table 3.4.3	20
														Toluene	2.81E-04	lb/MMBtu	7.89E-03	3.94E-04	AP-42 Table 3.4.3	
														Xylenes	1.93E-04	lb/MMBtu	5.42E-03	2.71E-04	AP-42 Table 3.4.3	
														Formaldehyde	7.89E-05	lb/MMBtu	2.21E-03	1.11E-04	AP-42 Table 3.4.3	
														Acetaldehyde	2.52E-05	lb/MMBtu	7.07E-04	3.54E-05	AP-42 Table 3.4.3	
														Acrolein	7.88E-06	lb/MMBtu	2.21E-04	1.11E-05	AP-42 Table 3.4.3	
														Naphthalene	1.30E-04	lb/MMBtu	3.65E-03	1.82E-04	AP-42 Table 3.4.4	
														Total PAH	2.12E-04	lb/MMBtu	5.95E-03	2.98E-04	AP-42 Table 3.4.4	
System No. & Name:			System 5: Substation Engines																	
Substation	C32: 1 - C32: 2	Tier 2 Caterpillar C32 1.25 MW Diesel-Fired Generator	1	100	12.0	1,197.4	87.4	8,740	Gallons	1,676	BHP	None	N/A	Benzene	7.76E-04	lb/MMBtu	9.29E-03	4.65E-04	AP-42 Table 3.4.3	2
														Toluene	2.81E-04	lb/MMBtu	3.56E-03	1.68E-04	AP-42 Table 3.4.3	
														Xylenes	1.93E-04	lb/MMBtu	2.31E-03	1.16E-04	AP-42 Table 3.4.3	
														Formaldehyde	7.89E-05	lb/MMBtu	9.45E-04	4.72E-05	AP-42 Table 3.4.3	
														Acetaldehyde	2.52E-05	lb/MMBtu	3.02E-04	1.51E-05	AP-42 Table 3.4.3	
														Acrolein	7.88E-06	lb/MMBtu	9.44E-05	4.72E-06	AP-42 Table 3.4.3	
														Naphthalene	1.30E-04	lb/MMBtu	1.56E-03	7.78E-05	AP-42 Table 3.4.4	
														Total PAH	2.12E-04	lb/MMBtu	2.54E-03	1.27E-04	AP-42 Table 3.4.4	
System No. & Name:			System 6: Fire Pump Engines																	
Fire Command Center	FIRE: 1 - FIRE: 2	Tier 3 UFAD12 364 kW Clark Diesel-Fired Fire Pump Engine	1	40	4.32	173	31.5	1260	Gallons	488	BHP	None	N/A	Benzene	9.33E-04	lb/MMBtu	3.19E-03	6.37E-05	AP-42 Table 3.3.2	2
														Toluene	4.09E-04	lb/MMBtu	1.40E-03	2.79E-05	AP-42 Table 3.3.2	
														Xylenes	2.85E-04	lb/MMBtu	9.74E-04	1.95E-05	AP-42 Table 3.3.2	
														Formaldehyde	1.18E-03	lb/MMBtu	4.03E-03	8.06E-05	AP-42 Table 3.3.2	
														Acetaldehyde	7.67E-04	lb/MMBtu	2.62E-03	5.24E-05	AP-42 Table 3.3.2	
														Acrolein	9.25E-05	lb/MMBtu	3.16E-04	6.32E-06	AP-42 Table 3.3.2	
														Naphthalene	8.48E-05	lb/MMBtu	2.90E-04	5.79E-06	AP-42 Table 3.3.2	
														Total PAH	1.68E-04	lb/MMBtu	5.74E-04	1.15E-05	AP-42 Table 3.3.2	
													1,3-Butadiene	3.91E-05	lb/MMBtu	1.34E-04	2.67E-06	AP-42 Table 3.3.2		

FACILITY-WIDE POTENTIAL TO EMIT TABLE
(FOR ALL SOURCES INCLUDING INSIGNIFICANT ACTIVITIES)
(POUND/HOUR AND TON/YEAR)

Pollutant	Facility-Wide Potential to Emit (pound/hour)	Facility-Wide Potential to Emit (ton/year)
Total Particulate Matter (PM)	23.0	29.0
Total PM ₁₀	23.0	29.0
Total PM _{2.5}	23.0	29.0
Total Sulfur Dioxide (SO ₂)	15.3	42.5
Total Carbon Monoxide (CO)	144	152
Total Oxides of Nitrogen (NO _x)	359	159
Total Volatile Organic Compounds (VOC)	61.8	58.8
Total Lead (Pb)	--	--
Total Hydrogen Sulfide (H ₂ S)	--	--
Total Sulfuric Acid Mist (H ₂ SO ₄)	--	--
Total Hazardous Air Pollutants (HAPs)	19.3	66.6
Total Greenhouse Gases (CO ₂ e)	614,982	959,773

PLANT BOUNDARY COORDINATES FORM

Corner Number	UTM Easting	UTM Northing
1	284130.44	4380960.55
2	284123.46	4380863.63
3	284422.70	4380852.97
4	284367.66	4379114.39
5	284981.45	4379102.08
6	284438.21	4377981.16
7	284413.30	4377974.09
8	284362.52	4378004.20
9	283573.52	4376386.14
10	283555.40	4376192.30
11	283669.61	4376028.22
12	283936.77	4376109.34
13	283955.05	4376275.44
14	284160.38	4376353.72
15	284232.51	4376224.72
16	284450.80	4376337.27
17	284690.02	4376523.48
18	284750.20	4376598.27
19	285046.78	4377142.07
20	285259.03	4377023.61
21	285387.11	4377250.57
22	285408.77	4377261.57
23	285452.75	4377344.38
24	285547.73	4377533.24
25	285391.09	4377542.32
26	285319.79	4377574.81
27	285265.28	4377652.68
28	285256.68	4377644.06
29	285247.55	4377641.67
30	285237.74	4377644.19
31	285231.91	4377649.93
32	285229.09	4377660.06
33	285231.89	4377669.62
34	285237.57	4377676.79
35	285219.38	4377876.39
36	285225.12	4377966.46
37	285239.79	4378038.56
38	285281.46	4378194.65
39	285684.62	4378333.63
40	285570.94	4378622.49
41	285621.16	4378623.72
42	285664.33	4378630.01
43	285693.45	4378638.31
44	285797.67	4378679.63
45	285776.62	4378702.44
46	285747.26	4378732.89
47	285729.30	4378757.26
48	285711.57	4378790.03
49	285699.43	4378820.92

PLANT BOUNDARY COORDINATES FORM

Corner Number	UTM Easting	UTM Northing
50	285694.06	4378840.88
51	285686.61	4378882.92
52	285687.04	4378922.47
53	285690.41	4378948.24
54	285700.83	4378992.32
55	285724.71	4379081.44
56	285541.24	4379072.30
57	285512.23	4379880.59
58	285497.99	4379905.88
59	285514.49	4379931.32
60	285509.58	4379934.81
61	285504.64	4379942.11
62	285502.69	4379951.04
63	285503.19	4379959.68
64	285506.55	4379966.27
65	285512.66	4379972.98
66	285522.54	4379976.61
67	285531.79	4379976.97
68	285538.15	4379974.99
69	285596.66	4380018.57
70	285614.03	4380094.76
71	285643.42	4380110.95
72	285599.16	4380173.37
73	285580.99	4380194.75
74	285557.56	4380215.98
75	285532.45	4380233.69
76	285504.80	4380250.16
77	285468.87	4380270.61
78	285356.42	4380215.82
79	285321.97	4380203.65
80	285319.49	4380176.81
81	285189.83	4380107.89
82	285128.82	4380162.97
83	285165.34	4380305.03
84	285361.57	4380401.85
85	285184.77	4380755.22
86	285142.87	4380814.57
87	285066.07	4380894.87
88	285004.89	4380934.45
89	284899.49	4380981.15
90	284840.44	4380996.64
91	284767.26	4381007.67
92	284683.34	4381006.58
93	284434.35	4380979.49
94	284333.58	4380967.18
95	284241.98	4380953.39

PLANT BUILDING PARAMETERS FORM

Building Parameters

Building Name: DC Building
Roof Height (ft): 63.32
X-Length (ft): 155.09
Rotation Angle (deg): 1

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 1369.39

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285310.42	4378913.02		

Building Parameters

Building Name: J420 Gen Housing Building 1
Roof Height (ft): 18.01
X-Length (ft): 25.98
Rotation Angle (deg): 29

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 243.01

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285383.00	4378486.31		

Building Parameters

Building Name: J420 Gen Housing Building 2
Roof Height (ft): 18.01
X-Length (ft): 25.98
Rotation Angle (deg): 29

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 243.01

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285337.89	4378569.29		

Building Parameters

Building Name: J420 Gen Housing Building 3
Roof Height (ft): 18.01
X-Length (ft): 25.98
Rotation Angle (deg): 29

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 243.01

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285399.07	4378492.60		

Building Parameters

Building Name: J420 Gen Housing Building 4
Roof Height (ft): 18.01
X-Length (ft): 25.98
Rotation Angle (deg): 29

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 243.01

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285353.27	4378574.89		

PLANT BUILDING PARAMETERS FORM

Building Parameters

Building Name: J420 Gen Housing Building 5
 Roof Height (ft): 18.01
 X-Length (ft): 25.98
 Rotation Angle (deg): 29

Building Tier: 1
 Building Diameter (ft): N/A
 Y-Length (ft): 243.01

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285418.00	4378505.82		

Building Parameters

Building Name: J420 Gen Housing Building 6
 Roof Height (ft): 18.01
 X-Length (ft): 25.98
 Rotation Angle (deg): 29

Building Tier: 1
 Building Diameter (ft): N/A
 Y-Length (ft): 243.01

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285372.85	4378588.73		

Building Parameters

Building Name: J420 Gen Housing Building 7
 Roof Height (ft): 18.01
 X-Length (ft): 25.98
 Rotation Angle (deg): 29

Building Tier: 1
 Building Diameter (ft): N/A
 Y-Length (ft): 243.01

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285434.03	4378511.37		

Building Parameters

Building Name: J420 Gen Housing Building 8
 Roof Height (ft): 18.01
 X-Length (ft): 25.98
 Rotation Angle (deg): 29

Building Tier: 1
 Building Diameter (ft): N/A
 Y-Length (ft): 243.01

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285388.05	4378593.16		

Building Parameters

Building Name: J420 Gen Housing Building 9
 Roof Height (ft): 18.01
 X-Length (ft): 25.98
 Rotation Angle (deg): 29

Building Tier: 1
 Building Diameter (ft): N/A
 Y-Length (ft): 243.01

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285452.68	4378524.13		

PLANT BUILDING PARAMETERS FORM

Building Parameters

Building Name: J420 Gen Housing Building 10
Roof Height (ft): 18.01
X-Length (ft): 25.98
Rotation Angle (deg): 29

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 243.01

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285407.03	4378607.64		

Building Parameters

Building Name: J420 Gen Housing Building 11
Roof Height (ft): 18.01
X-Length (ft): 25.98
Rotation Angle (deg): 29

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 243.01

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285467.58	4378530.13		

Building Parameters

Building Name: J420 Gen Housing Building 12
Roof Height (ft): 18.01
X-Length (ft): 25.98
Rotation Angle (deg): 29

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 79.99

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285423.82	4378612.50		

Building Parameters

Building Name: CAT C32 Generator 1 Housing
Roof Height (ft): 12.3
X-Length (ft): 9.81
Rotation Angle (deg): 24

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 46.82

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285288.01	4379541.71		

Building Parameters

Building Name: CAT C32 Generator 2 Housing
Roof Height (ft): 12.3
X-Length (ft): 9.81
Rotation Angle (deg): 24

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 46.82

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285282.10	4379539.16		

PLANT BUILDING PARAMETERS FORM

Building Parameters

Building Name: Logistics Building
Roof Height (ft): 35.99
X-Length (ft): N/A

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): N/A

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285509.21	4378978.42	285545.98	4378951.01
285486.45	4378978.16	285568.66	4378951.00
285487.39	4378948.68	285567.63	4378979.45
285509.86	4378949.72	285545.35	4378979.08
285510.80	4378925.86	285544.72	4378989.83
285546.55	4378926.70	285509.20	4378989.71

Building Parameters

Building Name: Black Start Generator 1
Roof Height (ft): 12.3
X-Length (ft): 11.58
Rotation Angle (deg): 116

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 34.12

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285352.09	4378558.13		

Building Parameters

Building Name: Black Start Generator 2
Roof Height (ft): 12.3
X-Length (ft): 11.58
Rotation Angle (deg): 116

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 34.12

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285366.84	4378572.92		

Building Parameters

Building Name: Black Start Generator 3
Roof Height (ft): 12.3
X-Length (ft): 11.58
Rotation Angle (deg): 116

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 34.12

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285386.28	4378577.34		

Building Parameters

Building Name: Black Start Generator 4 Housing
Roof Height (ft): 12.3
X-Length (ft): 11.58
Rotation Angle (deg): 116

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 34.12

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285400.36	4378590.68		

PLANT BUILDING PARAMETERS FORM

Building Parameters

Building Name: Black Start Generator 5
Roof Height (ft): 12.3
X-Length (ft): 11.58
Rotation Angle (deg): 116

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 34.12

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285420.53	4378595.47		

Building Parameters

Building Name: Black Start Generator 6
Roof Height (ft): 12.3
X-Length (ft): 11.58
Rotation Angle (deg): 116

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 34.12

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285435.33	4378610.94		

Building Parameters

Building Name: Large Tank A Near DC1
Roof Height (ft): 48
X-Length (ft): N/A
Rotation Angle (deg): N/A

Building Tier: 1
Building Diameter (ft): 39.99
Y-Length (ft): N/A

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285272.13	4379107.48		

Building Parameters

Building Name: Large Tank B Near DC1
Roof Height (ft): 48
X-Length (ft): N/A
Rotation Angle (deg): N/A

Building Tier: 1
Building Diameter (ft): 39.99
Y-Length (ft): N/A

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285285.48	4379107.82		

Building Parameters

Building Name: Large Tank A Near DC2
Roof Height (ft): 48
X-Length (ft): N/A
Rotation Angle (deg): N/A

Building Tier: 1
Building Diameter (ft): 39.99
Y-Length (ft): N/A

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285286.07	4379091.57		

PLANT BUILDING PARAMETERS FORM

Building Parameters

Building Name: Large Tank B Near DC2
Roof Height (ft): 48
X-Length (ft): N/A
Rotation Angle (deg): N/A

Building Tier: 1
Building Diameter (ft): 39.99
Y-Length (ft): N/A

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285273.05	4379091.90		

Building Parameters

Building Name: Large Tank 1 Near Logistics
Roof Height (ft): 48
X-Length (ft): N/A
Rotation Angle (deg): N/A

Building Tier: 1
Building Diameter (ft): 60.01
Y-Length (ft): N/A

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285455.18	4378988.41		

Building Parameters

Building Name: Large Tank 2 near Logistics
Roof Height (ft): 48
X-Length (ft): N/A
Rotation Angle (deg): N/A

Building Tier: 1
Building Diameter (ft): 60.01
Y-Length (ft): N/A

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285454.71	4378967.98		

Building Parameters

Building Name: Generator Building 1
Roof Height (ft): 42.42
X-Length (ft): 72.77
Rotation Angle (deg): 1

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 568.93

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285375.28	4378891.19		

Building Parameters

Building Name: Generator Building 2
Roof Height (ft): 42.42
X-Length (ft): 72.77
Rotation Angle (deg): 1

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 568.93

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285373.88	4379177.85		

PLANT BUILDING PARAMETERS FORM

Building Parameters

Building Name: Generator Building 3
Roof Height (ft): 42.42
X-Length (ft): 72.77
Rotation Angle (deg): 1

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 568.93

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285266.37	4378890.18		

Building Parameters

Building Name: Generator Building 4
Roof Height (ft): 42.42
X-Length (ft): 72.77
Rotation Angle (deg): 1

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): 568.93

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285263.07	4379177.60		

Building Parameters

Building Name: Central Security Fire Command
Roof Height (ft): 20.51
X-Length (ft): N/A

Building Tier: 1
Building Diameter (ft): N/A
Y-Length (ft): N/A

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing
285465.70	4378926.35	285474.06	4378915.09
285465.70	4378928.67	285445.37	4378914.43
285473.90	4378928.68	285444.82	4378925.25

APPLICATION CERTIFICATION DOCUMENT

(With Required Attachments)

Please check all applicable boxes below to indicate the information provided in your application submittal:

- ☒ Cover Page
- ☒ General Company Information Form
- ☐ Compliance Plan
- ☒ Industrial Process Application Form(s)
- ☒ Combustion Equipment Application Form(s)
- ☐ Storage Silo Application Form(s)
- ☒ Liquid Storage Tank Application Form(s)
- ☒ Manufacturer's Guarantee
- ☒ Facility-Wide Potential to Emit Table
- ☐ Revision Table
- ☒ **Surface Area Disturbance Form** – Submitting separately
- ☒ Plant Boundary Coordinates Form
- ☒ Plant Building Parameters Form
- ☒ Detailed Emission Calculations (for all emission units including IA units)
- ☐ Source Testing Data (if referenced in calculations)
- ☒ Process Narrative (revision applications must include a description of the revision)
- ☐ Process Flow Diagram(s)
- ☒ Site Plan(s) showing the locations (UTM coordinates), dimensions, and heights of buildings on the site
- ☒ Maps:
 - ☒ Vicinity Map of where the facility is located in the State
 - ☒ Area Map of the Facility (including location of all emission units, building locations (with UTM), location of front gate, and fence line/site boundary (with UTM))
- ☒ Environmental Evaluation (AERMOD Air Dispersion Modeling Report and Electronic Input Files) (NAC 445B.310, NAC 445B.311)
- ☒ Manufacturer's Guarantee *if applicable*
- ☒ Equipment Specifications *if applicable*
- ☒ TANKs Modeling Output *if applicable*
- ☒ Application Fee Attached or Electronically Submitted
- ☒ Digital Copy of Application on CD or Thumb Drive
- ☒ Application Certification Document with Original Responsible Official Signature

APPLICATION CERTIFICATION DOCUMENT (CONTINUED)
(With Required Attachments)

PLEASE NOTE THE FOLLOWING REQUIREMENTS WHICH APPLY TO PERMIT APPLICANTS DURING THE APPLICATION PROCESS:

- A. A permit applicant must submit supplementary facts or corrected information upon discovery. (NAC 445B.297(1)(b))
- B. A permit applicant is required to provide any additional information which the Director requests in writing within the time specified in the Director's request. (NAC 445B.297(1)(c))
- C. Submission of fraudulent data or other information may result in prosecution for an alleged criminal offense. (NRS 445B.470)

CERTIFICATION:

I certify that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate and complete.



Signature of Responsible Official

Chris Vonderhaar - President, Fleet

Print or Type Name and Title

2/27/25

Date

System 1 P1 Power Plant Engines (136)

BAPC ID	ID	Building	Equipment	UTM E (m)	UTM N (m)
S1.001	J420_01	Prime Engine Yard (Outdoors)	P1 NG Engine	285384.92	4378491.42
S1.002	J420_02	Prime Engine Yard (Outdoors)	P1 NG Engine	285381.43	4378497.58
S1.003	J420_03	Prime Engine Yard (Outdoors)	P1 NG Engine	285378.76	4378502.29
S1.004	J420_04	Prime Engine Yard (Outdoors)	P1 NG Engine	285375.22	4378508.55
S1.005	J420_05	Prime Engine Yard (Outdoors)	P1 NG Engine	285372.57	4378513.21
S1.006	J420_06	Prime Engine Yard (Outdoors)	P1 NG Engine	285369.19	4378519.18
S1.007	J420_07	Prime Engine Yard (Outdoors)	P1 NG Engine	285366.47	4378523.99
S1.008	J420_08	Prime Engine Yard (Outdoors)	P1 NG Engine	285363.15	4378529.85
S1.009	J420_09	Prime Engine Yard (Outdoors)	P1 NG Engine	285360.59	4378534.38
S1.010	J420_10	Prime Engine Yard (Outdoors)	P1 NG Engine	285357.06	4378540.40
S1.011	J420_11	Prime Engine Yard (Outdoors)	P1 NG Engine	285354.43	4378545.25
S1.012	J420_12	Prime Engine Yard (Outdoors)	P1 NG Engine	285351.01	4378551.27
S1.013	J420_13	Prime Engine Yard (Outdoors)	P1 NG Engine	285339.47	4378573.10
S1.014	J420_14	Prime Engine Yard (Outdoors)	P1 NG Engine	285336.41	4378578.86
S1.015	J420_15	Prime Engine Yard (Outdoors)	P1 NG Engine	285333.21	4378584.18
S1.016	J420_16	Prime Engine Yard (Outdoors)	P1 NG Engine	285329.75	4378589.96
S1.017	J420_17	Prime Engine Yard (Outdoors)	P1 NG Engine	285327.61	4378594.12
S1.018	J420_18	Prime Engine Yard (Outdoors)	P1 NG Engine	285323.88	4378600.52
S1.019	J420_19	Prime Engine Yard (Outdoors)	P1 NG Engine	285321.56	4378605.11
S1.020	J420_20	Prime Engine Yard (Outdoors)	P1 NG Engine	285317.95	4378611.45
S1.021	J420_21	Prime Engine Yard (Outdoors)	P1 NG Engine	285315.41	4378615.96
S1.022	J420_22	Prime Engine Yard (Outdoors)	P1 NG Engine	285312.03	4378621.94
S1.023	J420_23	Prime Engine Yard (Outdoors)	P1 NG Engine	285309.22	4378626.89
S1.024	J420_24	Prime Engine Yard (Outdoors)	P1 NG Engine	285305.72	4378633.06
S1.025	J420_25	Prime Engine Yard (Outdoors)	P1 NG Engine	285401.67	4378496.37
S1.026	J420_26	Prime Engine Yard (Outdoors)	P1 NG Engine	285398.51	4378501.96
S1.027	J420_27	Prime Engine Yard (Outdoors)	P1 NG Engine	285395.77	4378506.84
S1.028	J420_28	Prime Engine Yard (Outdoors)	P1 NG Engine	285392.03	4378513.29
S1.029	J420_29	Prime Engine Yard (Outdoors)	P1 NG Engine	285389.51	4378518.09
S1.030	J420_30	Prime Engine Yard (Outdoors)	P1 NG Engine	285386.01	4378524.33
S1.031	J420_31	Prime Engine Yard (Outdoors)	P1 NG Engine	285383.32	4378529.14
S1.032	J420_32	Prime Engine Yard (Outdoors)	P1 NG Engine	285379.90	4378535.25
S1.033	J420_33	Prime Engine Yard (Outdoors)	P1 NG Engine	285377.36	4378539.78
S1.034	J420_34	Prime Engine Yard (Outdoors)	P1 NG Engine	285374.21	4378545.42
S1.035	J420_35	Prime Engine Yard (Outdoors)	P1 NG Engine	285371.37	4378550.48
S1.036	J420_36	Prime Engine Yard (Outdoors)	P1 NG Engine	285368.02	4378556.45
S1.037	J420_37	Prime Engine Yard (Outdoors)	P1 NG Engine	285355.83	4378579.23
S1.038	J420_38	Prime Engine Yard (Outdoors)	P1 NG Engine	285352.61	4378585.00
S1.039	J420_39	Prime Engine Yard (Outdoors)	P1 NG Engine	285349.76	4378589.89
S1.040	J420_40	Prime Engine Yard (Outdoors)	P1 NG Engine	285346.25	4378595.89
S1.041	J420_41	Prime Engine Yard (Outdoors)	P1 NG Engine	285343.58	4378600.77
S1.042	J420_42	Prime Engine Yard (Outdoors)	P1 NG Engine	285340.29	4378606.63
S1.043	J420_43	Prime Engine Yard (Outdoors)	P1 NG Engine	285337.82	4378611.61
S1.044	J420_44	Prime Engine Yard (Outdoors)	P1 NG Engine	285334.15	4378617.66
S1.045	J420_45	Prime Engine Yard (Outdoors)	P1 NG Engine	285331.56	4378622.06
S1.046	J420_46	Prime Engine Yard (Outdoors)	P1 NG Engine	285328.24	4378628.28
S1.047	J420_47	Prime Engine Yard (Outdoors)	P1 NG Engine	285325.42	4378633.02
S1.048	J420_48	Prime Engine Yard (Outdoors)	P1 NG Engine	285322.11	4378639.33
S1.049	J420_49	Prime Engine Yard (Outdoors)	P1 NG Engine	285419.74	4378510.05
S1.050	J420_50	Prime Engine Yard (Outdoors)	P1 NG Engine	285416.31	4378516.17
S1.051	J420_51	Prime Engine Yard (Outdoors)	P1 NG Engine	285413.71	4378520.82
S1.052	J420_52	Prime Engine Yard (Outdoors)	P1 NG Engine	285410.22	4378527.04
S1.053	J420_53	Prime Engine Yard (Outdoors)	P1 NG Engine	285407.50	4378531.91
S1.054	J420_54	Prime Engine Yard (Outdoors)	P1 NG Engine	285404.07	4378538.02
S1.055	J420_55	Prime Engine Yard (Outdoors)	P1 NG Engine	285401.64	4378542.37
S1.056	J420_56	Prime Engine Yard (Outdoors)	P1 NG Engine	285398.32	4378548.29
S1.057	J420_57	Prime Engine Yard (Outdoors)	P1 NG Engine	285395.76	4378552.86
S1.058	J420_58	Prime Engine Yard (Outdoors)	P1 NG Engine	285392.24	4378559.15
S1.059	J420_59	Prime Engine Yard (Outdoors)	P1 NG Engine	285389.65	4378563.78
S1.060	J420_60	Prime Engine Yard (Outdoors)	P1 NG Engine	285386.06	4378570.33
S1.061	J420_61	Prime Engine Yard (Outdoors)	P1 NG Engine	285374.62	4378593.36
S1.062	J420_62	Prime Engine Yard (Outdoors)	P1 NG Engine	285371.33	4378599.23
S1.063	J420_63	Prime Engine Yard (Outdoors)	P1 NG Engine	285368.56	4378604.19

System 1 P1 Power Plant Engines (136)

BAPC ID	ID	Building	Equipment	UTM E (m)	UTM N (m)
S1.064	J420_64	Prime Engine Yard (Outdoors)	P1 NG Engine	285365.18	4378610.22
S1.065	J420_65	Prime Engine Yard (Outdoors)	P1 NG Engine	285362.33	4378614.69
S1.066	J420_66	Prime Engine Yard (Outdoors)	P1 NG Engine	285358.87	4378620.86
S1.067	J420_67	Prime Engine Yard (Outdoors)	P1 NG Engine	285356.32	4378625.42
S1.068	J420_68	Prime Engine Yard (Outdoors)	P1 NG Engine	285352.93	4378631.47
S1.069	J420_69	Prime Engine Yard (Outdoors)	P1 NG Engine	285350.14	4378636.46
S1.070	J420_70	Prime Engine Yard (Outdoors)	P1 NG Engine	285347.14	4378641.82
S1.071	J420_71	Prime Engine Yard (Outdoors)	P1 NG Engine	285344.31	4378646.86
S1.072	J420_72	Prime Engine Yard (Outdoors)	P1 NG Engine	285340.99	4378652.80
S1.073	J420_73	Prime Engine Yard (Outdoors)	P1 NG Engine	285336.14	4378515.08
S1.074	J420_74	Prime Engine Yard (Outdoors)	P1 NG Engine	285432.45	4378521.68
S1.075	J420_75	Prime Engine Yard (Outdoors)	P1 NG Engine	285429.88	4378526.27
S1.076	J420_76	Prime Engine Yard (Outdoors)	P1 NG Engine	285426.37	4378532.53
S1.077	J420_77	Prime Engine Yard (Outdoors)	P1 NG Engine	285423.77	4378537.18
S1.078	J420_78	Prime Engine Yard (Outdoors)	P1 NG Engine	285420.27	4378543.43
S1.079	J420_79	Prime Engine Yard (Outdoors)	P1 NG Engine	285417.90	4378547.65
S1.080	J420_80	Prime Engine Yard (Outdoors)	P1 NG Engine	285414.42	4378553.86
S1.081	J420_81	Prime Engine Yard (Outdoors)	P1 NG Engine	285411.72	4378558.69
S1.082	J420_82	Prime Engine Yard (Outdoors)	P1 NG Engine	285408.25	4378564.89
S1.083	J420_83	Prime Engine Yard (Outdoors)	P1 NG Engine	285405.57	4378569.67
S1.084	J420_84	Prime Engine Yard (Outdoors)	P1 NG Engine	285402.24	4378575.62
S1.085	J420_85	Prime Engine Yard (Outdoors)	P1 NG Engine	285390.63	4378597.63
S1.086	J420_86	Prime Engine Yard (Outdoors)	P1 NG Engine	285387.17	4378603.81
S1.087	J420_87	Prime Engine Yard (Outdoors)	P1 NG Engine	285384.53	4378608.53
S1.088	J420_88	Prime Engine Yard (Outdoors)	P1 NG Engine	285381.02	4378614.80
S1.089	J420_89	Prime Engine Yard (Outdoors)	P1 NG Engine	285378.40	4378619.48
S1.090	J420_90	Prime Engine Yard (Outdoors)	P1 NG Engine	285375.04	4378625.47
S1.091	J420_91	Prime Engine Yard (Outdoors)	P1 NG Engine	285372.35	4378630.28
S1.092	J420_92	Prime Engine Yard (Outdoors)	P1 NG Engine	285368.79	4378636.64
S1.093	J420_93	Prime Engine Yard (Outdoors)	P1 NG Engine	285366.57	4378640.61
S1.094	J420_94	Prime Engine Yard (Outdoors)	P1 NG Engine	285363.14	4378646.73
S1.095	J420_95	Prime Engine Yard (Outdoors)	P1 NG Engine	285360.42	4378651.58
S1.096	J420_96	Prime Engine Yard (Outdoors)	P1 NG Engine	285357.02	4378657.66
S1.097	J420_97	Prime Engine Yard (Outdoors)	P1 NG Engine	285454.19	4378528.55
S1.098	J420_98	Prime Engine Yard (Outdoors)	P1 NG Engine	285450.66	4378534.86
S1.099	J420_99	Prime Engine Yard (Outdoors)	P1 NG Engine	285447.92	4378539.74
S1.100	J420_100	Prime Engine Yard (Outdoors)	P1 NG Engine	285444.48	4378545.90
S1.101	J420_101	Prime Engine Yard (Outdoors)	P1 NG Engine	285441.96	4378550.40
S1.102	J420_102	Prime Engine Yard (Outdoors)	P1 NG Engine	285438.46	4378556.64
S1.103	J420_103	Prime Engine Yard (Outdoors)	P1 NG Engine	285435.77	4378561.45
S1.104	J420_104	Prime Engine Yard (Outdoors)	P1 NG Engine	285432.35	4378567.56
S1.105	J420_105	Prime Engine Yard (Outdoors)	P1 NG Engine	285429.66	4378572.35
S1.106	J420_106	Prime Engine Yard (Outdoors)	P1 NG Engine	285426.26	4378578.43
S1.107	J420_107	Prime Engine Yard (Outdoors)	P1 NG Engine	285423.55	4378583.27
S1.108	J420_108	Prime Engine Yard (Outdoors)	P1 NG Engine	285420.51	4378588.89
S1.109	J420_109	Prime Engine Yard (Outdoors)	P1 NG Engine	285408.48	4378611.96
S1.110	J420_110	Prime Engine Yard (Outdoors)	P1 NG Engine	285405.30	4378617.50
S1.111	J420_111	Prime Engine Yard (Outdoors)	P1 NG Engine	285402.62	4378622.29
S1.112	J420_112	Prime Engine Yard (Outdoors)	P1 NG Engine	285399.20	4378628.38
S1.113	J420_113	Prime Engine Yard (Outdoors)	P1 NG Engine	285396.52	4378633.18
S1.114	J420_114	Prime Engine Yard (Outdoors)	P1 NG Engine	285393.10	4378639.28
S1.115	J420_115	Prime Engine Yard (Outdoors)	P1 NG Engine	285390.30	4378644.28
S1.116	J420_116	Prime Engine Yard (Outdoors)	P1 NG Engine	285386.95	4378650.26
S1.117	J420_117	Prime Engine Yard (Outdoors)	P1 NG Engine	285384.21	4378655.16
S1.118	J420_118	Prime Engine Yard (Outdoors)	P1 NG Engine	285380.85	4378661.15
S1.119	J420_119	Prime Engine Yard (Outdoors)	P1 NG Engine	285378.07	4378666.11
S1.120	J420_120	Prime Engine Yard (Outdoors)	P1 NG Engine	285374.61	4378672.30
S1.121	J420_121	Prime Engine Yard (Outdoors)	P1 NG Engine	285470.43	4378533.10
S1.122	J420_122	Prime Engine Yard (Outdoors)	P1 NG Engine	285467.13	4378539.21
S1.123	J420_123	Prime Engine Yard (Outdoors)	P1 NG Engine	285464.34	4378544.19
S1.124	J420_124	Prime Engine Yard (Outdoors)	P1 NG Engine	285460.90	4378550.34
S1.125	J420_125	Prime Engine Yard (Outdoors)	P1 NG Engine	285458.28	4378555.01
S1.126	J420_126	Prime Engine Yard (Outdoors)	P1 NG Engine	285454.79	4378561.25
S1.127	J420_127	Prime Engine Yard (Outdoors)	P1 NG Engine	285452.17	4378565.93
S1.128	J420_128	Prime Engine Yard (Outdoors)	P1 NG Engine	285448.64	4378572.22
S1.129	J420_129	Prime Engine Yard (Outdoors)	P1 NG Engine	285445.99	4378576.95

System 1 P1 Power Plant Engines (136)

BAPC ID	ID	Building	Equipment	UTME (m)	UTM N (m)
S1.130	J420_130	Prime Engine Yard (Outdoors)	P1 NG Engine	285442.51	4378583.18
S1.131	J420_131	Prime Engine Yard (Outdoors)	P1 NG Engine	285439.84	4378587.94
S1.132	J420_132	Prime Engine Yard (Outdoors)	P1 NG Engine	285436.48	4378593.94
S1.133	J420_133	Prime Engine Yard (Outdoors)	P1 NG Engine	285426.06	4378616.74
S1.134	J420_134	Prime Engine Yard (Outdoors)	P1 NG Engine	285422.57	4378622.97
S1.135	J420_135	Prime Engine Yard (Outdoors)	P1 NG Engine	285419.92	4378627.70
S1.136	J420_136	Prime Engine Yard (Outdoors)	P1 NG Engine	285416.78	4378633.36

System 2 CNG PRS (12) - Insignificant Activity

BAPC ID	ID	Building	Equipment	UTM E (m)	UTM N (m)
S2.001	PRS 01	Prime Engine Yard (Outdoors)	CNG PRS 1	285448.60	4378474.63
S2.002	PRS 02	Prime Engine Yard (Outdoors)	CNG PRS 2	285454.28	4378478.50
S2.003	PRS 03	Prime Engine Yard (Outdoors)	CNG PRS 3	285454.54	4378464.43
S2.004	PRS 04	Prime Engine Yard (Outdoors)	CNG PRS 4	285460.22	4378468.30
S2.005	PRS 05	Prime Engine Yard (Outdoors)	CNG PRS 5	285460.73	4378452.82
S2.006	PRS 06	Prime Engine Yard (Outdoors)	CNG PRS 6	285466.41	4378456.69
S2.007	PRS 07	Prime Engine Yard (Outdoors)	CNG PRS 7	285467.70	4378439.14
S2.008	PRS 08	Prime Engine Yard (Outdoors)	CNG PRS 8	285473.38	4378443.01
S2.009	PRS 09	Prime Engine Yard (Outdoors)	CNG PRS 9	285474.16	4378426.75
S2.010	PRS 10	Prime Engine Yard (Outdoors)	CNG PRS 10	285479.84	4378430.62
S2.011	PRS 11	Prime Engine Yard (Outdoors)	CNG PRS 11	285482.68	4378412.55
S2.012	PRS 12	Prime Engine Yard (Outdoors)	CNG PRS 12	285488.35	4378416.42

System 3 BSE Gensets (6)

BAPC ID	ID	Building	Equipment	UTM E (m)	UTM N (m)
S3.001	BSE1	Prime Engine Yard (Outdoors)	BS Engine	285350.15	4378559.44
S3.002	BSE2	Prime Engine Yard (Outdoors)	BS Engine	285358.11	4378570.48
S3.003	BSE3	Prime Engine Yard (Outdoors)	BS Engine	285384.64	4378578.46
S3.004	BSE4	Prime Engine Yard (Outdoors)	BS Engine	285391.79	4378588.87
S3.005	BSE5	Prime Engine Yard (Outdoors)	BS Engine	285418.40	4378596.26
S3.006	BSE6	Prime Engine Yard (Outdoors)	BS Engine	285426.88	4378608.87

System 4 Data Center Emergency Backup Engines (82)

BAPC ID	ID	Building	Equipment	UTM E (m)	UTM N (m)
S4.001	DC1_01	Generator Building 1	DC Engine	285391.56	4378900.95
S4.002	DC1_02	Generator Building 1	DC Engine	285391.58	4378903.97
S4.003	DC1_03	Generator Building 1	DC Engine	285391.56	4378923.01
S4.004	DC1_04	Generator Building 1	DC Engine	285391.39	4378926.51
S4.005	DC1_05	Generator Building 1	DC Engine	285391.46	4378930.50
S4.006	DC1_06	Generator Building 1	DC Engine	285391.53	4378933.89
S4.007	DC1_07	Generator Building 1	DC Engine	285391.24	4378953.08
S4.008	DC1_08	Generator Building 1	DC Engine	285391.14	4378957.12
S4.009	DC1_09	Generator Building 1	DC Engine	285391.21	4378960.66
S4.010	DC1_10	Generator Building 1	DC Engine	285391.20	4378964.03
S4.011	DC1_11	Generator Building 1	DC Engine	285390.94	4378983.65
S4.012	DC1_12	Generator Building 1	DC Engine	285390.91	4378986.98
S4.013	DC1_13	Generator Building 1	DC Engine	285390.95	4378991.50
S4.014	DC1_14	Generator Building 1	DC Engine	285390.91	4378995.00
S4.015	DC1_15	Generator Building 1	DC Engine	285390.75	4379013.81
S4.016	DC1_16	Generator Building 1	DC Engine	285390.76	4379017.40
S4.017	DC1_17	Generator Building 1	DC Engine	285390.66	4379021.99
S4.018	DC1_18	Generator Building 1	DC Engine	285390.69	4379025.51
S4.019	DC1_19	Generator Building 1	DC Engine	285390.51	4379044.27
S4.020	DC1_20	Generator Building 1	DC Engine	285390.47	4379048.00
S4.021	DC1_21	Generator Building 1	DC Engine	285390.55	4379057.43
S4.022	DC2_01	Generator Building 2	DC Engine	285388.82	4379188.34
S4.023	DC2_02	Generator Building 2	DC Engine	285388.76	4379191.88
S4.024	DC2_03	Generator Building 2	DC Engine	285388.49	4379210.81
S4.025	DC2_04	Generator Building 2	DC Engine	285388.44	4379214.48
S4.026	DC2_05	Generator Building 2	DC Engine	285388.38	4379218.65
S4.027	DC2_06	Generator Building 2	DC Engine	285388.40	4379221.92
S4.028	DC2_07	Generator Building 2	DC Engine	285388.08	4379241.25
S4.029	DC2_08	Generator Building 2	DC Engine	285387.98	4379244.62
S4.030	DC2_09	Generator Building 2	DC Engine	285387.98	4379248.64
S4.031	DC2_10	Generator Building 2	DC Engine	285387.98	4379252.01
S4.032	DC2_11	Generator Building 2	DC Engine	285387.71	4379271.56
S4.033	DC2_12	Generator Building 2	DC Engine	285387.64	4379274.97
S4.034	DC2_13	Generator Building 2	DC Engine	285387.57	4379279.53
S4.035	DC2_14	Generator Building 2	DC Engine	285387.44	4379283.09
S4.036	DC2_15	Generator Building 2	DC Engine	285387.18	4379301.63
S4.037	DC2_16	Generator Building 2	DC Engine	285387.17	4379305.26
S4.038	DC2_17	Generator Building 2	DC Engine	285387.07	4379309.85
S4.039	DC2_18	Generator Building 2	DC Engine	285387.03	4379313.62
S4.040	DC2_19	Generator Building 2	DC Engine	285386.84	4379332.39
S4.041	DC2_20	Generator Building 2	DC Engine	285386.78	4379336.12
S4.042	DC3_01	Generator Building 3	DC Engine	285268.76	4379055.62
S4.043	DC3_02	Generator Building 3	DC Engine	285268.97	4379045.92
S4.044	DC3_03	Generator Building 3	DC Engine	285269.03	4379042.19
S4.045	DC3_04	Generator Building 3	DC Engine	285269.34	4379023.72
S4.046	DC3_05	Generator Building 3	DC Engine	285269.34	4379020.29
S4.047	DC3_06	Generator Building 3	DC Engine	285269.43	4379015.59
S4.048	DC3_07	Generator Building 3	DC Engine	285269.51	4379011.95
S4.049	DC3_08	Generator Building 3	DC Engine	285269.80	4378992.98
S4.050	DC3_09	Generator Building 3	DC Engine	285269.82	4378989.68
S4.051	DC3_10	Generator Building 3	DC Engine	285269.98	4378985.30
S4.052	DC3_11	Generator Building 3	DC Engine	285269.95	4378981.78
S4.053	DC3_12	Generator Building 3	DC Engine	285270.26	4378962.19
S4.054	DC3_13	Generator Building 3	DC Engine	285270.41	4378958.60
S4.055	DC3_14	Generator Building 3	DC Engine	285270.37	4378955.06
S4.056	DC3_15	Generator Building 3	DC Engine	285270.39	4378951.38
S4.057	DC3_16	Generator Building 3	DC Engine	285270.66	4378932.37
S4.058	DC3_17	Generator Building 3	DC Engine	285270.67	4378928.89
S4.059	DC3_18	Generator Building 3	DC Engine	285270.88	4378924.49
S4.060	DC3_19	Generator Building 3	DC Engine	285270.78	4378921.19
S4.061	DC3_20	Generator Building 3	DC Engine	285271.02	4378902.17
S4.062	DC3_21	Generator Building 3	DC Engine	285270.98	4378898.75
S4.063	DC4_01	Generator Building 4	DC Engine	285264.43	4379335.24

System 4 Data Center Emergency Backup Engines (82)

BAPC ID	ID	Building	Equipment	UTM E (m)	UTM N (m)
S4.064	DC4_02	Generator Building 4	DC Engine	285264.47	4379331.50
S4.065	DC4_03	Generator Building 4	DC Engine	285264.65	4379312.73
S4.066	DC4_04	Generator Building 4	DC Engine	285264.61	4379309.13
S4.067	DC4_05	Generator Building 4	DC Engine	285264.62	4379304.64
S4.068	DC4_06	Generator Building 4	DC Engine	285264.64	4379300.93
S4.069	DC4_07	Generator Building 4	DC Engine	285264.95	4379282.17
S4.070	DC4_08	Generator Building 4	DC Engine	285265.05	4379278.65
S4.071	DC4_09	Generator Building 4	DC Engine	285264.97	4379274.08
S4.072	DC4_10	Generator Building 4	DC Engine	285264.91	4379270.78
S4.073	DC4_11	Generator Building 4	DC Engine	285265.15	4379251.33
S4.074	DC4_12	Generator Building 4	DC Engine	285265.14	4379247.91
S4.075	DC4_13	Generator Building 4	DC Engine	285265.24	4379243.94
S4.076	DC4_14	Generator Building 4	DC Engine	285265.22	4379240.46
S4.077	DC4_15	Generator Building 4	DC Engine	285265.45	4379221.29
S4.078	DC4_16	Generator Building 4	DC Engine	285265.53	4379217.83
S4.079	DC4_17	Generator Building 4	DC Engine	285265.50	4379213.79
S4.080	DC4_18	Generator Building 4	DC Engine	285265.57	4379210.03
S4.081	DC4_19	Generator Building 4	DC Engine	285265.67	4379191.12
S4.082	DC4_20	Generator Building 4	DC Engine	285265.71	4379187.62

System 5 Substation Engines (2)

BAPC ID	ID	Building	Equipment	UTM E (m)	UTM N (m)
S5.001	C32_1	Substation	Substation Engine	285288.38	4379543.42
S5.002	C32_2	Substation	Substation Engine	285282.67	4379541.41

System 6 Fire Pump Engines (2)

BAPC ID	ID	Building	Equipment	UTM E (m)	UTM N (m)
S6.001	FIRE_1	Fire and Security Building	Fire Pump Engine	285471.32	4378925.17
S6.002	FIRE_2	Fire and Security Building	Fire Pump Engine	285468.63	4378922.16

150-gallon Tanks (84) – Insignificant Activity

BAPC ID	ID	Building	Equipment	UTM E (m)	UTM N (m)
IA1.001	DC1 T 01	Generator Building 1	DC Engine Tank	285389.48	4378900.83
IA1.002	DC1 T 02	Generator Building 1	DC Engine Tank	285389.49	4378903.85
IA1.003	DC1 T 03	Generator Building 1	DC Engine Tank	285389.48	4378922.89
IA1.004	DC1 T 04	Generator Building 1	DC Engine Tank	285389.31	4378926.40
IA1.005	DC1 T 05	Generator Building 1	DC Engine Tank	285389.38	4378930.38
IA1.006	DC1 T 06	Generator Building 1	DC Engine Tank	285389.44	4378933.78
IA1.007	DC1 T 07	Generator Building 1	DC Engine Tank	285389.16	4378952.97
IA1.008	DC1 T 08	Generator Building 1	DC Engine Tank	285389.06	4378957.00
IA1.009	DC1 T 09	Generator Building 1	DC Engine Tank	285389.12	4378960.54
IA1.010	DC1 T 10	Generator Building 1	DC Engine Tank	285389.11	4378963.92
IA1.011	DC1 T 11	Generator Building 1	DC Engine Tank	285388.86	4378983.53
IA1.012	DC1 T 12	Generator Building 1	DC Engine Tank	285388.83	4378986.86
IA1.013	DC1 T 13	Generator Building 1	DC Engine Tank	285388.87	4378991.39
IA1.014	DC1 T 14	Generator Building 1	DC Engine Tank	285388.83	4378994.88
IA1.015	DC1 T 15	Generator Building 1	DC Engine Tank	285388.67	4379013.69
IA1.016	DC1 T 16	Generator Building 1	DC Engine Tank	285388.68	4379017.29
IA1.017	DC1 T 17	Generator Building 1	DC Engine Tank	285388.58	4379021.87
IA1.018	DC1 T 18	Generator Building 1	DC Engine Tank	285388.61	4379025.39
IA1.019	DC1 T 19	Generator Building 1	DC Engine Tank	285388.43	4379044.15
IA1.020	DC1 T 20	Generator Building 1	DC Engine Tank	285388.39	4379047.89
IA1.021	DC1 T 21	Generator Building 1	DC Engine Tank	285388.47	4379057.31
IA1.022	DC2 T 01	Generator Building 2	DC Engine Tank	285386.54	4379188.25
IA1.023	DC2 T 02	Generator Building 2	DC Engine Tank	285386.48	4379191.79
IA1.024	DC2 T 03	Generator Building 2	DC Engine Tank	285386.21	4379210.72
IA1.025	DC2 T 04	Generator Building 2	DC Engine Tank	285386.16	4379214.39
IA1.026	DC2 T 05	Generator Building 2	DC Engine Tank	285386.10	4379218.56
IA1.027	DC2 T 06	Generator Building 2	DC Engine Tank	285386.12	4379221.83
IA1.028	DC2 T 07	Generator Building 2	DC Engine Tank	285385.80	4379241.16
IA1.029	DC2 T 08	Generator Building 2	DC Engine Tank	285385.70	4379244.53
IA1.030	DC2 T 09	Generator Building 2	DC Engine Tank	285385.70	4379248.55
IA1.031	DC2 T 10	Generator Building 2	DC Engine Tank	285385.70	4379251.92
IA1.032	DC2 T 11	Generator Building 2	DC Engine Tank	285385.43	4379271.47
IA1.033	DC2 T 12	Generator Building 2	DC Engine Tank	285385.36	4379274.88
IA1.034	DC2 T 13	Generator Building 2	DC Engine Tank	285385.29	4379279.44
IA1.035	DC2 T 14	Generator Building 2	DC Engine Tank	285385.16	4379283.00
IA1.036	DC2 T 15	Generator Building 2	DC Engine Tank	285384.90	4379301.54
IA1.037	DC2 T 16	Generator Building 2	DC Engine Tank	285384.89	4379305.18
IA1.038	DC2 T 17	Generator Building 2	DC Engine Tank	285384.79	4379309.76
IA1.039	DC2 T 18	Generator Building 2	DC Engine Tank	285384.75	4379313.53
IA1.040	DC2 T 19	Generator Building 2	DC Engine Tank	285384.56	4379332.30
IA1.041	DC2 T 20	Generator Building 2	DC Engine Tank	285384.50	4379336.03
IA1.042	DC3 T 01	Generator Building 3	DC Engine Tank	285271.65	4379055.59
IA1.043	DC3 T 02	Generator Building 3	DC Engine Tank	285271.58	4379046.16
IA1.044	DC3 T 03	Generator Building 3	DC Engine Tank	285271.61	4379042.43
IA1.045	DC3 T 04	Generator Building 3	DC Engine Tank	285271.79	4379023.67
IA1.046	DC3 T 05	Generator Building 3	DC Engine Tank	285271.76	4379020.15
IA1.047	DC3 T 06	Generator Building 3	DC Engine Tank	285271.87	4379015.56
IA1.048	DC3 T 07	Generator Building 3	DC Engine Tank	285271.86	4379011.97
IA1.049	DC3 T 08	Generator Building 3	DC Engine Tank	285272.01	4378993.16
IA1.050	DC3 T 09	Generator Building 3	DC Engine Tank	285272.05	4378989.66
IA1.051	DC3 T 10	Generator Building 3	DC Engine Tank	285272.01	4378985.14
IA1.052	DC3 T 11	Generator Building 3	DC Engine Tank	285272.04	4378981.81
IA1.053	DC3 T 12	Generator Building 3	DC Engine Tank	285272.30	4378962.19
IA1.054	DC3 T 13	Generator Building 3	DC Engine Tank	285272.31	4378958.82
IA1.055	DC3 T 14	Generator Building 3	DC Engine Tank	285272.24	4378955.28
IA1.056	DC3 T 15	Generator Building 3	DC Engine Tank	285272.34	4378951.24
IA1.057	DC3 T 16	Generator Building 3	DC Engine Tank	285272.63	4378932.05
IA1.058	DC3 T 17	Generator Building 3	DC Engine Tank	285272.56	4378928.66
IA1.059	DC3 T 18	Generator Building 3	DC Engine Tank	285272.49	4378924.67
IA1.060	DC3 T 19	Generator Building 3	DC Engine Tank	285272.66	4378921.17
IA1.061	DC3 T 20	Generator Building 3	DC Engine Tank	285272.68	4378902.13
IA1.062	DC3 T 21	Generator Building 3	DC Engine Tank	285272.66	4378899.11
IA1.063	DC4 T 01	Generator Building 4	DC Engine Tank	285266.44	4379335.19

150-gallon Tanks (84) – Insignificant Activity

BAPC ID	ID	Building	Equipment	UTM E (m)	UTM N (m)
IA1.064	DC4 T 02	Generator Building 4	DC Engine Tank	285266.49	4379331.46
IA1.065	DC4 T 03	Generator Building 4	DC Engine Tank	285266.67	4379312.69
IA1.066	DC4 T 04	Generator Building 4	DC Engine Tank	285266.63	4379309.09
IA1.067	DC4 T 05	Generator Building 4	DC Engine Tank	285266.64	4379304.60
IA1.068	DC4 T 06	Generator Building 4	DC Engine Tank	285266.66	4379300.88
IA1.069	DC4 T 07	Generator Building 4	DC Engine Tank	285266.97	4379282.12
IA1.070	DC4 T 08	Generator Building 4	DC Engine Tank	285267.07	4379278.61
IA1.071	DC4 T 09	Generator Building 4	DC Engine Tank	285266.99	4379274.04
IA1.072	DC4 T 10	Generator Building 4	DC Engine Tank	285266.93	4379270.74
IA1.073	DC4 T 11	Generator Building 4	DC Engine Tank	285267.17	4379251.29
IA1.074	DC4 T 12	Generator Building 4	DC Engine Tank	285267.16	4379247.87
IA1.075	DC4 T 13	Generator Building 4	DC Engine Tank	285267.26	4379243.89
IA1.076	DC4 T 14	Generator Building 4	DC Engine Tank	285267.24	4379240.42
IA1.077	DC4 T 15	Generator Building 4	DC Engine Tank	285267.46	4379221.25
IA1.078	DC4 T 16	Generator Building 4	DC Engine Tank	285267.55	4379217.79
IA1.079	DC4 T 17	Generator Building 4	DC Engine Tank	285267.52	4379213.75
IA1.080	DC4 T 18	Generator Building 4	DC Engine Tank	285267.59	4379209.99
IA1.081	DC4 T 19	Generator Building 4	DC Engine Tank	285267.68	4379191.08
IA1.082	DC4 T 20	Generator Building 4	DC Engine Tank	285267.73	4379187.58
IA1.083	C32 T 1	Substation	Substation Engine Tank	285287.48	4379545.98
IA1.084	C32 T 2	Substation	Substation Engine Tank	285281.62	4379543.64

1,240-gallon Tanks (6) - Insignificant Activity

BAPC ID	ID	Building	Equipment	UTM E (m)	UTM N (m)
IA2.001	BSE T 1	Prime Engine Yard (Outdoors)	BSE Tank 1	285347.60	4378558.34
IA2.002	BSE T 2	Prime Engine Yard (Outdoors)	BSE Tank 2	285360.05	4378571.62
IA2.003	BSE T 3	Prime Engine Yard (Outdoors)	BSE Tank 3	285382.54	4378577.60
IA2.004	BSE T 4	Prime Engine Yard (Outdoors)	BSE Tank 4	285394.00	4378589.63
IA2.005	BSE T 5	Prime Engine Yard (Outdoors)	BSE Tank 5	285416.06	4378595.36
IA2.006	BSE T 6	Prime Engine Yard (Outdoors)	BSE Tank 6	285429.25	4378610.32

400-gallon Tanks (2) – Insignificant Activity

BAPC ID	ID	Building	Equipment	UTM E (m)	UTM N (m)
IA3.001	FIRE T 1	Fire and Security Building	Fire Pump Engine Tank	285471.43	4378923.51
IA3.002	FIRE T 2	Fire and Security Building	Fire Pump Engine Tank	285468.64	4378920.61

ATTACHMENT B

PERMIT APPLICATION REPORT

**APPLICATION FOR CLASS I
OPERATING PERMIT TO CONSTRUCT
FOR THE PERU RIDGE TECHNOLOGY CENTER
SPARKS, NEVADA**

Submitted to:

**Nevada Division of Environmental Protection
Bureau of Air Pollution Control**
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Prepared for:

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March 3, 2026

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1.0 INTRODUCTION AND SUMMARY

1.1 Introduction

PR RNO Property Owner 1, LLC ("PR RNO") is seeking authorization in the form of a new Class I operating permit to construct (OPTC) for the Peru Ridge Technology Center (PRTC or Facility) to be located in Sparks, Nevada, with the following proposed equipment: a P1 Power Plant consisting of natural gas-fueled prime engines with combined rating estimated at 218 megawatts (MW), a compressed natural gas (CNG) pressure reducing system (PRS), and diesel-fueled emergency black start engines (BSE) gensets with combined rating of 8.2 MW; diesel-fueled emergency backup data center (DC) engines with a combined rating estimated at 246 MW serving as backup power for a data center; Substation diesel-fueled emergency backup engines; fire pump engines; and associated diesel storage tanks. The detailed list of emission units to be covered by the Class I OPTC application are:

- One-hundred-thirty-six (136) Aggreko Jenbacher J420 natural gas-fueled prime engines at the P1 Power Plant, rated at 2,146 bhp each (about 1.6 MW each) with selective catalytic reduction (SCR) and catalytic oxidizer (CatOx) emission controls;
- Twelve (12) Certarus Compressed Natural Gas (CNG) Pressure Reducing System (PRS) units at the P1 Power Plant, only 6 units will ever run simultaneously; that are non-flame combustion units that qualify as permit-exempt fuel-burning equipment;
- Six (6) Tier 4 Volvo Penta diesel-fueled emergency black start engine (BSE) gensets (each genset with two engines operating together) at the P1 Power Plant, each engine rated at 685 kW (932 bhp) and each genset at 1,370 kW (1,864 bhp), each with a 1,240-gallon diesel tank;
- Eighty-two (82) Tier 4 Caterpillar 3516E (EM4718-02) diesel-fueled emergency backup engines at the Data Center, rated at 4,393 bhp each (3.0 MW each) at four (4) generator buildings, each with a 150-gallon diesel tank;
- Two (2) Tier 2 Caterpillar C32 Substation diesel-fueled emergency backup engines, rated at 1.25 MW each (about 1,676 bhp each), each with a 150-gallon diesel tank;
- Two (2) Tier 3 Clarke C18H0-UFAD12 diesel-fueled emergency fire pump engines, rated at 488 bhp (or 364 kW each), each with a 400-gallon diesel tank; and
- Twelve (12) 40,000-gallon diesel storage tanks, located outside of the generator buildings. These tanks are covered under a separate Insignificant Activity (IA) application.

The proposed Facility will be located in the northeastern section of an approximately 1,204-acre parcel located in Storey County west of Highway 439 on Assessor's Parcel Numbers (APNs) 005-012-24 (P1 Power Plant); and APN 005-011-96 and 005-011-

92 (Data Center), which are adjacent parcels. The site location is about 16 miles east of Reno and about 28 miles northeast of Carson City. Interstate 80 runs approximately 2.5 miles north of the site.

All of the diesel-fueled emergency engines, except for the fire pump engines, will be routinely used for equipment maintenance and testing purposes, and will be available for NV Energy's emergency demand-response program under Energy Emergency Alert (EEA) Levels 1 and 2, up to total 100 hours/year.

The proposed Facility constitutes a minor source under the Prevention of Significant Deterioration (PSD) preconstruction permitting regulations and a new major source under the Title V operating permit regulations. PR RNO plans to permit the Facility as a Class I Synthetic Minor Source under the State of Nevada Minor New Source Review (NSR) program [Nevada Administrative Code (NAC) Chapter 445B]. The proposed site location in Storey County, Nevada is classified as attainment for all regulated NSR criteria pollutants. Attainment criteria pollutants include nitrogen oxides (NO_x and NO₂), carbon monoxide (CO), ozone [including precursors volatile organic compounds (VOC) and NO_x], particulate matter of less than 10 microns in diameter (PM₁₀), particulate matter of less than 2.5 microns in diameter (PM_{2.5}), and oxides of sulfur (SO_x and SO₂).

This Class I OPTC application contains the required information, analyses and demonstrations under the applicable state of Nevada and federal regulations. The Nevada Division of Environmental Protection (NDEP) Bureau of Air Pollution Control (BAPC) is the permitting authority for this Facility. NDEP/BAPC's permitting authority is explained in greater detail in Section 4.0 of this application.

1.2 Summary of Regulatory Items Affecting NDEP Review

An analysis was conducted to determine whether the Facility triggers specific NDEP review requirements, including whether the Facility will trigger federal NSR major source permitting thresholds or the federal Title V major source permitting thresholds. A summary of regulatory items affecting NDEP review is provided in this section. A regulatory compliance review presented in Section 4.0 discusses in detail the applicable federal and NDEP regulations that directly affect the Facility's permit application, the review process, and expected compliance requirements.

Facility annual potential-to-emit (PTE) emissions in tons per year (TPY) are summarized in Table 1, for comparison to NDEP review thresholds, the PSD NSR thresholds and the Class I (or Title V) permit thresholds. Detailed emission tables are provided in Section 3.0 of this application report and appendices. The PTE represents the maximum capacity of the Facility to emit pollutants, excluding secondary emissions, under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment, and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design, if the limitation or the effect it would have on the emissions is legally and practically enforceable by any rule, ordinance, order, or permit adopted or issued under NAC Chapter 445B.

TABLE 1 PERU RIDGE FACILITY POTENTIAL-TO-EMIT SUMMARY (TPY) COMPARISON TO NDEP THRESHOLDS			
Pollutant	Facility PTE	PSD Permit Threshold	Class I Permit Threshold
NO _x	159	250	100
CO	152	250	100
VOC	58.8	250	100
SO ₂	42.5	250	100
PM ₁₀	29.0	250	100
PM _{2.5}	29.0	250	100
CO ₂ e	959,773	100,000	100,000
HAPs (Individual)	56.4	--	10
HAPs (Combined)	66.6	--	25

Source: NDEP/BAPC Class I Air Quality Operating Permit Guidance Document, July 2021.

PTE = Potential-to-Emit, NSR = New Source Review, HAPs = Hazardous Air Pollutants, CO₂e = Carbon Dioxide Equivalent.

As shown in Table 1, Facility operations will not trigger federal PSD major NSR permitting requirements outlined in Code of Federal Regulations (CFR), Title 40, Section 51.166(b)(1)(i)(b), because facility-wide emissions will not equal or exceed 250 TPY for any attainment criteria pollutant. A Best Available Control Technology (BACT) analysis is not required for facilities that do not trigger federal PSD requirements, so a BACT analysis is not included in this application. The threshold for considering whether a facility is a PSD major source of greenhouse gas (GHG) emissions is 100,000 TPY, but only if emissions of a criteria pollutant first trigger NSR major source status. The Facility will not be a major source of any criteria pollutant under PSD.

The Facility will be a major source of NO_x and CO emissions exceeding the 100 TPY threshold, and hazardous air pollutants (HAPs) exceeding the thresholds of 10 TPY for individual HAP emissions and 25 TPY for all HAPs combined. The Facility will be required to obtain a Title V permit under the federal regulation 40 CFR Part 70. Therefore, the facility qualifies as a Class I facility. Greenhouse gas emissions do exceed 100,000 TPY; however, since the emissions of criteria pollutants do not trigger NSR major source status, Class I permit thresholds will not be exceeded.

Nevada Administrative Code (NAC) Section 445B.310 requires facilities applying for air operating permits that would have a PTE of greater than 25 TPY of at least one criteria pollutant to perform an environmental evaluation, which includes air dispersion modeling of the proposed Facility emissions impacts. As the proposed Facility would have a PTE of greater than 25 TPY of at least one criteria pollutant, air dispersion modeling of the facility has been performed in an Air Dispersion Modeling Analysis. Using air dispersion modeling, the analysis ensures the protection of the National Ambient Air Quality Standards (NAAQS) and the Nevada Ambient Air Quality Standards (NvAAQS). NDEP also requires that Class I Minor Sources, as well as PSD Major Sources, make a showing that the thresholds for available PSD NO₂ and PM₁₀

increments in the region will not be exceeded with the addition of Facility emissions. The Air Dispersion Modeling Report is included separately from this application report in Attachment C.

Appendix A includes the site layout and Facility figures. Detailed emission calculations for the Facility are included in Appendix B. Appendix C contains the manufacturer specifications for the proposed emission units.

1.3 Permit Application Required Content and Forms

This document is the Peru Ridge Technology Center permit application to authorize the construction and operation of the Facility. Section 2.0 presents the proposed Facility and process description. Facility emissions and proposed limitations are presented in Section 3.0. Section 4.0 presents a regulatory applicability analysis. Section 5.0 includes proposed federally enforceable Class I OPTC permit limitations.

2.0 FACILITY AND PROCESS DESCRIPTION

This section provides an overview of the Facility and description of the proposed emission units.

2.1 Facility Overview

PR RNO is proposing to construct the PRTC Facility, consisting of a 218-MW power facility consisting of the P1 Power Plant, with natural gas-fueled prime engines, CNG PRS units, and diesel-fueled black start engine (BSE) gensets; diesel-fueled emergency engines with a combined generation capacity at 100% load of 246 MW, serving as backup power for a data center; Substation emergency diesel-fueled engines; and fire pump engines, on a portion of an approximately 1,204-acre parcel in Storey County, Nevada. The proposed Facility design includes a P1 Power Plant with 136 x 2,146 brake-horsepower (bhp) (about 1.6 MW) Jenbacher J420 gas engines, 12 x CNG PRS units (only 6 ever run simultaneously) and 6 x 1,370 kW (1,864 bhp) diesel-fueled black start engine gensets; 82 x 4,393 bhp (3.0 MW) Caterpillar 3516E Tier 4 diesel-fired emergency generators; 2 x 1.25 MW (1,676 bhp) Tier 2 Caterpillar C32 Substation emergency diesel generators; and 2 x 488 bhp (364 kW) Tier 3 Clarke C18H0-UFAD12 diesel-fired fire pump engines.

The P1 Power Plant site will be located south of the data center, with the one-hundred-thirty-six (136) P1 gas engines distributed evenly on the site and the six (6) BSE gensets situated in the center. The twelve (12) CNG PRS units will be located southwest of the P1 site. PR RNO will construct one data center building, four generator buildings, and accessory structures. At full build-out, the two south generator buildings will include twenty-one (21) DC engines each, and the two north buildings will include twenty (20) DC engines each. The engines will be powered by diesel fuel and/or equivalent renewable diesel fuel. A 150-gallon diesel tank will be attached to each of the DC Engines. The two Substation engines will be located onsite at the Substation. The two fire pump engines will be located onsite at the Security/Fire Building. The Substation and fire pump engines will also have associated

diesel tanks. The engines will be operated periodically for equipment maintenance and testing purposes. The PRS units and diesel tank units are insignificant activities (IAs). Site maps are included in Appendix A.

2.2 Facility Location

The proposed Facility will be located on the northeastern section of an approximately 1,204-acre parcel located in Storey County about 16 miles east of Reno and about 28 miles northeast of Carson City. Highway 439 runs approximately 0.5 miles east of the site, and Interstate 80 runs approximately 2.5 miles north of the site. Facility emission sources will be centered at about UTM 285375 m E, 4378940 m N, WGS84 Zone 11. The general location of the facility is shown in Figure 1. The proposed location, boundary, and generator locations at full buildout are shown in Figure 2. The site layout for the Facility is provided in Appendix A. The area immediately surrounding the site is generally characterized by mountainous terrain at about 4,650 feet (ft) above sea level. Terrain rises to the south and west of the Facility site. Industrial facilities are to the north and east of the Facility site.

The portion of Storey County where the Facility is located is classified as attainment for all criteria pollutants.



FIGURE 1. GENERAL LOCATION OF THE PERU RIDGE TECHNOLOGY CENTER FACILITY



FIGURE 2. SPECIFIC LOCATION OF THE PERU RIDGE TECHNOLOGY CENTER FACILITY

3.0 FACILITY EMISSIONS

The Peru Ridge Technology Center (PRTC) will be a new stationary source. Therefore, the PTE of regulated attainment area NSR criteria pollutants from the proposed Facility equipment is used for air permitting purposes. The equipment proposed for the Facility includes installation of 136 x P1 engines, 12 x CNG PRS units (6 of which will be operating simultaneously at any given time), 6 x BSE gensets, 82 x DC engines, 2 x Substation engines, and 2 x fire pump engines. The facility will include a storage tank assigned to each diesel-fueled engine. This section describes the emissions calculations for regulated NSR criteria pollutants, greenhouse gases (GHGs) and HAPs.

3.1 Summary of Facility Emissions Units

Table 2 presents a summary of the proposed emissions units for the PRTC Facility.

TABLE 2 PROPOSED EMISSIONS UNITS FOR THE PERU RIDGE FACILITY			
Building/Area	System No.	Designation	Description
P1 Power Plant	1	J420_01-J420_136	P1 gas engines, 136 Units
	2	PRS_1-PRS-12	CNG PRS, 12 Units
	3	BSE1-BSE6; BSE_T_1-BSE_T_6	BSE Gensets, 6 Units, each with a 1,240-gallon diesel storage tank
Generator Building 1	4	DC1_01-DC1_21; DC1_T_01-DC1_T_21	DC diesel engines, 21 Units; each with a 150-gallon diesel tank
Generator Building 2	4	DC2_01-DC2_20; DC2_T_01-DC2_T_20	DC diesel engines, 20 Units; each with a 150-gallon diesel tank
Generator Building 3	4	DC3_01-DC3_21; DC3_T_01-DC3_T_21	DC diesel engines, 21 Units; each with a 150-gallon diesel tank
Generator Building 4	4	DC4_01-DC4_20; DC4_T_01-DC4_T_20	DC diesel engines, 20 Units; each with a 150-gallon diesel tank
Substation	5	C32_01-C32_02; C32_T_1-C32_T_2	Substation diesel engines, 2 Units; 2 x 150-gallon diesel tanks
Security/Fire Building	6	FIRE_1-FIRE_2; FIRE_T_1-FIRE_T_2	Fire pump diesel engines, 2 units; 2 x 400-gallon diesel tanks

3.2 Equipment Discussion

3.2.1 Prime Power Plant Natural Gas Engines

The proposed Facility will be equipped with one hundred and thirty-six (136) Jenbacher J420 natural gas-fueled prime power engines which will provide the primary electrical generation capacity for the Facility. Each P1 engine is a 2,146 bhp, 1.6 MW, four-stroke lean burn (4SLB), spark-ignition reciprocating internal combustion engine (SI RICE) designed for continuous duty and high-efficiency operation. The engines operate on a lean-burn combustion strategy, which lowers combustion temperatures and reduces the formation of NO_x prior to exhaust treatment.

Aggreko will be responsible for operating the P1 Facility, providing full operational management of the onsite generation systems and associated emissions control equipment. As the Facility operator, Aggreko will oversee continuous operation of the engines, compliance with applicable air quality standards, and ongoing performance of all aftertreatment systems.

Each P1 engine will be equipped with a Selective Catalytic Reduction (SCR) system and a Catalytic Oxidizer (CatOx) to achieve compliance with the United States Environmental Protection Agency (USEPA) New Source Performance Standards (NSPS) for stationary spark-ignition internal combustion engines (40 CFR Part 60, Subpart JJJJ). The SCR system injects a urea-based solution into the exhaust stream, where it reacts over a catalyst to convert NO_x to nitrogen and water vapor. The oxidizing catalyst reduces CO and VOCs, including formaldehyde, through catalytic oxidation. Together, the SCR and CatOx systems provide high overall control efficiencies, ensuring that the engines meet stringent NO_x, CO, and VOC emission limits.

The P1 engines use filtered intake air compressed by pistons and ignited by spark plugs, with precisely metered natural gas fuel. Each engine cycle consists of an intake stroke, compression stroke, power stroke, and exhaust stroke, completed over two revolutions of the crankshaft. The J420 engine is a 20-cylinder, V-type configuration, optimized for high power density, stable lean-burn operation, and reduced fuel consumption during continuous 8,760-hour annual operation.

The P1 engines will burn natural gas fuel at a lower, derated, rate on an annual average basis due to the high base elevation (> 4,600 ft) of the Facility. The derated fuel use for the P1 engines (plus a 10% safety factor), is used to calculate the annual PTE emissions shown in Section 3.3.1, but the fully rated hourly fuel use is used to calculate short-term hourly emissions.

The P1 engines will be located in the southern portion of the site, arranged to support the Facility's prime power needs. Exhaust gas temperatures under full-load operation

typically reach 800–900°F, depending on ambient conditions and efficiency of the heat recovery and aftertreatment systems.

Table 3 summarizes the manufacturer-provided general specifications for the P1 engines. See Appendix C for manufacturer specifications.

TABLE 3 GENERAL SPECIFICATIONS FOR P1 ENGINES	
Parameter	Value
Model	Jenbacher J420
Number of Units	136
Power Output per Engine (MW)	1.6
Power Output per Engine (bhp)	2,146
Facility Output Power (Gross) Total (MW)	218
Fuel Input Rate (MMBtu/hr)	14.23

3.2.2 Prime Power Plant CNG Pressure Reducing System Units

The Facility P1 Power Plant will include 12 Compressed Natural Gas (CNG) Pressure Reducing System (PRS) units, with only 6 operating simultaneously, designed to depressurize high-pressure CNG to a stable, engine-ready natural gas pressure without flash freezing issues. The PRS is a fuel-burning (or fuel-consuming) device that mechanically depressurizes natural gas with flameless fuel combustion utilizing a catalyst, rather than combusting fuel with a flame. According to emissions information provided by Certarus, the PRS does not produce measurable emissions of CO, VOC, PM₁₀, PM_{2.5}, SO₂, or hazardous air pollutants (HAPs) like formaldehyde. These pollutants are typically associated with flame-based combustion; the vendor has indicated they are negligible or zero for the PRS. Two pollutants are emitted in quantifiable amounts: NO_x and CO₂.

The overall fuel gas throughput associated with the PRS is approximately 34,280 SCF/day per operating unit, corresponding to roughly 35 MMBtu/day. See Appendix C for manufacturer specifications.

TABLE 4 GENERAL SPECIFICATIONS FOR CNG PRS UNITS	
Parameter	Value
Model	Certarus
Number of Units	12
Fuel Input Rate per Unit (MMBtu/hr)	0.24

3.2.3 Prime Power Plant Black Start Engine Gensets and Diesel Storage Tanks

The Facility P1 Power Plant will include six (6) Volvo Penta Tier 4 diesel-fueled black start engine (BSE) gensets, each rated at 1,370 kW (1,864 bhp). Each black start engine genset will consist of two engines that must operate together. These BSE gensets enable the P1 engines to be brought online following a loss of grid power. The Volvo Penta engines are Tier 4 compression-ignition reciprocating internal combustion engine (CI RICE) units, utilizing urea-based diesel exhaust fluid (DEF) for NO_x emissions control, an oxidation catalyst for VOC and CO emissions control and filters for particulate control. Each genset will be associated with a 1,240-gallon diesel tank, for a total of 4 tanks.

The engines will operate only during plant startup scenarios and during periodic testing and maintenance activities. Table 5 summarizes the manufacturer-provided general specifications for the BSE gensets. See Appendix C for manufacturer specifications.

TABLE 5 GENERAL SPECIFICATIONS FOR BSE GENSETS	
Parameter	Value
Model	Volvo Penta T4
Number of Units	6
Number of Engines per Unit	2
Power Output per Engine (kW)	685
Power Output per Unit (kW)	1,370
Power Output per Engine (bhp)	932
Power Output per Unit (bhp)	1,864
Fuel Input Rate per Engine (MMBtu/hr)	7.08
Fuel Input Rate per Unit (MMBtu/hr)	14.2

3.2.4 Data Center Emergency Engines and Diesel Storage Tanks

The proposed Facility will be equipped with eighty-two (82) Caterpillar 3516E (EM4718-02) Tier 4 CI RICE units, which will provide backup power for the data center building. These engines are turbocharged, aftercooled, and operate on diesel fuel and/or equivalent renewable diesel. Each engine is rated to produce approximately 3.0 MW (4,394 bhp) of power. There will be 20 engines in each of the two north generator buildings and 21 in each of in the two south generator buildings. Each engine will be associated with a 150-gallon diesel tank, for a total of 82 tanks.

The Caterpillar 3516E Tier 4 engines are designed to meet USEPA Tier 4 nonroad diesel engine emission standards through engine-integrated, in-cylinder control technologies. These include advanced electronic fuel injection, optimized combustion chamber design, air/fuel ratio management, and turbocharging. SCR and OxCat

emissions control systems are incorporated into each of these engines. In the SCR process, a urea-based DEF is injected into the exhaust stream, where it reacts over a catalyst to convert nitrogen oxides NO_x to nitrogen and water vapor. The oxidizing catalyst reduces CO and VOCs, including formaldehyde, through catalytic oxidation. These aftertreatment systems significantly reduce NO_x emissions beyond what can be achieved through combustion optimization alone.

Modern RICE units like the 3516E are four-stroke internal combustion engines, in which filtered intake air is compressed by a piston and fuel is injected directly into the cylinder. The fuel self-ignites due to the high pressure and temperature—a process known as compression ignition. Each engine cycle consists of an intake stroke, compression stroke, power stroke, and exhaust stroke, completed over two revolutions of the crankshaft.

The Caterpillar 3516E engine is a 16-cylinder, four-stroke, V-type diesel engine, widely used in industrial power generation, oil and gas production, and other high-duty-cycle applications. Exhaust gases exit the engine under full load conditions at temperatures typically up to 1,000°F, depending upon ambient conditions. These engines are representative of the durable, fuel-efficient designs used across a broad range of industrial and utility-scale power generation applications.

The DC engines will be operated periodically for equipment maintenance and testing purposes and for emergency demand-response up to the maximum hourly fuel use, at 100% load for up to 100 hours per year. Table 6 summarizes the manufacturer-provided general specifications for the Caterpillar 3516E Tier 4 engine at maximum fuel use and 100% rated load. See Appendix C for manufacturer specifications.

TABLE 6 GENERAL SPECIFICATIONS FOR DATA CENTER ENGINES	
Parameter	Value
Model	Caterpillar 3516E
Number of Units	82
Power Output per Engine (MW)	3.0
Power Output per Engine (bhp)	4,393
Facility Output Power (Gross) Total (MW)	246
100% Load Fuel Consumption (gal/hr)	204.3
100% Load Fuel Consumption (MMBtu/hr)	28.1
Maximum Annual Fuel Usage (gallons/year)	20,430

3.2.5 Substation Engines and Diesel Storage Tanks

Two Tier 2 Caterpillar C32 backup diesel-fired generators, with an estimated backup maximum output rating of 1.25 MW (1,676 bhp) each will be installed at the Facility Substation. Each engine will be associated with a 150-gallon diesel tank, for a total of 2 tanks.

The Caterpillar C32 is a compression ignition, reciprocating internal combustion engine. The engines will act as emergency backup power for operations not involving data center server power loads. The engines will be operated periodically for equipment maintenance and testing purposes and for emergency demand-response up to the maximum hourly fuel use, at 100% load for up to 100 hours per year. The specifications for the proposed substation engines are summarized in Table 7. See Appendix C for manufacturer specifications.

TABLE 7 GENERAL SPECIFICATIONS FOR SUBSTATION ENGINES	
Parameter	Value
Model	Caterpillar C32
Number of Units	2
Output Power per Unit (MW)	1.25
Output Power per Unit (bhp)	1,676
100% Load Fuel Consumption (gal/hr)	87.4
100% Load Fuel Consumption (MMBtu/hr)	12.0
Maximum Annual Fuel Use (gallons/year)	8,740

3.2.6 Fire Pump Diesel Engines and Diesel Storage Tanks

Two Tier 3 C18H0-UFAD12 Clark diesel-fired fire pump engines, with an estimated backup maximum output rating of 488 bhp (364 kW) each will be installed at the Security/Fire Building. Each engine will be associated with a 400-gallon diesel tank, for a total of 2 tanks.

The 364 kW Clark engines are compression ignition, reciprocating internal combustion engines and will drive the water pump to serve the Facility's fire emergency needs. The engines will also be operated periodically for equipment maintenance and testing purposes. The estimated specifications for the proposed fire pump engines are summarized in Table 8. See Appendix C for manufacturer specifications.

TABLE 8 GENERAL SPECIFICATIONS FOR FIRE PUMP ENGINES	
Parameter	Value
Model	Clarke UFAD12
Number of Units	2
Output Power per Unit (kW)	364
Output Power per Unit (bhp)	488
100% Load Fuel Consumption (gal/hr)	31.5
100% Load Fuel Consumption (MMBtu/hr)	4.32
Maximum Annual Fuel Use (gallons/year)	1,260

3.3 Regulated Pollutants

This section summarizes PTE calculations and resulting emission rates for regulated New Source Review (NSR) criteria pollutants and greenhouse gases (GHGs) from the units proposed as part of the Peru Ridge Technology Center. The regulated NSR pollutants included here are NO_x, CO, VOC, SO₂, PM₁₀, PM_{2.5} and GHGs as carbon dioxide equivalent (CO₂e).

3.3.1 Jenbacher J420 Prime Power Natural Gas Engine NSR Pollutant Emissions

A summary of NSR pollutant emissions from the P1 Power Plant natural gas-fueled engines is presented in this section. Each engine will operate for up to 8,760 hours per year at the maximum hourly fuel rate at 100% load. The short-term (hourly to daily, or 24-hour) PTE of regulated NSR pollutants for the proposed engines are based upon the bhp rating, and fuel consumption at 100% load (MMBtu/hr) per engine; and the uncontrolled emission factors provided by the manufacturer and obtained from USEPA AP-42. The long-term (annual) PTE of regulated NSR pollutants for the proposed engines are based upon the derated fuel usage of the engines at a high altitude, per engine, with a 10% safety factor; and the uncontrolled emission factors provided by the manufacturer and obtained from USEPA AP-42. The control efficiencies for NO_x, CO and VOC due to the SCR and OxCat controls were provided by the manufacturer.

Table 9 presents the maximum controlled hourly NSR pollutant emissions for the proposed Jenbacher J420 prime power engines.

TABLE 9 JENBACHER J420 – MAXIMUM CONTROLLED HOURLY NSR POLLUTANT EMISSIONS PER PRIME POWER ENGINE	
Pollutant	Hourly Emissions (lb/hr)
NO _x	0.24
CO	0.25
VOC	0.09
PM ₁₀	0.05
PM _{2.5}	0.05
SO ₂	0.07
CO _{2e}	1,567

Maximum uncontrolled and controlled emission rates for NO_x, CO, VOC, SO_x, PM₁₀, PM_{2.5}, and CO_{2e} for the proposed engines are detailed in the PTE calculations in Appendix B. These are based on 100% load condition, at site elevation.

The PTE of regulated NSR criteria pollutants from the P1 engines using the derated fuel usage emission rates and based upon each engine operating for 8,760 hours per year, are summarized in Table 10.

TABLE 10 JENBACHER J420 – DERATED CONTROLLED ANNUAL NSR POLLUTANT EMISSIONS PER PRIME POWER ENGINE	
Pollutant	Annual Emissions (TPY)
NO _x	1.04
CO	1.08
VOC	0.41
PM ₁₀	0.21
PM _{2.5}	0.21
SO ₂	0.31
CO _{2e}	6,863

3.3.2 CNG PRS NSR Pollutant Emissions

A summary of NSR pollutant emissions from the CNG PRS units is presented in this section. Each CNG PRS unit will operate for up to 8,760 hours per year. The short-term (hourly to daily, or 24-hour) and annual PTE of regulated NSR pollutants for the proposed CNG PRS units are based upon emissions provided by the manufacturer. Table 11 presents the maximum hourly NSR pollutant emissions for the proposed CNG PRS units, per unit.

TABLE 11 CNG PRS – MAXIMUM HOURLY NSR POLLUTANT EMISSIONS PER UNIT	
Pollutant	Hourly Emissions (lb/hr)
NO _x	0.053
CO	0
VOC	0
PM ₁₀	0
PM _{2.5}	0
SO ₂	0
CO ₂ e	244

Maximum emission rates for NO_x and CO₂e for the proposed CNG PRS are detailed in the PTE calculations in Appendix B.

The maximum annual emissions (or PTE) of regulated NSR criteria pollutants from the CNG PRS units using the maximum hourly emission rates shown above and based upon each PRS CNG unit operating for up to 8,760 hours per year are summarized in Table 12.

TABLE 12 CNG PRS – MAXIMUM ANNUAL NSR POLLUTANT EMISSIONS PER UNIT	
Pollutant	Annual Emissions (TPY)
NO _x	0.23
CO	0
VOC	0
PM ₁₀	0
PM _{2.5}	0
SO ₂	0
CO ₂ e	1,071

3.3.3 Volvo Penta T4 Black Start Engine Genset NSR Pollutant Emissions

A summary of NSR pollutant emissions from the dual-engine BSE gensets is presented in this section. Each BSE genset will operate for testing and maintenance and emergency demand-response up to the maximum hourly fuel use, at 100% load for up to 100 hours per year. Each BSE genset consists of two 685 kW engines. The short-term (hourly to daily, or 24-hour) and annual PTE of regulated NSR pollutants for the proposed BSE gensets are based upon the kW rating, and fuel consumption at 100% load (MMBtu/hr) per genset; and the Tier 4 controlled emission factors provided by the manufacturer and uncontrolled emission factors obtained from

USEPA AP-42. Table 13 presents the maximum controlled hourly NSR pollutant emissions for the proposed Volvo BSE gensets.

TABLE 13 VOLVO 1,370 KW BSE – MAXIMUM CONTROLLED HOURLY NSR POLLUTANT EMISSIONS PER BLACK START ENGINE GENSET	
Pollutant	Hourly Emissions (lb/hr)
NO _x	1.21
CO	0.20
VOC	0.04
PM ₁₀	0.04
PM _{2.5}	0.04
SO ₂	0.02
CO ₂ e	2,342

Maximum uncontrolled and controlled emission rates for NO_x, CO, VOC, SO_x, PM₁₀, PM_{2.5}, and CO₂e for the proposed BSE gensets are detailed in the PTE calculations in Appendix B. These are based on 100% load condition, at site elevation. While the BSE gensets will likely operate one hour per day or less for testing and maintenance, those operations could occur at any time of day. An emergency demand-response situation, such as Energy Emergency Alert (EEA) Levels 1 or 2, could occur at any time.

The maximum controlled annual emissions (or PTE) of regulated NSR criteria pollutants from the BSE gensets using the maximum hourly emission rates shown above and based upon the equivalent of engine operations of 100 hours per year at 100% load, are summarized in Table 14.

TABLE 14 VOLVO 1,370 KW BSE GENSET – MAXIMUM ANNUAL NSR POLLUTANT EMISSIONS PER BLACK START ENGINE GENSET	
Pollutant	Annual Emissions (TPY)
NO _x	0.06
CO	0.01
VOC	0.002
PM ₁₀	0.002
PM _{2.5}	0.002
SO ₂	0.001
CO ₂ e	117

3.3.4 Caterpillar 3516E Data Center Engine NSR Pollutant Emissions

A summary of NSR pollutant emissions from the DC engines is presented in this section. Each DC engine will operate for testing and maintenance and emergency demand-response up to the maximum hourly fuel use, at 100% load for up to 100 hours per year. The short-term (hourly to daily, or 24-hour) and annual PTE of regulated NSR pollutants for the proposed engines are based upon the bhp rating, and fuel consumption at 100% load (MMBtu/hr) per engine; and the uncontrolled emission factors provided by the manufacturer and obtained from USEPA AP-42. The control efficiencies for PM_{2.5}, PM₁₀, NO_x and CO due to the particulate filters, SCR, and OxCat controls were provided by the manufacturer. Table 15 presents the maximum controlled hourly NSR pollutant emissions for the proposed Caterpillar 3516E Tier 4 engines.

TABLE 15 CATERPILLAR 3516E – MAXIMUM HOURLY NSR POLLUTANT EMISSIONS PER DATA CENTER ENGINE	
Pollutant	Hourly Emissions (lb/hr)
NO _x	3.27
CO	1.28
VOC	0.58
PM ₁₀	0.19
PM _{2.5}	0.19
SO ₂	0.04
CO _{2e}	4,646

Maximum uncontrolled and controlled emission rates for NO_x, CO, VOC, SO_x, PM₁₀, PM_{2.5}, and CO_{2e} for the proposed engines are detailed in the PTE calculations in Appendix B. These are based on 100% load condition, at site elevation. While the engines will likely operate one hour per day or less for testing and maintenance, those operations could occur at any time of day. An emergency demand-response situation, such as EEA Levels 1 or 2, could occur at any time.

The maximum controlled annual emissions (or PTE) of regulated NSR criteria pollutants from the engines using the maximum hourly emission rates shown above, and the maximum annual fuel use based upon the equivalent of engine operations of 100 hours per year at 100% load, are summarized in Table 16.

TABLE 16 CATERPILLAR 3516E – MAXIMUM ANNUAL NSR POLLUTANT EMISSIONS PER DATA CENTER ENGINE	
Pollutant	Total Emissions (TPY)
NO _x	0.16
CO	0.06
VOC	0.03
PM ₁₀	0.01
PM _{2.5}	0.01
SO _x	0.002
CO _{2e}	232

3.3.5 Caterpillar C32 Substation Engine NSR Pollutant Emissions

A summary of NSR pollutant emissions from the Substation engines are presented in this section. Each engine will operate for testing and maintenance and emergency demand-response up to the maximum hourly fuel use stated in Section 3.2.5, based upon 100% load for up to 100 hours per year. The short-term (hourly to daily, or 24-hour) and annual PTE of regulated NSR pollutants for the proposed engines are based upon the bhp, and fuel consumption at 100% load (MMBtu/hr) per engine; and the uncontrolled emission factors provided by the manufacturer and obtained from USEPA AP-42. Table 17 presents the hourly emissions information used for this application for the proposed Caterpillar C32 Tier 2 engines.

TABLE 17 CATERPILLAR C32 – MAXIMUM HOURLY NSR POLLUTANT EMISSIONS PER SUBSTATION ENGINE	
Pollutant	Hourly Emissions (lb/hr)
NO _x	22.9
CO	0.78
VOC	0.37
PM ₁₀	0.07
PM _{2.5}	0.07
SO ₂	0.02
CO _{2e}	1,982

Maximum emission rates for NO_x, CO, VOC, SO_x, PM₁₀, PM_{2.5}, and CO_{2e} for the proposed engines are detailed in the PTE calculations in Appendix B. These are based on 100% load condition, at site elevation. While the engines will likely operate one hour per day or less for testing and maintenance, those operations could occur at any time of day. An emergency demand-response situation, such as EEA Levels 1 or 2, could occur at any time.

The maximum annual emissions (or PTE) of regulated NSR pollutants from the engines during normal operation using the conservative emission rates shown above, and the maximum annual fuel usage, based upon engine operations at an equivalent of 100 hours per year at 100% load are summarized in Table 18.

TABLE 18 CATERPILLAR C32 – MAXIMUM ANNUAL NSR POLLUTANT EMISSIONS PER SUBSTATION ENGINE	
Pollutant	Annual Emissions (TPY)
NO _x	1.15
CO	0.04
VOC	0.02
PM ₁₀	0.004
PM _{2.5}	0.004
SO ₂	0.0009
CO _{2e}	99.1

3.3.6 Fire Pump Engine NSR Pollutant Emissions

The proposed fire pump engines will be USEPA-certified Tier 3 units as required in 40 CFR §60.4205(c), and subject to the emissions standards in Table 4 of 40 CFR 60 Subpart IIII for NO_x, CO, VOC, and PM. For emissions calculations, the short-term and annual PTE of regulated NSR pollutant emissions for the fire pump engines are based upon the rating, and fuel consumption at 100% load; and the uncontrolled emission factors provided by the manufacturer and obtained from USEPA AP-42. Table 19 presents the hourly emissions information used for this application for the proposed Clarke fire pump Tier 3 engines.

TABLE 19 CLARKE UFAD12 – MAXIMUM HOURLY NSR POLLUTANT EMISSIONS PER FIRE PUMP ENGINE	
Pollutant	Hourly Emissions (lb/hr)
NO _x	2.36
CO	1.52
VOC	0.14
PM ₁₀	0.16
PM _{2.5}	0.16
SO ₂	1.00
CO _{2e}	710

Maximum emission rates for NO_x, CO, VOC, SO_x, PM₁₀, PM_{2.5}, and CO_{2e} for the proposed fire pump engines are detailed in the PTE calculations in Appendix B. These are based on 100% load condition, at site elevation. While the engine will likely operate one hour per day or less for testing and maintenance, those operations could occur at any time of day.

The maximum annual emissions (PTE) of regulated NSR pollutants from the engines during normal operation using the conservative emission rates shown above and based upon the maximum annual fuel usage stated in Section 3.2.6, based upon the equivalent of engine operations of 40 hours per year at 100% load, are summarized in Table 20.

TABLE 20 CLARKE UFAD12 – MAXIMUM ANNUAL NSR POLLUTANT EMISSIONS PER FIRE PUMP ENGINE	
Pollutant	Annual Emissions (TPY)
NO _x	0.05
CO	0.03
VOC	0.003
PM ₁₀	0.003
PM _{2.5}	0.003
SO ₂	0.02
CO _{2e}	14.2

3.3.7 Summary of Facility Potential-to-Emit of Regulated NSR Pollutants

Table 21 summarizes the annual controlled PTE of regulated NSR pollutants for the Peru Ridge Technology Facility for all engines. Detailed uncontrolled and controlled emissions calculations are provided in Appendix B.

TABLE 21 SUMMARY OF MAXIMUM CONTROLLED ANNUAL EMISSIONS OF NSR POLLUTANTS FOR THE PERU RIDGE TECHNOLOGY FACILITY (TPY)							
Pollutants	Jenbacher J420 2,146 bhp	CNG PRS Units	Volvo BSEs 1,370 kW	CAT 3516E 3.0 MW	CAT C32 1.25 MW	Clarke Fire Pumps 488 bhp	Total Facility PTE
NO _x	134	1.40	0.36	13.4	2.29	0.094	159
CO	138	0	0.06	5.24	0.08	0.061	152
VOC	53.2	0	0.012	2.38	0.04	0.005	58.8
PM ₁₀	26.6	0	0.012	0.79	0.007	0.006	29.0
PM _{2.5}	26.6	0	0.012	0.79	0.007	0.006	29.0
SO ₂	39.9	0	0.006	0.17	0.002	0.04	42.5
CO ₂ e	933,371	6,424	703	19,049	198	28.4	959,773

Maximum controlled annual PTE of all criteria pollutants will be below the PSD threshold of 250 TPY, but PTE of NO_x and CO is above the Class I Title V threshold of 100 TPY.

3.4 Hazardous Air Pollutants Emissions

HAP emissions from the proposed emissions units under the Peru Ridge Technology Center are presented in this section.

3.4.1 Natural Gas Combustion HAP Emissions

Combustion of natural gas in the P1 Power Plant engines will form HAP emissions. For the P1 engines, the emission factors of the HAP species (except formaldehyde) are based on the list of speciated organic compounds for natural gas-fired Reciprocating Engines, 4-stroke lean burn from USEPA AP-42 Chapter 3.2. The formaldehyde emission factor for the P1 engines was provided by the manufacturer. The control efficiencies for the P1 engines were assumed 80% for all HAPs except formaldehyde due to the OxCat controls. A 90% control efficiency was assumed for formaldehyde, as stated by the engine manufacturer.

3.4.2 Diesel Engine HAP Emissions

Combustion of diesel fuel in the DC engines, BSE gensets, Substation engines, and fire pump engines will form HAP emissions. For the DC, BSE, and Substation engines, which are rated greater than 600 horsepower, emission factors of HAP species are based on the list of speciated organic compounds and polycyclic aromatic hydrocarbons (PAHs) for large uncontrolled stationary diesel engines from USEPA AP-42, Chapter 3.4. For the fire pump engines which are less than 600 horsepower, HAP species and emission factors are based on the AP-42, Chapter 3.3. No control efficiencies were applied for any of the diesel engine HAP emissions calculations.

3.4.3 Summary of Source-Wide HAPs Emissions

Table 22 presents the total maximum controlled annual (PTE) HAP emissions from the Peru Ridge Technology Center. Detailed uncontrolled and controlled emissions calculations are provided in Appendix B.

TABLE 22
SUMMARY OF MAXIMUM CONTROLLED ANNUAL HAP EMISSIONS
FOR THE PERU RIDGE TECHNOLOGY FACILITY

HAP	CAS #	Emissions (TPY)						
		Jenbacher J420 2,146 bhp	CNG PRS Units	Volvo BSE Gensets 1,370 kW	CAT 3516E 3.0 MW	CAT C32 1.25 MW	Clarke Fire Pumps 488 bhp	Total Facility PTE
1,1,2,2-Tetrachloroethane	79345	6.78E-02	--	--	--	--	--	6.78E-02
1,1,2-Trichloroethane	79005	5.39E-02	--	--	--	--	--	5.39E-02
1,3-Butadiene	106990	4.53E-01	--	--	--	--	5.34E-06	4.53E-01
1,3-Dichloropropene	542756	4.48E-02	--	--	--	--	--	4.48E-02
2,2,4-Trimethylpentane	540841	4.24E-01	--	--	--	--	--	4.24E-01
2-Methylnaphthalene	91576	5.63E-02	--	--	--	--	--	5.63E-02
Acenaphthene	83329	2.12E-03	--	--	--	--	--	2.12E-03
Acenaphthylene	208968	9.37E-03	--	--	--	--	--	9.37E-03
Acetaldehyde	75070	--	--	1.07E-04	2.90E-03	3.02E-05	1.05E-04	3.14E-03
Acrolein	107028	--	--	3.35E-05	9.07E-04	9.44E-06	1.26E-05	9.62E-04
Benzene	71432	7.46E-01	--	3.29E-03	8.93E-02	9.29E-04	1.27E-04	8.40E-01
Benzo(b)fluoranthene	205992	2.81E-04	--	--	--	--	--	2.81E-04
Benzo(e)pyrene	192972	7.04E-04	--	--	--	--	--	7.04E-04
Benzo(g,h,i)perylene	191242	7.02E-04	--	--	--	--	--	7.02E-04
Biphenyl	92524	3.59E-01	--	--	--	--	--	3.59E-01
Carbon Tetrachloride	56235	6.22E-02	--	--	--	--	--	6.22E-02
Chlorobenzene	108907	5.15E-02	--	--	--	--	--	5.15E-02
Chloroform	67663	4.83E-02	--	--	--	--	--	4.83E-02
Chrysene	218019	1.17E-03	--	--	--	--	--	1.17E-03
Ethylbenzene	100414	6.73E-02	--	--	--	--	--	6.73E-02
Ethylene Dibromide	106934	7.51E-02	--	--	--	--	--	7.51E-02
Fluoranthene	206440	1.88E-03	--	--	--	--	--	1.88E-03
Fluorene	86737	9.61E-03	--	--	--	--	--	9.61E-03

TABLE 22 SUMMARY OF MAXIMUM CONTROLLED ANNUAL HAP EMISSIONS FOR THE PERU RIDGE TECHNOLOGY FACILITY								
HAP	CAS #	Emissions (TPY)						
		Jenbacher J420 2,146 bhp	CNG PRS Units	Volvo BSE Gensets 1,370 kW	CAT 3516E 3.0 MW	CAT C32 1.25 MW	Clarke Fire Pumps 488 bhp	Total Facility PTE
Formaldehyde	50000	5.64E+01	--	3.35E-04	9.08E-03	9.45E-05	1.61E-04	5.64E+01
Methanol	67561	4.24E+00	--	--	--	--	--	4.24E+00
Methylene Chloride	75092	3.39E-02	--	--	--	--	--	3.39E-02
n-Hexane	110543	1.88E+00	--	--	--	--	--	1.88E+00
Naphthalene	91203	1.26E-01	--	5.52E-04	1.50E-02	1.56E-04	1.16E-05	1.42E-01
Total PAH	1151	4.56E-02	--	9.00E-04	2.44E-02	2.54E-04	2.30E-05	7.12E-02
Phenanthrene	85018	1.76E-02	--	--	--	--	--	1.76E-02
Phenol	108952	4.07E-02	--	--	--	--	--	4.07E-02
Pyrene	129000	2.31E-03	--	--	--	--	--	2.31E-03
Styrene	100425	4.00E-02	--	--	--	--	--	4.00E-02
Perchloroethylene	127184	4.20E-03	--	--	--	--	--	4.20E-03
Toluene	108883	6.92E-01	--	1.19E-03	3.23E-02	3.36E-04	5.59E-05	7.26E-01
Vinyl Chloride	75014	2.53E-02	--	--	--	--	--	2.53E-02
Xylenes	1330207	3.12E-01	--	8.19E-04	2.22E-02	2.31E-04	3.89E-05	3.35E-01
Total HAPs								66.6

* Formaldehyde, which is the highest single HAP, is bolded in the table.

The Facility maximum PTE of a single HAP (formaldehyde) is 56.4 TPY, which is above the Class I threshold of 10 TPY. The total PTE of all HAPs is 66.6 TPY, which is above the Class I threshold of 25 TPY. Because Facility-wide HAP emissions exceed the major-source thresholds of 10 TPY for any single HAP and 25 TPY for total combined HAPs, the Facility is subject to the Maximum Achievable Control Technology (MACT) requirements under 40 CFR Part 63, including Subpart ZZZZ for stationary reciprocating internal combustion engines.

4.0 REGULATORY APPLICABILITY REVIEW

A review of the potentially applicable federal and NDEP regulations has been conducted for the proposed Peru Ridge Technology Center. The following subsections summarize the applicability of these regulations to the proposed Facility.

4.1 State Regulations

4.1.1 New Source Review

The NDEP has incorporated the federal New Source Review (NSR) program for new and modified sources of air emissions in the Nevada Administrative Code (NAC) Chapter 445B. The NSR program establishes preconstruction permitting requirements. There are three types of NSR permits: Prevention of Significant Deterioration (PSD) for new major sources in attainment areas, nonattainment NSR for new major sources in nonattainment areas, and minor NSR for smaller sources.

The Facility is located in an unclassified and/or attainment area for all criteria air pollutants. Therefore, nonattainment NSR is not applicable to the Facility. Based on the estimated PTE in Section 3.0, the Facility's site-wide PTE for one or more regulated criteria pollutants will not exceed the 250 tons per year threshold for PSD NSR major sources. Therefore, the Facility's sources are not subject to the consideration of best available control technology (BACT). Although the Facility is not a major source under the state NSR program, it is a major source of HAPs under federal regulations. Federal MACT applicability is addressed in Section 4.2.

4.1.2 Air Dispersion Modeling Analysis (NAC 445B.310)

Nevada Administrative Code (NAC) Section 445B.310 requires facilities applying for air operating permits that would have a PTE of greater than 25 TPY of at least one criteria pollutant to perform an environmental evaluation, which includes air dispersion modeling of the proposed Facility emissions impacts. As the proposed Peru Ridge Technology Center would have a PTE of greater than 25 TPY of at least one criteria pollutant, air dispersion modeling of the facility has been performed in an air dispersion modeling analysis. Using air dispersion modeling, the analysis ensures the protection of the NAAQS and the NvAAQS. NDEP also requires that Class I Minor Sources, as well as PSD Major Sources, make a showing that the thresholds for available PSD NO₂ and PM₁₀ increments in the region will not be exceeded with the addition of Facility emissions.

The emissions impacts associated with the Facility were analyzed pursuant to NDEP modeling requirements and the NDEP/BAPC *Class I Air Quality Operating Permit Guidance Document*, dated July 2021 following the NDEP's *General Air Dispersion Modeling Guidelines*, dated September 2008 and the USEPA *Guideline on Air Quality Models* (40 CFR 51, Appendix W). The modeling analysis was conducted to demonstrate that impacts from NO_x, CO, SO₂, PM₁₀ and PM_{2.5} comply with the NAAQS and NvAAQS, for the applicable averaging periods. Ozone impacts were determined using the Scheffe screening method, detailed in the NDEP modeling guidelines. A PSD increment consumption analysis was completed for NO₂ and PM₁₀ emissions from the Facility. The Air Dispersion Modeling Report is included separately from this application report in Attachment C.

4.1.3 Emissions of Particulate Matter (NAC 445B.2203)

All Facility fuel-burning equipment including P1 engines, BSE gensets, DC engines, Substation engines, and fire pump engines are subject to NAC 445B.2203, which states that allowable PM₁₀ emissions resulting from the combustion of fuel in fuel-burning equipment must be limited to the amount calculated by the following equation for equipment with a maximum heat input of greater than 10 MMBtu/hr but less than 4,000 MMBtu/hr:

$$Y = 1.02X^{-0.231}$$

Where: X = maximum operating rate in MMBtu/hr

Y = allowable rate of emission in lb/MMBtu

All fuel-burning equipment will comply with NAC 445B.2203.

4.1.4 Sulfur Emissions (NAC 445B.22047)

All Facility fuel-burning equipment including P1 engines, BSE gensets, DC engines, Substation engines, and fire pump engines are subject to NAC 445B.22047, which states that allowable sulfur emissions resulting from the combustion of fuel in fuel-burning equipment must be limited to the amount calculated by the following equation for equipment with a maximum heat input of less than 250 MMBtu/hr:

$$Y = 0.7X$$

Where: X = maximum operating input of heat in MMBtu/hr

Y = allowable rate of emissions in lb/hr

The Facility will combust ultra-low sulfur diesel (ULSD) in all diesel-fired engines and pipeline-quality natural gas in the P1 engines. Both fuels contain extremely low sulfur content—ULSD contains ≤15 ppm sulfur, and pipeline natural gas typically contains sulfur in the grains-per-hundreds-of-cubic-feet range—resulting in SO₂ emissions that are far below the allowable limits calculated under NAC 445B.22047.

Emissions estimates provided in Appendix B confirm that sulfur dioxide emissions from all applicable fuel-burning equipment are well below both the equipment-specific

allowable rates and the Facility-wide SO₂ potential-to-emit. Accordingly, all fuel-burning equipment at the Facility complies with the sulfur emission requirements of NAC 445B.22047.

4.1.5 Hazardous Air Pollutants and Toxic Regulated Air Pollutants: Prohibited Discharge (NAC 445B.22013)

NAC 445B.22013 prohibits the discharge of HAPs and toxic regulated air pollutants except when those emissions occur in accordance with applicable federal emission standards. The Facility will combust ULSD in all diesel-fired engines, and low-sulfur pipeline-quality commercial natural gas in the P1 engines which minimizes HAP emissions.

As shown in Table 22, the Facility's potential-to-emit exceeds the major-source thresholds of 10 TPY for a single HAP and 25 TPY for combined HAPs, and therefore the Facility is subject to the major-source NESHAP requirements under 40 CFR Part 63. Compliance with the applicable federal MACT standards—including those under Subpart ZZZZ for stationary RICE—fulfills the prohibition in NAC 445B.22013, as the rule allows HAP emissions only when federal standards are met.

The Facility will comply with all applicable federal MACT requirements identified in Section 4.2, thereby ensuring compliance with NAC 445B.22013.

4.1.6 Exemptions from Requirements, Insignificant Activities (NAC 445B.288)

The 150-gallon diesel tanks attached to the DC engines and substation engines, the 1,240-gallon tanks for the BSE gensets, and the 400-gallon tanks for the fire pump engines are exempt from permitting requirements under NAC 445B.288(2)(d), which exempts storage containers for petroleum liquids with a capacity of less than 40,000 gallons.

The Facility will also include twelve (12) 40,000-gallon diesel storage tanks, each of which exceeds the exemption threshold in NAC 445B.288(2)(d). Therefore, these tanks are not automatically exempt. However, because diesel fuel has an extremely low vapor pressure and the resulting VOC emissions are minimal, the Facility is submitting a separate Application for Determination of Insignificant Activities under NAC 445B.288(4) requesting that the 40,000-gallon tanks be formally designated as Insignificant Activities. As the tanks have not yet been approved as an Insignificant Activity, they are not included in the emissions calculations of this application.

Appendix B shows that each 40,000-gallon diesel storage tank has estimated VOC emissions of 0.047 TPY. While these emissions are small, NAC 445B.288(5) requires VOC emissions from Insignificant Activities to be included when determining a stationary source's major source status.

Although fugitive VOC emissions from the diesel tanks are expected to be negligible, the emissions from the 150-gallon, 1,240-gallon, and 400-gallon tanks were conservatively assumed to be equal to those from the 40,000-gallon tanks due to

their operational connection. Detailed VOC emission calculations for both the engine tanks and the 40,000-gallon diesel storage tanks are included in Appendix B.

4.1.7 Odors (NAC 445B.22087)

NAC 445B.22087 prohibits the discharge of air contaminants that create objectionable odors. The Facility will combust ULSD in all diesel-fired engines and pipeline-quality commercial natural gas in the P1 engines. Both fuels have inherently low odor potential. Given the limited operating hours of the diesel engines for testing and maintenance, no objectionable odors are expected from diesel-fired units.

The P1 engines will serve as the Facility's prime power units and may operate up to 8,760 hours per year. Natural gas combustion produces very few odorous compounds, and the engines are equipped with SCR and OxCat systems that further minimize ammonia slip and other odor-forming emissions. Routine operation of these engines is therefore not anticipated to create objectionable odors, even under continuous full-year operation.

Based on the clean-burning nature of ULSD and natural gas, the use of advanced emissions controls, and compliance with manufacturer operating specifications, no additional odor control measures are required.

4.1.8 Prohibited Acts and Enforcement (NRS 445B.470)

The Facility must comply with all permit conditions, reporting requirements, and monitoring obligations under NRS 445B.470. Any falsification of data, failure to pay fees, or tampering with monitoring equipment would constitute a violation subject to significant penalties. The Facility will implement strict compliance protocols to ensure adherence to these requirements.

4.1.9 Maximum Opacity of Emissions (NAC 445B.22017)

Nevada Administrative Code (NAC) 445B.22017 limits visible emissions from stationary sources by prohibiting opacity greater than 20 percent, except for brief periods associated with startup, shutdown, or malfunction. This standard applies broadly to all stationary fuel-burning equipment at the Facility, including P1 engines, BSE gensets, DC engines, Substation engines, and fire pump engines.

All diesel-fired engines will operate on ULSD, which significantly reduces visible particulate emissions compared to higher-sulfur fuels. The P1 engines combust pipeline-quality commercial natural gas, which produces negligible visible particulate matter and is inherently compliant with opacity limitations.

Each diesel-fired unit is certified to meet federal Tier 2, Tier 3, or Tier 4 emission standards, which incorporate design-based particulate matter controls that further ensure opacity remains well below the NAC 445B.22017 limit. Emission calculations in Appendix B confirm that particulate emissions from all combustion units are well below PM emissions thresholds for Class I major sources, and no operational scenario

is expected to produce visible emissions approaching the 20 percent opacity threshold.

Accordingly, all fuel-burning equipment at the Facility will comply with NAC 445B.22017, and no exceedances of the 20 percent opacity standard are anticipated during normal operation, testing, or maintenance.

4.1.10 Contents of Operating Permits: Required Conditions (NAC 445B.315(3)(h),(i), & (k))

The Facility will comply with NAC 445B.315(3)(h), (i), & (k) requirements by:

- Maintaining accurate records and responding promptly to NDEP information requests;
- Paying all applicable Class I permit fees; and
- Submitting compliance certifications and monitoring data per permit conditions.

4.2 Federal Regulations

4.2.1 New Source Performance Standards (40 CFR Part 60; Code Ch. 6)

Applicability of the New Source Performance Standard (NSPS) requirements for the proposed units is presented below. Some of the NSPS requirements are incorporated by reference in NAC Chapter 445B.

4.2.1.1 General Provisions (40 CFR Part 60, Subpart A)

PR RNO will comply with the applicable requirements under General Provisions of 40 CFR Part 60 Subpart A. These will include notifications, compliance testing, monitoring, recordkeeping, and reporting provisions of the rule, as applied to the unit-specific NSPS for engines as provided below.

4.2.1.2 Standards of Performance for Storage Tanks (40 CFR Part 60, Subpart Kc)

NSPS 40 CFR Part 60, Subpart Kc applies to petroleum liquid storage vessels for vessels that commence construction after October 4, 2023 and are $\geq 20,000$ gallons in storage capacity. There is an exemption for storage tanks that store volatile organic liquids with a maximum true vapor pressure that is less than 0.25 psia (1.7 kPa absolute). The 40,000-gallon diesel tanks will store an organic liquid with a maximum true vapor pressure less than 0.25 psia. Therefore, Subpart Kc will not apply.

4.2.1.3 Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60, Subpart IIII)

In NSPS 40 CFR Part 60, Subpart IIII applies to stationary CI RICE units. The proposed CI RICE units at the Facility fall into two categories: emergency and fire pump engines.

The DC engines, BSE gensets, and Substation engines are emergency stationary CI RICE model year 2007 or later with a displacement of less than 30 liters per cylinder. In accordance with § 60.4202(a)(2), the Tiered emission standards for new nonroad CI engines must be in compliance with the same rated power as described in 40 CFR Part 1039, Appendix I, shown in Table 23. The DC engines, BSE and Substation engines will be compliant with all applicable standards of NSPS Subpart IIII.

TABLE 23 NSPS IIII REQUIREMENTS FOR DC, BSE AND SUBSTATION ENGINES							
Engine	Tier	Pollutant Emission Standard (g/kW-hr)					Rule Reference
		NO_x + NMHC	NMHC	NO_x	CO	PM	
DC and BSE	4	-	0.19	0.67	3.5	0.03	§ 1039.101, Table 1
Substation	2	6.4	-	-	3.5	0.2	Appendix I to Part 1039, Table 2

The diesel fire pump engines are proposed to be model year 2009 or later and are rated at 364 kW each. Therefore, the limits shown in Table 24 apply and the fire pump engines will be compliant with all applicable standards of NSPS Subpart IIII.

TABLE 24 NSPS IIII REQUIREMENTS FOR EMERGENCY DIESEL FIRE PUMP ENGINES	
Pollutant	Emission Standard (g/kW-hr)
NMHC+NO _x	4.0
CO	3.5
PM	0.20

40 CFR §60.4202(d) and 60.4205(c), Table 4

PR RNO plans to purchase manufacturer-certified RICE units that will be in compliance with the above limitations. All of the engines will use ultra-low sulfur diesel fuel per the requirements of 40 CFR §80.510(b) and 40 CFR §60.4207.

In accordance with the operating restrictions for emergency stationary CI RICE, the Facility's diesel-fueled emergency engines—including the BSE gensets, DC engines, and Substation engines—are permitted to operate for up to 100 hours per year for the combined purposes of non-emergency testing and maintenance, and participation in EEA Level 1 and Level 2 emergency demand-response events. This operational allowance is consistent with the provisions of NSPS Subpart IIII for emergency engines and does not alter the engines' emergency classification or their applicability under the rule. The engines will continue to meet all applicable emission standards, fuel requirements, monitoring obligations, and compliance determinations specified under 40 CFR Part 60, Subpart IIII.

4.2.1.4 Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (40 CFR Part 60, Subpart JJJJ)

NSPS 40 CFR Part 60, Subpart JJJJ applies to the P1 engines. The P1 engines are lean-burn, four-stroke, SI RICE. Each P1 unit is a 20-cylinder, V-configuration, natural-gas-fired SI engine with a maximum engine power rating greater than 500 bhp and a manufacture date after July 1, 2010. Accordingly, these engines meet the applicability criteria for new SI stationary RICE under Subpart JJJJ.

The emission standards specified in Table 1 of Subpart JJJJ apply to the P1 engines, shown in Table 25. PR RNO will comply with all applicable requirements of NSPS Subpart JJJJ, including emissions limits, monitoring, testing, fuel requirements, recordkeeping, and reporting.

TABLE 25 NSPS JJJJ REQUIREMENTS FOR P1 ENGINES	
Pollutant	Emission Standard (g/hp-hr)
NO _x	2.0
CO	4.0
VOC	1.0

Subpart JJJJ of Part 60, Title 40, Table 1

4.2.2 National Emissions Standards for Hazardous Air Pollutants (40 CFR Part 63; Code Ch 7)

Applicability of the National Emissions Standards for Hazardous Air Pollutants (NESHAP) requirements for the proposed units is presented below. Some of the NESHAP requirements are incorporated by reference in NAC Chapter 445B.

Facility-wide PTE of HAPs provided in Table 22 shows the Facility will emit 56.4 TPY of a single HAP (formaldehyde) and 66.6 TPY of total combined HAPs, which exceed the major-source thresholds of 10 TPY for any individual HAP and 25 TPY for total combined HAPs established in 40 CFR §63.2. Accordingly, the Facility is considered a major source of HAPs under the federal NESHAP program.

As a major source of HAP emissions, the Facility is subject to the applicable MACT standards under 40 CFR Part 63. The Facility will meet all monitoring, testing, recordkeeping, and reporting requirements associated with major-source MACT applicability.

4.2.2.1 National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR Part 63, Subpart ZZZZ)

40 CFR Part 63, Subpart ZZZZ applies to all stationary RICE located at both area and major sources of HAPs. As shown in Table 22, the Facility will emit more than 10 TPY of a single HAP (formaldehyde) and more than 25 TPY of total combined HAPs and therefore qualifies as a major source of HAP emissions under 40 CFR §63.2. Accordingly, all RICE units at the Facility, including P1 engines, BSE gensets, DC engines, Substation engines, and fire pump engines, are subject to the major source requirements of Subpart ZZZZ.

For the P1 engines, which are new 4SLB stationary RICE units each rated above 500 brake horsepower, the applicable requirements of Subpart ZZZZ are defined under 40 CFR §63.6600(b). This provision states that an owner or operator of a new or reconstructed 4SLB stationary RICE with a site rating of more than 500 brake horsepower located at a major source of HAP emissions must comply with the emission limitations contained in Table 2a of Subpart ZZZZ and the operating limitations contained in Table 2b. Accordingly, the P1 engines must meet these MACT emission and operational standards in addition to complying with the applicable requirements of NSPS Subpart JJJJ. Table 2a of Subpart ZZZZ states that engines must achieve a 93 percent reduction in CO emissions, or limit formaldehyde emissions at or below 14 ppmvd at 15 percent O₂. The P1 engines will meet both MACT emission limits.

The diesel-fired RICE units at the Facility—including the BSE gensets, DC engines, Substation engines, and fire pump engines—are new emergency CI engines and therefore meet the applicability criteria of §63.6590(c). Under this provision, new emergency stationary CI RICE located at major sources satisfy all Subpart ZZZZ requirements by complying with the applicable emission and operational requirements of NSPS Subpart IIII. These engines are therefore required to meet the fuel, emission, monitoring, and operational requirements of Subpart IIII, which serves as the mechanism for demonstrating full compliance with Subpart ZZZZ.

All RICE units at the Facility must also comply with the general Subpart ZZZZ requirements applicable to major sources, including the development and implementation of appropriate startup, shutdown, and malfunction provisions where required; adherence to manufacturer specified maintenance and operating procedures; performance testing where applicable under corresponding NSPS requirements; continuous parameter monitoring when required; and compliance with the recordkeeping and reporting requirements established for major source RICE units.

4.2.3 Greenhouse Gases

Per 40 CFR § 52.21(b)(49)(iv) (implemented per delegation agreement with the USEPA, for major modification purposes, GHGs are considered subject to regulation only if the project is a major source for attainment area criteria pollutants other than GHGs and the increase in emissions of GHGs is 100,000 tons of CO₂e per year or

more. As noted in Section 1.2 in this application, this Facility will not be a major source of attainment criteria pollutants under NSR. Therefore, GHGs are not considered subject to regulation under the federal PSD permitting program for attainment pollutants. However, they are considered for the Title V permit, since the Facility will exceed the Title V major source threshold for at least one criteria pollutant, CO and NO_x.

5.0 PROPOSED PERMIT TERMS AND CONDITIONS

This section of the application presents proposed permit terms and conditions for the Class I OPTC for the Peru Ridge Facility.

PR RNO is proposing the following federally enforceable emission and operational limitations for the proposed equipment P1 engines, BSE gensets, DC engines, Substation engines, and fire pump engines to keep the Facility PTE below the NSR and PSD thresholds.

(1) Emission Limitations:

- a. The Permittee shall not cause or allow the combined NO_x emissions from the P1 engines, BSE gensets, DC engines, Substation engines, and fire pump engines to exceed 250 tons per 12-month rolling total sum.
- b. The Permittee shall not cause or allow the combined CO emissions from the P1 engines, BSE gensets, DC engines, Substation engines, and fire pump engines to exceed 250 tons per 12-month rolling total sum.
- c. The Permittee shall not cause or allow the combined PM₁₀ or PM_{2.5} emissions from the P1 engines, BSE gensets, DC engines, Substation engines, and fire pump engines to exceed 250 tons per 12-month rolling total sum.
- d. The Permittee shall not cause or allow the combined VOC emissions from the P1 engines, BSE gensets, DC engines, Substation engines, and fire pump engines to exceed 250 tons per 12-month rolling total sum.
- e. The Permittee shall not cause or allow the combined SO_x emissions from the P1 engines, BSE gensets, DC engines, Substation engines, and fire pump engines to exceed 250 tons per 12-month rolling total sum.

(2) Operational Limitation: The Permittee shall limit the usage of natural gas in the P1 engines and CNG PRS units to 16,964,636 MMBtu per year, per 12-month rolling total sum.

(3) Operational Limitation: The Permittee shall limit the usage of diesel fuel in the DC engines to 1,675,260 gallons per year, per 12-month rolling total sum; for non-emergency operations, including testing and maintenance activities, and emergency demand-response.

(4) Operational Limitation: The Permittee shall limit the usage of diesel fuel in the BSE gensets to 61,800 gallons per year, per 12-month rolling total sum; for non-

emergency operations, including testing and maintenance activities, and emergency demand response.

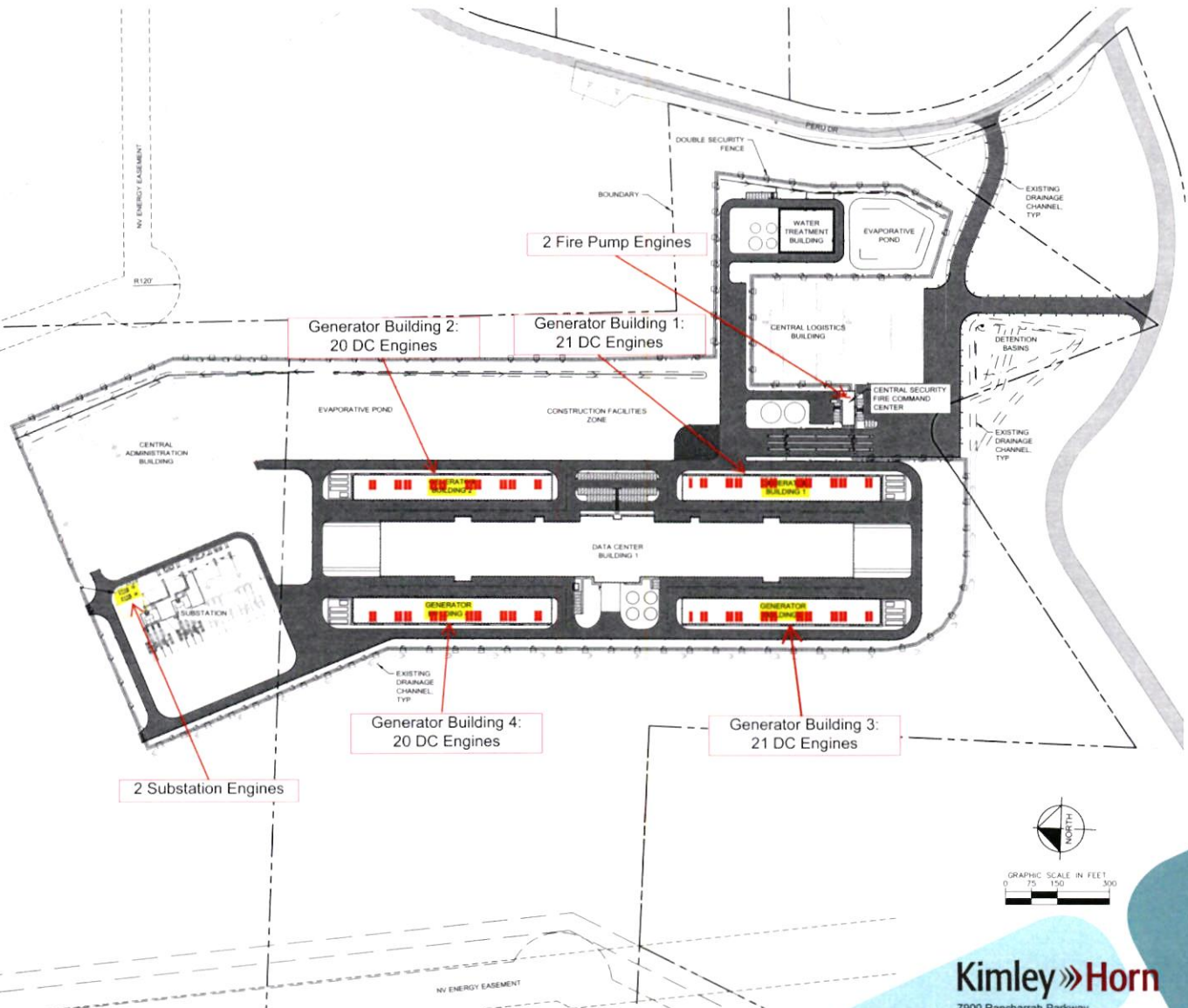
- (5) Operational Limitation: The Permittee shall limit the usage of diesel fuel in the Substation engines to 17,480 gallons per year, per 12-month rolling total sum; for non-emergency operations, including testing and maintenance activities, and emergency demand response.
- (6) Operational Limitation: The Permittee shall limit the usage of diesel fuel in the fire pump engines to 2,520 gallons per year, per 12-month rolling total sum; for non-emergency operations, including testing and maintenance activities.

APPENDIX A
SITE LAYOUT

PERU RIDGE - RNO 10

SITE PLAN

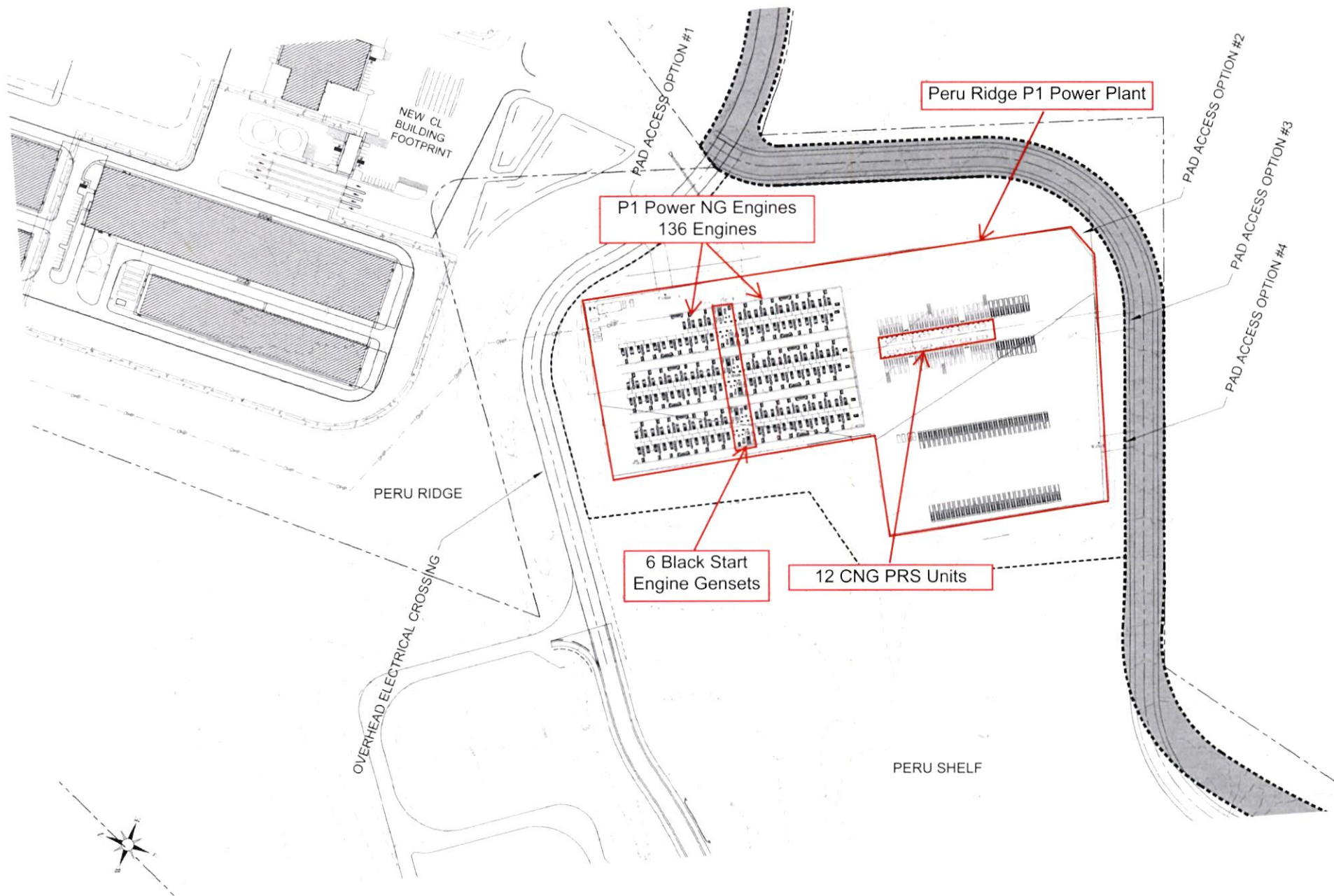
January 2026



NOTE: THIS PLAN IS CONCEPTUAL IN NATURE

DWG NAME: C:\ACCORDS\BIM\BIM\PROJECT FILES\01 - WORK IN PROGRESS (WIP)\10 - SITE (ST)\03 - CIVIL ENGINEERING\EXHIBITS\SITE PLANS\SITE PLAN - GENERATORS.DWG
LAST SAVED: 1/28/2026 7:51 AM

Kimley»Horn
7900 Ranchamiah Parkway
Suite 100
Reno, Nevada 89511
775-787-7552



APPENDIX B

POTENTIAL-TO-EMIT CALCULATIONS

Peru Ridge Technology Center

Total GHG Calculations

March 3, 2026

Hourly CO₂e

Pollutant	GWP Factor	Hourly Rate All P1 Prime Engines (lb/hr)	Hourly Rate All CNG PRS Units (lb/hr)	Hourly Rate All Black Start Engines (lb/hr)	Hourly Rate All DC Engines (lb/hr)	Hourly Rate All Substation Engines (lb/hr)	Hourly Rate All Fire Pump Engines (lb/hr)	Total Hourly Rate (lb/hr)	CO ₂ e (lb/hr)
CO ₂	1	2.13E+05	1.47E+03	1.40E+04	3.80E+05	3.95E+03	1.42E+03	6.13E+05	6.13E+05
CH ₄	28	4.27E+00	0.00E+00	5.62E-01	1.52E+01	1.58E-01	5.71E-02	2.03E+01	5.67E+02
N ₂ O	265	4.27E-01	0.00E+00	1.12E-01	3.04E+00	3.17E-02	1.14E-02	3.63E+00	9.61E+02

CO₂e: 614,982

Annual CO₂e

Pollutant	GWP Factor	Annual Rate All P1 Prime Engines (TPY)	Annual Rate All CNG PRS Units (TPY)	Annual Rate All Black Start Engines (TPY)	Annual Rate All DC Engines (TPY)	Annual Rate All Substation Engines (TPY)	Annual Rate All Fire Pump Engines (TPY)	Total Annual Rate (TPY)	CO ₂ e (TPY)
CO ₂	1	9.32E+05	6.42E+03	7.00E+02	1.90E+04	1.98E+02	2.83E+01	9.59E+05	9.59E+05
CH ₄	28	1.87E+01	0.00E+00	2.81E-02	7.61E-01	7.92E-03	1.14E-03	1.95E+01	5.46E+02
N ₂ O	265	1.87E+00	0.00E+00	5.62E-03	1.52E-01	1.58E-03	2.28E-04	2.03E+00	5.37E+02

CO₂e: 959,773

Peru Ridge Technology Center

Prime Power (P1) Engines

Criteria Pollutants and CO₂

March 3, 2026

Model: Jenbacher J420											
Number of Generators:		136									
Fuel:		NG		Total Engine Rated w/Backup Power (MW):		218		Nominal			
Hours/yr:		8,760		Target (MW):		189					
Operating Factor:		100%									
Engine Power (kWh):		1,600		Max Rate		MMBtu/hr:		14.2		Engine Fuel:	
										16,245	
										scf/hr	
										worst-case	
Maximum Potential Engine Power (HP):		2,146		Max Rate		Total MMBtu/hr:		1,935		Derated Fuel:	
										13,950	
										scf/hr	
										at 1.2 MWe (altitude)	
Total Engine Power (kWh):		217,600		Max Rate		MMBtu/yr/all engines:		16,951,861		Annual Fuel:	
										18,281	
										MMscf/yr	
										(w 10% safety factor)	
Total Engine Power (HP):		291,856		Max Rate				Ratio for Annual:		0.945	
Exhaust Airflow (lb/hr per engine):		18,415		Max Rate							
Exhaust Temperature (F):		819									

Pollutant	Emission Factor	EF Units	Emission Factor Source	Uncontrolled Estimated Emissions per Engine @ Full Load (lb/hr)	Uncontrolled Estimated Emissions per Engine @ Full Load (TPY)	Fuel Based Emission Factor (lbs/MMBTU)	Pollutant Control (%)	Controlled Estimated Emissions @ Full Load (g/hp-hr)	Controlled Estimated Emissions @ Full Load (lb/hr)	Fuel Based Emission Factor (lbs/MMBTU)	Controlled Annual Emissions @ Full Load per Engine (TPY)	Facility Controlled Estimated Emissions - Derated (TPY)
NO _x	0.81	g/hp-hr	Vendor	3.83	16.8	0.269	93.8%	0.0502	0.238	0.0167	1.04	133.7
CO	2.00	g/hp-hr	Vendor	9.46	41.4	0.66	97.4%	0.0520	0.246	0.0173	1.08	138.4
PM _{10/2.5}	0.01	g/hp-hr	Vendor	0.0473	0.21	0.0033	0.0%	0.0100	0.0473	0.00332	0.207	26.6
VOC	0.10	g/hp-hr	Vendor	0.473	2.07	0.0332	80.0%	0.0200	0.0946	0.0066	0.414	53.2
SO ₂	0.015	g/hp-hr	Vendor	0.071	0.311	0.0050	0.0%	0.0150	0.0710	0.0050	0.311	39.9
CO ₂	1.10E+02	lb/MMBTU	AP-42 3.2	1,565	6,856	110	0.0%	110	1,565	110	6,856	880,699

Peru Ridge Technology Center

Prime Power (P1) Engines

HAP Emissions

March 3, 2026

Model: Jenbacher J420
Number of Generators: 136 MMBtu/hr: 14.2
Fuel: NG Total MMBtu/hr: 1,935
Hours/yr: 8760
Operating Factor: 100%
Engine Power (kWh): 1,600
Max Potential Engine Power (HP): 2,146
Total Engine Power (kWh): 217,600
Total Engine Power (HP): 291,856
Exhaust Airflow (CFM): 18,415
Exhaust Temperature (F): 819

Hazardous Air Pollutants	Uncontrolled Emission Factor	Emission Factor Units	Pollutant Control (%)	Controlled Emissions			
				Emissions Per Engine (lb/hr)	Emissions All Engines (lb/hr)	Emissions Per Engine (TPY)	Emissions All Engines (TPY)
1,1,2,2-Tetrachloroethane	4.00E-05	lb/MMBtu	80%	1.14E-04	1.55E-02	4.99E-04	6.78E-02
1,1,2-Trichloroethane	3.18E-05	lb/MMBtu	80%	9.05E-05	1.23E-02	3.96E-04	5.39E-02
1,3-Butadiene	2.67E-04	lb/MMBtu	80%	7.60E-04	1.03E-01	3.33E-03	4.53E-01
1,3-Dichloropropene	2.64E-05	lb/MMBtu	80%	7.51E-05	1.02E-02	3.29E-04	4.48E-02
2,2,4-Trimethylpentane	2.50E-04	lb/MMBtu	80%	7.11E-04	9.68E-02	3.12E-03	4.24E-01
2-Methylnaphthalene	3.32E-05	lb/MMBtu	80%	9.45E-05	1.28E-02	4.14E-04	5.63E-02
Acenaphthene	1.25E-06	lb/MMBtu	80%	3.56E-06	4.84E-04	1.56E-05	2.12E-03
Acenaphthylene	5.53E-06	lb/MMBtu	80%	1.57E-05	2.14E-03	6.89E-05	9.37E-03
Benzene	4.40E-04	lb/MMBtu	80%	1.25E-03	1.70E-01	5.48E-03	7.46E-01
Benzo(b)fluoranthene	1.66E-07	lb/MMBtu	80%	4.72E-07	6.42E-05	2.07E-06	2.81E-04
Benzo(e)pyrene	4.15E-07	lb/MMBtu	80%	1.18E-06	1.61E-04	5.17E-06	7.04E-04
Benzo(g,h,i)perylene	4.14E-07	lb/MMBtu	80%	1.18E-06	1.60E-04	5.16E-06	7.02E-04
Biphenyl	2.12E-04	lb/MMBtu	80%	6.03E-04	8.21E-02	2.64E-03	3.59E-01
Carbon Tetrachloride	3.67E-05	lb/MMBtu	80%	1.04E-04	1.42E-02	4.57E-04	6.22E-02
Chlorobenzene	3.04E-05	lb/MMBtu	80%	8.65E-05	1.18E-02	3.79E-04	5.15E-02
Chloroform	2.85E-05	lb/MMBtu	80%	8.11E-05	1.10E-02	3.55E-04	4.83E-02
Chrysene	6.93E-07	lb/MMBtu	80%	1.97E-06	2.68E-04	8.64E-06	1.17E-03
Ethylbenzene	3.97E-05	lb/MMBtu	80%	1.13E-04	1.54E-02	4.95E-04	6.73E-02
Ethylene Dibromide	4.43E-05	lb/MMBtu	80%	1.26E-04	1.71E-02	5.52E-04	7.51E-02
Fluoranthene	1.11E-06	lb/MMBtu	80%	3.16E-06	4.30E-04	1.38E-05	1.88E-03
Fluorene	5.67E-06	lb/MMBtu	80%	1.61E-05	2.19E-03	7.07E-05	9.61E-03
Formaldehyde	2.00E-01	g/hp-hr	90%	9.46E-02	1.29E+01	4.14E-01	5.64E+01
Methanol	2.50E-03	lb/MMBtu	80%	7.11E-03	9.68E-01	3.12E-02	4.24E+00
Methylene Chloride	2.00E-05	lb/MMBtu	80%	5.69E-05	7.74E-03	2.49E-04	3.39E-02
n-Hexane	1.11E-03	lb/MMBtu	80%	3.16E-03	4.30E-01	1.38E-02	1.88E+00
Naphthalene	7.44E-05	lb/MMBtu	80%	2.12E-04	2.88E-02	9.27E-04	1.26E-01
PAH	2.69E-05	lb/MMBtu	80%	7.66E-05	1.04E-02	3.35E-04	4.56E-02
Phenanthrene	1.04E-05	lb/MMBtu	80%	2.96E-05	4.03E-03	1.30E-04	1.76E-02
Phenol	2.40E-05	lb/MMBtu	80%	6.83E-05	9.29E-03	2.99E-04	4.07E-02
Pyrene	1.36E-06	lb/MMBtu	80%	3.87E-06	5.26E-04	1.70E-05	2.31E-03
Styrene	2.36E-05	lb/MMBtu	80%	6.72E-05	9.13E-03	2.94E-04	4.00E-02
Perchloroethylene	2.48E-06	lb/MMBtu	80%	7.06E-06	9.60E-04	3.09E-05	4.20E-03
Toluene	4.08E-04	lb/MMBtu	80%	1.16E-03	1.58E-01	5.09E-03	6.92E-01
Vinyl Chloride	1.49E-05	lb/MMBtu	80%	4.24E-05	5.77E-03	1.86E-04	2.53E-02
Xylenes	1.84E-04	lb/MMBtu	80%	5.24E-04	7.12E-02	2.29E-03	3.12E-01
TOTAL HAPs				0.11	15.2	0.49	66.4

Emission factors for all HAPs except formaldehyde are for natural gas-fired Reciprocating Engines, 4-stroke lean burn, AP-42, Chapter 3, Section 2, Table 3.2-2 (10/24). Formaldehyde emission factor and control efficiency are from the vendor's specification.

Peru Ridge Technology Center

CNG PRS

Criteria Pollutants and CO₂

March 3, 2026

Model: Certarus CNG Pressure Reducing System

Total Number of PRS Units: 12
 Number of PRS Units Running Simultaneously: 6
 Fuel: CNG
 Hours/yr: 8,760
 Fuel Use (6 units): 34,280 scf/day
 Fuel Use (per unit): 0.000238 MMscf/hr
 Fuel Use (6 units): 35 MMBtu/day
 Fuel Use (per unit): 5.83 MMBtu/day
 Fuel Use (per unit): 0.24 MMBtu/hr

Pollutant	Emission Factor	Emission Source	Uncontrolled Estimated Emissions 6 Units (lb/hr)	Uncontrolled Estimated Emissions per Unit (lb/hr)	Uncontrolled Estimated Emissions per Unit (TPY)	Pollutant Control (%)	Controlled Estimated Emissions per Unit (lb/hr)	Controlled Annual Estimated Emissions per Unit (TPY)	Facility Controlled Estimated Emissions 6 Units (TPY)
NO _x	N/A	Vendor	0.32	0.053	0.23	0.0%	0.053	0.23	1.40
CO	N/A	N/A	0	0	0.00	0.0%	0.00	0.00	0.0
PM _{10/2.5}	N/A	N/A	0	0	0.00	0.0%	0.00	0.00	0.0
VOC	N/A	N/A	0	0	0.00	0.0%	0.00	0.00	0.0
SO ₂	N/A	N/A	0	0	0.00	0.0%	0.00	0.00	0.0
CO ₂	N/A	Vendor	1466.7	244	1,071	0.0%	244	1,071	6,424

Peru Ridge Technology Center

Black Start Engine Gensets

Criteria Pollutants and CO₂

*March 3, 2026

Model:	Volvo Penta T4 TWD1683GE		
Number of Gensets:	6		
Number of Engines:	12		
Fuel:	Diesel	8.22	Total Engine Rated Backup Power (MW)
Hours/yr:	100		
Operating Factor:	100%	51.50	100% Load Fuel Consumption per Engine (Gal/hr/engine)
Engine Power (kWh):	685	5,150	Fuel Consumption (Gal/yr/engine)
Maximum Potential Engine Power (HP):	932	61,800	Total Fuel Consumption (gal/yr)
Total Engine Power (kWh):	8,220	7,075	Fuel Consumption (MMBtu/hr)
Total Engine Power (HP):	11,184		
Exhaust Airflow (CFM):	3,991		
Exhaust Temperature (F):	810		

Pollutant	Emission Factor	EF Units	Emission Factor Source	Uncontrolled Estimated Emissions @ Full Load per Engine (lb/hr)	Uncontrolled Estimated Emissions @ Full Load per Genset (lb/hr)	Uncontrolled Estimated Emissions per Engine @ Full Load (TPY)	Uncontrolled Estimated Emissions per Genset @ Full Load (TPY)	Fuel Based Emission Factor (lbs/gal)	Pollutant Control (%)	Controlled Emission Factor	Controlled Estimated Emissions @ Full Load per Engine (lb/hr)	Controlled Estimated Emissions @ Full Load per Genset (lb/hr)	Controlled Annual Estimated Emissions @ Full Load per Engine (TPY)	Controlled Annual Estimated Emissions @ Full Load per Genset (TPY)	Facility Controlled Estimated Emissions (TPY)
NO _x	0.4	g/kWh	Vendor	0.604	1.208	0.0302	0.060	1.17E-02	0	0.400	0.60	1.21	0.0302	0.0604	0.36
CO	0.066	g/kWh	Vendor	0.0997	0.199	0.0050	0.010	1.94E-03	0	0.066	0.10	0.20	0.0050	0.0100	0.06
PM _{10/2.5}	0.0137	g/kWh	Vendor	0.0207	0.041	0.0010	0.0021	4.02E-04	0	0.0137	0.02	0.04	0.0010	0.0021	0.012
VOC	0.013	g/kWh	Vendor	0.0196	0.039	0.0010	0.0020	3.81E-04	0	0.013	0.02	0.04	0.0010	0.0020	0.012
SO ₂	0.0015	lb/MMBtu	AP-42 3.4	0.0107	0.021	0.0005	0.0011	2.08E-04	0	0.00152	0.0107	0.02	0.0005	0.0011	0.006
CO ₂	165	lb/MMBtu	AP-42 3.4	1,167	2,335	58.4	117	2.27E+01	0	165	1,167	2,335	58.4	117	700

Peru Ridge Technology Center

Black Start Engine Gensets

HAP Emissions

March 3, 2026

Model:	Volvo Penta T4 TWD1683GE				
Number of Gensets:	6				
Number of Engines:	12				
Fuel:	Diesel	8.22	Engine Rated Backup Power (MW)		
Hours/yr:	100				
Operating Factor:	100%	51.5	100% Load Fuel Consumption (gal/hr)		
Engine Power (kWh):	685	5,150	Fuel Consumption (gal/yr/engine)		
Max Potential Engine Power (HP):	932	61,800	Total Fuel Consumption (gal/yr)		
Total Engine Power (kWh):	8,220	7.08	Fuel Consumption (MMBtu/hr)		
Total Engine Power (HP):	11,184				
Exhaust Airflow (CFM):	3,991				
Exhaust Temperature (F):	810				

Hazardous Air Pollutants	Uncontrolled Emission Factor (lb/MMBtu)	Controlled Emissions			
		Emissions Per Genset (lb/hr)	Emissions All Gensets (lb/hr)	Emissions Per Genset (TPY)	Emissions All Gensets (TPY)
Benzene	7.76E-04	1.10E-02	6.59E-02	5.49E-04	3.29E-03
Toluene	2.81E-04	3.98E-03	2.39E-02	1.99E-04	1.19E-03
Xylenes	1.93E-04	2.73E-03	1.64E-02	1.37E-04	8.19E-04
Formaldehyde	7.89E-05	1.12E-03	6.70E-03	5.58E-05	3.35E-04
Acetaldehyde	2.52E-05	3.57E-04	2.14E-03	1.78E-05	1.07E-04
Acrolein	7.88E-06	1.12E-04	6.69E-04	5.58E-06	3.35E-05
Naphthalene	1.30E-04	1.84E-03	1.10E-02	9.20E-05	5.52E-04
Total PAH	2.12E-04	3.00E-03	1.80E-02	1.50E-04	9.00E-04
TOTAL HAPs		0.024	0.14	0.0012	0.0072

Emission factors for large uncontrolled diesel-fueled engines, AP-42, Chapter 3, Section 4, Table 3.4-3 and 3.4-4 (4/25).

Peru Ridge Technology Center

Data Center Engines

Criteria Pollutants and CO₂

March 3, 2026

Model:	Caterpillar 3516E (EM4718-02)		
Number of Generators:	82		
Fuel:	Diesel	246	Engine Rated Backup Power (MW)
Hours/yr:	100		
Operating Factor:	100%	204.3	100% Load Fuel Consumption (gal/hr)
Engine Power (kVA):	3,750	20,430	Fuel Consumption (gal/yr/engine)
Engine Power (kWh):	3,000	1,675,260	Total Fuel Consumption (gal/yr)
Maximum Potential Engine Power (HP):	4,393	28.07	Fuel Consumption (MMBtu/hr)
Total Engine Power (kWh):	246,000		
Total Engine Power (HP):	360,226		
Exhaust Airflow (CFM):	22,806		
Exhaust Temperature (F):	902		

Pollutant	Emission Factor	EF Units	Emission Factor Source	Uncontrolled Estimated Emissions @ Full Load (lb/hr)	Uncontrolled Estimated Emissions per Engine @ Full Load (TPY)	Fuel Based Emission Factor (lbs/gal)	Pollutant Control (%)	Controlled Estimated Emissions Factor @ Full Load	Controlled Estimated Emissions @ Full Load (lb/hr)	Controlled Annual Estimated Emissions per Engine @ Full Load (TPY)	Facility Controlled Estimated Emissions (TPY)
NO _x	6.76	g/hp-hr	Vendor	65.5	3.27	3.20E-01	95	0.34	3.27	0.16	13.4
CO	1.20	g/hp-hr	Vendor	11.6	0.58	5.69E-02	89	0.13	1.28	0.06	5.24
PM _{10/2.5}	0.06	g/hp-hr	Vendor	0.581	0.03	2.84E-03	66.7	0.020	0.19	0.01	0.79
VOC	0.06	g/hp-hr	Vendor	0.581	0.03	2.84E-03	0	0.06	0.58	0.03	2.38
SO ₂	0.0015	lb/MMBtu	AP-42 3.4	0.0425	0.00	2.08E-04	0	0.002	0.04	0.002	0.17
CO ₂	165	lb/MMBtu	AP-42 3.4	4,631	232	2.27E+01	0	165	4,631	232	18,987

Peru Ridge Technology Center

Data Center Engines

HAP Emissions

March 3, 2026

Model:	Caterpillar 3516E (EM4718-02)		
Number of Generators:	82		
Fuel:	Diesel	246	Engine Rated Backup Power (MW)
Hours/yr:	100		
Operating Factor:	100%	204.3	100% Load Fuel Consumption (gal/hr)
Engine Power (kVA):	3,750	20,430	Fuel Consumption (gal/yr/engine)
Engine Power (kWh):	3,000	1,675,260	Total Fuel Consumption (gal/yr)
Max Potential Engine Power (HP):	4,393	28.07	Fuel Consumption (MMBtu/hr)
Total Engine Power (kWh):	246,000		
Total Engine Power (HP):	360,226		
Exhaust Airflow (CFM):	22,806		
Exhaust Temperature (F):	902		

Hazardous Air Pollutants	Uncontrolled Emission Factor (lb/MMBtu)	Controlled Emissions			
		Emissions Per Engine (lb/hr)	Emissions All Engines (lb/hr)	Emissions Per Engine (TPY)	Emissions All Engines (TPY)
Benzene	7.76E-04	2.18E-02	1.79E+00	1.09E-03	8.93E-02
Toluene	2.81E-04	7.89E-03	6.47E-01	3.94E-04	3.23E-02
Xylenes	1.93E-04	5.42E-03	4.44E-01	2.71E-04	2.22E-02
Formaldehyde	7.89E-05	2.21E-03	1.82E-01	1.11E-04	9.08E-03
Acetaldehyde	2.52E-05	7.07E-04	5.80E-02	3.54E-05	2.90E-03
Acrolein	7.88E-06	2.21E-04	1.81E-02	1.11E-05	9.07E-04
Naphthalene	1.30E-04	3.65E-03	2.99E-01	1.82E-04	1.50E-02
Total PAH	2.12E-04	5.95E-03	4.88E-01	2.98E-04	2.44E-02
TOTAL HAPs		0.05	3.92	0.0024	0.20

Emission factors for large uncontrolled diesel-fueled engines, AP-42, Chapter 3, Section 4, Table 3.4-3 and 3.4-4 (4/25).

Peru Ridge Technology Center

Substation Engines

Criteria Pollutants and CO₂

March 3, 2026

Model: Caterpillar C32 1250 kW			
Number of Generators:	2		
Fuel:	Diesel	2.5	Engine Rated Backup Power (MW)
Hours/yr:	100		
Operating Factor:	100%	87.4	100% Load Fuel Consumption (gal/hr)
Engine Power (kWh):	1,250	8,740	Fuel Consumption (gal/yr/engine)
Maximum Potential Engine Power (HP):	1,676	17,480	Total Fuel Consumption (gal/yr)
Total Engine Power (kWh):	2,500	12.0	Fuel Consumption (MMBtu/hr)
Total Engine Power (HP):	3,353		
Exhaust Airflow (CFM):	10,005.8		
Exhaust Temperature (F):	807		

Pollutant	Emission Factor	EF Units	Emission Factor Source	Uncontrolled Estimated Emissions @ Full Load (lb/hr)	Fuel Based Emission Factor (lbs/gal)	Pollutant Control (%)	Controlled Estimated Emissions @ Full Load (lb/hr)	Controlled Annual Estimated Emissions per Engine @ Full Load (TPY)	Facility Controlled Estimated Emissions (TPY)
NO _x	6.2	g/hp-hr	Vendor	22.9	2.62E-01	0	22.9	1.15	2.29
CO	0.21	g/hp-hr	Vendor	0.776	8.88E-03	0	0.776	0.0388	0.08
PM _{10/2.5}	0.02	g/hp-hr	Vendor	0.0739	8.46E-04	0	0.0739	0.00370	0.007
VOC	0.1	g/hp-hr	Vendor	0.370	4.23E-03	0	0.370	0.0185	0.04
SO ₂	0.0015	lb/MMBtu	AP-42 3.4	0.0181	2.08E-04	0	0.0181	0.000907	0.002
CO ₂	165	lb/MMBtu	AP-42 3.4	1,976	2.26E+01	0	1,976	98.8	198

Peru Ridge Technology Center

Substation Engines

HAP Emissions

March 3, 2026

Model:	Caterpillar C32	1250 kW	
Number of Generators:	2		
Fuel:	Diesel	2.5	Engine Rated Backup Power (MW)
Hours/yr:	100		
Operating Factor:	100%	87.4	100% Load Fuel Consumption (gal/hr)
Engine Power (kWh):	1,250	8,740	Fuel Consumption (gal/yr/engine)
Max Potential Engine Power (HP):	1,676	17,480	Total Fuel Consumption (gal/yr)
Total Engine Power (kWh):	2,500	11.97	Fuel Consumption (MMBtu/hr)
Total Engine Power (HP):	3,353		
Exhaust Airflow (CFM):	10,005.8		
Exhaust Temperature (F):	806.6		

Hazardous Air Pollutants	Uncontrolled Emission Factor (lb/MMBtu)	Controlled Emissions			
		Emissions Per Engine (lb/hr)	Emissions All Engines (lb/hr)	Emissions Per Engine (TPY)	Emissions All Engines (TPY)
Benzene	7.76E-04	9.29E-03	1.86E-02	4.65E-04	9.29E-04
Toluene	2.81E-04	3.36E-03	6.73E-03	1.68E-04	3.36E-04
Xylenes	1.93E-04	2.31E-03	4.62E-03	1.16E-04	2.31E-04
Formaldehyde	7.89E-05	9.45E-04	1.89E-03	4.72E-05	9.45E-05
Acetaldehyde	2.52E-05	3.02E-04	6.03E-04	1.51E-05	3.02E-05
Acrolein	7.88E-06	9.44E-05	1.89E-04	4.72E-06	9.44E-06
Naphthalene	1.30E-04	1.56E-03	3.11E-03	7.78E-05	1.56E-04
Total PAH	2.12E-04	2.54E-03	5.08E-03	1.27E-04	2.54E-04
TOTAL HAPs		0.020	0.041	0.0010	0.0020

Emission factors for large uncontrolled diesel-fueled engines, AP-42, Chapter 3, Section 4, Table 3.4-3 and 3.4-4 (4/25).

Peru Ridge Technology Center

Fire Pump Engines

Criteria Pollutants and CO₂

March 3, 2026

Model: Clarke C18H0-UFAD12			
Number of Engines:	2	31.5	100% Load Fuel Consumption (gal/hr)
Fuel:	Diesel	1,260	Fuel Consumption (gal/yr/engine)
Hours/yr:	40	2,520	Total Fuel Consumption (gal/yr)
Operating Factor:	100%	4.32	Fuel Consumption (MMBtu/hr/engine)
Fuel:	364		
Total Engine Power (kWh):	728		
Total Engine Power (HP):	488		
Exhaust Airflow (CFM):	3,830		
Exhaust Temperature (F):	953		

Pollutant	Emission Factor	EF Units	Emission Factor Source	Uncontrolled Estimated Emissions @ Full Load (lb/hr)	Pollutant Control (%)	Controlled Estimated Emissions @ Full Load (lb/hr)	Controlled Annual Estimated Emissions per Engine @ Full Load (TPY)	Controlled Estimated Emissions (TPY)
NO _x	2.94	g/kWh	Vendor	2.36	0	2.36	0.0472	0.094
CO	1.9	g/kWh	Vendor	1.52	0	1.52	0.0305	0.061
PM _{10/2.5}	0.199	g/kWh	Vendor	0.160	0	0.160	0.00319	0.006
VOC	0.17	g/kWh	Vendor	0.136	0	0.136	0.00273	0.005
SO ₂	0.00205	lb/hp-hr	AP-42 3.3	1.00	0	1.00	0.0200	0.04
CO ₂	1.15	lb/hp-hr	AP-42 3.3	561	0	561	11.2	22.4

Peru Ridge Technology Center

Fire Pump Engines

HAP Emissions

March 3, 2026

Model: Clarke C13H0-UFAD50
 Number of Engines: 2
 Fuel: Diesel
 Hours/yr: 40
 Engine Power (kWh): 364
 Total Engine Power (kWh): 728
 Total Engine Power (HP): 488
 Max Operating Hours/Day: 1

Hazardous Air Pollutants	Emission Factor (lb/MMBtu)	Maximum Potential Emissions Per Engine (lb/hr)	Maximum Potential Emissions All Engines (lb/hr)	Maximum Potential Emissions Per Engine (lb/day)	Maximum Potential Emissions All Engines (lb/day)	Maximum Potential Emissions Per Engine (TPY)	Maximum Potential Emissions All Engines (TPY)
Benzene	9.33E-04	3.19E-03	6.37E-03	3.19E-03	6.37E-03	6.37E-05	1.27E-04
Toluene	4.09E-04	1.40E-03	2.79E-03	1.40E-03	2.79E-03	2.79E-05	5.59E-05
Xylenes	2.85E-04	9.74E-04	1.95E-03	9.74E-04	1.95E-03	1.95E-05	3.89E-05
Formaldehyde	1.18E-03	4.03E-03	8.06E-03	4.03E-03	8.06E-03	8.06E-05	1.61E-04
Acetaldehyde	7.67E-04	2.62E-03	5.24E-03	2.62E-03	5.24E-03	5.24E-05	1.05E-04
Acrolein	9.25E-05	3.16E-04	6.32E-04	3.16E-04	6.32E-04	6.32E-06	1.26E-05
Naphthalene	8.48E-05	2.90E-04	5.79E-04	2.90E-04	5.79E-04	5.79E-06	1.16E-05
Total PAHs	1.68E-04	5.74E-04	1.15E-03	5.74E-04	1.15E-03	1.15E-05	2.30E-05
1,3-Butadiene	3.91E-05	1.34E-04	2.67E-04	1.34E-04	2.67E-04	2.67E-06	5.34E-06
TOTAL HAPs		0.014	0.027	0.014	0.027	0.00027	5.41E-04

Emission factors for uncontrolled diesel-fueled engines, AP-42, Chapter 3, Section 3, Table 3.3-2 (4/25).

Peru Ridge Technology Center

Diesel Fuel Storage Tanks - VOC Emissions

March 3, 2026

Modeled using EPA TANKS 5.1: <https://www.epa.gov/air-emissions-factors-and-quantification/tanks-emissions-estimation-software-version-5>

Data Center Diesel Storage Fuel Tanks

Number of tanks: 12
 Tank type: Horizontal Fixed Roof
 Petroleum Type: No.2 Fuel Oil (Diesel)
 Shell Length (ft): 47.3
 Shell Diameter (ft): 12
 Max. Liquid Height (ft): 12
 Min. Liquid Height (ft): 1
 Vacuum Setting (psig): -0.03
 Pressure Setting (psig): 0.03
 Vapor Space Pressure at Normal Operating Conditions (psig): 0
 Insulated or Underground? Not Insulated
 Equipped with Control Device? No Control Device
 Calculation Method: AP-42
 Shell Color: White
 Shell Condition: New
 Met Data Location: Reno, NV

Annual Throughput (all tanks, gal/yr): 1,757,060

Annual Throughput (per tank, gal/yr): 146,422

Engine Tanks

Number of tanks: 92

Engine Tank: Storage Tank Ratio 7.667

Annual Throughput (all tanks, gal/yr): 1,757,060

Annual Throughput (per tank, gal/yr): 19,098

TANKS Modeling Results - VOC Emissions:

Tank Description	Annual Standing Losses Per Tank (lb/yr)	Annual Working Losses Per Tank (lb/yr)	Total Annual Losses Per Tank (lb/yr)	Total Annual Losses Per Tank (TPY)	Total Annual Losses All Tanks (TPY)	Total Annual Losses All Tanks (lb/hr)
Diesel Storage Fuel Tanks	5.37	2.53	7.90	0.0040	0.047	2.71E-09
Engine Tanks*	0.70	0.33	1.03	0.00052	0.047	2.71E-09

*It is conservatively assumed that the VOC emissions from the engine tanks are equal to the VOC emissions from the storage fuel tanks.

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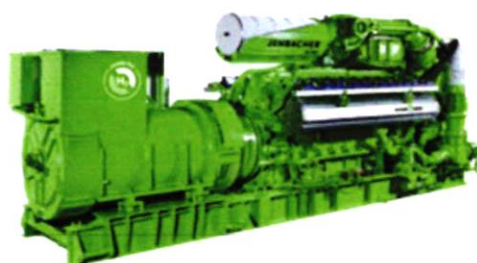
APPENDIX C

MANUFACTURER SPECIFICATIONS

JENBACHER TYPE 4

An efficiency milestone

Based on the proven design concepts of Types 3 and 6, the modern Jenbacher Type 4 engines in the 800 to 1,560 kW power range are characterized by a high-power density and outstanding efficiency. The enhanced control and monitoring provide easy preventive maintenance, high reliability and availability.



Reference installations

J416—AGR Fenland Glasshouse, UK



AGR's Fenland Glasshouse and energy center includes a combined heat and power (CHP) plant comprising three high-efficiency Jenbacher engines that deliver electricity, while an exhaust cooling system delivers recovered CO₂ to help the plants grow. Additionally, an innovative 33 MWth heat pump system provides renewable hot water heating for the facility.

Engines	1 x J416, 1 x J620, 1 x J624
Electrical output	9 MW
Thermal output	11.2 MW
Energy source	Pipeline gas
Commissioning	2022

J420—Heslerhof, Germany



With the installation of a Jenbacher J420 engine and investments into a large buffer storage tank and a gas storage tank, the biogas plant at the Heslerhof farm in Germany was converted into a renewable storage power plant with flexible, power market-driven operation. The farm generates its own power, which is used to supply all the electricity it requires, and surplus power is fed into the grid at attractive feed-in tariffs at market rates.

Engine	1 x J420
Electrical output	1.56 MW
Thermal output	1.8 MW
Energy source	Biogas
Commissioning	2021

J420—Chok Yuen Yong Industry Co., LTD, Thailand



Five Jenbacher J420 biogas-fueled engines produce more than enough electric power to supply Chok Yuen Yong Industry Co., LTD's tapioca starch factory. The excess electricity produced by the engines—about 1,000 kW—is supplied to the public grid to further reduce the facility's power costs.

Engines	5 x J420
Electrical output	7.1 MW
Thermal output	5.2 MW
Energy source	Biogas
Commissioning	2012, 2017

J420—Hefei Xiaomiao Organic Waste Treatment Center Project, China



At the Hefei Xiaomiao Organic Waste Treatment Center Project, organic waste is pretreated and turned into biogas through anaerobic digestion at a nearly 67,000-square-meter facility. Two Jenbacher J420 biogas-fueled gensets power the facility and also supply power to the local grid.

Engines	2 x J420
Electrical output	3 MW
Thermal output	1.2 MW
Energy source	Biogas
Commissioning	2021

Technical features

Feature	Description	Advantages
Heat recovery	Flexible arrangement of heat exchanger, two stage oil plate heat exchanger on demand	– High thermal efficiency, even at high and fluctuating return temperatures
Gas dosing valve	Electronically controlled gas dosing valve with high degree of control accuracy	– Very quick response time – Rapid adjustment of air/gas ratio – Large adjustable calorific value range
Four-valve cylinder head	Enhanced swirl and channel geometry using advanced calculation and simulation methods (CFD)	– Reduced charge-exchange losses – Central spark-plug position resulting in optimal cooling and combustion conditions
Crack connecting rod	Applying a technology—tried and tested in the automotive industry—in our powerful stationary engines	– High dimensional stability and accuracy – Reduced connecting rod bearing wear – Easy to maintain

Technical data

Configuration				Dimensions l x w x h (mm)	
Bore (mm)	145			J412	5,400 x 1,800 x 2,200
Stroke (mm)	185			Generator set J416	6,200 x 1,800 x 2,200
Displacement / cylinder (lit)	3.06			J420	7,100 x 1,900 x 2,200
Speed (rpm)	1,800/1,200 (60 Hz) 1,500 (50 Hz)			J412	6,000 x 1,800 x 2,200
Mean piston speed (m/s)	7.4 (1,200 1/min) 9.3 (1,500 1/min) 11.2 (1,800 1/min)			Cogeneration system J416	6,700 x 1,800 x 2,200
				J420	7,100 x 1,800 x 2,200
Scope of supply	Generator set, cogeneration system, generator set / cogeneration in container			J412	12,200 x 3,000 x 2,700 – 5,300
Applicable gas types	Natural gas, flare gas, biogas, landfill gas, sewage gas, special gases (e.g., coal mine gas, coke gas, wood gas, pyrolysis gas)			Container ¹ 40-foot J416	12,200 x 3,000 x 2,700 – 5,300
Engine type	J412 J416 J420			J420	12,200 x 3,000 x 2,700 – 5,300
No. of cylinders	12 16 20				
Total displacement (lit)	36.7 48.9 61.1				
				Weights empty (kg)	
				J412	11,200
				Generator set J416	13,500
				J420	17,200
				J412	11,800
				Cogeneration system J416	14,100
				J420	17,800

Outputs and efficiencies

Natural gas		1,500 l/min 50 Hz					1,800 l/min 60 Hz					1,200 l/min 60 Hz				
NO _x ¹	Type	Pel (kW) ²	Pth (kW) ²	ηel (%) ²	ηth (%) ²	ηtot (%)	Pel (kW) ²	Pth (kW) ²	ηel (%) ²	ηth (%) ²	ηtot (%)	Pel (kW) ²	Pth (kW) ²	ηel (%) ²	ηth (%) ²	ηtot (%)
500 mg/m ³ _{N₂}	J412	902	928	43.4	44.6	88.0	853	960	41.7	46.9	88.6	630	618	42.8	41.9	84.7
	J416	1,201	1,244	43.4	44.9	88.3	1,142	1,281	41.8	46.9	88.7	846	824	43.0	41.9	85.0
	J416	1,003	1,029	43.5	44.6	88.1	-	-	-	-	-	-	-	-	-	-
	J420	1,562	1,649	43.7	46.1	89.9	1,427	1,602	41.8	46.9	88.8	1,057	1,029	43.0	41.9	84.9
	J420	1,562	1,833	42.4	49.7	92.1	-	-	-	-	-	-	-	-	-	-
250 mg/m ³ _{N₂}	J412	902	967	42.2	45.2	87.4	853	1,003	40.7	47.9	88.5	630	641	41.8	42.5	84.4
	J416	1,201	1,285	42.3	45.2	87.5	1,142	1,338	40.9	47.9	88.7	846	856	42.1	42.6	84.7
	J416	1,003	1,045	42.9	44.7	87.6	-	-	-	-	-	-	-	-	-	-
	J420	1,501	1,605	42.7	45.6	88.4	1,427	1,648	41.1	47.5	88.7	1,057	1,085	41.7	42.8	84.6
	J420	1,562	1,906	41.4	50.5	91.9	-	-	-	-	-	-	-	-	-	-
Biogas		1,500 l/min 50 Hz					1,800 l/min 60 Hz									
NO _x ¹	Type	Pel (kW) ²	Pth (kW) ²	ηel (%) ²	ηth (%) ²	ηtot (%)	Pel (kW) ²	Pth (kW) ²	ηel (%) ²	ηth (%) ²	ηtot (%)					
500 mg/m ³ _{N₂}	J412	751	750	42.2	42.2	84.3	-	-	-	-	-					
	J412	902	916	42.7	43.3	86.0	853	916	41.2	44.2	85.4					
	J412	935	914	43.3	42.3	85.6	-	-	-	-	-					
	J416	1,004	994	42.5	42.1	84.6	-	-	-	-	-					
	J416	1,201	1,217	42.7	43.3	86.0	1,142	1,220	41.4	44.2	85.5					
250 mg/m ³ _{N₂}	J416	1,248	1,225	43.3	42.4	85.7	-	-	-	-	-					
	J420	1,501	1,518	42.8	43.3	86.1	1,427	1,527	41.3	44.2	85.6					
	J420	1,562	1,538	43.3	42.6	85.9	-	-	-	-	-					
	J412	902	930	42.0	43.4	85.4	853	933	40.5	44.3	84.8					
	J416	1,205	1,240	42.1	43.4	85.5	1,142	1,237	40.6	44.0	84.7					
	J420	1,501	1,544	42.2	43.4	85.6	1,427	1,556	40.6	44.3	85.0					

¹ The dimensions refer to the standard base models with horizontal exhaust silencer.
² Technical data according to ISO 3046.
³ Total heat output with a tolerance of +/- 8%, exhaust gas outlet temperature 120°C, for biogas gas outlet temperature 180°C.
 All data according to full load and subject to technical development and modification. Further engine versions available on request.



Contact us:
jenbacher.com/
en/contact

In general, "Ready for H₂" Jenbacher units can be converted to operate on up to 100% hydrogen in the future. Details on the cost and timeline for a future conversion may vary and need to be clarified individually.

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For more information, visit INNIO Group's website at innio.com

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Jenbacher is part of the INNIO Group

III. Heat Rate Guarantee.¹

Site Details

Name	South Valley
Rating	34.9kV, 60Hz
Maximum Ambient Temperature	[95°F (35°C) BEFORE DERATE] ²
Maximum Altitude	6562ft (2000m) BEFORE DERATE
Main Fuel Type	LNG
Methan Index	74 or above
Pressure	50psi

Gas Flow to Each J420 Generator Set	460 m3/hr @40C (worst case) 395 m3/hr @40C when package operate at 1200kWe
-------------------------------------	---

At full power output genset consumes
3847kW of energy in gas per hour -
13,127,000 BTU per hour
At expected derate genset consumption will
reduce to 3300kW of energy in gas per hour
- 11,250,000 BTU per hour

Heating Value

Consumption in scf per hour will be (scf/hr):
16245 scf/hr @ full power output (worst
case)
13950 scf/hr @ derate 1.2MWe output (worst
case)

Then we expect to see:
8,752 BTU/kWe @1500kWe package output
9,375 BTU/kWe @1200KWe package output
– worst case @40degC

Description	Measurement	Total
Total Gen Units	Count	90

¹ **Note to Draft:** Provisions are to be added to address the heat rate guarantee of the Generation Equipment contemplated in Seller's operational workbook provided to Buyer. Provisions to be added will address not only the guaranteed heat rate, but also responsibility for Fuel costs in excess of the guaranteed heat rate and related impacts on take-or-pay arrangement. These provisions are to be further discussed by the Parties. **Seller NTD:** Heat rate guarantee and figures subject to further review and refinement. In the interest of progressing the discussion, Seller has shared the testing information that will flow into the heat rate guarantee.

² **Note to Draft:** Operations teams to discuss temperature based de-rating.

Nameplate of each generator	MW	1.5MWe (expected reduction to 1.2MWe due to altitude)
Ancillary MW each generator (N)	MW	Included in power output above. Parasitic loads per package are: 53.6kW – Reference C02000193
Derating due to site conditions each generator	MW	20% derate 1.2MWe
Net output per generator with deration and ancillaries	MW	1.2MWe – parasitic loads are always included in our technical spec – Reference
Running prime power (N)	Count	90
Running prime power (N)	MW	108
Total installed power with deration and ancillary power	MW	111.56

Application & Performance Warranty Data
Project Information

Site Location: US
 Project Name: Jenbacher J420 SCR - No EPA Pre-Cat
 Application: Prime Power
 Number Of Engines: 90
 Operating Hours per Year: 8000

Engine Specifications

Engine Manufacturer: Jenbacher
 Model Number: J420
 Rated Speed: 1800 RPM
 Type of Fuel: Natural Gas
 Type of Lube Oil: 1 wt% sulfated ash or less
 Lube Oil Consumption: 0.1 % Fuel Consumption
 Number of Exhaust Manifolds: 1

Engine Cycle Data

Load	Speed	Power	Exhaust Flow	Exhaust Temp.	Fuel Cons.	NO _x	CO	NMNEHC	CH ₂ O	PM	O ₂	H ₂ O
%		bhp	lb/hr	° F		g/bhp-hr	g/bhp-hr	g/bhp-hr	g/bhp-hr	g/bhp-hr	%	%
100	Rated	2,146	18,415	819		0.81	2	0.1	0.2	0.01	10	17

Emission Data (100% Load)

Emission	Raw Engine Emissions						Target Outlet Emissions						Calculated Reduction
	g/bhp-hr	tons/yr	ppmvd @ 15% O ₂	ppmvd	g/kW-hr	lb/MW-hr	g/bhp-hr	tons/yr	ppmvd @ 15% O ₂	ppmvd	g/kW-hr	lb/MW-hr	
NO _x *	0.81	15.33	86	158	1.086	2.39	0.05	0.95	5	10	0.067	0.15	93.8%
CO	2	37.85	347	641	2.682	5.91	0.05	0.98	9	17	0.07	0.15	97.4%
NMNEHC**	0.1	1.89	30	56	0.134	0.3	0.02	0.38	6	11	0.027	0.06	80%
CH ₂ O	0.2	3.78	32	60	0.268	0.59	0.02	0.38	3	6	0.027	0.06	90%
PM	0.01	0.19	4	7	0.013	0.03							
NH ₃							0.04	0.66	10	18	0.047	0.1	

* MW referenced as NO₂

** MW referenced as CH₄. Propane in the exhaust shall not exceed 15% by volume of the NMHC compounds in the exhaust, excluding aldehydes. The 15% (vol.) shall be established on a wet basis, reported on a methane molecular weight basis. The measurement of exhaust NMHC composition shall be based upon EPA method 320 (FTIR), and shall exclude formaldehyde.

System Specifications**SCR/Oxidation System Specifications (NRLZ-36-J-TBD, ACIS II, Commissioning & Startup, SP-IQ2-34-TBD, MS3-20PF-3, IB-NRLZ-36-TBD, SP-RTS-350-TBD, PLZ-96239-36-TBD, SP-RACK-TBD)**

Housing Model Number:	SP-IQ2-34-TBD-HSG-0
Element Model Number:	SCRC-140-150-450
Number of Catalyst Elements per Engine:	2
Number of Spare Catalyst Layers:	0
SCR Catalyst Space Velocity:	9,334 1/hr
Sound Attenuation:	25-30 dBA insertion loss
Reactant:	Urea
Percent Concentration:	32.5%
Design Exhaust Flow Rate:	18,415 lb/hr
Design Exhaust Temperature ¹ :	819° F
Exhaust Temperature Limits:	572° F – 977° F
SCR Catalyst Volume:	26 ft ³
System Dosing Capacity:	6 L/hr
System Pressure Loss:	14.4 inH ₂ O (Clean)
Total Catalyst Volume:	26 ft ³
Estimated Reactant Consumption:	1.0 gal/hr (4 L/hr) / Per Engine



LIMITED WARRANTY

1. **Warranty Period** Products have different warranty periods and are subject to the conditions and exclusions contained herein. Seller warrants that the:

APX1 (One-Year) Catalyst Elements for Reciprocating Engine applications. The product shall achieve the emission levels defined in the Proposal, within the conditions and limitations defined in Section 2 (below), for a period of twelve (12) months from the date the Product is complete and ready for shipment;

APX2 (Two-Year) Catalyst Elements for Reciprocating Engine applications. The product shall achieve the emission levels defined in the Proposal, within the conditions and limitations defined in Section 2 (below), for a period of twenty-four (24) months from the date the Product is complete and ready for shipment;

APX3 (Three-Year) Catalyst Elements for Reciprocating Engine applications. The product shall achieve the emission levels defined in the Proposal, within the conditions and limitations defined in Section 2 (below), for a period of thirty-six (36) months from the date the Product is complete and ready for shipment;

APXP (Propane) Catalyst Elements for Reciprocating Engine applications. The product shall achieve the emission levels defined in the Proposal, within the conditions and limitations defined in Section 2 (below), for a period of thirty-six (36) months from the date the Product is complete and ready for shipment

Gas Turbine Catalyst Elements shall achieve the emission levels and performance warranty period defined in the Proposal within the conditions and limitations defined in Section 2 (below). Gas Turbine Catalyst is a custom product. Please consult your Proposal for project-specific warranties and emission guarantees;

Specialty Catalyst Elements shall be free of defects in material and workmanship and shall be free of defects in material and workmanship and shall achieve the emission levels defined in the Proposal, within the conditions and limitations defined in Section 2 (below), for a period of twelve (12) months from the date the Product is complete and ready for shipment;

Siloxane Gas (designated with "SG") Catalyst Elements for Reciprocating Engine applications operating on landfill gas, digester gas, sewage gas and other siloxane-bearing fuels, carry no warranty;

SCR Products. Unless other terms are specified in the Proposal (which shall supersede these General Terms and Conditions), SCR Products shall be free of defects in material and workmanship and shall achieve the emission levels within the conditions and limitations defined in Section 2 (below), for a period of twenty-four (24) months from the date the Product is placed in operation or thirty (30) months from the date the Product is complete and ready for shipment, whichever shall first occur;

Passive Diesel Particulate Filter Products shall be free of defects in material and workmanship and shall achieve the emission levels defined in the Proposal, within the conditions and limitations defined in Section 2 (below), for a period of for a period of 8,000 hours of operation or twenty-four (24) months from the date the Product is ready for shipment, whichever shall first occur;

Active Diesel Particulate Filter Products included with AT-IV shall be free of defects in material and workmanship and shall achieve the emission levels defined in the Proposal, within the conditions and limitations defined in Section 2 (below), for a period of 2,600 hours of operation, twelve (12) months from the date the Product is commissioned by an authorized MIRATECH field service representative, or eighteen (18) months from the date the Product is ready for shipment to Purchaser, whichever shall first occur;

Service shall be free of defects of workmanship for a period of ninety (90) days from the date the final Service is provided by Seller to Purchaser;

Housings shall be free of defects in material and workmanship for a period of twelve (12) months from the date the Product is complete and ready for shipment;

Silencer Only Products shall be free of defects in material and workmanship for a period of twelve (12) months from the date the Silencer Only Product is placed in operation or eighteen (18) months from the date the Silencer Only Product is complete and ready for shipment, whichever shall first occur;

Emissions Data for Certarus CNG Pressure Reducing System (PRS)

- Quantity of twelve – PRS Units at Peru Shelf site
 - Only six PRS Units will be operating at any given time; the additional six PRS Units are for redundancy and should not be considered in emissions calculations
- Exhaust Stack Diameter – 3/8" Tubing for Instrument Vent Header and 3/4" Tubing for Blowdowns
- Height of PRS Exhaust – Approx. 10-12' Above Ground
- Exhaust Temperature – Range of ambient temperature to colder than ambient depending on stage of process
- AFCM – Few ft/s on instrument and drain vents to 150 ft/s on blowdown scenarios

Note: All emission factor data are sourced from communications with our vendor, Certarus, who provided documentation indicating that CO, PM10/2.5, VOC, SO₂, and formaldehyde emissions are negligible, hence zero in the corresponding estimated emissions. The CO₂ emissions were calculated at 15.974 metric tons per day, while NO_x emissions were determined as follows:

- Daily NO_x emissions per PRS are 1.26 lb/day.
- For six PRS units, total NO_x emissions amount to 7.56 lb/day.

Overall emissions calculations are based on the operation of six CNG units with a daily fuel gas consumption per unit at 34,280 SCF/day (35 mmBTU/day).

Pollutant	Emission Source*	Uncontrolled Estimated Emissions @ Full Load (lb/hr)	Pollutant Control (%)	Controlled Estimated Emissions @ Full Load (lb/hr)	Facility Controlled Estimated Emissions (TPY)
NO _x	Vendor	0.32	0.0%	0.32	1.38
CO	Vendor	0.00	0.0%	0.00	0.00
PM10/2.5	Vendor	0.00	0.0%	0.00	0.00
VOC	Vendor	0.00	0.0%	0.00	0.00
SO ₂	Vendor	0.00	0.0%	0.00	0.00
CO ₂	Vendor	1466.70	0.0%	1466.70	6427.81
Formaldehyde	Vendor	0.00	0.0%	0.00	0.00



NO: 164069

EXHAUST EMISSION DECLARATION

The emission data in this declaration are measured according to the test procedures specified below and on one member engine of the engine type. Emission data may vary among production engines.

TECHNICAL SPECIFICATION

Engine type:

TWD1683GE

Module No:

138090511

Rated crankshaft power *):

685 kW

Rated speed:

1800 rpm

*) Stand-by power without fan acc. to ISO 3046.

TEST INFORMATION

Test conditions

40 CFR part 1039

Test identification

22011844

Test date

2019-04-06

Test cycle

D2 Test cycle

EXHAUST EMISSIONS (weighted cycle)

CO (g/kWh)	0,066
HC (g/kWh)	0,013
NOx (g/kWh)	0,40
PM (g/kWh)	0,0137

EXHAUST EMISSIONS (per cycle mode)

Mode	#	1	2	3	4	5
Power	(kW)	685	514	342	171	68
NOx	(g/h)	141,1	154,5	106,6	112,1	194,4
HC	(g/h)	6,378	6,112	5,793	4,198	3,643
CO	(g/h)	47,73	31,35	20,05	11,62	15,2
CO ₂	(kg/h)	432,9	320	219,1	121,5	63,37
NOx Dry	(ppm)	24,29	31,35	26,47	40,33	99,68
HC Wet	(ppm)	3,578	4,039	4,679	4,907	6,059
CO Dry	(ppm)	14,42	11,07	8,588	7,145	13,06
CO ₂	(%)	8,27	7,133	5,907	4,69	3,44
O ₂	(%)	9,651	11,2	12,87	14,56	16,25

TA-Luft

Test identification

22011844

Test date

2019-04-06

Mode	#	1	2	3	4
Power	(kW)	685,4	514,1	342,7	171,4
NOx (O ₂)	(mg/Nm ³)	2348	2689	2523	2301
HC (O ₂)	(mg/Nm ³)	22,43	28,61	37,64	56,13
CO (O ₂)	(mg/Nm ³)	46,55	41,5	52,85	108,9
PM (O ₂)	(mg/Nm ³)	5,813	4,376	4,756	4,83

Gothenburg 2019-07-10

Jennifer Ahlberg

Director Emission Compliance

Quality, Environment, Product Compliance**AB Volvo Penta**

VOLVO PENTA

Document No

Issue Index

TWD1683GE**23776347****03****Important**

This Technical Data Sheet and the corresponding Installation Instructions provide important information to ensure the installed engine will operate according to the design specification in the Volvo Penta application for certification.

Requirements marked with  are considered as critical for exhaust emissions compliance according to the design specification in the Volvo Penta application for certification.

Failing to follow and meet these instructions and requirements when installing a certified engine in a piece of nonroad equipment for use in the United States violates U.S. federal law (40 CFR 1068.105(b)), subject to fines or other penalties as described in the Clean Air Act.

General

In-line four stroke turbocharged diesel engine with direct injection.

Rotation direction, anti-clockwise viewed towards flywheel.

Number of cylinders			6
Displacement, total	litre		16,12
	in ³		983,9
Firing order			1-5-3-6-2-4
Bore	mm		144
	in		5,67
Stroke	mm		165
	in		6,50
Compression ratio			16,8:1
Wet weight w/o EATS	Engine only	kg	1810
		lb	3990
	Engine incl. cooling system and air filtration system	kg	2217
		lb	4888
	Engine incl. cooling system, air filtration system, and frame	kg	2767
		lb	6100
Wet weight EATS only	EATS (XL Urea Tank, 165 Liters)	kg	255
		lb	562
	EATS (L Urea Tank, 70 Liters)	kg	226
		lb	498

Performance

		rpm	1500	1800
Prime Power	without fan	kW	590	626
		hp	802	851
	with fan	kW	570	596
		hp	775	811
Standby Power	without fan	kW	647	685
		hp	880	932
	with fan	kW	627	655
		hp	853	891
COP Power	without fan	kW	443	470
		hp	602	639
	with fan	kW	428	447
		hp	581	608
Torque at:	Prime Power	Nm	3756	3321
		lbft	2770	2449
	Standby Power	Nm	4119	3634
		lbft	3038	2680
Total mass moment of inertia, J (mR ²)		kgm ²	2,50	
		lbft ²	59,3	

Derating due to altitude - see Technical Diagrams

VOLVO PENTA**TWD1683GE**

Document No

23776347

Issue Index

03**Engine noise emission**

Test Standards: ISO 3744-1981 (E) sound power with fan

Tolerance ± 0.75 dB(A)

		rpm	1500	1800
Measured sound power L _w	No load	dB(A)	118,2	119,3
	Prime Power	dB(A)	118,2	119,8
	Standby Power	dB(A)	117,8	119,9
Calculated sound pressure L _p at 1 m	No load	dB(A)	106,2	107,3
	Prime Power	dB(A)	106,2	107,8
	Standby Power	dB(A)	105,8	107,9

Test conditions for load acceptance data

Warm engine.	Generator	Model	Type of AVR	
	ABB	AMG 0355CC04 DBPM	Basler-Electric DECS-150	
AVR Settings	UFRO (Hz):	3 DIP:	1.4	DWELL: 1.4
		Voltage (V):	400	Power factor: 1.0

Load acceptance performance can vary due to actual alternator inertia, voltage regulator, type of load and local ambient conditions.

Abbreviation:	Full name:	Descriptions
AVR	Automatic Voltage Regulator	Generator performance and safety control unit
UFRO	Under Frequency Roll Off	Overheating protection at under frequency
DIP		Controls the slope of voltage drop when the UFRO is active
DWELL		Controls the slope of voltage recovery when the UFRO is active.

Load Acceptance at 1500 rpm

Genset Classification

This engine fulfills G1, G2 and G3 classes, according to ISO8528-5. For other class, please, see the table below.

Load (%)	Speed diff (%)	Speed Recovery time (s)	
0-47	7 (G3)	1,8	G3 boundary conditions
0-54	10 (G2)	2,0	G2 boundary conditions

Load (%)	Speed diff (%)	Speed Recovery time (s)	Voltage diff (%)	Voltage Recovery time (s)	Remaining load (%)	Speed diff (%)	Speed Recovery time (s)	Voltage diff (%)	Voltage Recovery time (s)
0-20	1,9	1,3	-	-	20-100	19,8	3,3	19,0	1,9
0-40	4,9	1,2	0,8	0,8	40-100	10,3	1,9	7,5	1,2
0-60	14,9	2,1	13,1	1,7	60-100	4,0	1,3	1,5	1,3
0-80	23,2	3,6	25,4	2,5	80-100	1,7	0,7	0,8	0,8
0-100	30,0	4,6	35,5	3,5					
0-110	31,7	5,0	38,3	3,7					
100-0	9,8	2,6	4,3	2,0					

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TWD1683GE**23776347****03****Load Acceptance at 1800 rpm**

Genset Classification

This engine fulfills G1, G2 and G3 classes, according to ISO8528-5. For other class, please, see the table below.

Load (%)	Speed diff (%)	Speed Recovery time (s)	
0-55	7 (G3)	1,2	G3 boundary conditions
0-64	10 (G2)	1,3	G2 boundary conditions

Load (%)	Speed diff (%)	Speed Recovery time (s)	Voltage diff (%)	Voltage Recovery time (s)	Remaining load (%)	Speed diff (%)	Speed Recovery time (s)	Voltage diff (%)	Voltage Recovery time (s)
0-20	1,3	0,5	-	-	20-100	11,4	1,5	12,0	1,2
0-40	2,8	0,8	-	-	40-100	6,2	0,9	3,2	0,9
0-60	7,5	1,0	5,0	1,0	60-100	3,4	0,7	1,3	0,9
0-80	13,8	1,6	15,8	1,6	80-100	1,4	0,7	1,0	0,6
0-100	19,6	2,2	25,8	2,0					
0-110	21,6	2,5	29,5	2,4					
100-0	4,0	1,2	4,3	1,8					

Cold start performance		Ambient Temp. [°C]		Manifold Heater		Block heater		RPM	
								1500	1800
Time to Set Speed from start		20		-		-		4,7 sec.	5,0 sec.
		5		-		-		4,8 sec.	6,3 sec.
		-15 *		Yes		-		7,0 sec.	6,8 sec.
		-30 **		Yes		Yes		6,2 sec.	6,7 sec.

Min start temp w/o Block Heater* -30 °C

* With manifold heater 6 kW engaged, lubrication oil SAE 10W/30.

** With manifold heater 6 kW engaged, lubrication oil SAE 10W/30 and block heater, Fuel MK-1.

Block heater type	Power kW	Engaged hours	Cooling water temp engine block
Volvo partnumber: 23012775	2	15	7°C 45°F

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Lubrication system		rpm	1500	1800
Lubricating oil consumption	Prime Power	litre/h	0,07	0,08
		US gal/h	0,018	0,022
	Standby Power	litre/h	0,10	0,10
		US gal/h	0,025	0,026
Oil system capacity including filters		litre	48	
		US gal	12,7	
Oil sump capacity:	max	litre	42	
		US gal	11,1	
	min	litre	32	
		US gal	8,5	
Oil change intervals/specifications:	VDS 4.5 10W/30	h	500	
Engine angularity limits:	front up	°	30	
	front down	°	30	
	side tilt	°	30	
Oil pressure at rated speed		kPa	395 - 415	
		psi	57 - 60	
Lubrication oil temperature in oil sump:	max	°C	130	
		°F	266	
Oil filter micron size		μ	40,000	

* See also general section in the sales guide

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TWD1683GE

23776347**03****Fuel system****Prime Power**Specific **fuel** consumption at:

		rpm	1500	1800
	25%	g/kWh	214	230
		lb/hph	0,347	0,373
	50%	g/kWh	195	203
		lb/hph	0,316	0,329
	75%	g/kWh	191	196
		lb/hph	0,309	0,317
	100%	g/kWh	191	195
		lb/hph	0,309	0,315
% DEF consumption at: (Compare to Fuel consumption by Volyme)	25%	%	6,3	5,6
	50%	%	7,2	6,3
	75%	%	7,0	6,8
	100%	%	6,6	6,2

Standby PowerSpecific **fuel** consumption at:

	25%	g/kWh	211	225
		lb/hph	0,341	0,364
	50%	g/kWh	194	201
		lb/hph	0,315	0,325
	75%	g/kWh	191	194
		lb/hph	0,310	0,315
	100%	g/kWh	193	196
		lb/hph	0,313	0,318
% DEF consumption at: (Compare to Fuel consumption by Volume)	25%	%	6,6	5,7
	50%	%	7,2	6,4
	75%	%	6,7	6,7
	100%	%	6,4	5,9

CO2 emission declarationCarbon dioxide (CO₂) emissions determined during the EU type approval process, NRSC-D2.

	rpm	1500	1800
g/kWh		619	647

Fuel system

Fuel to conform to

EN590:2013
 ASTM D 975 1-D and 2-D
 EN15940:2016 (GTL/HVO)
 SS-155435:201 (MK1)

	rpm	1500	1800
System supply flow at:	litre/h	177,0	195,0
	US gal/h	46,8	51,5
Fuel supply line max restriction (Measured at fuel inlet connection)	kPa	-20,0	-20,0
	psi	-2,9	-2,9
Fuel supply line max pressure, engine stopped	kPa	16,5	16,5
	psi	2,4	2,4
System return flow	litre/h	25,0	25,0
	US gal/h	6,6	6,6
Fuel return line max restriction (Measured at fuel return connection)	kPa	20,0	20,0
	psi	2,9	2,9
Maximum allowable inlet fuel temp (Measured at fuel inlet connection)	°C	60	60
	°F	140	140
Prefilter / Water separator micron size	μ	30	
Fuel filter micron size	μ	5	
Governor type/make, standard	Volvo / EMS 2.4		
Injection pump type/make	Unit Injector Delphi		

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TWD1683GE**23776347****03****Intake and exhaust system**

		rpm	1500	1800
Air consumption at: (+25°C and 100kPa)	Prime Power	m ³ /min	43	48
		cfm	1519	1695
	Standby Power	m ³ /min	45	51
		cfm	1589	1801

**See front page for important information**

Max allowable air intake restriction including piping		kPa	3	3
		psi	0,4	0,4
Air filter restriction clean Volvo Penta filter		kPa	2,3	2,5
		psi	0,3	0,4
Heat rejection to exhaust at:	Prime Power	kW	393	438
		BTU/min	22350	24909
	Standby Power	kW	448	495
		BTU/min	25477	28150
Exhaust gas temperature after turbine at:	Prime Power	°C	434	432
		°F	813	810
	Standby Power	°C	464	461
		°F	867	862

**See front page for important information**

Max allowable back pressure in exhaust line (after turbine)	Prime Power	kPa	20	20
		psi	2,9	2,9
Pipe dimension Ø: 200 mm	Standby Power	kPa	20	20
		psi	2,9	2,9

**See front page for important information**

Max allowable temperature drop between turbine and SCR muffler inlet.	Prime Power	Δ°C	10	10
		Δ°F	18	18
	Standby Power	Δ°C	10	10
		Δ°F	18	18
SCR muffler pressure drop (at exhaust max Power)	Standby Power	kPa	10	10
		psi	1,5	1,5
Exhaust gas flow at: (temp and pressure after turbine at max Power)	Standby Power	m ³ /min	104,0	113,0
		cfm	3673	3991

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TWD1683GE**23776347****03**

Cooling system		rpm	1500	1800
Heat rejection radiation from engine at max Power:		kW	20	20
		BTU/min	1137	1137
Radiator cooling system type		Closed circuit		
Standard radiator core area		m²	1,68	
		foot²	18,08	
Fan diameter		mm	965	
		in	37,99	
Fan power consumption		kW	20	30
		hp	27	41
Fan drive ratio		1.04:1		
Coolant capacity,	engine only	litre	33	
		US gal	8,72	
	charge air coolers	litre	10	
		US gal	2,64	
	coolant radiators incl piping	litre	48	
		US gal	12,68	
	expansion tank	litre	20	
		US gal	5,28	
Coolant pump		drive/ratio	Belt / 1.85:1	
Thermostat	start to open	°C	82	
		°F	180	
	fully open	°C	92	
		°F	198	
Maximum static pressure head (expansion tank height + pressure cap setting)		kPa	100	
		psi	14,5	
Minimum static pressure head (expansion tank height + pressure cap setting)		kPa	70	
		psi	10,2	
Standard pressure cap setting		kPa	100	
		psi	14,5	
Maximum top tank temperature		°C	107	
		°F	225	
Charge air pressure		kPa	350	
(after charge air coolers)		psi	50,8	

**See front page for important information**

Max allowable Charge air outlet temp. (Charge air temp after intercooler)	Prime Power	°C	50	50
		°F	122	122
Amb. Temp. 25°C	Standby Power	°C	50	50
		°F	122	122

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TWD1683GE**23776347****03****OEM cooling system design:****- remote position of standard radiators**

	rpm	1500	1800
Maximum additional coolant with standard expansion tank	litre	15	15
	US gal	4	4
Maximum distance in vertical direction with standard pressure cap (100 kPa)	m	4	4
	ft	13	13
Maximum additional pressure drop due to remote position	KPa	10	10
	psi	1	1

OEM cooling system design: 2-circuit system**- engine coolant circuit**

		rpm	1500	1800	
- engine coolant circuit	Heat rejection to coolant	Prime Power	kW	188	214
			BTU/min	10691	12170
	engine coolant circuit:	Standby Power	kW	188	218
			BTU/min	10691	12397
Min coolant flow engine coolant circuit (at fully open thermostat)	litre/s	6,5	7,7		
	US gal/s	1,71	2,04		
Maximum coolant temperature entering engine (25°C amb. Temp.)	°C	82			
	F	180			
Maximum external engine coolant circuit restriction, including piping (25°C amb. Temp.)	kPa	90			
	psi	13,1			
Nominal coolant pressure	kPa	100	100		
	psi	14,5	14,5		
- charge air cooler (CAC) coolant circuit					
Heat rejection to coolant	Prime Power	kW	139	160	
		BTU/min	7905	9099	
	CAC coolant circuit:	Standby Power	kW	151	167
			BTU/min	8587	9497
Nominal coolant flow CAC coolant circuit:	litre/s	1,7	2,0		
	US gal/s	0,45	0,53		
Maximum coolant temperature entering CAC (at air inlet temperature 25°C)	°C	40			
	F	104			
Coolant pressure drop over Low Temp. Radiator (at Nominal coolant flow CAC coolant circuit above)	kPa	65	85		
	psi	9,4	12,3		
Nominal CAC coolant pressure	kPa	100	100		
	psi	14,5	14,5		

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Cooling performance

Standard fan:	Fan ratio: 1: 1,04	Fan type: FIX
---------------	--------------------	---------------

Cooling air flow and external restriction at different radiator air temperatures based on 107°C TTT and 40% antifreeze. Valid at 1 atm.
(radiator and cooling fan, see optional equipment)

Engine speed rpm	Air on temp °C	PRIME POWER		STANDBY POWER	
		Air flow m ³ /s	External restriction Pa	Air flow m ³ /s	External restriction Pa
1500	66	11,4	0		
	64	11,0	100		
	63	10,4	200		
	62	10,0	300	11,4	0
	60			11,0	100
	59			10,4	200
	58			10,0	300
1800	67	13,4	0		
	66	12,7	100		
	65	12,2	200		
	64	11,7	300	13,4	0
	62			12,7	100
	61			12,2	200
	59			11,7	300

Note! External restrictions are calculated for values >0 Pa

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23776347**03****Engine management system**

Functionality	Alternatives	Default setting
Governor mode	Isochronous	Isochronous
Governor droop		
Governor response	Adjustable PID-constants (VODIA)	
Dual speed	1500rpm 50Hz/ 1800 rpm 60Hz	1500 rpm 50 Hz
Idle speed	900-1200rpm	900rpm
Fine speed adjustment	+ - 90 rpm	
Stop function		
Preheating function	On / Off	
Lamp test		

Engine sensor and switch settings

Parameter	Unit	Warning Level (Yellow)	Engine protection		
			Alarm level (Red)	Default	Optional
Oil temp	°C	125	130,0	Shut down.	N/A
Oil pressure	Low idle	kPa	170	145,0	Shut down
	1500 rpm	kPa	300,0	275,0	Shut down
	1800 rpm	kPa	300,0	275,0	Shut down
Oil level			Low level		N/A
DEF Dosing injector failure		Min. Level		Shut down	N/A
Piston cooling pressure >1000 rpm	kPa	N/A	N/A	N/A	N/A
Coolant temp	°C	103	107,0	Shut down.	N/A
Coolant level		On	Low level	Shut down.	N/A
Fuel feed pressure	Low idle	kPa			N/A
	>1400 rpm				N/A
Water in fuel					N/A
Crank case pressure	kPa	N/A	N/A	N/A	N/A
Air filter pressure droop	kPa				N/A
Altitude, above sea	m			Automatic derating, see section derating	N/A
Charge air temp	°C	80	82,5	Shut down	N/A
Charge air pressure	kPa	30 above demanded	40 above demanded	Shut down	N/A
Engine speed	rpm	115% of rated speed	Alarm level	Shut down.	N/A
Exhaust Temperature (Before SCR volume)	°C	530	550,0	Shut down.	N/A

Engine protection can be disabled. For consequences please see VP International Limited Warranty Policy

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23776347**03****Electrical system**

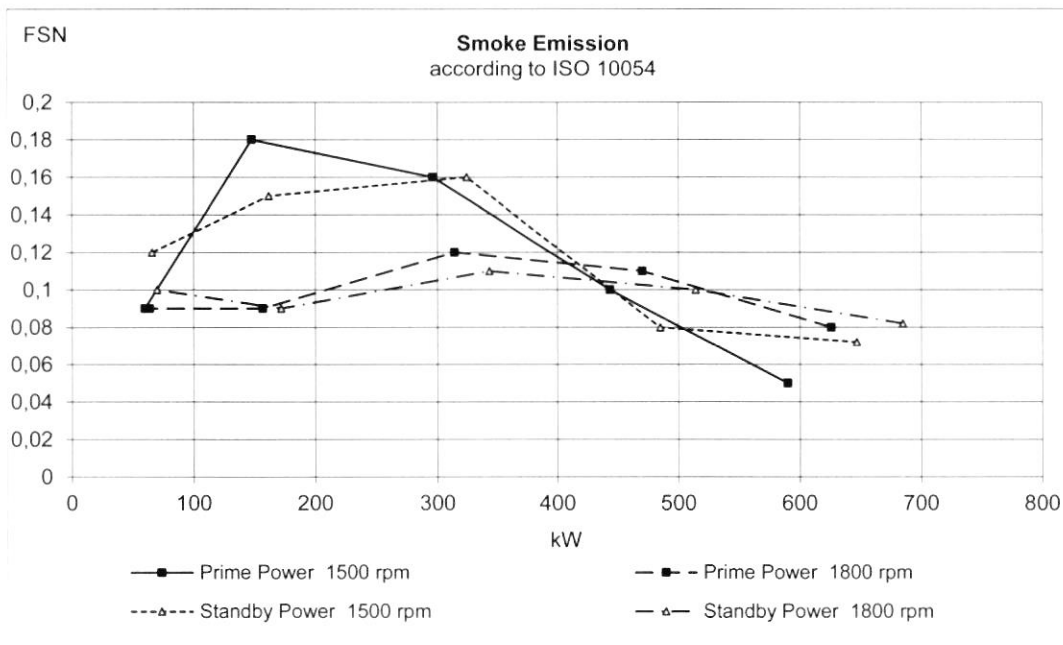
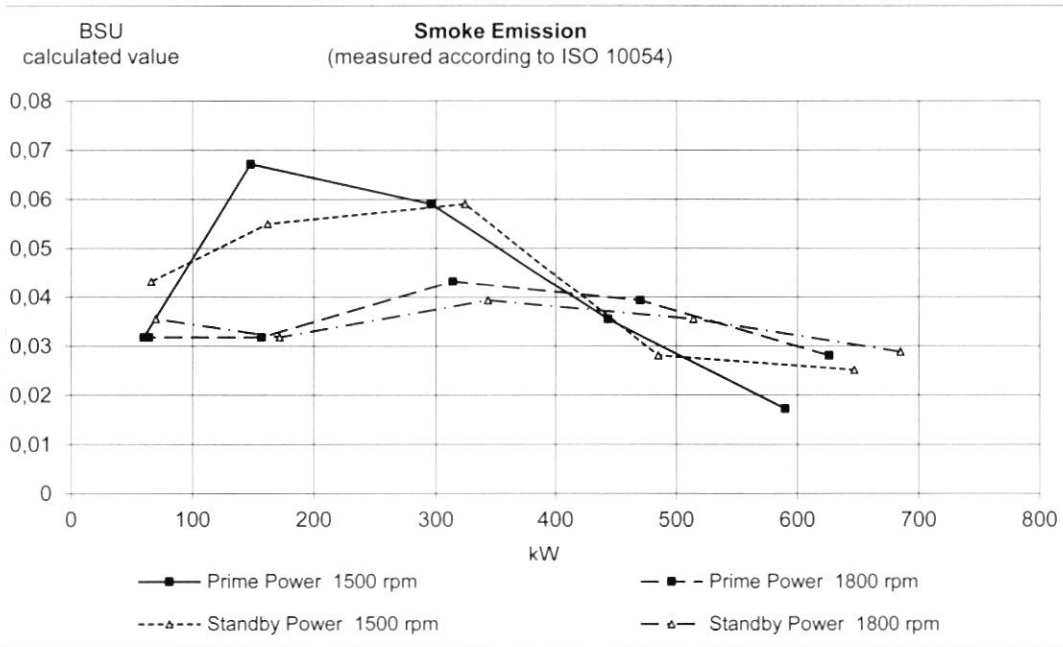
Voltage and type		24 V /insulated from earth	
Alternator:	make/output	A	Bosch / 80
	tacho output	Hz/alt. Rev	6
	drive ratio		3,94 : 1
Starter motor		make	Mitsubishi electric
		type	24 V 7 kW 12/3. 17F
		kW	7,0
Number of teeth on:	flywheel		153
	starter motor		12
Max wiring resistance main circuit		mΩ	3
Cranking current at +20°C		A	400
Crank engine speed at 20°C		rpm	155
Starter motor battery capacity:	min	Ah	2 x 145
	CCA at -18°C	Ah/A	900
Inlet manifold heater (at 24 V)		kW	3,6
Power relay for the manifold heater		A	1

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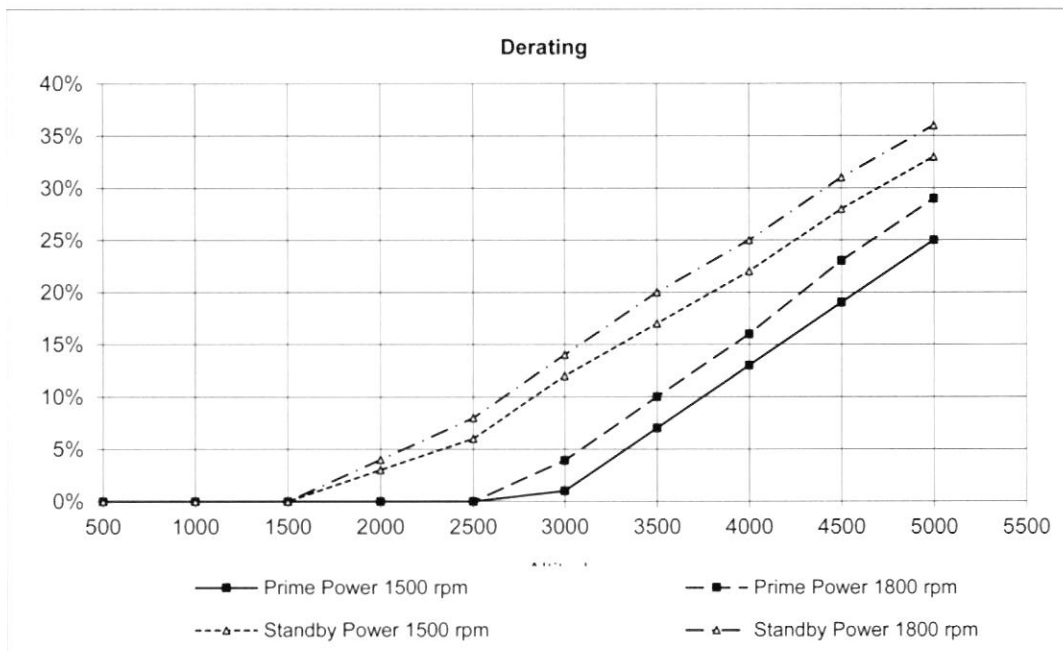
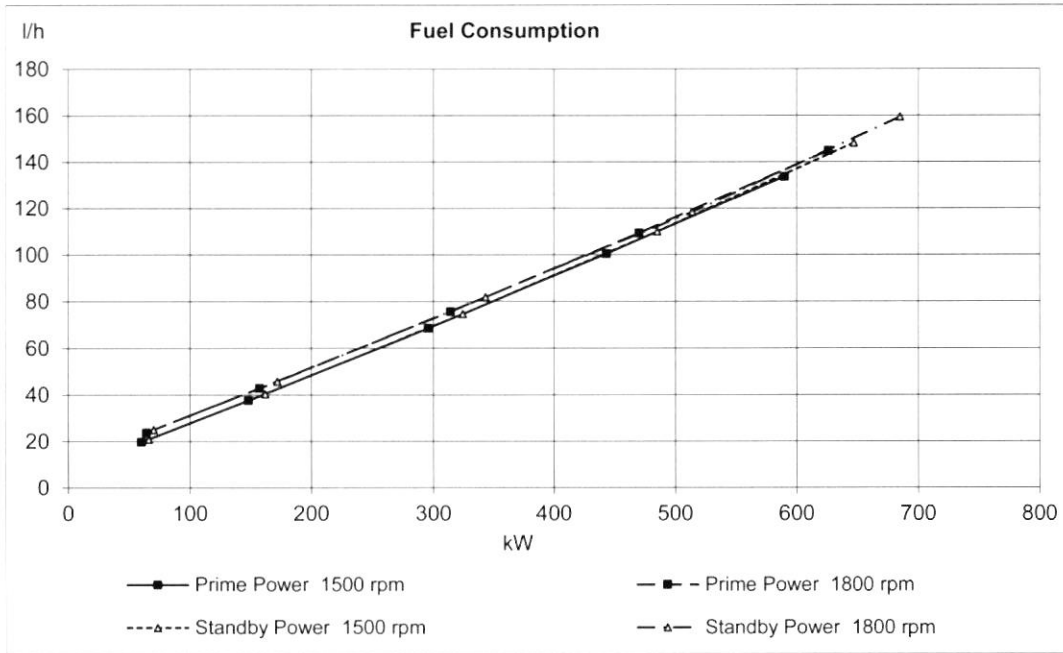
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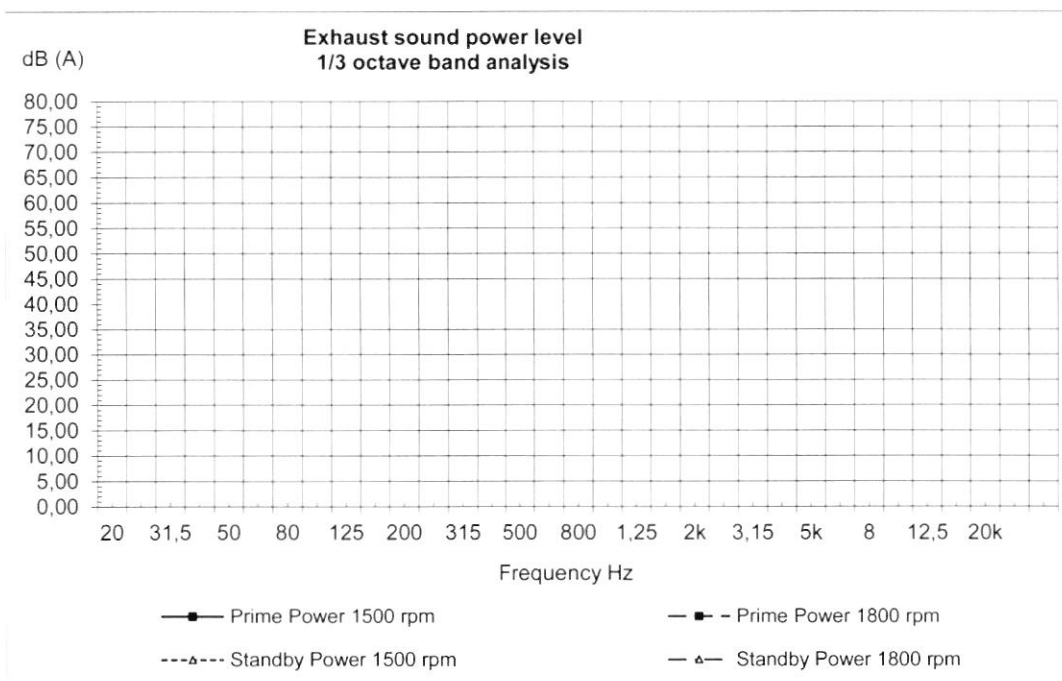
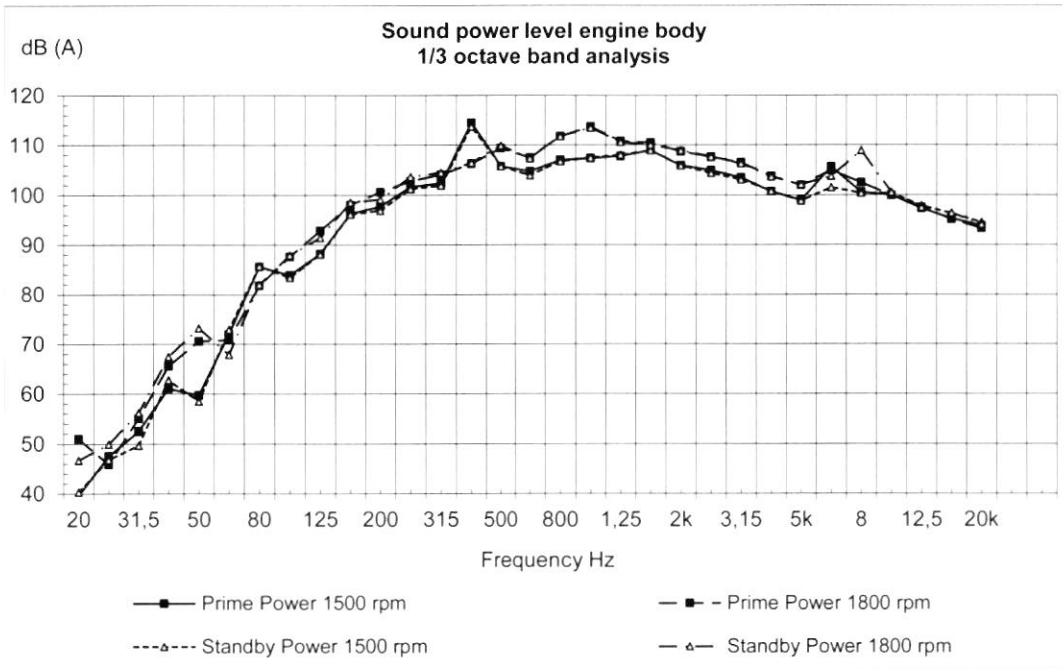
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23776347**03**

Cat® 3516E

High Power Density (HPD) Diesel Generator Sets

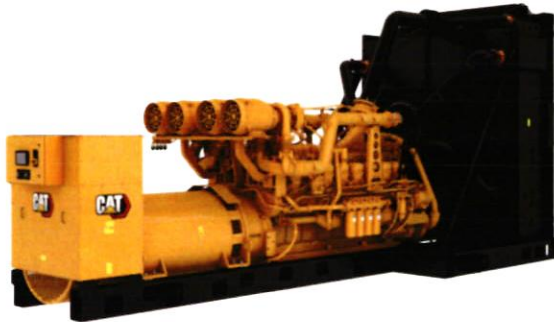


Image shown may not reflect actual configuration.

Bore – mm (in)	170 (6.69)
Stroke – mm (in)	215 (8.46)
Displacement – L (in ³)	78.1 (4766)
Compression Ratio	13.9:1
Aspiration	TA
Fuel System	MEUI
Governor Type	ADEM™ A5

Mission Critical 60 Hz kW (kVA)	Emissions Performance
3000 (3750)	U.S. EPA Certified for Emergency Stationary Applications (Tier 2)

Features

Cat® Diesel Engine

- Meets U.S. EPA Stationary Emergency Use Only (Tier 2) emissions standards
- Reliable performance proven in thousands of applications worldwide
- Certified alternative fuels including Hydrotreated Vegetable Oil (HVO), Renewable Diesel (RD) and Hydrotreated Renewable Diesel (HRD) which meet EN 15940 or ASTM D975 can be used or blended with EN 590 diesel

Generator Set Package

- Accepts 100% block load in one step
- Meets NFPA 110 loading requirements
- Conforms to ISO 8528-5 G3 load acceptance requirements
- Reliability verified through torsional vibration, fuel consumption, oil consumption, transient performance, and endurance testing

Alternators

- Superior motor starting capability minimizes need for oversizing generator
- Designed to match performance and output characteristics of Cat diesel engines

Cooling System

- Cooling systems available to operate in ambient temperatures up to 50°C (122°F)
- Tested to ensure proper generator set cooling

Cat Energy Control System (ECS)

- User-friendly interface and navigation
- Scalable system to meet a wide range of installation requirements
- Expansion modules and site specific programming for specific customer requirements
- Graphical touchscreen display
- Easily upgradeable

Warranty

- 24 months/1000-hour warranty for standby and mission critical ratings
- Extended service protection is available to provide extended coverage options

Worldwide Product Support

- Cat dealers have over 1,800 dealer branch stores operating in 200 countries
- Your local Cat dealer provides extensive post-sale support, including maintenance and repair agreements

Financing

- Caterpillar offers an array of financial products to help you succeed through financial service excellence
- Options include loans, finance lease, operating lease, working capital, and revolving line of credit
- Contact your local Cat dealer for availability in your region

**3516E Diesel Generator Sets
High Power Density (HPD)
Electric Power**



Standard and Optional Equipment

Engine

Air Cleaner

- ☐ Single element
- ☐ Dual element

Muffler

- ☐ Industrial grade (15 dB)
- ☐ Critical grade (25 dB)
- ☐ Hospital grade (35 dB)

Starting

- ☐ Standard batteries
- ☐ Oversized batteries
- ☐ Dual electric starting motors
- ☐ Air starter(s)
- ☐ Jacket water heater

Alternator

Output voltage

- ☐ 480V ☐ 12470V
- ☐ 600V ☐ 13200V
- ☐ 4160V ☐ 13800V

**Temperature Rise
(over 40°C ambient)**

- ☐ 150 °C
- ☐ 125 °C/130 °C

Winding type

- ☐ Random wound
- ☐ Form wound

Excitation

- ☐ Internal excitation (IE)
- ☐ Permanent magnet (PM)

Attachments

- ☐ Anti-condensation heater
- ☐ Stator and bearing temperature monitoring and protection

Power Termination

Type

- ☐ Bus bar
- ☐ Circuit breaker
- ☐ 5000A ☐ UL
- ☐ 3-pole ☐ 4-pole
- ☐ Manually operated
- ☐ Electrically operated

Trip Unit

- ☐ LSI ☐ LSI-G
- ☐ LSIG-P

Control System

Controller

- ☐ Cat ECS 100
- ☐ Cat ECS 200
- ☐ EMCP 4.4

Attachments

- ☐ Local annunciator module
- ☐ Remote annunciator module
- ☐ Expansion I/O module
- ☐ Remote monitoring software

Charging

- ☐ Battery charger – 10A
- ☐ Battery charger – 20A
- ☐ Battery charger – 35A

Vibration Isolators

- ☐ Spring
- ☐ Seismic rated

Cat Connect

Connectivity

- ☐ Ethernet
- ☐ Cellular

Extended Service Options

Terms

- ☐ 3 year
- ☐ 5 year
- ☐ 10 year

Coverage

- ☐ Silver
- ☐ Gold
- ☐ Platinum
- ☐ Platinum Plus

Ancillary Equipment

- ☐ Automatic transfer switch (ATS)
- ☐ Paralleling switchgear
- ☐ Paralleling controls

Certifications

- ☐ ULC 2200 Listed
- ☐ IBC seismic certification

Note: Some options may not be available on all models. Certifications may not be available with all model configurations.
Consult factory for availability.

3516E Diesel Generator Sets High Power Density (HPD) Electric Power



Package Performance

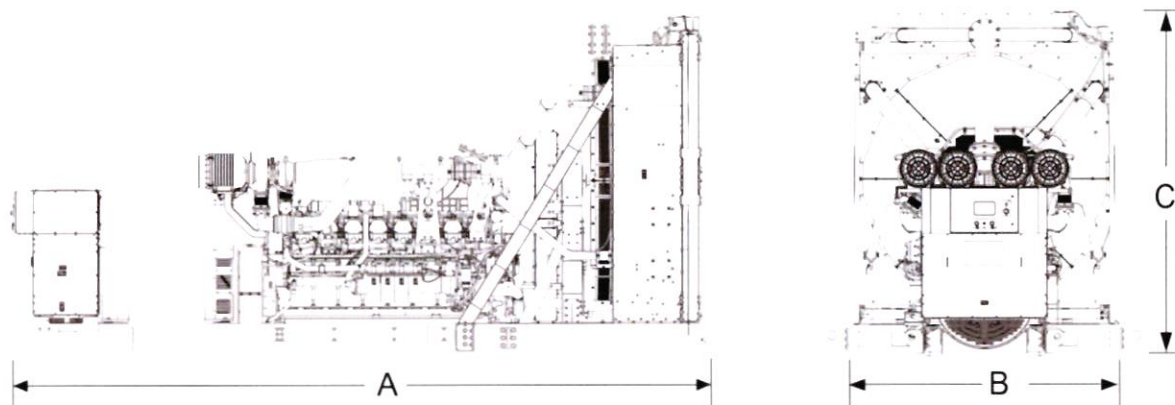
Performance	Mission Critical	
Engine Speed	1800 rpm	
Frequency	60 Hz	
Gen set power rating with fan	3000 ekW	
Gen set power rating with fan @ 0.8 power factor	3750 kVA	
Emissions	Tier 2 (EPA ESE)	
Performance number	EM4718-02	
Fuel Consumption		
100% load with fan – L/hr (gal/hr)	773.2	(204.3)
75% load with fan – L/hr (gal/hr)	624.2	(164.9)
50% load with fan – L/hr (gal/hr)	467.5	(123.5)
25% load with fan – L/hr (gal/hr)	246.4	(65.1)
Cooling System		
Radiator air flow restriction (system) – kPa (in. water)	0.12	(0.48)
Radiator air flow – m³/min (cfm)	3476	(122753)
Engine coolant capacity – L (gal)	179.0	(47.3)
Radiator coolant capacity – L (gal)	255.0	(67.4)
Total coolant capacity – L (gal)	434.0	(114.7)
Inlet Air		
Combustion air inlet flow rate – m³/min (cfm)	246.1	(8690.9)
Exhaust System		
Exhaust stack gas temperature – °C (°F)	483.3	(902.0)
Exhaust gas flow rate – m³/min (cfm)	645.8	(22806.2)
Exhaust system backpressure (maximum allowable) – kPa (in. water)	7.0	(28.1)
Heat Rejection		
Heat rejection to jacket water – kW (Btu/min)	917	(52144)
Heat rejection to exhaust (total) – kW (Btu/min)	3091	(175769)
Heat rejection to aftercooler – kW (Btu/min)	944	(53683)
Heat rejection to atmosphere from engine – kW (Btu/min)	158	(8993)
Heat rejection from alternator – kW (Btu/min)	119	(6739)
Emissions* (Nominal)		
NOx mg/Nm³ (g/hp-h)	2610.4	(5.63)
CO mg/Nm³ (g/hp-h)	305.9	(0.66)
HC mg/Nm³ (g/hp-h)	17.4	(0.04)
PM mg/Nm³ (g/hp-h)	17.6	(0.05)
Emissions* (Potential Site Variation)		
NOx mg/Nm³ (g/hp-h)	3132.5	(6.76)
CO mg/Nm³ (g/hp-h)	550.6	(1.20)
HC mg/Nm³ (g/hp-h)	23.1	(0.06)
PM mg/Nm³ (g/hp-h)	24.6	(0.06)

*mg/Nm³ levels are corrected to 5% O₂. Contact your local Cat dealer for further information.

3516E Diesel Generator Sets High Power Density (HPD) Electric Power



Weights and Dimensions



Standby Rating ekW (kVA)	Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Dry Weight kg (lb)
3000 (3750)	7678 (302.3)	2874 (113.2)	3639 (143.3)	20 380 (44,930)

Note: For reference only. Do not use for installation design. Contact your local Cat dealer for precise weights and dimensions.

Ratings Definitions

Mission Critical

Output available with varying load for the duration of the interruption of the normal source power. Average power output is 85% of the mission critical rated ekW. Typical peak demand up to 100% of rated ekW for up to 5% of the operating time. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Applicable Codes and Standards

AS 1359, ULC 2200 3rd edition, UL 489, UL 869A, IBC, IEC 60034-1, ISO 3046, ISO 8528, NEMA MG1-22, NEMA MG1-33, 2014/35/EU, 2006/42/EC, 2014/30/EU and facilitates compliance to NFPA 37, NFPA 70, NFPA 99, NFPA 110.

Note: Codes may not be available in all model configurations. Please consult your local Cat dealer for availability.

Data Center Applications

- All ratings Tier III/Tier IV compliant per Uptime Institute requirements.
- All ratings ANSI/TIA-942 compliant for Rated-1 through Rated-4 data centers.

Fuel Rates

Fuel consumption reported in accordance with ISO 3046-1, based on fuel oil of 35° API [16°C (60°F)] gravity having an LHV of 42,780 kJ/kg (18,390 Btu/lb) when used at 15°C (59°F) and weighing 850 g/liter (7.0936 lbs/U.S. gal). All fuel consumption values refer to rated engine power.

www.cat.com/electricpower

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Materials and specifications are subject to change without notice.

The International System of Units (SI) is used in this publication.

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Performance Number: EM4718

Change Level: 02

SALES MODEL:	3516E	COMBUSTION:	DIRECT INJECTION
BRAND:	CAT	ENGINE SPEED (RPM):	1,800
MACHINE SALES MODEL:		HERTZ:	60
ENGINE POWER (BHP):	4,393	FAN POWER (HP):	154.2
GEN POWER WITH FAN (EKW):	3,000.0	ASPIRATION:	TA
COMPRESSION RATIO:	13.9	AFTERCOOLER TYPE:	ATAAC
RATING LEVEL:	MISSION CRITICAL STANDBY	AFTERCOOLER CIRCUIT TYPE:	JW+OC, ATAAC
PUMP QUANTITY:	1	INLET MANIFOLD AIR TEMP (F):	122
FUEL TYPE:	DIESEL	JACKET WATER TEMP (F):	219.2
MANIFOLD TYPE:	DRY	TURBO CONFIGURATION:	PARALLEL
GOVERNOR TYPE:	ADEM5	TURBO QUANTITY:	4
ELECTRONICS TYPE:	ADEM5	TURBOCHARGER MODEL:	TPX44-H32-CT70-CA50-TT70-TA80
IGNITION TYPE:	CI	CERTIFICATION YEAR:	2020
INJECTOR TYPE:	MEUI-C	CRANKCASE BLOWBY RATE (FT3/HR):	4,390.2
FUEL INJECTOR:	5816980	FUEL RATE (RATED RPM) NO LOAD (GAL/HR):	17.2
UNIT INJECTOR TIMING (IN):	0.88	PISTON SPD @ RATED ENG SPD (FT/MIN):	2,539.4
REF EXH STACK DIAMETER (IN):	12		
MAX OPERATING ALTITUDE (FT):	6,562		

INDUSTRY	SUBINDUSTRY	APPLICATION
ELECTRIC POWER	STANDARD	PACKAGED GENSET

General Performance Data

THE INLET MANIFOLD AIR TEMP LISTED IN THE HEADER, AND IN THE GENERAL PERFORMANCE DATA, IS THE AVERAGE INLET MANIFOLD TEMP FRONT TO REAR ON THE ENGINE.

THIS STANDBY RATING IS FOR A STANDBY ONLY ENGINE ARRANGEMENT. RERATING THE ENGINE TO A STANDARD PRIME OR CONTINUOUS RATING IS NOT PERMITTED.

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	BRAKE MEAN EFF PRES (BMEP)	BRAKE SPEC FUEL CONSUMPTN (BSFC)	ISO BRAKE SPEC FUEL CONSUMPTN (BSFC)	VOL FUEL CONSUMPTN (VFC)	ISO VOL FUEL CONSUMPTN (VFC)	ELEC SPEC FUEL CONSUMPTN (ESFC)	ISO ELEC SPEC FUEL CONSUMPTN (ESFC)
EKW	%	BHP	PSI	LB/BHP-HR	LB/BHP-HR	GAL/HR	GAL/HR	LB/EKW-HR	LB/EKW-HR
3,000.0	100	4,393	406	0.336	0.330	208.2	204.3	0.492	0.483
2,700.0	90	3,976	367	0.340	0.333	190.3	186.7	0.500	0.491
2,400.0	80	3,557	328	0.349	0.343	175.1	171.7	0.517	0.508
2,250.0	75	3,347	309	0.356	0.349	168.1	164.9	0.530	0.520
2,100.0	70	3,137	290	0.362	0.355	160.2	157.1	0.541	0.531
1,800.0	60	2,716	251	0.370	0.363	141.7	139.0	0.559	0.548
1,500.0	50	2,294	212	0.389	0.382	125.9	123.5	0.595	0.584
1,200.0	40	1,872	173	0.406	0.398	107.2	105.2	0.634	0.622
900.0	30	1,449	134	0.401	0.393	81.8	80.3	0.645	0.633
750.0	25	1,236	114	0.381	0.374	66.4	65.1	0.628	0.616
600.0	20	1,022	94	0.392	0.384	56.4	55.4	0.667	0.655
300.0	10	590	55	0.441	0.433	36.7	36.0	0.869	0.852

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	INLET MFLD PRES	INLET MFLD TEMP	EXH MFLD TEMP	EXH MFLD PRES	ENGINE OUTLET TEMP	COMPRESSOR OUTLET PRES	COMPRESSOR OUTLET TEMP
EKW	%	BHP	IN-HG	DEG F	DEG F	IN-HG	DEG F	IN-HG	DEG F
3,000.0	100	4,393	91.7	119.6	1,263.2	61.5	901.9	100	451.3
2,700.0	90	3,976	82.2	119.3	1,247.8	54.4	904.4	90	423.5
2,400.0	80	3,557	74.9	118.9	1,242.3	48.9	913.3	82	403.8
2,250.0	75	3,347	72.1	119.0	1,240.1	46.9	917.3	79	395.9
2,100.0	70	3,137	67.8	119.3	1,240.0	43.8	925.8	74	384.0
1,800.0	60	2,716	56.0	120.2	1,245.9	35.5	953.4	62	348.0
1,500.0	50	2,294	47.1	118.6	1,248.2	29.9	973.6	52	318.8
1,200.0	40	1,872	33.9	114.2	1,255.9	21.9	1,002.7	38	269.7
900.0	30	1,449	16.7	112.4	1,203.6	12.3	984.1	20	191.4
750.0	25	1,236	8.9	110.5	1,091.8	8.1	915.3	11	150.2
600.0	20	1,022	5.8	108.3	1,004.5	6.6	847.7	8	133.3
300.0	10	590	0.9	104.2	780.2	4.2	671.9	3	108.0

General Performance Data (Continued)

GENSET POWER	PERCENT LOAD	ENGINE POWER	WET INLET AIR VOL	ENGINE OUTLET	WET INLET AIR	WET EXH GAS	WET EXH VOL	DRY EXH VOL
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PERFORMANCE DATA[EM4718]

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WITH FAN			FLOW RATE	WET EXH GAS VOL FLOW RATE	MASS FLOW RATE	MASS FLOW RATE	FLOW RATE (32 DEG F AND 29.98 IN HG)	FLOW RATE (32 DEG F AND 29.98 IN HG)
EKW	%	BHP	CFM	CFM	LB/HR	LB/HR	FT3/MIN	FT3/MIN
3,000.0	100	4,393	8,689.8	22,803.0	37,643.0	39,120.1	8,234.2	7,508.7
2,700.0	90	3,976	8,100.6	21,092.5	34,770.1	36,119.8	7,602.7	6,941.1
2,400.0	80	3,557	7,618.2	19,872.8	32,572.6	33,813.7	7,116.5	6,503.0
2,250.0	75	3,347	7,434.9	19,421.7	31,724.7	32,917.4	6,934.8	6,343.9
2,100.0	70	3,137	7,140.4	18,713.3	30,413.9	31,551.3	6,641.0	6,078.0
1,800.0	60	2,716	6,316.6	16,737.0	26,667.4	27,671.7	5,823.4	5,324.6
1,500.0	50	2,294	5,698.5	15,244.3	23,951.1	24,844.2	5,229.6	4,787.6
1,200.0	40	1,872	4,748.1	12,895.5	19,832.8	20,593.5	4,335.7	3,959.7
900.0	30	1,449	3,421.3	9,198.1	14,210.7	14,791.0	3,132.4	2,847.7
750.0	25	1,236	2,813.2	7,143.6	11,655.6	12,126.4	2,554.4	2,323.7
600.0	20	1,022	2,588.4	6,214.7	10,705.5	11,105.8	2,337.3	2,139.1
300.0	10	590	2,189.5	4,545.1	9,126.5	9,387.3	1,974.8	1,838.2

Heat Rejection Data

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXHAUST RECOVERY TO 350F	FROM OIL COOLER	FROM AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIGH HEAT VALUE ENERGY
EKW	%	BHP	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN
3,000.0	100	4,393	52,144	8,993	175,769	91,810	23,854	53,683	186,315	447,861	477,084
2,700.0	90	3,976	48,348	8,755	162,671	85,129	21,755	46,560	168,590	408,442	435,094
2,400.0	80	3,557	45,188	8,663	152,310	80,972	19,852	39,923	150,835	372,717	397,037
2,250.0	75	3,347	43,721	8,625	147,003	79,360	18,929	37,161	141,942	355,388	378,578
2,100.0	70	3,137	42,430	8,593	141,837	77,229	18,002	34,024	133,031	337,986	360,040
1,800.0	60	2,716	40,153	8,591	130,286	71,150	16,087	27,442	115,184	302,034	321,742
1,500.0	50	2,294	37,137	8,662	118,761	66,069	14,137	20,821	97,288	265,422	282,742

Emissions Data

PARTICULATE EMISSIONS WERE NOT MEASURED FOR THIS RATING. PUBLISHED PM DATA IS ESTIMATED FROM MEASURED SMOKE METER DATA.

DIESEL

RATED SPEED NOMINAL DATA: 1800 RPM

GENSET POWER WITH FAN	EKW	3,000.0	2,250.0	1,500.0	750.0	300.0
PERCENT LOAD	%	100	75	50	25	10
ENGINE POWER	BHP	4,393	3,347	2,294	1,236	590
TOTAL NOX (AS NO2)	G/HR	24,589	12,160	6,934	8,735	6,302
TOTAL CO	G/HR	2,899	2,470	1,673	2,077	1,535
TOTAL HC	G/HR	190	142	118	84	160
TOTAL CO2	KG/HR	2,097	1,691	1,268	673	371
PART MATTER	G/HR	200.9	249.8	229.1	153.7	16.6
TOTAL NOX (AS NO2) (CORR 5% O2)	MG/NM3	2,610.4	1,597.8	1,214.4	2,955.6	3,548.5
TOTAL CO (CORR 5% O2)	MG/NM3	305.9	319.2	290.7	686.3	917.4
TOTAL HC (CORR 5% O2)	MG/NM3	17.4	16.0	17.7	24.0	84.5
PART MATTER (CORR 5% O2)	MG/NM3	17.6	27.2	33.4	41.1	11.3
TOTAL NOX (AS NO2) (CORR 15% O2)	MG/NM3	968.6	592.9	450.6	1,096.7	1,316.7
TOTAL CO (CORR 15% O2)	MG/NM3	113.5	118.5	107.9	254.7	340.4
TOTAL HC (CORR 15% O2)	MG/NM3	6.4	5.9	6.6	8.9	31.4
PART MATTER (CORR 15% O2)	MG/NM3	6.5	10.1	12.4	15.3	4.2
TOTAL NOX (AS NO2) (CORR 5% O2)	PPM	1,272	778	592	1,440	1,728
TOTAL CO (CORR 5% O2)	PPM	245	255	233	549	734
TOTAL HC (CORR 5% O2)	PPM	32	30	33	45	158
TOTAL NOX (AS NO2) (CORR 15% O2)	PPM	472	289	219	534	641
TOTAL CO (CORR 15% O2)	PPM	91	95	86	204	272
TOTAL HC (CORR 15% O2)	PPM	12	11	12	17	59
TOTAL NOX (AS NO2)	G/HP-HR	5.63	3.65	3.03	7.07	10.68
TOTAL CO	G/HP-HR	0.66	0.74	0.73	1.68	2.60
TOTAL HC	G/HP-HR	0.04	0.04	0.05	0.07	0.27

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PART MATTER	G/HP-HR	0.05	0.07	0.10	0.12	0.03
TOTAL NOX (AS NO2)	G/KW-HR	7.66	4.96	4.12	9.61	14.53
TOTAL CO	G/KW-HR	0.90	1.01	0.99	2.29	3.54
TOTAL HC	G/KW-HR	0.06	0.06	0.07	0.09	0.37
PART MATTER	G/KW-HR	0.06	0.10	0.14	0.17	0.04
TOTAL NOX (AS NO2)	LB/HR	54.21	26.81	15.29	19.26	13.89
TOTAL CO	LB/HR	6.39	5.44	3.69	4.58	3.38
TOTAL HC	LB/HR	0.42	0.31	0.26	0.18	0.35
TOTAL CO2	LB/HR	4.623	3.728	2.794	1.484	819
PART MATTER	LB/HR	0.44	0.55	0.51	0.34	0.04
OXYGEN IN EXH	%	8.9	9.4	9.5	8.5	12.0
DRY SMOKE OPACITY	%	2.0	2.6	2.9	4.3	0.2
BOSCH SMOKE NUMBER		0.86	0.96	1.02	1.16	0.70

RATED SPEED POTENTIAL SITE VARIATION: 1800 RPM

GENSET POWER WITH FAN	EKW	3,000.0	2,250.0	1,500.0	750.0	300.0
PERCENT LOAD	%	100	75	50	25	10
ENGINE POWER	BHP	4,393	3,347	2,294	1,236	590
TOTAL NOX (AS NO2)	G/HR	29,507	14,592	8,321	10,482	7,562
TOTAL CO	G/HR	5,219	4,446	3,012	3,738	2,763
TOTAL HC	G/HR	253	188	157	111	213
PART MATTER	G/HR	281.2	349.8	320.7	215.1	23.3
TOTAL NOX (AS NO2) (CORR 5% O2)	MG/NM3	3,132.5	1,917.4	1,457.3	3,546.7	4,258.2
TOTAL CO (CORR 5% O2)	MG/NM3	550.6	574.6	523.3	1,235.4	1,651.3
TOTAL HC (CORR 5% O2)	MG/NM3	23.1	21.3	23.6	31.9	112.4
PART MATTER (CORR 5% O2)	MG/NM3	24.6	38.1	46.7	57.6	15.8
TOTAL NOX (AS NO2) (CORR 15% O2)	MG/NM3	1,162.4	711.5	540.8	1,316.1	1,580.1
TOTAL CO (CORR 15% O2)	MG/NM3	204.3	213.2	194.2	458.4	612.8
TOTAL HC (CORR 15% O2)	MG/NM3	8.6	7.9	8.8	11.8	41.7
PART MATTER (CORR 15% O2)	MG/NM3	9.1	14.1	17.3	21.4	5.9
TOTAL NOX (AS NO2) (CORR 5% O2)	PPM	1,526	934	710	1,728	2,074
TOTAL CO (CORR 5% O2)	PPM	441	460	419	988	1,321
TOTAL HC (CORR 5% O2)	PPM	43	40	44	60	210
TOTAL NOX (AS NO2) (CORR 15% O2)	PPM	566	347	263	641	770
TOTAL CO (CORR 15% O2)	PPM	163	171	155	367	490
TOTAL HC (CORR 15% O2)	PPM	16	15	16	22	78
TOTAL NOX (AS NO2)	G/HP-HR	6.76	4.38	3.64	8.49	12.82
TOTAL CO	G/HP-HR	1.20	1.33	1.32	3.03	4.68
TOTAL HC	G/HP-HR	0.06	0.06	0.07	0.09	0.36
PART MATTER	G/HP-HR	0.06	0.10	0.14	0.17	0.04
TOTAL NOX (AS NO2)	G/KW-HR	9.19	5.95	4.94	11.54	17.43
TOTAL CO	G/KW-HR	1.63	1.81	1.79	4.11	6.37
TOTAL HC	G/KW-HR	0.08	0.08	0.09	0.12	0.49
PART MATTER	G/KW-HR	0.09	0.14	0.19	0.24	0.05
TOTAL NOX (AS NO2)	LB/HR	65.05	32.17	18.34	23.11	16.67
TOTAL CO	LB/HR	11.51	9.80	6.64	8.24	6.09
TOTAL HC	LB/HR	0.56	0.42	0.35	0.25	0.47
PART MATTER	LB/HR	0.62	0.77	0.71	0.47	0.05

Regulatory Information

EPA EMERGENCY STATIONARY			2011 - ----	
GASEOUS EMISSIONS DATA MEASUREMENTS PROVIDED TO THE EPA ARE CONSISTENT WITH THOSE DESCRIBED IN EPA 40 CFR PART 60 SUBPART IIII AND ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. THE "MAX LIMITS" SHOWN BELOW ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE EMERGENCY STATIONARY REGULATIONS.				
Locality	Agency	Regulation	Tier/Stage	Max Limits - G/BKW - HR
U.S. (INCL CALIF)	EPA	STATIONARY	EMERGENCY STATIONARY	CO: 3.5 NOx + HC: 6.4 PM: 0.20

Altitude Derate Data

A BLANK IN THE ALTITUDE DERATE TABLE SIGNIFIES THAT NO RATING IS AVAILABLE AT THAT SPECIFIED ALTITUDE AND AMBIENT TEMPERATURE.

THE TEMPERATURES LISTED IN THE CHART ARE AMBIENT TEMPERATURES. THE FOLLOWING DERATE CHART WAS CALCULATED ASSUMING A 5 DEG C RISE IN AIR TEMPERATURE BETWEEN AMBIENT AND THE TURBOCHARGER INLET.

STANDARD

ALTITUDE CORRECTED POWER CAPABILITY (BHP)

AMBIENT OPERATING TEMP (F)	30	40	50	60	70	80	90	100	110	120	130	140	NORMAL
ALTITUDE (FT)													
0	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	1,927		4,393
1,000	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	1,860		4,393
2,000	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,304		4,393
3,000	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,313	2,786		4,393
4,000	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,355	4,037	1,625			4,393
5,000	4,393	4,393	4,393	4,393	4,393	4,383	4,334	4,221	3,517				4,393
6,000	4,393	4,393	4,393	4,356	4,307	4,246	4,183	4,064	2,023				4,393
7,000	4,393	4,380	4,306	4,226	4,160	4,072	3,968	3,778					4,378
8,000	4,347	4,247	4,153	4,051	3,974	3,836	3,573	3,093					4,274
9,000	4,203	4,068	3,954	3,831	3,738	3,550	3,208	2,621					4,152
10,000	3,990	3,831	3,691	3,541	3,442	3,250	2,968	2,196					3,986
11,000	3,755	3,560	3,390	3,239	3,162	3,018	2,762	1,678					3,815
12,000	3,413	3,252	3,123	3,015	2,940	2,762	2,300	1,104					3,539
13,000	3,070	2,977	2,897	2,829	2,750	2,477	1,702						3,198
14,000	2,754	2,728	2,691	2,660	2,553	2,240							2,841
15,000	2,454	2,461	2,285	2,143	2,057	1,713							2,523

Cross Reference

Test Spec	Setting	Engine Arrangement	Engineering Model	Engineering Model Version	Start Effective Serial Number	End Effective Serial Number
5643812	LL2329	5577462	PG296	-	ZNL00001	

Supplementary Data

Type	Classification	Performance Number
ALTITUDE DATA	HIGH RESOLUTION	EM5585

Performance Parameter Reference

Parameters Reference:DM9600-15
PERFORMANCE DEFINITIONS

PERFORMANCE DEFINITIONS DM9600

APPLICATION:

Engine performance tolerance values below are representative of a typical production engine tested in a calibrated dynamometer test cell at SAE J1995 standard reference conditions. Caterpillar maintains ISO9001:2000 certified quality management systems for engine test Facilities to assure accurate calibration of test equipment. Engine test data is corrected in accordance with SAE J1995. Additional reference material SAE J1228, J1349, ISO 8665, 3046-1:2002E, 3046-3:1989, 1585, 2534, 2288, and 9249 may apply in part or are similar to SAE J1995. Special engine rating request (SERR) test data shall be noted.

PERFORMANCE PARAMETER TOLERANCE FACTORS:

Power +/- 3%

Torque +/- 3%

Exhaust stack temperature +/- 8%

Inlet airflow +/- 5%

Intake manifold pressure-gage +/- 10%

Exhaust flow +/- 6%

Specific fuel consumption +/- 3%

Specific fuel consumption (C7-C18) +/- 4%

Fuel rate +/- 5%

Specific DEF consumption +/- 3%

DEF rate +/- 5%

PERFORMANCE DATA[EM4718]

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Heat rejection +/- 5%

Heat rejection exhaust only +/- 10%

Heat rejection CEM only +/- 10%

Heat Rejection values based on using treated water.

Torque is included for truck and industrial applications, do not use for Gen Set or steady state applications.

On C7 - C18 engines, at speeds of 1100 RPM and under these values are provided for reference only, and may not meet the tolerance listed.

On 3500 and C175 engines, at speeds below Peak Torque these values are provided for reference only, and may not meet the tolerance listed.

These values do not apply to C280/3600. For these models, see the tolerances listed below.

C280/3600 HEAT REJECTION TOLERANCE FACTORS

Heat rejection +/- 10%

Heat rejection to Atmosphere +/- 50%

Heat rejection to Lube Oil +/- 20%

Heat rejection to Aftercooler +/- 5%

TEST CELL TRANSDUCER TOLERANCE FACTORS:

Torque +/- 0.5%

Speed +/- 0.2%

Fuel flow +/- 1.0%

Temperature +/- 2.0 C degrees

Intake manifold pressure +/- 0.1 kPa

OBSERVED ENGINE PERFORMANCE IS CORRECTED TO SAE J1995 REFERENCE

AIR AND FUEL CONDITIONS.

REFERENCE ATMOSPHERIC INLET AIR

FOR 3500 ENGINES AND SMALLER

SAE J1228 AUG2002 for marine engines, and J1995 JAN2014 for other engines, reference atmospheric pressure is 100 KPA (29.61 in hg), and standard temperature is 25deg C (77 deg F) at 30% relative humidity at the stated aftercooler water temp, or inlet manifold temp.

FOR 3600 ENGINES

Engine rating obtained and presented in accordance with ISO 3046/1 and SAE J1995 JANJAN2014 reference atmospheric pressure is 100 KPA (29.61 in hg), and standard temperature is 25deg C (77 deg F) at 30% relative humidity and 150M altitude at the stated aftercooler water temperature.

MEASUREMENT LOCATION FOR INLET AIR TEMPERATURE

Location for air temperature measurement air cleaner inlet at stabilized operating conditions.

REFERENCE EXHAUST STACK DIAMETER

The Reference Exhaust Stack Diameter published with this dataset is only used for the calculation of Smoke Opacity values displayed in this dataset. This value does not necessarily represent the actual stack diameter of the engine due to the variety of exhaust stack adapter options available. Consult the price list, engine order or general dimension drawings for the actual stack diameter size ordered or options available.

REFERENCE FUEL

DIESEL

Reference fuel is #2 distillate diesel with a 35API gravity.

A lower heating value is 42,780 KJ/KG (18,390 BTU/LB) when used at 15 deg C (59 deg F), where the density is 850 G/Liter (7.0936 Lbs/Gal).

GAS

Reference natural gas fuel has a lower heating value of 33.74 KJ/L (905 BTU/CU Ft). Low BTU ratings are based on 18.64 KJ/L (500 BTU/CU FT) lower heating value gas. Propane ratings are based on 87.56 KJ/L (2350 BTU/CU Ft) lower heating value gas.

ENGINE POWER (NET) IS THE CORRECTED FLYWHEEL POWER (GROSS) LESS

EXTERNAL AUXILIARY LOAD

Engine corrected gross output includes the power required to drive standard equipment; lube oil, scavenge lube oil, fuel transfer, common rail fuel, separate circuit aftercooler and jacket water pumps. Engine net power available for the external (flywheel) load is calculated by subtracting the sum of auxiliary load from the corrected gross flywheel out put power. Typical auxiliary loads are radiator cooling fans, hydraulic pumps, air compressors and battery charging alternators. For Tier 4 ratings additional Parasitic losses would also include Intake, and Exhaust Restrictions.

ALTITUDE CAPABILITY

Altitude capability is the maximum altitude above sea level at standard temperature and standard pressure at which the engine could develop full rated output power on the current performance data set.

Standard temperature values versus altitude could be seen on TM2001.

When viewing the altitude capability chart the ambient temperature is the inlet air temp at the compressor inlet.

Engines with ADEM MEUI and HEUI fuel systems operating at conditions above the defined altitude capability derate for atmospheric pressure and temperature conditions outside the values

PERFORMANCE DATA[EM4718]

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defined, see TM2001.

Mechanical governor controlled unit injector engines require a setting change for operation at conditions above the altitude defined on the engine performance sheet. See your Caterpillar technical representative for non standard ratings.

REGULATIONS AND PRODUCT COMPLIANCE

TMI Emissions information is presented at 'nominal' and 'Potential Site Variation' values for standard ratings. No tolerances are applied to the emissions data. These values are subject to change at any time. The controlling federal and local emission requirements need to be verified by your Caterpillar technical representative.

Customer's may have special emission site requirements that need to be verified by the Caterpillar Product Group engineer.

EMISSION CYCLE LIMITS

Cycle emissions Max Limits apply to cycle-weighted averages only. Emissions at individual load points may exceed the cycle-weighted limit.

WET & DRY EXHAUST/EMISSIONS DESCRIPTION:

Wet - Total exhaust flow or concentration of total exhaust flow

Dry - Total exhaust flow minus water vapor or concentration of exhaust flow with water vapor excluded

EMISSIONS DEFINITIONS:

Emissions : DM1176

EMISSION CYCLE DEFINITIONS

1. For constant-speed marine engines for ship main propulsion, including diesel-electric drive, test cycle E2 shall be applied, for controllible-pitch propeller sets
test cycle E2 shall be applied.

2. For propeller-law-operated main and propeller-law-operated auxiliary engines the test cycle E3 shall be applied.

3. For constant-speed auxiliary engines test cycle D2 shall be applied.

4. For variable-speed, variable-load auxiliary engines, not included above, test cycle C1 shall be applied.

HEAT REJECTION DEFINITIONS:

Diesel Circuit Type and HHV Balance : DM9500

HIGH DISPLACEMENT (HD) DEFINITIONS:

3500 : EM1500

RATING DEFINITIONS:

Agriculture : TM6008

Fire Pump : TM6009

Generator Set : TM6035

Generator (Gas) : TM6041

Industrial Diesel : TM6010

Industrial (Gas) : TM6040

Irrigation : TM5749

Locomotive : TM6037

Marine Auxiliary : TM6036

Marine Prop (Except 3600) : TM5747

Marine Prop (3600 only) : TM5748

MSHA : TM6042

Oil Field (Petroleum) : TM6011

Off-Highway Truck : TM6039

On-Highway Truck : TM6038

SOUND DEFINITIONS:

Sound Power : DM8702

Sound Pressure : TM7080

Date Released : 03/12/24

Engine Parameters

Engine Manufacturer	Caterpillar		Raw Emissions		
Engine Model	3516E		NOx	6.76	g/bhp-hr
Engine Power	4393	bhp	CO	1.20	g/bhp-hr
Exhaust Flowrate	39120	lb/hr	THC	0.06	g/bhp-hr
Exhaust Temperature	902	° F	PM	0.06	g/bhp-hr
Load	100%		Oxygen	8.9	%
Fuel	Diesel				
Engine Data Sheet	3516E_3.0MW_EM4718-02_Perf Data_E.pdf				

System Performance

Guaranteed Emissions for EPA Tier IV Compliance (6)			Expected Backpressure		
NOx	0.34	g/bhp-hr	Fresh	17.76	inches of water
CO	0.13	g/bhp-hr	DPF Fully Loaded	25.64	inches of water
THC	0.05	g/bhp-hr			
PM	0.02	g/bhp-hr	Required Utilities		
Attenuation	35 - 45	dBA	Urea Flow Rate	15.10	gal/hr

Cat® C32

Diesel Generator Sets



Image shown may not reflect actual configuration

Bore – mm (in)	145 (5.7)
Stroke – mm (in)	162 (6.4)
Displacement – L (in ³)	32.1 (1959)
Compression Ratio	14.0:1
Aspiration	TA
Fuel System	EUI
Governor Type	ADEM™ A4

Standby 60 Hz ekW (kVA)	Mission Critical 60 Hz ekW (kVA)	Prime 60 Hz ekW (kVA)	Emissions Performance
1100 (1375.0)	1100 (1375.0)	1000 (1250.0)	U.S. EPA Emergency Stationary Use Only (Tier 2)
1250 (1562.5)	1250 (1562.5)	1136 (1420.0)	

Standard Features

Cat® Diesel Engine

- Designed and tested to meet the U.S. EPA Emergency Stationary Use Only (Tier 2) emission standards
- Reliable and consistent performance proven in thousands of applications worldwide

Generator Set Package

- Accepts 100% block load in one step and meets NFPA 110 loading requirements
- Conforms to ISO 8528-5 G3 load acceptance requirements
- Reliability is verified through prototype testing, which includes torsional vibration, fuel consumption, oil consumption, transient performance, and endurance testing

Alternators

- Superior motor starting capability minimizes the need for oversizing the generator
- Designed to match the performance and output characteristics of Cat diesel engines

Cooling System

- Cooling systems available to operate in ambient temperatures up to 50°C (122°F)
- Tested to ensure proper generator set cooling

EMCP 4 Control Panels

- User-friendly interface and navigation
- Scalable system to meet a wide range of installation requirements
- Expansion modules and site specific programming for specific customer requirements

Warranty

- 24 months/1000-hour warranty for standby and mission critical ratings
- 12 months/unlimited hour warranty for prime and continuous ratings
- Extended service protection is available to provide extended coverage options

Worldwide Product Support

- Cat dealers have over 1,800 dealer branch stores operating in 200 countries
- Your local Cat dealer provides extensive post-sale support, including maintenance and repair agreements

Financing

- Caterpillar offers an array of financial products to help you succeed through financial service excellence
- Options include loans, finance lease, operating lease, working capital, and revolving line of credit
- Contact your local Cat dealer for availability in your region

Optional Equipment

Engine

Air Cleaner

- ☐ Single element
- ☐ Dual element
- ☐ Heavy duty

Muffler

- ☐ Industrial grade (15 dB)

Starting

- ☐ Standard batteries
- ☐ Oversized batteries
- ☐ Standard electric starter
- ☐ Dual duty electric starter
- ☐ Jacket water heater

Alternator

Output voltage

- ☐ 220V ☐ 440V
- ☐ 240V ☐ 480V
- ☐ 380V ☐ 600V
- ☐ 400V

Temperature Rise (over 40°C ambient)

- ☐ 150°C
- ☐ 125°C/130°C
- ☐ 105°C
- ☐ 80°C

Winding type

- ☐ Random wound
- ☐ Form wound

Excitation

- ☐ Self excited
- ☐ Internal excitation (IE)
- ☐ Permanent magnet (PM)

Attachments

- ☐ Anti-condensation heater
- ☐ Stator and bearing temperature monitoring and protection

Power Termination

Type

- ☐ Bus bar
- ☐ Circuit breaker
- ☐ 400A ☐ 800A
- ☐ 1200A ☐ 1600A
- ☐ 2000A ☐ 2500A
- ☐ 3000A ☐ 3200A
- ☐ UL ☐ IEC
- ☐ 3-pole ☐ 4-pole
- ☐ Manually operated
- ☐ Electrically operated

Trip Unit

- ☐ LSI ☐ LSI-G
- ☐ LSIG-P

Factory Enclosure

- ☐ Weather protective
- ☐ Sound attenuated

Attachments

- ☐ Cold weather bundle
- ☐ DC lighting package
- ☐ AC lighting package
- ☐ Motorized louvers

Fuel Tank

- ☐ Sub-base
- ☐ 1000 gal (3875 L)
- ☐ 2000 gal (7570 L)
- ☐ 3600 gal (13627 L)

Control System

Controller

- ☐ EMCP 4.2B
- ☐ EMCP 4.3
- ☐ EMCP 4.4

Attachments

- ☐ Local annunciator module
- ☐ Remote annunciator module
- ☐ Expansion I/O module
- ☐ Remote monitoring software

Charging

- ☐ Battery charger – 10A

Vibration Isolators

- ☐ Rubber
- ☐ Spring
- ☐ Seismic rated

Cat Connect

Connectivity

- ☐ Ethernet
- ☐ Cellular
- ☐ Satellite

Extended Service Options

Terms

- ☐ 2 year (prime)
- ☐ 3 year
- ☐ 5 year
- ☐ 10 year

Coverage

- ☐ Silver
- ☐ Gold
- ☐ Platinum
- ☐ Platinum Plus

Ancillary Equipment

- ☐ Automatic transfer switch (ATS)
- ☐ Uninterruptible power supply (UPS)
- ☐ Paralleling switchgear
- ☐ Paralleling controls

Certifications

- ☐ UL 2200 Listed
- ☐ CSA
- ☐ IBC seismic certification
- ☐ OSHPD pre-approval

Note: Some options may not be available on all models. Certifications may not be available with all model configurations. Consult factory for availability.

Package Performance

Performance	Standby		Mission Critical		Prime	
Frequency	60 Hz		60 Hz		60 Hz	
Gen set power rating with fan	1250 ekW		1250 ekW		1136 ekW	
Gen set power rating with fan @ 0.8 power factor	1562.5 kVA		1562.5 kVA		1420.0 kVA	
Emissions	EPA ESE (Tier 2)		EPA ESE (Tier 2)		EPA ESE (Tier 2)	
Performance number	EM2324-09		EM2532-03		EM2538-01	
Fuel Consumption						
100% load with fan – L/hr (gal/hr)	330.9	(87.4)	330.9	(87.4)	306.6	(81.0)
75% load with fan – L/hr (gal/hr)	268.9	(71.0)	269.1	(71.1)	241.4	(63.8)
50% load with fan – L/hr (gal/hr)	181.1	(47.8)	181.3	(47.9)	167.5	(44.3)
25% load with fan – L/hr (gal/hr)	102.1	(27.0)	102.3	(27.0)	94.7	(25.0)
Cooling System						
Radiator air flow restriction (system) – kPa (in. water)	0.12	(0.48)	0.12	(0.48)	0.12	(0.48)
Radiator air flow – m³/min (cfm)	1432	(50571)	1432	(50571)	1432	(50571)
Engine coolant capacity – L (gal)	55.0	(14.5)	55.0	(14.5)	55.0	(14.5)
Radiator coolant capacity – L (gal)	55.0	(14.5)	55.0	(14.5)	55.0	(14.5)
Total coolant capacity – L (gal)	110	(29.0)	110	(29.0)	110	(29.0)
Inlet Air						
Combustion air inlet flow rate – m³/min (cfm)	118.0	(4168.3)	118.0	(4168.3)	114.4	(4039.9)
Exhaust System						
Exhaust stack gas temperature – °C (°F)	430.3	(806.6)	430.3	(806.6)	420.1	(788.2)
Exhaust gas flow rate – m³/min (cfm)	283.4	(10005.8)	283.4	(10005.8)	270.7	(9558.9)
Exhaust system backpressure (maximum allowable) – kPa (in. water)	6.7	(27.0)	6.7	(27.0)	6.7	(27.0)
Heat Rejection						
Heat rejection to jacket water – kW (Btu/min)	403	(22908)	403	(22908)	390	(22199)
Heat rejection to exhaust (total) – kW (Btu/min)	1097	(62361)	1097	(62361)	1053	(59888)
Heat rejection to aftercooler – kW (Btu/min)	452	(25715)	452	(25715)	433	(24627)
Heat rejection to atmosphere from engine – kW (Btu/min)	222	(12620)	222	(12620)	209	(11880)
Heat rejection from alternator – kW (Btu/min)	58.9	(3350)	58.9	(3350)	52.2	(2969)
Emissions* (Nominal)						
NOx mg/Nm³ (g/hp-h)	2416.9	(5.13)	2416.9	(5.13)	2127.0	(4.58)
CO mg/Nm³ (g/hp-h)	53.0	(0.11)	53.0	(0.11)	40.4	(0.09)
HC mg/Nm³ (g/hp-h)	21.6	(0.05)	21.6	(0.05)	22.2	(0.06)
PM mg/Nm³ (g/hp-h)	5.1	(0.01)	5.1	(0.01)	6.8	(0.02)
Emissions* (Potential Site Variation)						
NOx mg/Nm³ (g/hp-h)	2924.5	(6.20)	2924.5	(6.20)	2573.7	(5.54)
CO mg/Nm³ (g/hp-h)	99.1	(0.21)	99.1	(0.21)	75.5	(0.16)
HC mg/Nm³ (g/hp-h)	40.8	(0.10)	40.8	(0.10)	42.0	(0.10)
PM mg/Nm³ (g/hp-h)	10.0	(0.02)	10.0	(0.02)	13.2	(0.03)

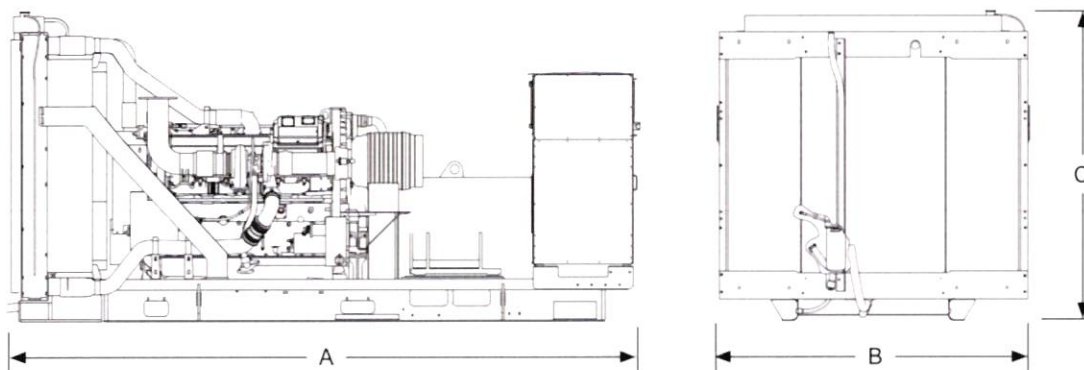
*mg/Nm³ levels are corrected to 5% O₂. Contact your local Cat dealer for further information

Package Performance

Performance	Standby		Mission Critical		Prime	
Frequency	60 Hz		60 Hz		60 Hz	
Gen set power rating with fan	1100 ekW		1100 ekW		1000 ekW	
Gen set power rating with fan @ 0.8 power factor	1375 kVA		1375 kVA		1250 kVA	
Emissions	EPA ESE (Tier 2)		EPA ESE (Tier 2)		EPA ESE (Tier 2)	
Performance number	EM2325-07		EM2533-03		EM2539-01	
Fuel Consumption						
100% load with fan – L/hr (gal/hr)	299.8	(79.2)	299.8	(79.2)	281.2	(74.3)
75% load with fan – L/hr (gal/hr)	232.8	(61.5)	232.8	(61.5)	210.6	(55.6)
50% load with fan – L/hr (gal/hr)	163.2	(43.1)	163.2	(43.1)	151.3	(40.0)
25% load with fan – L/hr (gal/hr)	92.3	(24.4)	92.3	(24.4)	85.4	(22.6)
Cooling System						
Radiator air flow restriction (system) – kPa (in. water)	0.12	(0.48)	0.12	(0.48)	0.12	(0.48)
Radiator air flow – m³/min (cfm)	1432	(50571)	1432	(50571)	1432	(50571)
Engine coolant capacity – L (gal)	55.0	(14.5)	55.0	(14.5)	55.0	(14.5)
Radiator coolant capacity – L (gal)	55.0	(14.5)	55.0	(14.5)	55.0	(14.5)
Total coolant capacity – L (gal)	110	(29.0)	110	(29.0)	110	(29.0)
Inlet Air						
Combustion air inlet flow rate – m³/min (cfm)	113.4	(4004.9)	113.4	(4004.9)	110.6	(3905.2)
Exhaust System						
Exhaust stack gas temperature – °C (°F)	417.3	(783.2)	417.3	(783.2)	410.6	(771.1)
Exhaust gas flow rate – m³/min (cfm)	266.9	(9425.0)	266.9	(9425.0)	257.6	(9097.1)
Exhaust system backpressure (maximum allowable) – kPa (in. water)	6.7	(27.0)	6.7	(27.0)	6.7	(27.0)
Heat Rejection						
Heat rejection to jacket water – kW (Btu/min)	385	(21898)	385	(21898)	367	(20867)
Heat rejection to exhaust (total) – kW (Btu/min)	1036	(58923)	1036	(58923)	981	(55782)
Heat rejection to aftercooler – kW (Btu/min)	424	(24138)	424	(24138)	394	(22416)
Heat rejection to atmosphere from engine – kW (Btu/min)	204	(11618)	204	(11618)	190	(10824)
Heat rejection from alternator – kW (Btu/min)	54.2	(3082)	54.2	(3082)	49.3	(2804)
Emissions* (Nominal)						
NOx mg/Nm³ (g/hp-h)	2018.8	(4.38)	2018.8	(4.38)	1717.3	(3.83)
CO mg/Nm³ (g/hp-h)	37.4	(0.08)	37.4	(0.08)	41.4	(0.09)
HC mg/Nm³ (g/hp-h)	22.5	(0.06)	22.5	(0.06)	23.2	(0.06)
PM mg/Nm³ (g/hp-h)	7.2	(0.02)	7.2	(0.02)	8.3	(0.02)
Emissions* (Potential Site Variation)						
NOx mg/Nm³ (g/hp-h)	2442.7	(5.30)	2442.7	(5.30)	2077.9	(4.63)
CO mg/Nm³ (g/hp-h)	69.9	(0.15)	69.9	(0.15)	77.4	(0.17)
HC mg/Nm³ (g/hp-h)	42.6	(0.11)	42.6	(0.11)	43.9	(0.11)
PM mg/Nm³ (g/hp-h)	14.1	(0.04)	14.1	(0.04)	16.1	(0.04)

*mg/Nm³ levels are corrected to 5% O₂. Contact your local Cat dealer for further information

Weights and Dimensions



Standby 60 Hz ekW (kVA)	Mission Critical 60 Hz ekW (kVA)	Prime 60 Hz ekW (kVA)	Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Dry Weight kg (lb)
1100 (1375.0)	1100 (1375.0)	1000 (1250.0)	4285 (168.7)	2228 (87.7)	2194 (86.4)	7400 (16,314)
1250 (1562.5)	1250 (1562.5)	1136 (1420.0)	4385 (172.7)	2228 (87.7)	2194 (86.4)	7600 (16,755)

Note: For reference only. Do not use for installation design. Contact your local Cat dealer for precise weights and dimensions.

Ratings Definitions

Standby

Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Mission Critical

Output available with varying load for the duration of the interruption of the normal source power. Average power output is 85% of the mission critical power rating. Typical peak demand up to 100% of rated power for up to 5% of the operating time. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Prime

Output available with varying load for an unlimited time. Average power output is 70% of the prime power rating. Typical peak demand is 100% of prime rated ekW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year.

Applicable Codes and Standards

AS 1359, CSA C22.2 No. 100-04, UL 142, UL 489, UL 869, UL 2200, NFPA 37, NFPA 70, NFPA 99, NFPA 110, IBC, IEC 60034-1, ISO 3046, ISO 8528, NEMA MG1-22, NEMA MG1-33, 2014/35/EU, 2006/42/EC, 2014/30/EU.

Note: Codes may not be available in all model configurations. Please consult your local Cat dealer for availability.

Data Center Applications

- ISO 8528-1 Data Center Power (DCP) compliant per DCP application of Cat diesel generator set prime power rating.
- All ratings Tier III/Tier IV compliant per Uptime Institute requirements.
- All ratings ANSI/TIA-942 compliant for Rated-1 through Rated-4 data centers.

Fuel Rates

Fuel rates are based on fuel oil of 35° API [16°C (60°F)] gravity having an LHV of 42,780 kJ/kg (18,390 Btu/lb) when used at 29°C (85°F) and weighing 838.9 g/liter (7.001 lbs/U.S. gal.)

www.cat.com/electricpower

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Materials and specifications are subject to change without notice.
The International System of Units (SI) is used in this publication.



Project: Peru Ridge

Engine Selection | De-rate Calculator | Speed Interpolator
USA Purchased, PLD, Export

Date 2/19/2026 Log Number 147788

Type Clarke Engine Enclosure: None

Pump Requirements Pump Max Power: 415 BHP
RPM(s): 2100
Based on Peerless Pump:
3,000 GPM @ 150 PSI Rated
Pump Model: 8AEF15A

Derate Parameters Altitude: 4500 feet
Ambient Temperature: 77° F
Right Angle Gear Loss: 0%
Derate Percent: 12.6%

Application Information Customer:
Job Name:
Job Number:
Run By:

No engines match the selection criteria given.

Alternate NSPS Certified engine selections:

Model	RPM	Rated BHP (kW)	Ventilation Fan Loss BHP (kW)	Available BHP (kW)	Derate BHP (kW)	Interpolation Data (RPM, BHP)	EPA Emission Tier	Emission Data Available
C18H0-UFAD12-D	2100	488 (364)	-	-	426.5 (318.1)	Not Used	NSPS Tier 3-Certified	No

Note: Derated BHP takes into account all the input derates for altitude, temperature and right angle gearbox. When no derates are input, this column will be blank and engine selection(s) will be based upon rated BHP. When the Derated BHP column is filled in, then the engine selection(s) are based upon this value. These derates are based on NFPA 20 standard.

Definitions: **UL/FM** - Engine that is Underwriters Laboratories Listed and Factory Mutual Approved.
LPCB - Engine that is Loss Prevention Council Board Approved
NL - Non-Listed Engine has no private agency certification, like UL, or insurance company certification, like FM. It applies to any engine that is not UL Listed or FM Approved, and is built to meet individual European country specifications.



C18H0 MODELS

UFAD12 UFAD22 UFAD32
UFAD42

UL/FM - cUL APPROVED RATINGS BHP/kW

C18H0 MODEL	RATED SPEED							
	1470		1760		1900		2100	
UFAD12-D	450	335	460	343	488	364	488	364
FMAD12-S*	450	335	460	343	488	364	488	364
FMAD12-DS*	450	335	460	343	488	364	488	364
UFAD22-D	475	354	510	380	525	392	525	392
FMAD22-S*	475	354	510	380	525	392	525	392
FMAD22-DS*	475	354	510	380	525	392	525	392
UFAD32-D	491	366	542	404	556	414	556	414
FMAD32-S*	491	366	542	404	556	414	556	414
FMAD32-DS*	491	366	542	404	556	414	556	414
UFAD42-D	570	425	614	458	618	460	618	460
FMAD42-S*	570	425	614	458	618	460	618	460
FMAD42-DS*	570	425	614	458	618	460	618	460

All Models are EPA Tier 3 Certified.

♦ All Models are available for export and suitable for installations in the US and US territories.

* -S Suction and -DS Discharge & Suction PLD Engine Models are Factory Mutual (FM) Only

Note 1: PLD-D Use the Clarke PLD-D Calculator on www.clarkefire.com to verify if the Clarke PLD-D will work in your specific application. To order a PLD-D engine, you must submit the PLD-D discharge pressure set point and a copy of the PLD-D calculator results. Discharge (-D) set point pressure can be factory set between 100-350 psi.

Note 2: PLD-S Use the Clarke PLD-D Calculator on www.clarkefire.com to verify the flow requirements for the PLD-S to reach the pressure suction set point, enabling the PLD-S engine to adjust speed and maintain suction pressure. To order a PLD-S engine, you must submit a copy of the PLD-S calculator results. Suction (-S) set point pressure can be factory set between 8-30 psi.

Note 3: PLD-DS Engine orders with both Discharge (-D) and Suction (-S) control must include a copy of both the PLD-D and PLD-S calculator results.



Image shown represents a C18H0 NSR with TSP-E Dual Turbo model

ENGINE SPECIFICATIONS

Number of Cylinders	6
Aspiration	TRWA
Rotation*	CW
Overall Dimensions - in. (mm)	66.1(1678) H X 79.6(2022) L X 45.2(1147) W
Crankshaft Centerline Height - in. (mm)	17.0 (432)
Weight - lb (kg)	4100 (1860)
Compression Ratio	16.3:1
Displacement - cu. in. (l)	1104 (18.1)
Engine Type	4 Stroke Cycle - Inline Construction

Abbreviations: TRWA - Turbocharged and Raw Water Aftercooled CW - Clockwise

*Rotation viewed from Heat Exchanger / Front of engine

CERTIFIED POWER RATING

- Each engine is factory tested to verify power and performance
- FM-UL power ratings are shown at specific speeds. Clarke engines can be applied at a single rated RPM setting +/- 50 RPM.



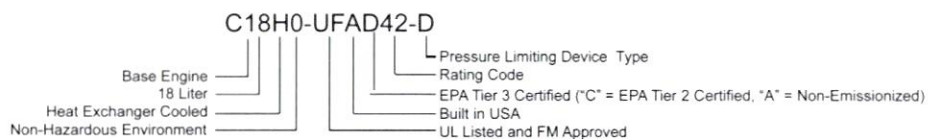
ENGINE RATINGS BASELINES

- Engines are to be used for stationary emergency standby fire pump service only. Engines are to be tested in accordance with NFPA 25.
- Engines are rated at standard SAE conditions of 29.61 in. (752.1 mm) 77°F (25°C) inlet air temperature [approximates 300 ft. (91.4 m) above sea level] by the testing laboratory (see SAE Standard J 1349).
- A deduction of 3 percent from engine horsepower rating at standard SAE conditions shall be made for diesel engines for each 1000 ft. (305 m) altitude above 300 ft. (91.4 m)
- A deduction of 1 percent from engine horsepower rating as corrected to standard SAE conditions shall be made for diesel engines for every 10°F (5.6°C) above 77°F (25°C) ambient temperature.

**C18H0 MODELS**UFAD12 UFAD22 UFAD32
UFAD42**ENGINE EQUIPMENT**

EQUIPMENT	STANDARD	OPTIONAL
Air Cleaner with Air Differential Gauge	Direct Mounted, Washable, Indoor Service with Drip Shield	Disposable, Drip Proof, Indoor Service Outdoor Type, Single or Two Stage
Alarm	Overspeed Alarm & Shutdown, Low Oil Pressure, Low & High Coolant Temperature, Low Raw Water Flow, High Raw Water Temperature, Alternate ECM Warning, Fuel Injection Malfunction, ECM Warning and Failure with Automatic Switching	Low Coolant Level, Low Oil Level, Oil Filter Differential Pressure, Fuel Filter Differential Pressure, Air Filter Restriction
Alternator	24V-DC, 50 Amps with V-Belt and Guard	
Coupling	Bare Flywheel	Driveshaft and Guard
Crankcase Ventilation		Crankcase Breather
Engine Heater	230V-AC, 3500 Watt	
Exhaust Flex Connection	SS Flex. 150# ANSI Flanged Connection. 8"	SS Flex. 150# ANSI Flanged Connection. 10"
Exhaust Protection	Metal Guard on Manifold and Turbocharges	
Flywheel Housing	SAE #1	
Flywheel Power Take Off	14" SAE Industrial Flywheel Connection	
Fuel Connections	Fire Resistent Supply and Return Lines	SS, Braided, cUL Listed, Supply and Return Lines
Fuel Filter	Primary Filter / Water Separator with Priming Pump, Secondary Filter	
Fuel Injection System	Unit Injector	
Governor, Speed	Electronic, Dual Electronic Engine Control Modules	
Heat Exchanger	Serviceable Shell and Tube Type, 60 PSI (4 Bar), NPT (F) Connections, Fresh Water Only	Serviceable 90/10 CuNi Sea Water Compatible (Provided with optional sea water, 316 stainless steel or 90/10 CuNi cooling loop)
Instrument Panel	Standard NEMA Type 4 (IP66) touch screen panel with digital tachometer, hour meter, water temperature, oil pressure and voltmeter gauges. Front Opening. <i>Note: Some models may include powerview display in place of TSP-E</i>	Stainless Steel NEMA Type 4X (IP66) touch screen panel with digital tachometer, hour meter, water temperature, oil pressure and voltmeter gauges. Front Opening.
Junction Box	Integral with Instrument Panel; For DC Wiring Interconnection to Engine Controller	
Lube Oil Cooler	Jacket Water Cooled, Shell and Tube Type	
Lube Oil Filter	Full Flow, Dual Element	
Lube Oil Pump	Gear Driven, Gear Type	
Manual Start Control	Dual Manual Start Contactors & On Instrument Panel with Control Position Warning Light	
Overspeed Control	Electronic, Factory Set	
Raw Water Cooling Loop w/ Alarms	Galvanized	Seawater, All 316 SS, High Pressure
Raw Water Solenoid Operation	Automatic from Fire Pump Controller and from Engine Instrument Panel (for Horizontal Fire Pump Applications)	
Run - Stop Control	On Instrument Panel with Control Position Warning Light	
Starters	One (1) 24V-DC	
Throttle Control	Adjustable Speed Control by Increase/Decrease Button, Tamper Proof Adjustable Speed Control	
Water Pump	Centrifugal Type, Gear Driven	

Abbreviations: DC - Direct Current, AC - Alternating Current, SAE - Society of Automotive Engineers, BSP(F) - British Standard Pipe Thread (Female), SS - Stainless Steel

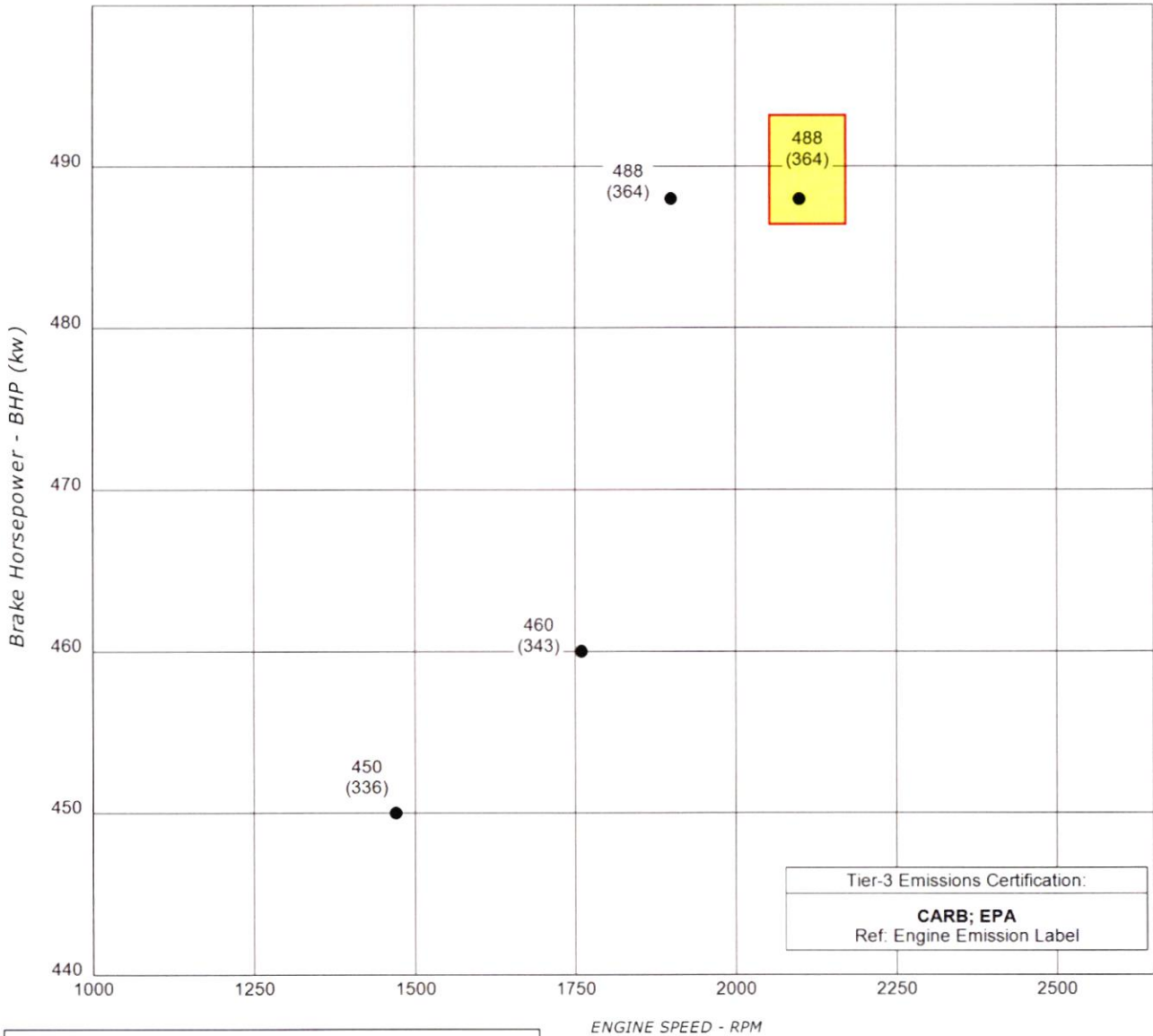
MODEL NOMENCLATURE (11 Digit Models)

Specifications and information contained in this brochure is subject to change without notice.

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CLARKE®

FIRE PUMP MODEL: C18H0-UFAD12
Heat Exchanger Cooled/Turbocharged
Raw Water Charge Cooling
18 Liter, 6 Cylinder



RESTRICTED:

Use only for Stand-By Fire Pump Applications

ENGINE PERFORMANCE:

STANDARD CONDITIONS: (SAE J1349, ISO 3046)
77°F (25°C) AIR INLET TEMPERATURE
29.61 IN. (752.1MM) HG BAROMETRIC PRESSURE
#2 DIESEL FUEL (SEE C130902)

Cory Robbins
Cory Robbins 11MAY19

● NAMEPLATE BHP (MAXIMUM PUMP LOAD)

1760, 1900, & 2100 SPEED RATINGS AVAILABLE AS VARIABLE SPEED PLD ONLY

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CREATED

CLR

DATE CREATED

12/02/19

ENGINE MODEL C18H0-UFAD12

DRAWING NO.

C137955

REV

B

Basic Engine Description

Engine Manufacturer	Caterpillar
Ignition Type	Compression (Diesel)
Number of Cylinders	6
Bore and Stroke - in (mm)	5.71 (145) X 7.2 (183)
Displacement - in ³ (L)	1106 (18.1)
Compression Ratio	16.3:1
Valves per cylinder	
Intake	2
Exhaust	2
Combustion System	Direct Injection
Engine Type	In-Line, 4 Stroke Cycle
Fuel Management Control	Electronic, Unit Injector
Firing Order (CW Rotation)	1-5-3-6-2-4
Aspiration	Turbocharged
Charge Air Cooling Type	Raw Water Cooled
Rotation, viewed from front of engine, Clockwise (CW)	Standard
Engine Crankcase Vent System	Open
Installation Drawing	D857
Weight - lb (kg)	4100 (1860)

Power Rating

	1470	1760	1900	2100
Nameplate Power - HP (kW) ¹	450 (336)	460 (343)	488 (364)	488 (364)

Cooling System

	1470	1760	1900	2100
Engine Coolant Heat - Btu/sec (kW)	165 (174)	192 (203)	202 (213)	232 (245)
Engine Radiated Heat - Btu/sec (kW)	50 (52.8)	41 (43.3)	43 (45.4)	57 (60.1)
Heat Exchanger (Brazed Non-Removeable Bundle) Minimum Flow - [C051389]				
60°F (15°C) Raw H ₂ O - gal/min (L/min)	16 (60.6)	18 (68.1)	20 (75.7)	23 (87.1)
100°F (37°C) Raw H ₂ O - gal/min (L/min)	22 (83.3)	24 (90.8)	26 (98.4)	31 (117)
Heat Exchanger (Brazed Non-Removeable Bundle) Maximum Cooling Raw Water - [C051389]				
Inlet Pressure - psi (bar)	60 (4.1)			
Flow - gal/min (L/min)	190 (719)			
Heat Exchanger (NSR Standard Removable Bundle) Minimum Flow - [C053643]				
60°F (15°C) Raw H ₂ O - gal/min (L/min)	16 (60.6)	18 (68.1)	20 (75.7)	23 (87.1)
100°F (37°C) Raw H ₂ O - gal/min (L/min)	22 (83.3)	24 (90.8)	26 (98.4)	31 (117)
Heat Exchanger (NSR Standard Removable Bundle) Maximum Cooling Raw Water - [C053643]				
Inlet Pressure - psi (bar)	60 (4.1)			
Flow - gal/min (L/min)	190 (719)			
Heat Exchanger (NSR Seawater Removable Bundle) Minimum Flow - [C053878]				
60°F (15°C) Raw H ₂ O - gal/min (L/min)	21 (79.5)	22 (83.3)	25 (94.6)	28 (106)
100°F (37°C) Raw H ₂ O - gal/min (L/min)	26 (98.4)	29 (110)	30 (114)	34 (129)
Heat Exchanger (NSR Seawater Removable Bundle) Maximum Cooling Raw Water - [C053878]				
Inlet Pressure - psi (bar)	60 (4.1)			
Flow - gal/min (L/min)	190 (719)			
Typical Engine H ₂ O Operating Temp - °F (°C)	185 (85) - 200 (93.3)			
Thermostat				
Start to Open - °F (°C)	189 (87.2)			
Fully Opened - °F (°C)	208 (97.8)			
Engine Coolant Capacity - qt (L)	40 (37.9)			
Coolant Pressure Cap - lb/in ² (kPa)	10 (68.9)			
Maximum Engine Coolant Temperature - °F (°C)	219 (104)			
Minimum Engine Coolant Temperature - °F (°C)	160 (71.1)			
High Coolant Temp Alarm Switch - °F (°C)	217 (103)			

Electric System - DC

	Standard	
System Voltage (Nominal)	24	
Battery Capacity for Ambients Above 32°F (0°C)		
Voltage (Nominal)12	12	{C07633}
Qty. Per Battery Bank	2	
SAE size per J537	8D	
CCA @ 0°F (-18°C) per J537	1200	
Reserve Capacity - Minutes per J537	430	
Battery Cable Circuit, Max Resistance - ohm	0.0012	
Battery Cable Minimum Size		
0-120 in. Circuit Length ²	00	
121-160 in. Circuit Length ²	000	
161-200 in. Circuit Length ²	0000	
Charging Alternator Maximum Output - Amp,	50	{1693345}
Starter Cranking Amps, Rolling - @60°F (15°C)	375	{C072743}

Exhaust System (Single Exhaust Outlet)

	1470	1760	1900	2100
Exhaust Flow - ft. ³ /min (m ³ /min)	2945 (83.4)	3170 (89.8)	3470 (98.3)	3830 (108)
Exhaust Temperature - °F (°C) (corrected to 77°F)	996 (536)	880 (471)	908 (487)	953 (512)
Maximum Allowable Back Pressure - in H ₂ O (kPa)	40 (10)	40 (10)	40 (10)	40 (10)
Minimum Exhaust Pipe Dia. - in (mm) ³	8 (203)	8 (203)	8 (203)	8 (203)

Fuel System

	1470	1760	1900	2100
Fuel Consumption - gal/hr (L/hr)	27.4 (104)	26.5 (100)	29.6 (112)	31.5 (119)
Fuel Return - gal/hr (L/hr)	72.5 (274)	72.5 (274)	71.3 (270)	68.5 (259)
Fuel Supply - gal/hr (L/hr)	99.9 (378)	99.0 (375)	100.9 (382)	100.0 (378)
Fuel Pressure - lb/in ² (kPa)	90 (621) - 110 (758)			
Minimum Line Size - Supply - in.	.75 Schedule 40 Steel Pipe			
Pipe Outer Diameter - in (mm)	1.05 (26.7)			
Minimum Line Size - Return - in.	.50 Schedule 40 Steel Pipe			
Pipe Outer Diameter - in (mm)	0.848 (21.5)			
Max. Allowable Fuel Pump Suction Lift w/ clean Filter				
at Customer Connection Block - in H ₂ O (mH ₂ O)	71 (1.8)			
Maximum Allowable Fuel Head above Fuel pump, Supply or Return - ft (m)	15 (4.6)			
Fuel Filter Micron Size	2 (Secondary)			
Maximum fuel supply temperature - °F (°C)				

Heater System

	Standard	Optional
Engine Coolant Heater		
Wattage (Nominal)	3500	
Voltage - AC, 1 Phase	230	
Part Number	{C127975}	

Air System

	1470	1760	1900	2100
Combustion Air Flow - ft. ³ /min (m ³ /min)	1135 (32.1)	1189 (33.7)	1350 (38.2)	1505 (42.6)
Air Cleaner	Standard		Optional	
Part Number	{C03595}		{C03330}	
Type	Indoor Service Only, with Shield		Canister,	
Cleaning method	Washable		Single-Stage Disposable	
Air Intake Restriction Maximum Limit				
Dirty Air Cleaner - in H ₂ O (kPa)	25 (6.2)		25 (6.2)	
Clean Air Cleaner - in H ₂ O (kPa)	15 (3.7)		15 (3.7)	
Maximum Allowable Temperature (Air To Engine Inlet) - °F (°C)	120 (48.9)			

Lubrication System

Oil Pressure - normal - lb/in ² (kPa)	40 (276) - 70 (483)
Low Oil Pressure Alarm Switch - lb/in ² (kPa)	22 (152)
In Pan Oil Temperature - °F (°C)	200 (93.3) - 230 (110)
Total Oil Capacity with Filter - qt (L)	48 (45.4)

Lube Oil Heater

	Optional	Optional
Wattage (Nominal)	300	300
Voltage	120V (+5%, -10%)	240V (+5%, -10%)
Part Number	{C04559}	{C04560}

Performance

	1470	1760	1900	2100
BMEP - lb/in ² (kPa)	219 (1510)	187 (1290)	184 (1270)	166 (1140)
Piston Speed - ft/min (m/min)	1764 (538)	2112 (644)	2280 (695)	2520 (768)
Mechanical Noise - dB(A) @ 1m	C138028 - Reference Noise data on Engine Page at www.clarkefire.com			
Power Curve	C137955 - Reference Power Curve on Engine Page at www.clarkefire.com			

NOTE: This engine is intended for indoor installation or in a weatherproof enclosure. ¹ Derate 3% per every 1000 ft. 304.8m above 300 ft. 91.4m and derate 1% for every 10°F 5.55 °C above 77°F 25°C. ² Positive and Negative Cables Combined Length. ³ Minimum Exhaust Pipe Diameter is based on: 15 feet of pipe, one 90° elbow, and one Industrial silencer. A Back-pressure flow analysis must be performed on the actual field installed exhaust system to assure engine maximum allowable back pressure is not exceeded. See Exhaust Sizing Calculator on www.clarkefire.com. { } indicates component reference part number.



C18H0 ENGINE MODELS ENGINE MATERIALS AND CONSTRUCTION

Air Cleaner

Type.....	Indoor Usage Only Oiled Fabric Pleats
Material.....	Surgical Cotton, Aluminum Mesh

Air Cleaner - Optional

Type.....	Canister
Material.....	Pleated Paper
Housing.....	Enclosed

Camshaft

Material.....	Forged Steel, Hardened
Location.....	In Head
Drive.....	Gear, Spur
Type of Cam.....	Ground

Charge Air Cooler

Type.....	Raw Water Cooled
-----------	------------------

Materials (in contact with raw water)

Tubes.....	90/10 CU/NI
Headers.....	36500 Muntz
Covers.....	83600 Red Brass
Plumbing.....	316 Stainless Steel/ Brass 90/10 Silicone

Coolant Pump

Type.....	Centrifugal
Drive.....	Gear

Coolant Thermostat

Type.....	Full Blocking
Qty.....	2

Cooling Loop (Galvanized)

Tees, Elbows, Pipe.....	Galvanized Steel
Ball Valves.....	Brass ASTM B 124
Solenoid Valve.....	Brass
Pressure Regulator.....	Bronze
Strainer.....	Cast Iron (1/2" - 1" Loops) or Bronze (1.25" - 2" Loops)

Cooling Loop (Sea Water)

Tees, Elbows, Pipe.....	316 Stainless Steel
Ball Valves.....	316 Stainless Steel
Solenoid Valve.....	316 Stainless Steel
Pressure Regulator/Strainer.....	Cast Brass ASTM B176 C87800

Cooling Loop (316SS)

Tees, Elbows, Pipe.....	316 Stainless Steel
Ball Valves.....	316 Stainless Steel
Solenoid Valve.....	316 Stainless Steel
Pressure Regulator/Strainer.....	316 Stainless Steel

Cooling Loop (90/10 CuNi)

Tees, Elbows, Pipe.....	90/10 CuNi
Ball Valves.....	922 Bronze Body/316SS Ball
Solenoid Valve.....	316 Stainless Steel
Pressure Regulator/Strainer.....	Cast Brass C87800

Connecting Rod

Type.....	I-Beam Taper
Material.....	Forged Steel Alloy

Crank Pin Bearings

Type.....	Precision Half Shell
Number.....	1 Pair Per Cylinder

Crankshaft

Material.....	Forged Steel
Type of Balance.....	Dynamic

Cylinder Block

Type.....	One Piece
Material.....	Grey Iron

Cylinder Head

Type.....	Slab 4 Valve
Material.....	Cast Iron

Cylinder Liners

Type.....	Centrifugal Cast, Wet Liner
Material.....	Compacted Graphite and Iron

Valves

Type.....	Poppet
Material.....	Steel Alloy
Arrangement.....	Overhead Valve
Number/Cylinder.....	2 intake/2 exhaust
Operating Mechanism.....	Mechanical Rocker Arm
Type of Lifter.....	Solid Roller
Valve Seat Insert.....	Replaceable

Exhaust Manifold

Material.....	Iron Alloy
---------------	------------

Fuel Pump

Type.....	Gear
Drive.....	Gear

Heat Exchanger (Brazed)

Type.....	Shell & Tube
Materials.....	
Tube & Headers.....	Copper
Shell.....	Copper
Electrode.....	Zinc

Heat Exchanger (Serviceable)

Type.....	Shell & Tube
Materials.....	
Tube.....	Copper C122
Header Assy.....	Copper C122/Nylon/EPDM Rubber
Shell.....	Aluminum 356-T6
Endcaps.....	Cast Iron CL 30/Aluminum 356-T6
Electrode.....	Zinc

Sea Water Heat Exchanger (Serviceable, 90/10 CuNi)

Type.....	Shell & Tube
Materials.....	
Tube.....	CuNi 70600
Header Assy.....	CuNi 70600/Nylon/Rubber
Shell.....	Aluminum 356-T6
Endcaps.....	C836 Bronze
Electrode.....	Zinc

Injection Pump

Type.....	Electronic Unit Injector
Drive.....	Cam Shaft

Lubrication Cooler

Type.....	Shell & Tube
-----------	--------------

Lubrication Pump

Type.....	Gear Pump
Drive.....	Gear

Main Bearings

Type.....	Precision Half Shells
-----------	-----------------------

Piston

Type and Material.....	Aluminum Alloy
Cooling.....	Oil Jet Spray

Piston Pin

Type.....	Full Floating
-----------	---------------

Piston Rings

Number/Piston.....	3
--------------------	---

Emissions

Clarke Model		C18H0-UFAD12		
Derived Rating	364	kW	488	hp
Rated Speed	2100	rpm	2100	rpm
NOx	2.94	g/kW-hr	2.19	g/hp-hr
HC	0.17	g/kW-hr	0.12	g/hp-hr
PM	0.199	g/kW-hr	0.149	g/hp-hr
CO	1.90	g/kW-hr	1.41	g/hp-hr
Certified Rating	470 kW		630 hp	
Rated Speed	2100 rpm		2100 rpm	
NOx	3.86 g/kW-hr		2.88 g/hp-hr	
HC	0.05 g/kW-hr		0.04 g/hp-hr	
PM	0.09 g/kW-hr		0.07 g/hp-hr	
CO	0.60 g/kW-hr		0.45 g/hp-hr	

-Applicable to Cat C18 700hp Tier 3, 630hp Tier 3 fire pump driver engines.

-PQ3060, PQ3061 respectively

-700 hp and 630 hp ratings are U.S. EPA certified as variable speed Emergency Stationary engines per 40 CFR Part 60 Subpart IIII.

-Estimated Nominal Emissions data for the fire pump rating cycle emissions are shown above.

-These engines are Certified to the variable speed 8 Mode C1 cycle that can be used in either constant or variable speed applications.

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- [A] - MOUNTING FACE OF FLYWHEEL
- [B] - ENGINE CRANKSHAFT HORIZONTAL
- [C] - ENGINE CRANKSHAFT VERTICAL
- - CENTER OF GRAVITY
- - CLOCKWISE (CW) ROTATION WHEN VIEWED FROM FRONT OF ENGINE

ALL PLUMBING MUST BE SUPPORTED AND/OR ISOLATED SO THAT NO WEIGHT OR STRESS IS APPLIED TO ANY ENGINE COMPONENT

REFER TO THE SPECIFIC MODELS'
"INSTALLATION AND OPERATION DATA"
FOR INSTALLATION GUIDELINES

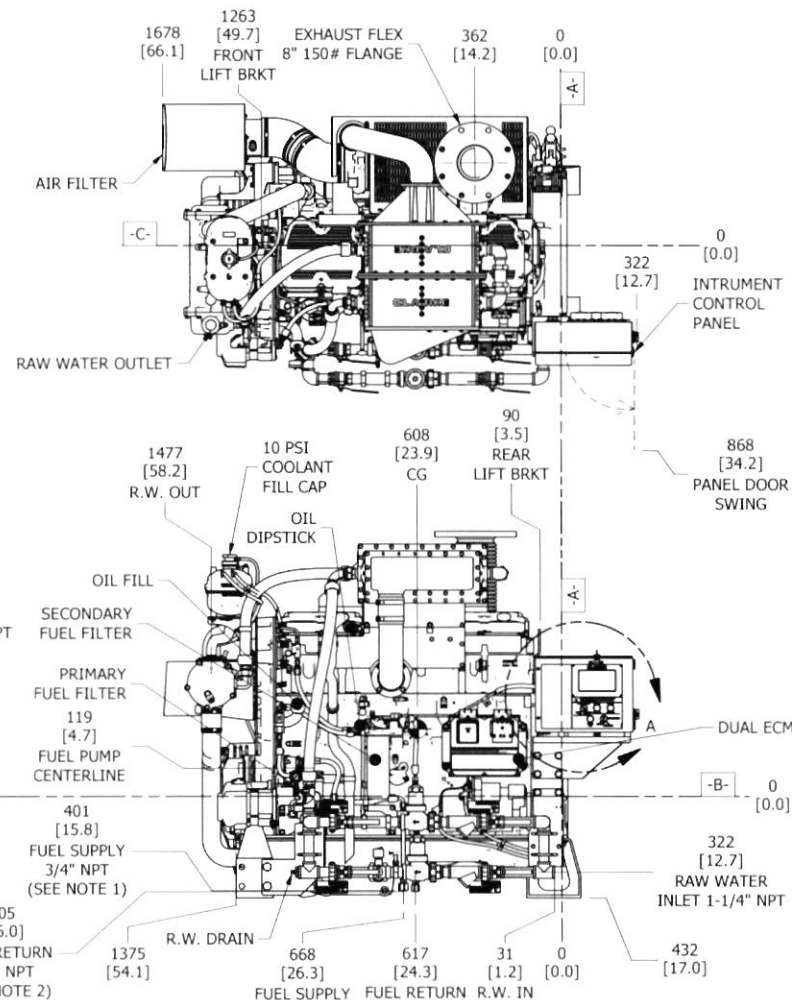
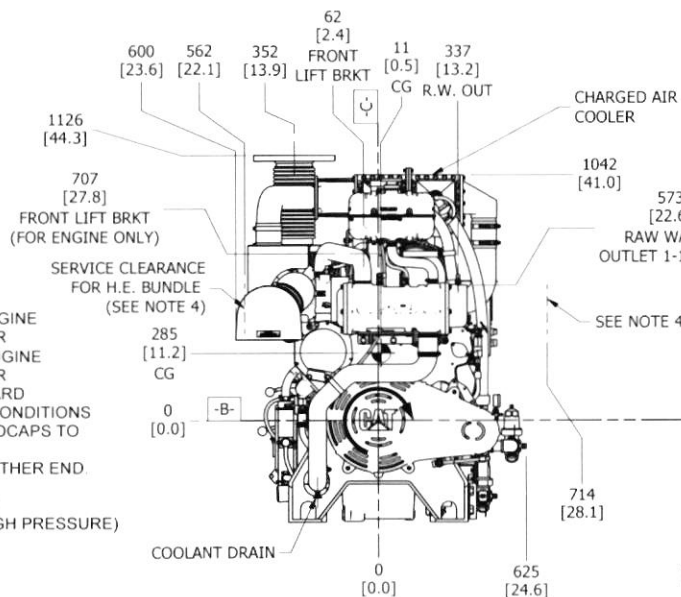
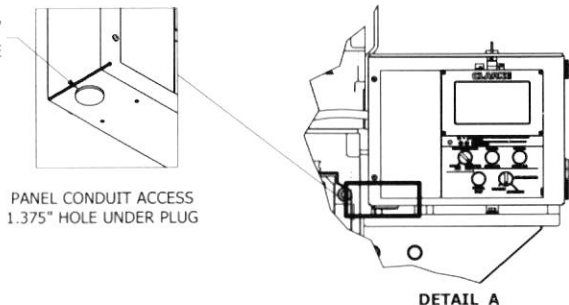
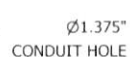
C18H0-UFAD12
C18H0-UFAD22
C18H0-UFAD32

C18H0-UFAD12-D
C18H0-UFAD22-D
C18H0-UFAD32-D

MODELS ARE TURBOCHARGED
WITH RAW WATER AFTER COOLING

- 1) FUEL SUPPLY PIPING FROM TANK TO ENGINE SHOULD BE 3/4" MINIMUM PIPE DIAMETER
- 2) FUEL RETURN PIPING FROM TANK TO ENGINE SHOULD BE 1/2" MINIMUM PIPE DIAMETER
- 3) THE LOOP SHOWN IS BASED ON STANDARD LOOP CONSTRUCTION AND FM SIZING CONDITIONS
- 4) HEAT EXCHANGER HAS REMOVABLE ENDCAPS TO SERVICE THE INTERNAL BUNDLE.
THE BUNDLE CAN BE REMOVED FROM EITHER END.

FOR ALTERNATE LOOP CONSTRUCTION
(STAINLESS STEEL, SEA WATER AND HIGH PRESSURE)
SIZES MAY VARY



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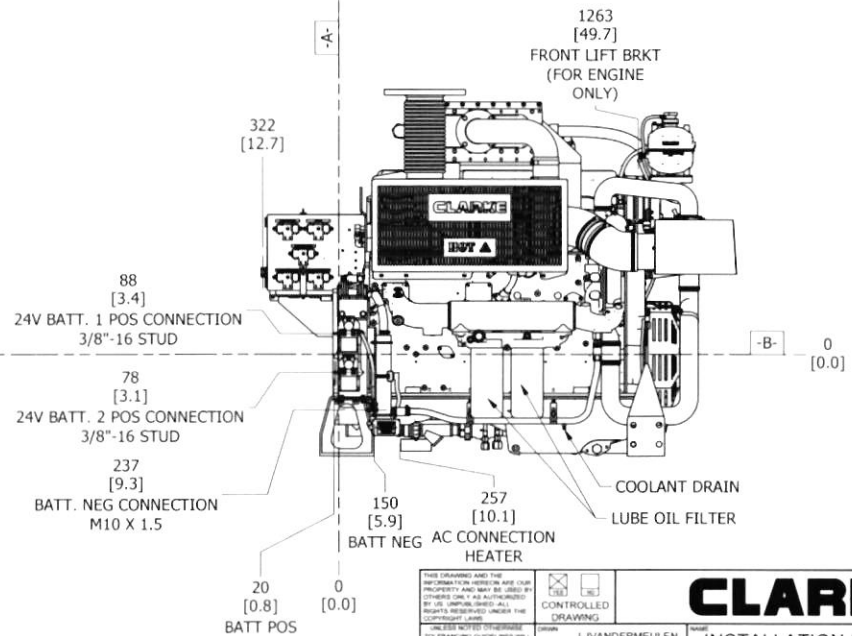
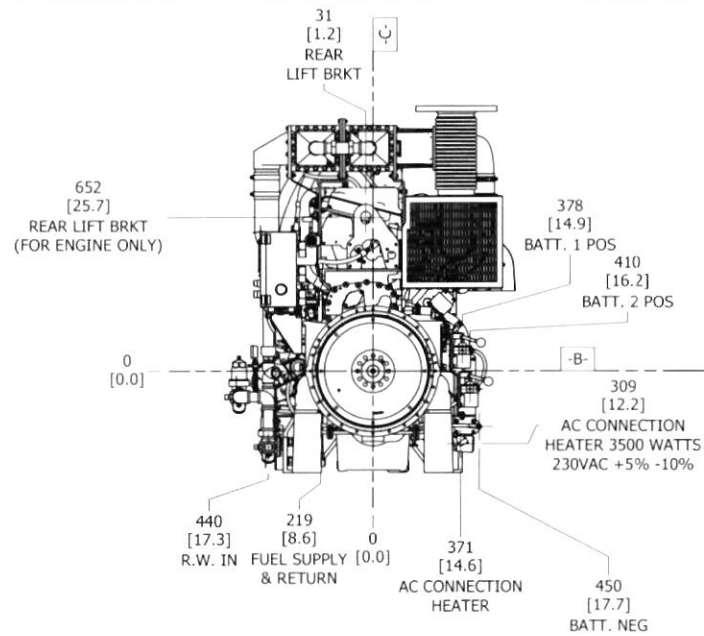
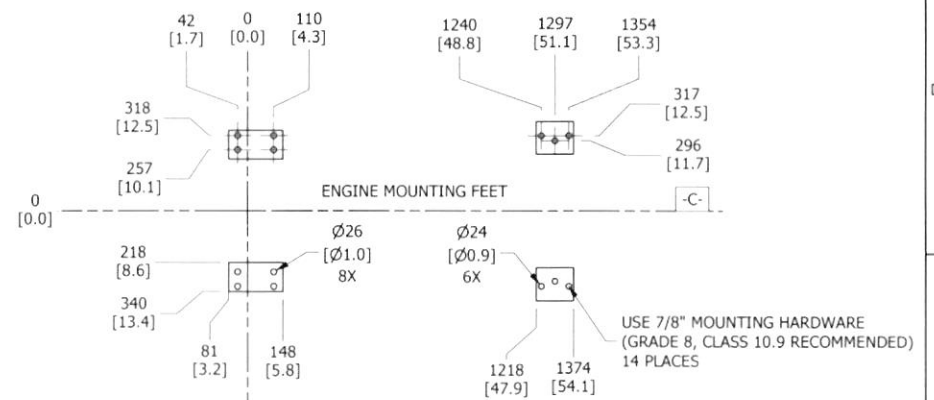
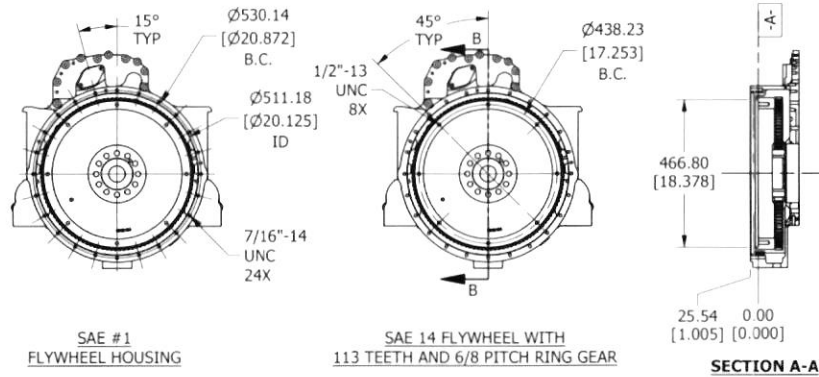
FOR ENGINE SPECIFIC OPTIONS
SEE www.clarkefire.com

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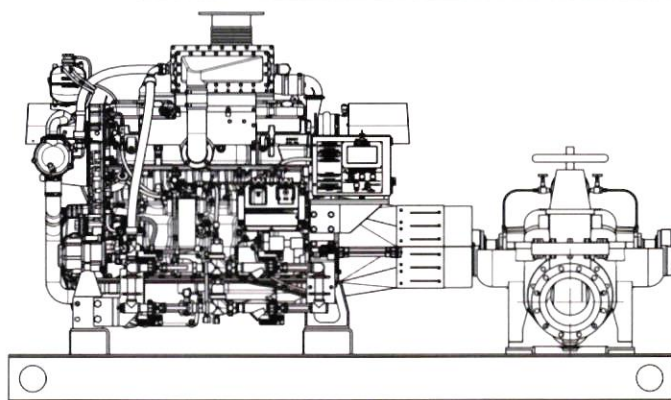
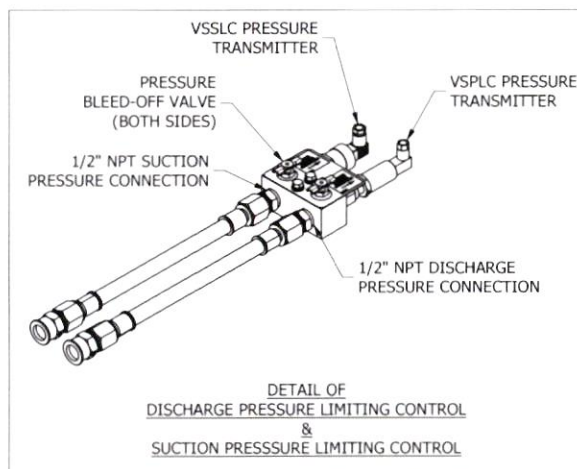
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A	ISSUED ENGINEERING DRAWING	6917	RAZ	MJD	16JAN2

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CONTROLLED DRAWING		NAME INSTALLATION DRAWING, FIRE PUMP ENGINE C18H0 & C18H0 PLD T3 NSR w/ TSP-E MODELS	
DATE 1/16/2025		PART NO D963	
DRAWN MJD/DEMBKOWSKI		SCALE NTS	
MATERIAL TSP-E		UNIT MM (INCH)	
DIMENSIONS TSP-E		SHEET 1 OF 2	

DETAIL DATUM -A-

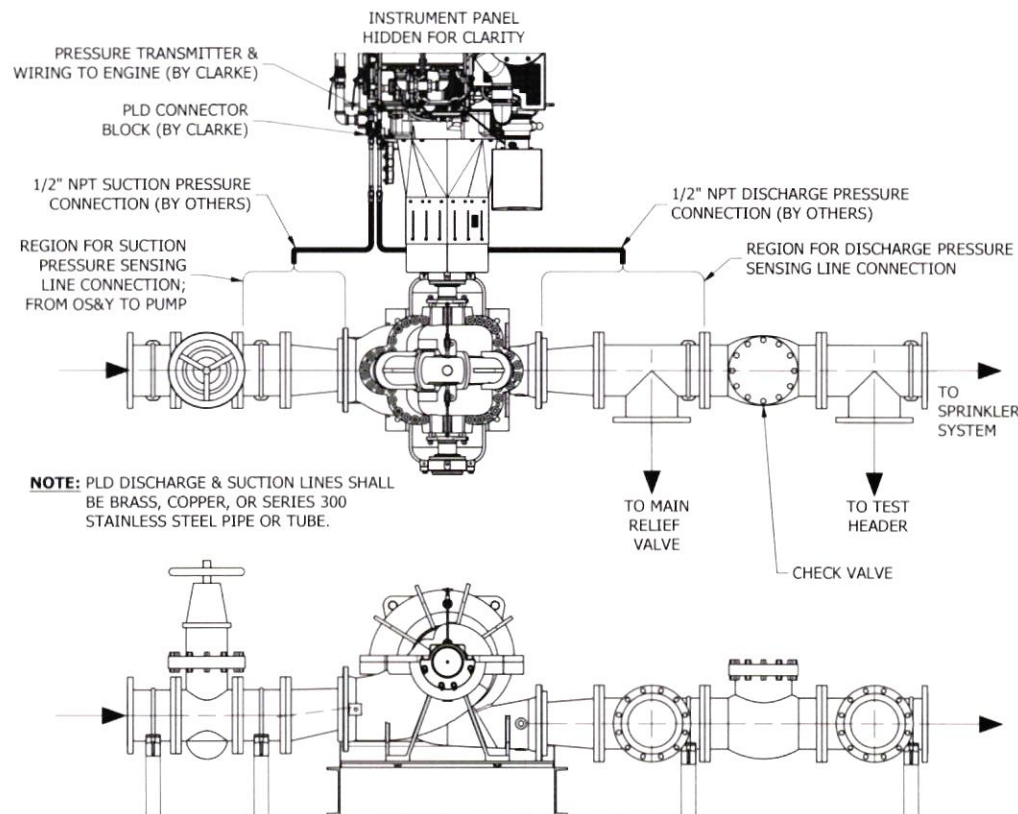


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DATE: 1/16/2025 DESIGNER: MJDEMBKOWSKI ASSEMBLY: TSP-E SIMILAR TO: D883	DATE: 1/16/2025 DESIGNER: MJDEMBKOWSKI ASSEMBLY: TSP-E SIMILAR TO: D883	INSTALLATION DRAWING, FIRE PUMP ENGINE C18H0 & C18H0 PLD T3 NSR w/ TSP-E MODELS D963 SCALE: NTS UNITS: MM (INCH) PAGE: 2 OF 2



SUCTION PRESSURE LIMITING CONTROL SENSING LINE CONNECTION

THE SINGLE SUCTION PRESSURE LIMITING CONTROL SENSING LINE SHALL BE CONNECTED IN THE IMMEDIATE REGION UPSTREAM OF THE PUMP INLET.



DISCHARGE PRESSURE LIMITING CONTROL SENSING LINE CONNECTION

THE SINGLE DISCHARGE PRESSURE CONTROL SENSING LINE SHALL BE CONNECTED IN THE REGION BETWEEN THE PUMP DISCHARGE FLANGE & THE CHECK VALVE.

- NOTES:
1. SEE DRAWING FOR ACTUAL CONTENT
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F	+0.005	+0.005
F	+0.005	+0.005
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ANGULAR ±0.1°

ORDER: LJVANDERMEULEN
DATE: 1/17/2025
DRAWN: MJOEMBOWSKI
MATERIAL: TSP-E
ASSEMBLY: TSP-E
SIMILAR TO: C137984

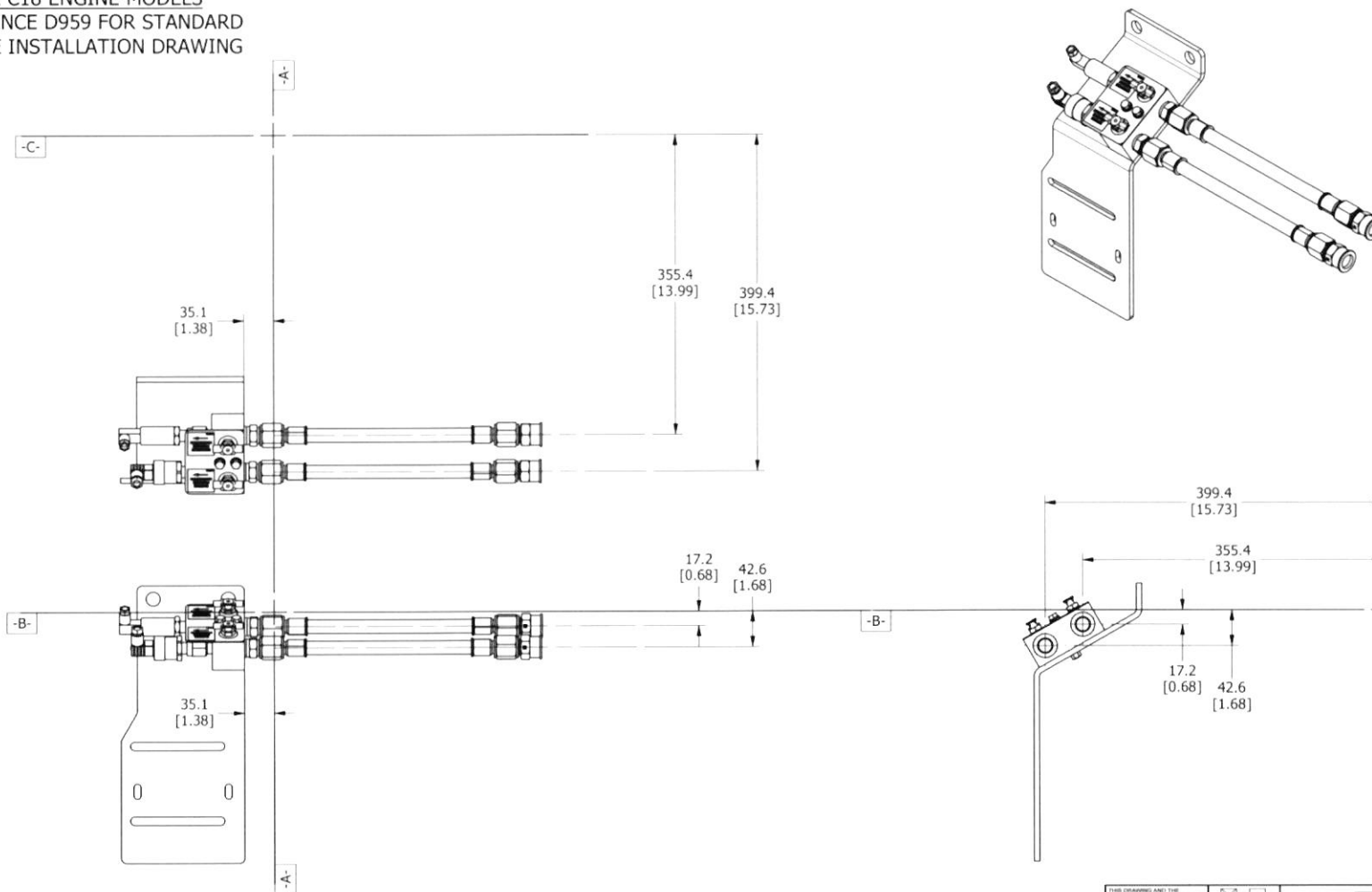
CLARKE

SCHEMATIC, C18 ELECTRONIC
PLD, NSR w/ TSP-E

PART NO: C139520
SCALE: NTS
UNITS: MM (INCH)
PAGE: 1 OF 2

REV	DESCRIPTION	ECN#	DWN	APVD	DATE
A	ISSUED ENGINEERING DRAWING	6917	LJV	MJD	17JAN25

CLARKE C18 ENGINE MODELS
REFERENCE D959 FOR STANDARD
ENGINE INSTALLATION DRAWING



DATUMS:

- A- - MOUNTING FACE OF FLYWHEEL
- B- - ENGINE CRANKSHAFT HORIZONTAL
- C- - ENGINE CRANKSHAFT VERTICAL

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UNLESS NOTED OTHERWISE, TOLERANCES SHOWN ARE AS SHOWN BELOW.		DRAWN: LJVANDERMEULEN DATE: 1/17/2025 ENGINEER: MJDENBROUWERSKI		NAME: SCHEMATIC, C18 ELECTRONIC PLD, NSR w/ TSP-E	
STANDARD TOLERANCE: FINISH: 1.5 H: 1.5 K: 1.5 L: 1.5 M: 1.5 N: 1.5 P: 1.5 Q: 1.5 R: 1.5 S: 1.5 T: 1.5 U: 1.5 V: 1.5 W: 1.5 X: 1.5 Y: 1.5 Z: 1.5		MATERIAL: TSP-E ASSEMBLY: C137984		PART NO: C139520 SCALE: NTS UNITS: MM (INCH)	
ANGLE: 1/16"		SCALE: NTS		PAGE: 2 OF 2	



C18H0-UFAD12

FIRE PUMP DRIVER

NOISE DATA

Mechanical Engine Noise *

RPM	BHP	OVERALL dB(A)	Octave Band									
			31.5 Hz dB(A)	63 Hz dB(A)	125 Hz dB(A)	250 Hz dB(A)	500 Hz dB(A)	1k Hz dB(A)	2k Hz dB(A)	4k Hz dB(A)	8k Hz dB(A)	16k Hz dB(A)
1470	450	102.10	46.00	62.90	81.90	82.20	93.80	99.50	94.80	92.10	79.50	68.20
1760	460	102.70	57.60	61.30	66.70	83.00	89.20	99.80	98.20	91.30	80.50	67.20
1900	488	108.20	60.10	65.20	70.10	84.50	94.20	106.50	101.50	95.60	84.30	70.70
2100	488	109.60	61.80	66.10	72.90	89.60	96.50	107.70	103.30	96.40	86.50	73.00

Raw Exhaust Engine Noise **

RPM	BHP	OVERALL dB(A)	Octave Band									
			31.5 Hz dB(A)	63 Hz dB(A)	125 Hz dB(A)	250 Hz dB(A)	500 Hz dB(A)	1k Hz dB(A)	2k Hz dB(A)	4k Hz dB(A)	8k Hz dB(A)	16k Hz dB(A)
1470	450	112.30	81.30	108.60	105.10	101.30	103.70	100.60	100.90	93.50	85.10	76.30
1760	460	113.50	64.80	80.50	93.70	101.00	105.80	108.50	108.80	103.10	92.30	85.00
1900	488	113.80	64.80	80.20	93.00	101.20	106.00	109.20	109.00	103.30	93.50	88.00
2100	488	114.20	64.50	80.10	92.20	100.00	105.50	110.30	109.50	103.50	92.50	87.20

* Values above are provided at 3.3ft (1m) from engine block and do not include the raw exhaust noise.

** Values above are provided at 23ft (7m), 90° horizontal, from a vertical exhaust outlet and does not include noise created mechanically by the engine.

The above data reflects values for a typical engine of this model, speed and power in a free-field environment.

Installation specifics such as background noise level and amplification of noise levels from reflecting off of surrounding objects, will affect the overall noise levels observed. As a result of this, Clarke makes no guarantees to the above levels in an actual installation.

ATTACHMENT C

AIR DISPERSION MODELING REPORT

AIR DISPERSION MODELING REPORT

PERU RIDGE TECHNOLOGY CENTER SPARKS, NEVADA

Submitted to:

Nevada Division of Environmental Protection Bureau of Air Pollution Control

901 South Stewart Street, Suite 4001
Carson City, NV 89701

Prepared for:

PR RNO Property Owner 1, LLC

3200 Cherry Creek S Drive, Suite 700
Denver, CO 80209

Prepared by:

BlueScape Environmental

16870 West Bernardo Drive, Suite 400
San Diego, CA 92127



March 5, 2026



**NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR POLLUTION CONTROL**

**ENVIRONMENTAL EVALUATION (MODELING)
CHECKLIST**

Facility Name & Permit No. Peru Ridge Technology Park

Type of Permit Application New Class I OPTC

Facility Location 2220 Peru Drive
Sparks, NV 89437

Date Completed 03/05/26

Modeler Name/Firm BlueScape Environmental

Modeling Protocol Submission (Optional but Recommended)		✓
1	Applicant submitted proposed modeling protocol to NDEP-BAPC for agency review/comment prior to any modeling?	N
Environmental Evaluation Data to be Prepared by the Applicant		✓
2	Detailed facility plot plan drawn to appropriate scale, which clearly shows all fencelines/property-lines, topography, emission units, stacks, storage tanks, facility buildings & roof heights, public roads, neighboring properties, etc.	Y
3	Emissions inventory spreadsheet of all regulated pollutants (PM, PM ₁₀ , SO ₂ , NO _x , CO, VOCs, Pb, HAPs, and H ₂ S) emitted from <u>all</u> emission units and insignificant activities and submitted in hardcopy and electronic formats?	Y
4	Spreadsheet uses appropriate EPA AP-42 emission factors, manufacturer's data, and/or facility stack test results?	Y
5	Applicant researched/considered appropriate ambient background values for all pollutants modeled?	Y
6	Facility's modeling receptor grids are appropriately spaced and reflect surrounding terrain (e.g., flat or complex)?	Y
7	Complex terrain (terrain > stack height) modeling runs incorporate appropriate terrain height data (e.g., USGS)?	Y
8	Effects of nearby facilities (co-located facilities, facilities sharing a common fenceline/property-line) considered?	N/A
Dispersion Modeling Runs		✓
9	Uses an EPA-approved/recommended dispersion model appropriate for the task (e.g., ISCST3)?	Y
10	NDEP-BAPC agrees with use of the selected meteorological data set?	Y
11	Modeled all criteria pollutants at the requested permit emission limits (including all insignificant activity emissions)?	Y
12	Highest impact for each pollutant/averaging time + background shows attainment with all NV ambient standards?	Y
13	Modeled secondary pollutants such as ozone - O ₃ (e.g., Scheffe screening analysis or ISCST3)?	Y
14	Model incorporates appropriate operating schedule (e.g., 24 hrs/day or a lesser operating schedule such as 8-5)?	Y
15	Model runs apply appropriate building downwash effects for all affected stack sources (e.g., BPIP)?	Y
16	Model runs distinguish correctly between stack (point), process fugitive (volume), and area source emissions? sources?	Y
Final Modeling Report (included as part of application submittal)		✓
17	Modeling report includes appropriate summary narrative (e.g., writeup) , data tables, plot plan, maps, figures, etc?	Y
18	Data provided is illustrative and clearly demonstrates compliance with all appropriate ambient standards?	Y
19	Modeling report includes appropriate hardcopy printouts of all plots (graphs) and model run outputs?	Y
20	Modeling report includes electronic (diskette or CD-ROM) input/output files and meteorology data set?	Y

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ATTACHMENTS

- Attachment A: Modeling Inputs
- Attachment B: Modeling Scenarios and Emission Rates
- Attachment C: Scheffe Ozone Calculations

1.0 INTRODUCTION

PR RNO Property Owner 1, LLC (PR RNO) is seeking authorization in the form of a new Class I operating permit to construct (OPTC) for the Peru Ridge Technology Center (PRTC or Facility) to be located in Sparks, Nevada. The Facility will have the following proposed equipment: a P1 Power Plant consisting of natural gas-fueled engines with combined rating of 218 megawatts (MW), a compressed natural gas (CNG) pressure reducing system (PRS), and diesel-fueled emergency black start engine (BSE) gensets with combined rating of 8.2 MW; diesel-fueled emergency backup data center (DC) engines with a combined rating of 246 MW serving as backup power for a data center; Substation diesel-fueled emergency backup engines; fire pump engines; and associated diesel storage tanks.

All of the diesel-fueled emergency engines, except for the fire pump engines, will be routinely used for equipment maintenance and testing purposes, and will be available for NV Energy's emergency demand response (DR) program under Energy Emergency Alert (EEA) Levels 1 and 2, up to 100 hours per year. The Facility will be located in the northeastern section of an approximately 1,204-acre parcel located in Storey County west of Highway 439 on Assessor's Parcel Numbers (APNs) 005-012-24 (P1 Power Plant); and APNs 005-011-96 and 005-011-92 (Data Center), which are adjacent parcels. The Project site is in an area that is in attainment for all criteria pollutants. The Facility is located within the jurisdiction of the Nevada Division of Environmental Protection (NDEP) Bureau of Air Pollution Control (BAPC). This document presents the results of the air dispersion modeling analysis conducted for the Facility.

Nevada Administrative Code (NAC) Section 445B.310 requires facilities applying for air operating permits that would have the potential to emit (PTE) of greater than 25 tons per year (TPY) of at least one criteria pollutant to perform an environmental evaluation, which includes air dispersion modeling of the proposed Facility. Because the proposed Peru Ridge Technology Center would have a PTE of greater than 25 TPY of at least one criteria pollutant, this analysis has been performed. The air dispersion modeling analysis ensures that the Facility will not cause or contribute to an exceedance of the National Ambient Air Quality Standards (NAAQS) and the Nevada Air Quality Standards (NvAAQS). Because NDEP uses NvAAQS to ensure that impacts from projects that are not classified as Prevention of Significant Deterioration (PSD) do not cause or contribute to an exceedance, the NvAAQS are used in this analysis to demonstrate that the Facility does not have significant impacts.

NDEP also requires that Class I Minor Sources, as well as PSD Major Sources, demonstrate that the thresholds for available PSD nitrogen dioxide (NO₂) and particulate matter of less than 10 microns in diameter (PM₁₀) increments in the region will not be exceeded with the addition of Project emissions (known as Increment Tracking). This analysis addresses the NO₂ and PM₁₀ Increment Tracking requirements.

This air dispersion modeling analysis is conducted in accordance with the NDEP modeling requirements and the NDEP/BAPC *Class I Air Quality Operating Permit Guidance Document*, dated July 2021, the NDEP's *General Air Dispersion Modeling Guidelines*, dated September 2008 and the United States Environmental Protection Agency's (USEPA) *Guideline on Air Quality Models* (40 CFR 51, Appendix W). The criteria pollutants evaluated in this analysis are particulate matter with an aerodynamic diameter of less than 2.5 microns ($PM_{2.5}$), PM_{10} , oxides of nitrogen (NO_x and NO_2), volatile organic compounds (VOC), sulfur dioxide (SO_2) and carbon monoxide (CO). To analyze impacts from VOC emissions, NDEP requires ozone (O_3) modeling using a method developed by the USEPA entitled *VOC/ NO_x Point Source Screening Tables*, by Richard D. Scheffe. A PSD increment consumption analysis was also completed for NO_2 and PM_{10} emissions from the Project. This modeling analysis demonstrates compliance with the NvAAQS for all criteria pollutants and demonstrates that the Project will not lead to increment consumption exceeding the PSD increment thresholds.

2.0 FACILITY DESCRIPTION

The proposed Facility will construct the P1 Power Plant, four (4) generator buildings with 82 data center (DC) backup engines, one (1) data center building and accessory structures. The P1 Power Plant will have one-hundred-thirty-six (136) 2,146 brake-horsepower (bhp) (about 1.6 MW) Jenbacher J420 natural gas-fueled engines, with six (6) 1,370 kW (1,864 bhp) Tier 4 Volvo Penta diesel-fueled black start engine (BSE) gensets, each with dual engines, situated in the center of the P1 Plant, to be used for startup of the P1 Plant in an emergency situation, or when called upon for a grid emergency. Twelve (12) CNG PRS units (six of which will ever be operating simultaneously) will be located southwest of the P1 site. The P1 Power Plant with Jenbacher gas engines, BSE diesel gensets and CNG PRS units will be located south of the data center and will be owned and operated by Aggreko.

Two north generator buildings will each include twenty (20) 3.0 MW emergency backup DC engines. Two south generator buildings will each include twenty-one (21) DC engines. The Facility will also include two (2) 1.25 MW (1,676 bhp) Tier 2 Caterpillar C32 emergency diesel-fueled engines which will be used as "Substation" backup engines for auxiliary operations. Two (2) 364 kW (488 bhp) Tier 3 fire pump diesel-fueled engines will be installed at the Facility.

Twelve (12) 40,000-gallon diesel storage tanks will be onsite, three (3) per generator building, along with 150-gallon diesel day tanks attached to each of the 3.0 MW generators. The BSE gensets will have associated 1,240-gallon diesel tanks. The two Substation emergency backup engines will be located onsite at the Substation. The two fire pumps will be located onsite at the Security/Fire Building (SFB). The Substation engines will also have associated 150-gallon day tanks. The fire pumps will have associated 400-gallon diesel tanks. The diesel backup engines will be operated periodically for equipment maintenance and testing purposes. In addition, the BSE gensets, DC engines and Substation engines may be used for emergency

demand-response when called upon by NV Energy. The diesel tank units will be insignificant activities (IAs).

Dispersion modeling for emissions impacts from the P1 Power Plant gas engines was based upon the maximum unit natural gas usage for up to 8,760 hours/year. Dispersion modeling for the emissions impacts from the CNG PRS units was based upon the maximum hourly NO₂ emissions given by the equipment manufacturer for six units running simultaneously for up to 8,760 hours/year. All diesel-fired engines will be powered by diesel fuel and/or equivalent renewable diesel. Dispersion modeling for emissions impacts from the diesel-fired engines (except the two fire pump engines) was based upon the maximum diesel fuel each engine could use for non-emergency testing and maintenance purposes or for emergency demand-response, at maximum unit rating and 100% load for up to 100 hours/year. Dispersion modeling for impacts from the fire pump engines was based upon the maximum diesel fuel each engine could use for non-emergency testing and maintenance purposes at 100% load for up to 40 hours/year.

See Figures 1, 2, 3 and 4 for the Facility site location, surrounding land uses and representative site configurations for the 82 DC backup emergency engines, the two Substation backup engines, and the two diesel fire pump engines; and the P1 Power Plant gas engines, the CNG PRS units, and the four BSE gensets.

3.0 SITE DESCRIPTION

The proposed Facility will be located in the northeastern section of an approximately 1,204-acre parcel located in Storey County about 16 miles east of Reno and about 28 miles northeast of Carson City. Highway 439 runs approximately 0.5 miles east of the site, and Interstate 80 runs approximately 2.5 miles north of the site. Facility emission sources will be centered at about UTM 285375 meters (m) E, 4378940 m N, WGS84 Zone 11. The proposed fenceline and Facility building locations at full buildout are shown in Figure 1. Figure 2 shows the locations of surrounding land uses. Figure 3 is a site map of the Data Center Facility showing locations of the DC generator buildings with general engine locations, the data center building, the Substation engines, the fire pump engines, and the auxiliary buildings. Figure 4 is a site map of the P1 Power Plant showing locations of the Jenbacher J420 engines, CNG PRS units, and BSE gensets.

The area immediately surrounding the site is generally characterized by mountainous terrain averaging about 4,650 feet (ft) above sea level. Terrain rises to the south and west of the Facility site. Industrial facilities are to the north, west and south of the Facility site. The nearest residential location is about 4.0 miles to the west from the center of the Project site. The nearest school to the Facility is Marvin Moss Elementary School located approximately 10.6 miles west of the Facility.

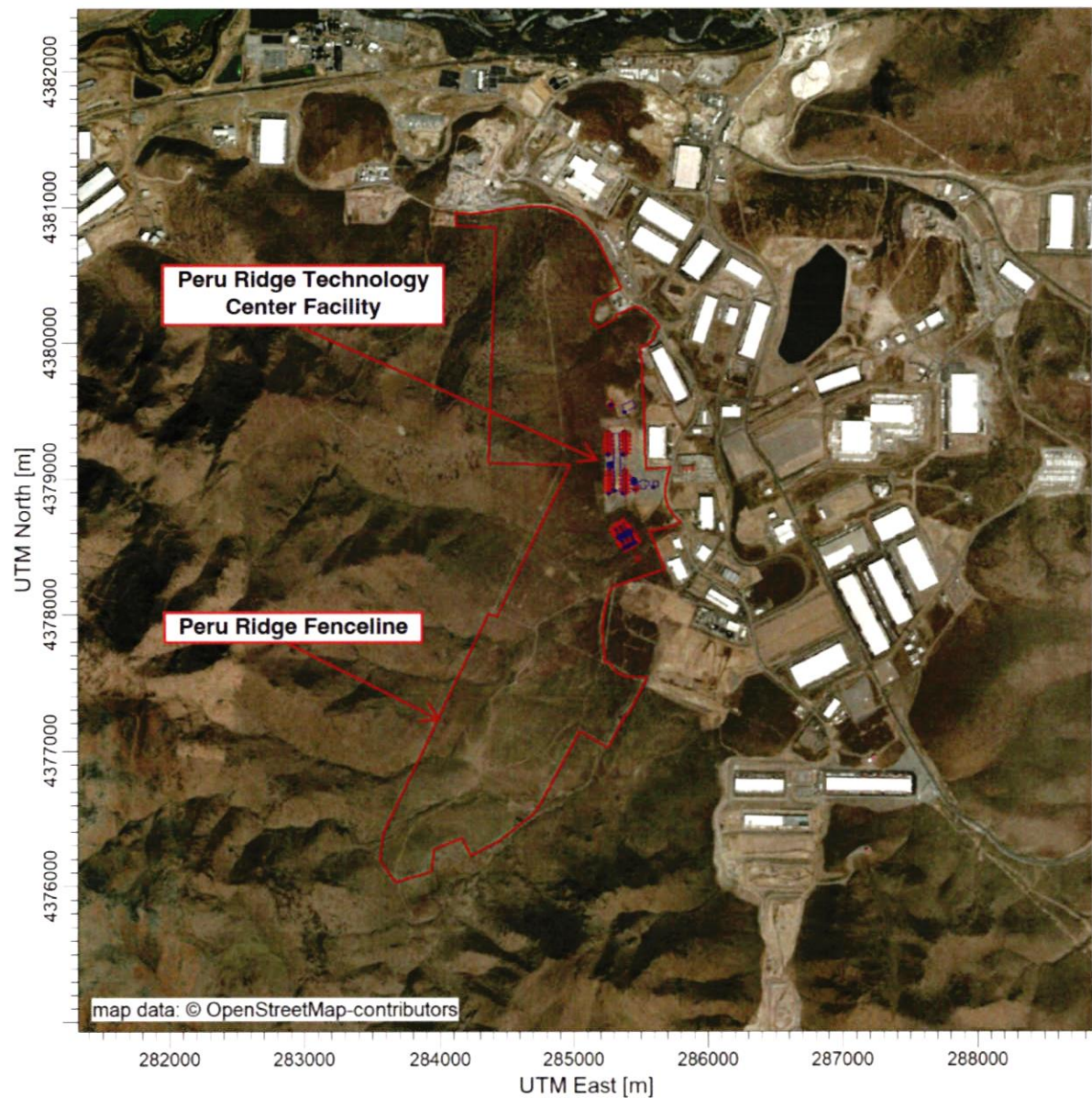
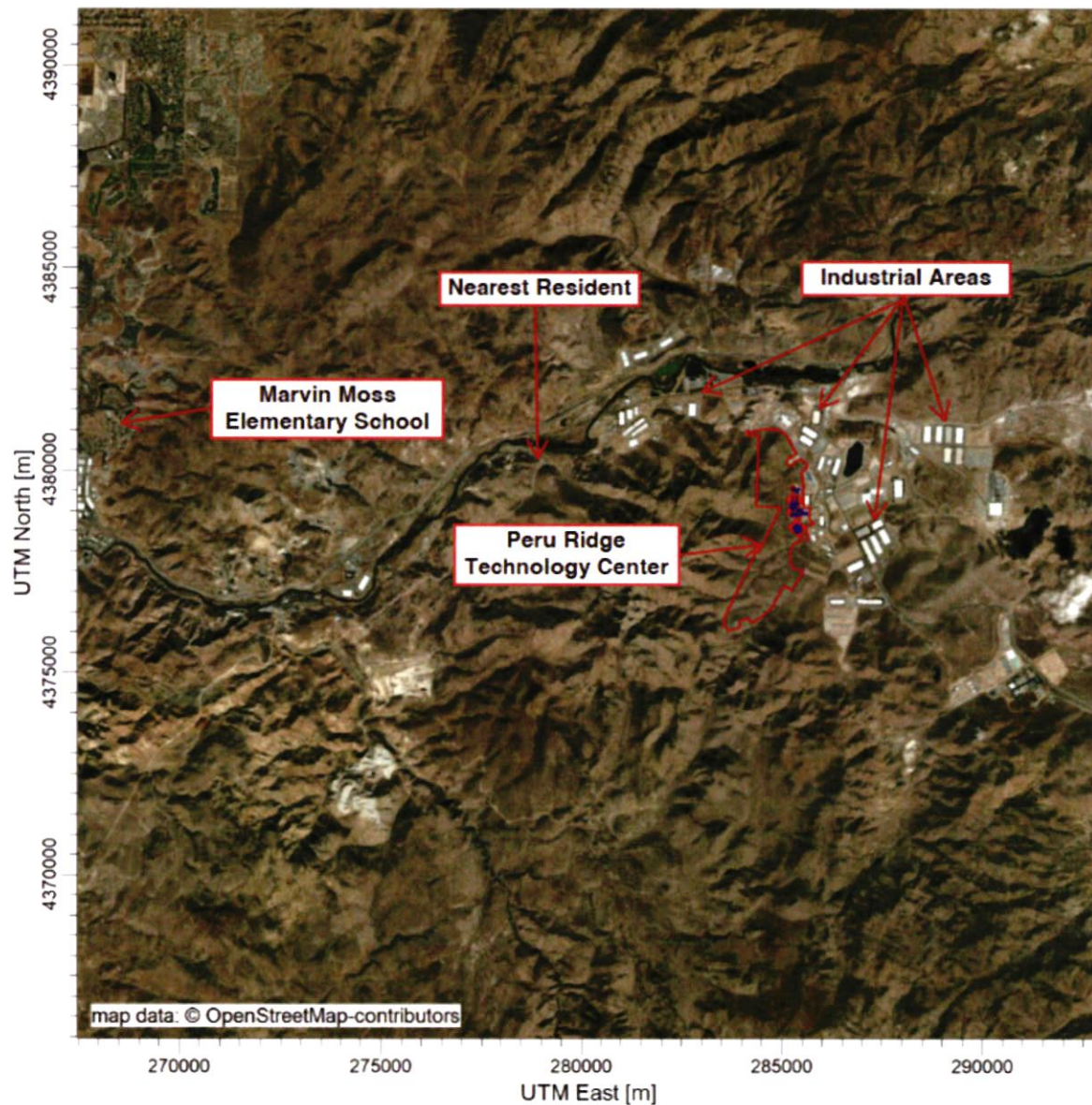


FIGURE 1. LOCATION OF THE PERU RIDGE TECHNOLOGY CENTER FACILITY



**FIGURE 2. PERU RIDGE TECHNOLOGY CENTER GENERAL LOCATION WITH
SURROUNDING LAND USES**

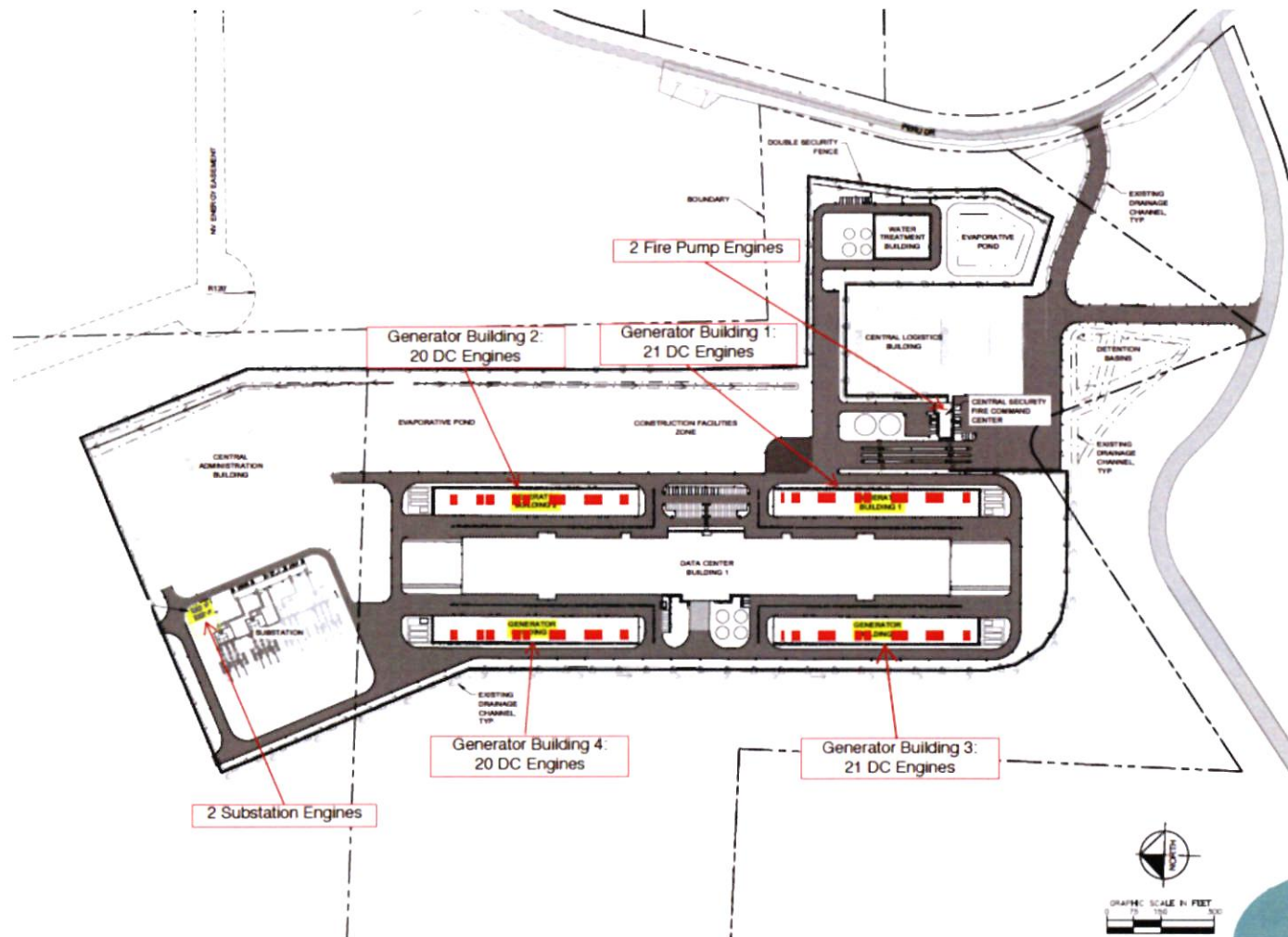


FIGURE 3. PERU RIDGE TECHNOLOGY CENTER SITE CONFIGURATION

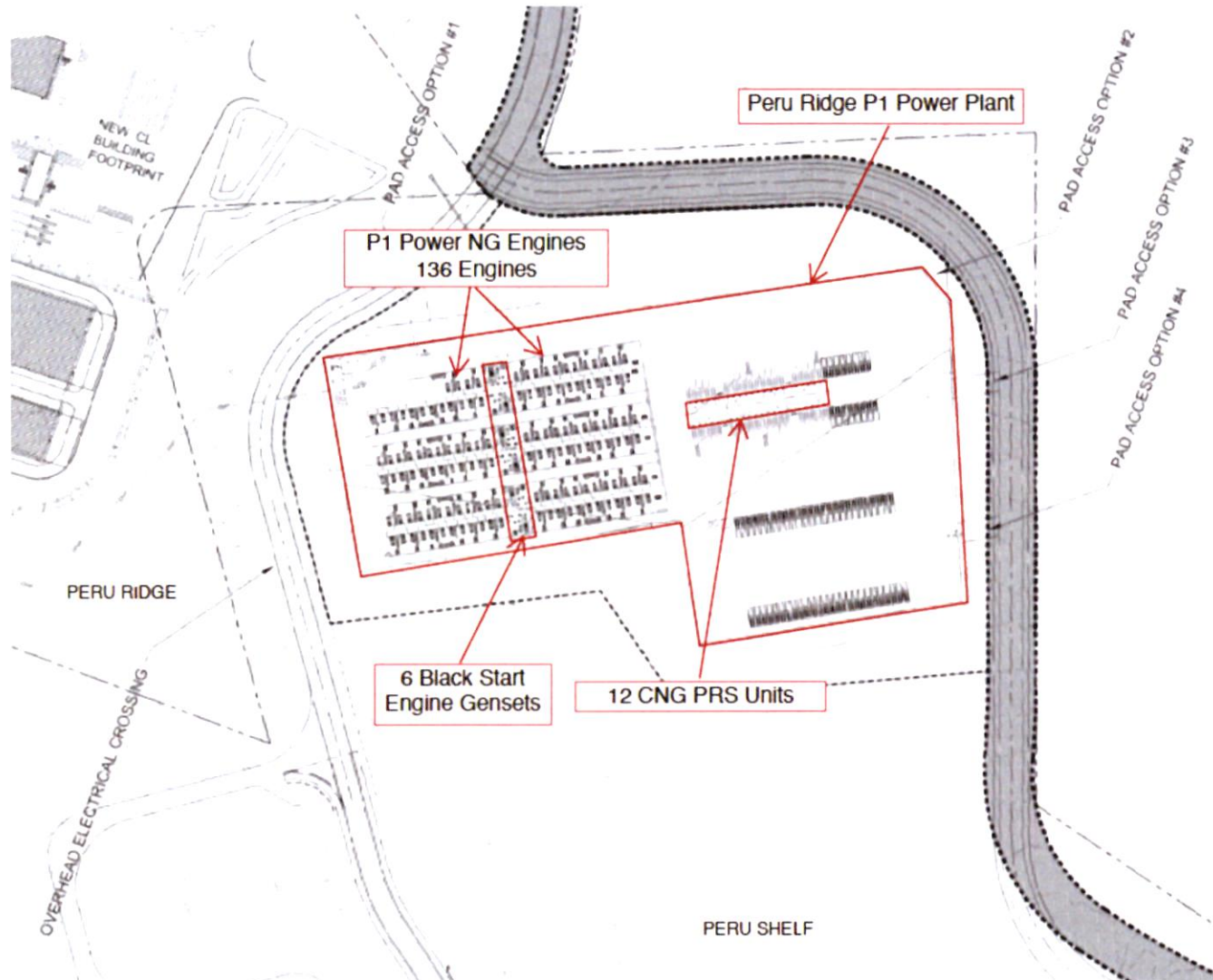


FIGURE 4. PERU RIDGE P1 POWER PLANT SITE CONFIGURATION

4.0 MODEL SELECTION AND INPUT

4.1 Model Selection

In accordance with NDEP modeling guidance, the USEPA-approved AERMOD model version 24142 with Lakes Environmental software was used to conduct the modeling analysis. AERMOD is a sequential model that calculates concentrations at each receptor for every hour in the year. The model is designed for rural or urban applications and can be used with a rectangular or polar system of receptors.

4.2 Control Options and Land Use Classification

AERMOD was run in the regulatory default mode, including stack-tip downwash and use of elevated terrain algorithms. A review of the area surrounding the Facility indicated the urban option is not appropriate for this modeling demonstration because the surrounding land characteristics are distinctly rural. Consequently, the rural option was employed.

4.3 Source Data

Point sources were used to evaluate all of the sources, except the CNG PRS units, which are better represented by an area source in AERMOD. The P1 Power Plant gas engine stacks, two Substation emergency engine stacks and two fire pump engine stacks were modeled as point sources located as shown in Figures 3 and 4. The four BSE genset stacks each represent emissions from two engines per genset. The twelve CNG PRS units were represented by an area source located where the units will operate. The 82 3.0 MW DC engine stacks were placed in each generator building according to detailed site maps (see Figure 3).

At the P1 Prime Power plant, the P1 Power Plant gas engine stacks were modeled at a height of 33.1 feet (ft), stack diameter of 1.67 ft, temperature of 819°F and exhaust flow rate of 19,000.9 actual cubic feet per minute (acfm). The BSE genset stacks were modeled at a height of 9.6 ft, stack diameter of 0.93 ft (representing two stacks with 8-inch diameter each), temperature of 810°F and exhaust flow rate of 7,758 acfm. The CNG PRS units were modeled as an area source with 12 ft release height and 5.58 ft initial vertical dimension.

The DC engine stacks in the generator buildings were modeled at a height of 60 ft, stack diameter of 1.0 ft, temperature of 902°F and exhaust flow rate of 22,806.2 acfm. The Substation emergency engine stacks were modeled at a height of 15 ft, a stack diameter of 1.0 ft, temperature of 806.6°F and a gas exit flow rate of 10,005 acfm. The fire pump engine stacks were modeled at a height of 20.5 ft, a stack diameter of 0.667 ft, temperature of 953°F and a gas exit flow rate of 3,830 acfm. Source locations were based upon a UTM WGS84, UTM Zone 11 projection. Attachment A provides the modeling input data for the sources and buildings.

AERMOD has the capability to account for building downwash produced by airflow over and around structures. Direction-specific building downwash parameters were

developed for Project sources for input into AERMOD using the USEPA Building Profile Input Program, or BPIP Model. The BPIP model requires building dimensions as well as stack locations for input. Base elevations for sources and buildings were set at base elevations listed on site maps. The configuration of the Facility and AERMOD sources is shown in Figure 4.

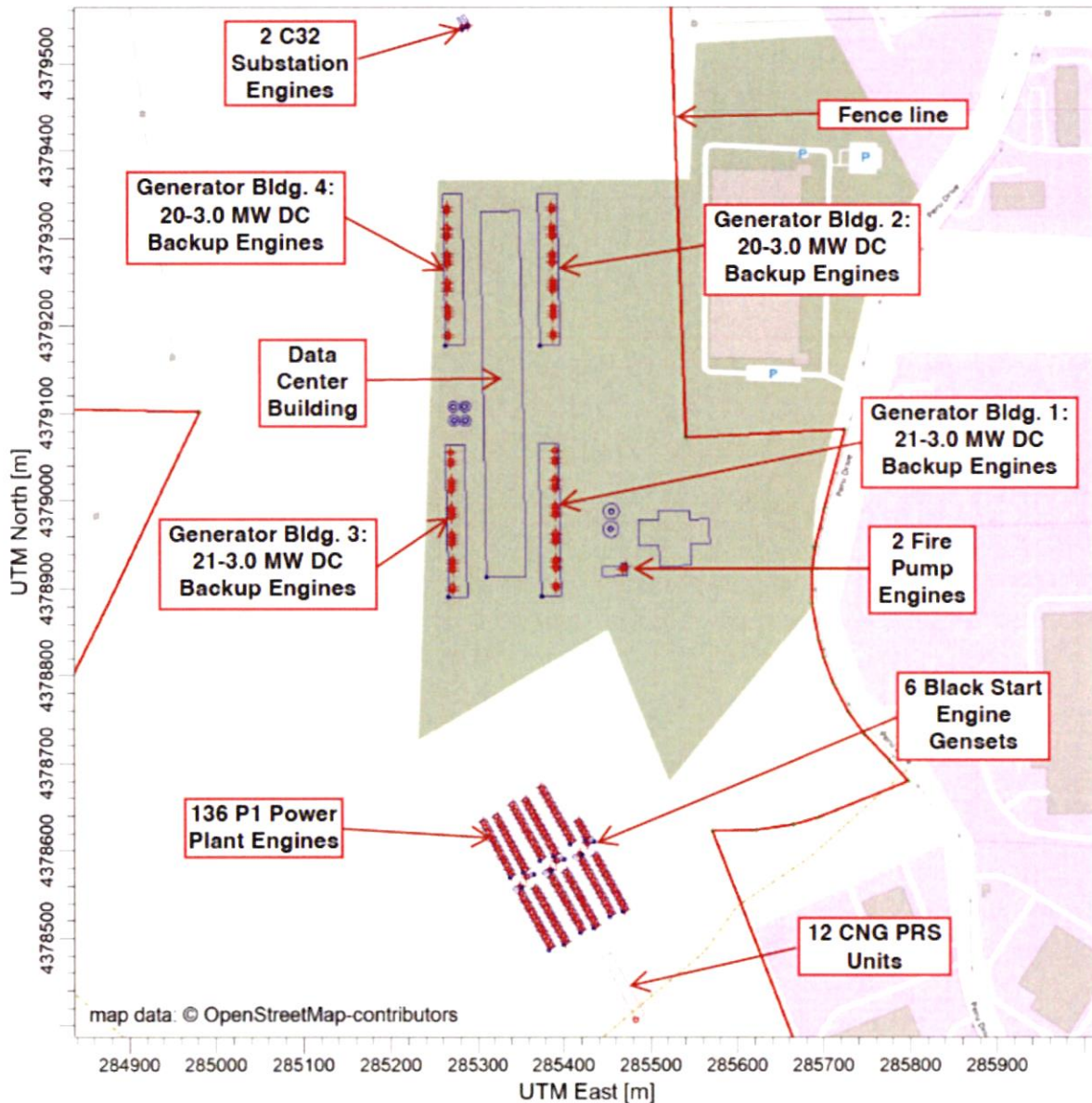


FIGURE 5. AERMOD FACILITY CONFIGURATION

4.4 Background Concentrations and Offsite Sources

Dispersion modeling analyses require evaluation of appropriate background concentrations along with modeled impacts of a proposed facility and nearby facilities. For this analysis, the NDEP "pristine" background concentrations were used for PM_{2.5} and PM₁₀. These concentrations are recommended by NDEP for Storey County as the area is removed from urban sources of anthropogenic pollutants. NDEP does not require the addition of background concentrations for gaseous air pollutants. The background concentrations used in this analysis are shown in Table 1.

NDEP does not require the inclusion of nearby facility sources for the analysis of impacts in Storey County. No nearby sources were included in the analysis.

TABLE 1 BACKGROUND CONCENTRATIONS		
Pollutant	Averaging Period	Background Concentration ($\mu\text{g}/\text{m}^3$)
CO	All	0
NO ₂	All	0
SO ₂	All	0
PM _{2.5}	24-hour	8
PM _{2.5}	Annual	2.3
PM ₁₀	24-hour	10.2

Source: NDEP/BAPC

4.5 Receptor Data

Modeled receptors were placed in all areas considered as "ambient air" pursuant to 40 CFR §50.1(e) and NDEP guidance. Ambient air is defined as that portion of the atmosphere, external to buildings, to which the general public has access.

Because the Facility is located in a mountainous region, initially a large grid of receptors, measuring out to 50 kilometers (km) from the Facility sources, was modeled in AERMOD for 1-hour (hr) NO₂ and 24-hr PM_{2.5} to ensure that maximum impacts are captured. This initial modeling helped to determine that a receptor grid extending out to 10 km from the Facility sources is more than sufficient to capture maximum impacts for all pollutants/averaging times.

To complete air dispersion modeling, Cartesian receptor grids were developed following NDEP modeling guidance and defined using UTM WGS84 Zone 11. For the NvAAQS modeling analysis, a nested receptor grid was developed to evaluate the effects of the proposed Facility in the area surrounding the Facility. The receptor spacing is as follows:

- 25 m spacing on the Facility boundary;
- 50 m gridded receptor spacing extending from the Facility boundary to approximately 500 m from the Facility boundary;
- 100 m gridded receptor spacing extending from approximately 500 m to approximately 3 kilometers (km) from the Facility boundary;
- 250 m gridded receptor spacing extending from approximately 3 km to approximately 5 km from the Facility boundary; and
- 500 m gridded receptor spacing extending from approximately 5 km to approximately 10 km from the Facility boundary.

In total, 8,893 receptors were included in the modeling analysis. Figure 5 shows the receptor grid used for the NvAAQS modeling analysis.

For Increment Tracking modeling, a receptor grid was provided by NDEP. The increment grid consists of receptors spaced 500 m apart covering the Air Quality Hydrographic Area (HA) in which the Facility will be located (HA-83). Figure 6 shows the receptor grid used for the Increment Tracking analysis. Note that onsite receptors were not included in the Increment Tracking modeling analysis.

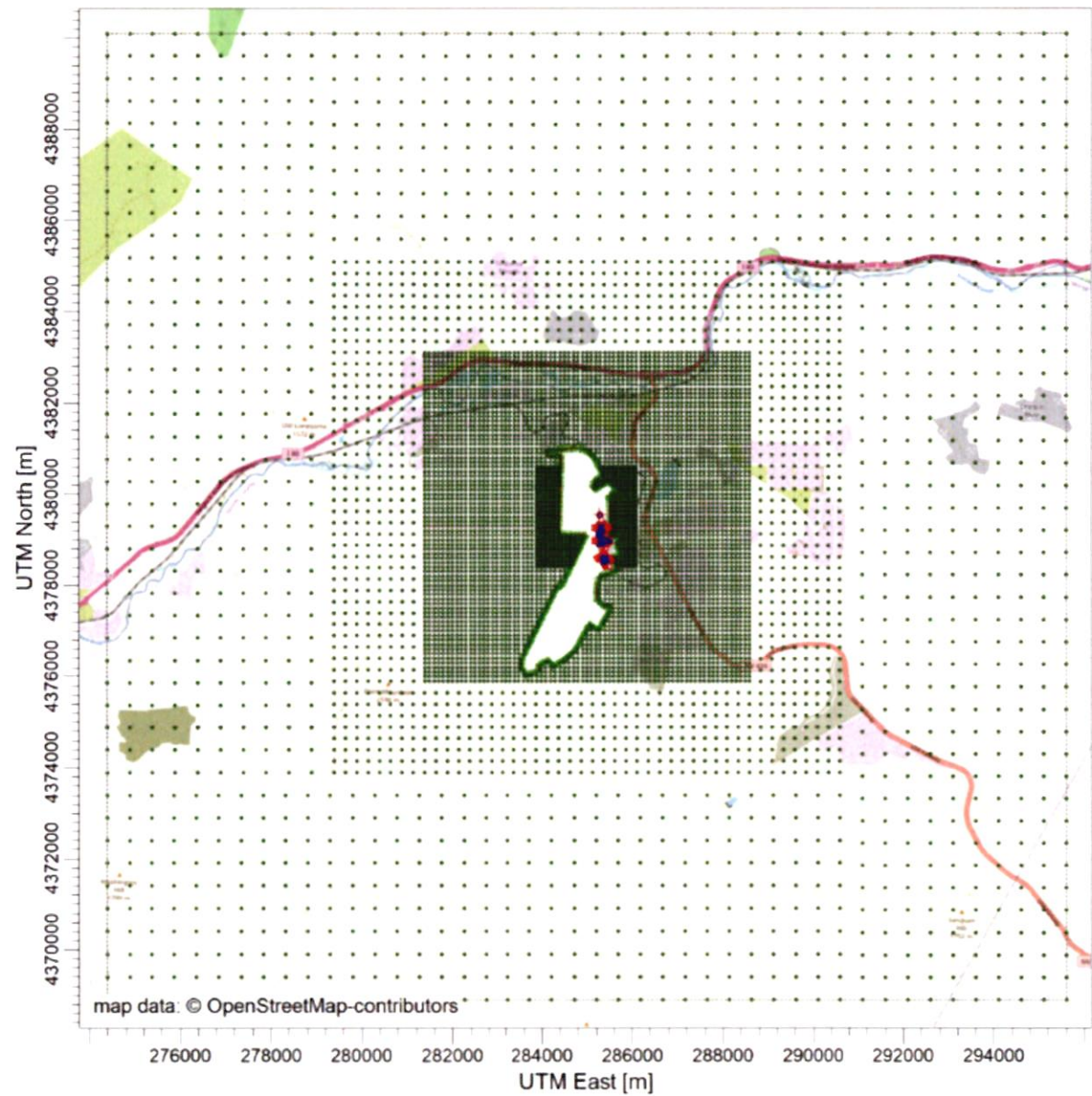


FIGURE 6. RECEPTORS FOR NVAQS ANALYSIS

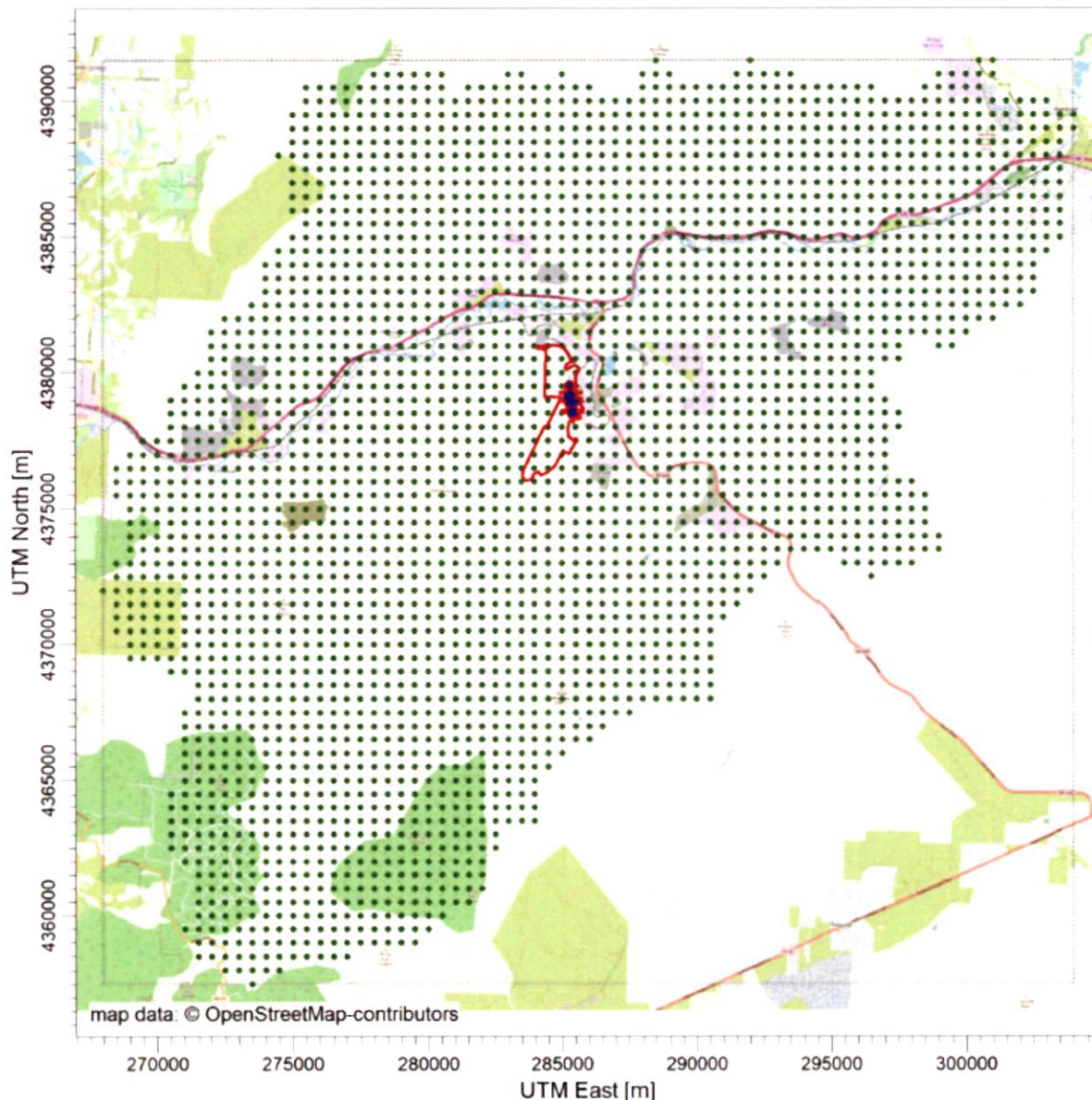


FIGURE 7. RECEPTORS FOR INCREMENT ANALYSIS (HA-83 GRID)

4.6 Terrain Data

The AERMOD model requires receptor elevation inputs to calculate impacts in simple terrain above stack base and in complex terrain above the stack height. Receptor elevations were developed using the National Elevation Dataset (NED) data. The NED data was converted to GeoTIFF format and processed using the Lakes Environmental AERMOD View Graphic User Interface (GUI) with AERMAP. NED data were processed at 1 arc-sec resolution; receptor terrain values were interpolated from the nearest NED grid points. Receptor base elevations for the increment modeling grid were

included in the file received from NDEP. Source and building base elevations were set to the base elevations listed in the site maps.

4.7 Meteorological Data

For the NvAAQS modeling analysis, NDEP provided a meteorological dataset consisting of one year (2019) of meteorological data collected at the Tracy met station, coupled with upper-air data collected by the National Weather Service at Reno, Nevada. The data were processed by NDEP using AERMET (version 23132), and NDEP provided PR RNO and BlueScape with AERMOD-ready surface and profile files for the year 2019. The adjust-u* option was used in the construction of the meteorological record.

A wind rose for the Tracy met station is shown in Figure 8. The wind rose shows an average wind speed of 2.76 meters per second (m/sec), with a predominant wind flow from the west and southwest and a secondary wind flow from the east. The Tracy 2019 meteorological data was used with an anemometer height of 10 m and a base elevation of 1,308 m.

For the increment modeling analysis, NDEP provided two meteorological datasets, each consisting of one year of meteorological data collected at the Tracy met station, coupled with upper-air data collected by the National Weather Service at Reno, Nevada. The 2009 and 2010 datasets were used to analyze annual NO₂ and annual PM₁₀ incremental impacts. The 2011 and 2012 datasets were used to analyze 24-hour PM₁₀ impacts.

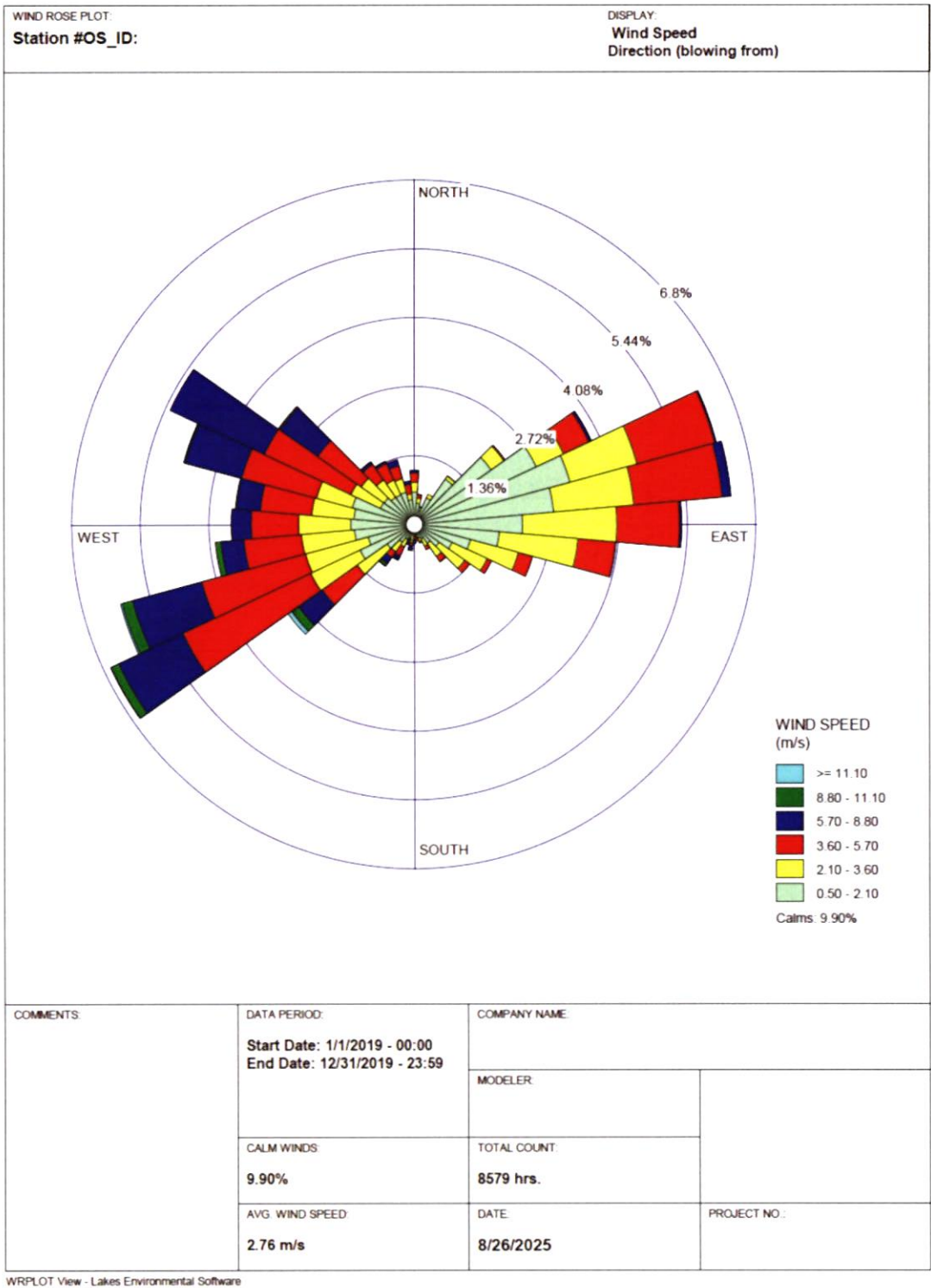


FIGURE 8. WIND ROSE FOR TRACY MET STATION (2019)

5.0 MODELING METHODOLOGY

5.1 Pollutants Subject to Review

All criteria pollutants except VOC were modeled using AERMOD and evaluated for NvAAQS compliance and for the NO₂ and PM₁₀ Increment Tracking analysis. The pollutants analyzed for NvAAQS compliance are NO₂, CO, PM_{2.5}, PM₁₀, and SO₂. Modeling for VOC, an ozone precursor, was not performed using AERMOD because NDEP requires VOC to be analyzed using USEPA's ozone analysis entitled *VOC/NO_x Point Source Screening Tables*, by Richard D. Scheffe (or the Scheffe Method). Details of the screening ozone analysis performed are discussed in Section 6.4.

5.2 Modeling Scenarios

For both NvAAQS and Increment analysis modeling, all of the engine sources were modeled using stack parameters and emission rates at 100% load. See the Permit Application Report for more details on emission calculations. All sources were modeled using no variable emission scenarios. All of the sources were assumed to be operating for every hour of the day and year (24 hours per day, 8,760 hours per year).

5.2.1 Modeling Scenarios for the NvAAQS Analysis

In all of the analyses, it was assumed that all sources would be running at one time. For all short-term modeling analyses, the model input emission rates from each of the 136 P1 Power Plant gas engines were the maximum hourly emissions at 100% load for each engine. For all long-term analyses, the model input emission rates from each of the 136 P1 Plant gas engines were the maximum hourly emissions, de-rated to account for high altitude of the site with a 10% safety factor. Because the CNG PRS units only have NO_x emissions, emissions from these units were included in NO₂ modeling only. For the 1-hr NO₂ and annual NO₂ modeling analyses for the CNG PRS units, the model input emission rate from these units was the maximum hourly emissions for six units operating simultaneously.

For the 1-hour NO₂ and 1-hour SO₂ modeling, the model input emission rates from each of the 82 x 3.0 MW DC engines, six BSE gensets and two Substation engines were annualized by evenly spreading the fuel usage and maximum hourly emissions of the equivalent of 100 hours per year of operation at 100% load for each engine over 8,760 hours of the year. For the fire pump engines, the model input emission rates were annualized similarly, but for the equivalent of 40 hours per year of operation at 100% load. These annualized emission rates were then entered into AERMOD for each stack and then modeled for the NvAAQS analysis.

For the annual NO₂; 24-hour and annual PM₁₀; 24-hour and annual PM_{2.5}; 3-hour, 24-hour and annual SO₂; and 1-hour and 8-hour CO impacts, the maximum hourly emissions for each diesel engine stack were input into AERMOD.

For the annual NO₂, annual PM₁₀ and annual PM_{2.5} modeling, the diesel engines were

modeled in a separate model run than the P1 Power Plant gas engines and the CNG PRS units. Then, for the diesel engines, a post-modeling analysis was completed in Excel spreadsheets where the high-first-high (H1H) through high-eighth-high (H8H) 1-hour modeled impact results were averaged at each receptor (for annual SO₂ modeling, only the H1H results were used), then multiplied by 100 hours per year / 8,760 total hours per year at each receptor. Then, the annual average modeled impacts from the P1 Plant gas engines and CNG PRS units at each receptor were added to the calculated diesel engine impacts.

For the short-term (non-annual) runs, the modeled results were in the form of the standard (e.g. H8H for 24-hour PM_{2.5}). The Air Dispersion Modeling Scenarios table in Attachment B shows the scenarios for each pollutant/averaging time for the NvAAQS analysis.

5.2.2 Modeling Scenarios for the Increment Tracking Analysis

The Increment Tracking analysis analyzed annual NO₂ and 24-hour/annual PM₁₀ impacts using baseline inventories (as concentrations in µg/m³) for the meteorological years that were modeled for each pollutant/averaging time (2009/2010 for annual NO₂ and PM₁₀; 2011/2012 for 24-hour PM₁₀). These baseline inventories, received from NDEP, are representative of the existing increment consumption of these pollutants for each averaging time at the location of the receptors in hydrogeographic area grid 83 (or HA-83 grid) for each of the meteorological data years.

To run the Increment Tracking analysis for annual NO₂ and 24-hour/annual PM₁₀, the annual average (or annualized) emission rates for the diesel engines (calculated as 40 or 100 hours per year / 8,760 hours per year multiplied by the maximum 1-hour NO₂ and PM₁₀ emission rates) and the maximum hourly emission rates for the P1 Power engines and CNG PRS units were entered into AERMOD for each stack and each meteorological data year was run separately in AERMOD. The results from these AERMOD runs were analyzed at each HA-83 grid receptor to determine if the receptor is within the Facility fenceline boundary. The modeled impact at each receptor that is outside of the Facility fenceline boundary was added to that receptor's baseline existing increment consumption value. Then, each receptor was analyzed to determine if the modeled impact plus the existing concentration representing increment consumption is above the increment threshold for that pollutant/averaging time. The higher result at each receptor from either of the two meteorological years is reported as the Project impact. Increment thresholds are shown in Table 2. The Air Dispersion Modeling Scenarios table in Attachment B shows the scenarios for each pollutant/averaging time for the Increment Tracking analysis.

TABLE 2 NDEP INCREMENT TRACKING ANALYSIS THRESHOLDS	
Pollutant/Averaging Time	Increment Threshold ($\mu\text{g}/\text{m}^3$)
Annual NO_2	25
24-hour PM_{10}	30
Annual PM_{10}	17

5.3 Significant Impact Levels

To demonstrate that the Project will not cause or contribute to a NvAAQS exceedance, a criteria pollutant air dispersion modeling analysis can be conducted in two steps: an initial or significant impact analysis (SIA), and a NvAAQS analysis, if a SIL is exceeded and is necessary. For this analysis, PR RNO opted not to perform the SIA. All pollutants/averaging times were evaluated for the NvAAQS analysis.

5.4 NvAAQS Analysis

An air dispersion modeling analysis is required to assess NvAAQS compliance for regulated NSR pollutants. If initial modeling for attainment pollutants exceeds a SIL, then a NvAAQS analysis is required. Because a SIA was not performed for this analysis, all pollutants were initially modeled for the NvAAQS. Table 3 shows the primary NvAAQS, with modeling design basis, for NO_2 , PM_{10} , $\text{PM}_{2.5}$, SO_2 , and CO.

TABLE 3 NEVADA AMBIENT AIR QUALITY STANDARDS (NvAAQS)		
Pollutant	Modeling Design Basis	NvAAQS ($\mu\text{g} / \text{m}^3$)
NO_2	1-hour (Diesel Engines): Annualized Emission Rate Input; 1-hour (P1 Prime Engines and PRS Units): Max. Hourly Rate Input; Maximum 1-hour Average Concentration 98 th Percentile (H8H) At each receptor over the one year modeled	188
	Annual (Diesel Engines): 1-hour Average Concentration Ranks H1H to H8H x 100/8,760 Annual (P1 Prime Engines and PRS Units): Annual Average	100
PM_{10}	24-hour: 24-hour Average Concentration Highest (H2H) at each receptor over the one year modeled	150
	Annual (Diesel Engines): 1-hour Average Concentration Ranks H1H to H8H x 100/8,760 Annual (P1 Prime Engines): Annual Average	50
$\text{PM}_{2.5}$	24-hour: 24-hour Average Concentration 98 th Percentile (H8H) Average at each receptor over the one year modeled	35
	Annual (Diesel Engines): 1-hour Average Concentration Ranks H1H to H8H x 100/8,760 Annual (P1 Prime Engines): Annual Average	12

TABLE 3 NEVADA AMBIENT AIR QUALITY STANDARDS (NVAAQS)		
Pollutant	Modeling Design Basis	NvAAQS ($\mu\text{g} / \text{m}^3$)
SO ₂	1-hour (Diesel Engines): Annualized Emission Rate Input; 1-hour (P1 Prime Engines): Max. Hourly Rate Input; H4H, 1-hour average	196
	3-hour: H1H 3-hour average	1,300
	24-hour: H1H 24-hour average	365
	Annual (Diesel Engines): 1-hour average (H1H) x 100/8,760 Annual (P1 Prime Engines): Annual Average	80
CO	1-hour: H1H 8-hour average	40,500
	8-hour (Elev. <5,000 ft above sea level): H1H 8-hour average	10,500
	8-hour (Elev. >5,000 ft above sea level): H1H 8-hour average	7,000

5.5 NO₂ Analysis

Following USEPA guidance (USEPA 2017), the NO₂ modeling analyses used the recommended three tier screening approach. Tier 1 was not employed, with the conservative assumption that 100% of the available NO_x converts to NO₂. The Tier 2 (Ambient Ratio Method, or ARM2) was employed with the USEPA recommended minimum and maximum ambient NO₂/NO_x ratios of 0.5 and 0.9 respectively. Tier 3, which accounts for the chemical reactions that convert NO_x to NO₂ in the presence of ozone, was not employed.

6.0 MODEL RESULTS

Modeling results are presented below. AERMOD input and output files are provided electronically.

6.1 Scenario Analysis Results

The long-term average annual emission rates modeled for NO₂, PM₁₀, PM_{2.5} and SO₂ and the short-term 1-hour, 3-hour, 8-hour and 24-hour emission rates and operating conditions modeled for NO₂, PM₁₀, PM_{2.5}, SO₂ and CO are shown in Attachment B.

6.2 NvAAQS Analysis Results

A NvAAQS analysis was conducted to assess compliance with the 24-hour and annual PM_{2.5}, 24-hour and annual PM₁₀, 1-hour and annual NO₂, 1-hour, 3-hour, 24-hour and annual SO₂ and 1-hour and 8-hour CO NvAAQS. As required by NDEP, background concentrations listed in Table 1 were added to the model results for 24-hour and annual PM_{2.5} and 24-hour PM₁₀. As shown in Table 1, NDEP does not require background concentrations to be added to modeled results for NvAAQS evaluation of the gaseous pollutants NO₂, SO₂ or CO. Table 3 in Section 5.4 shows the form of the standard for each pollutant.

The results of the NvAAQS analysis are presented in Table 4 and show pollutant emissions from the Project will not cause or contribute to exceedance of the NvAAQS.

TABLE 4 NVAAQS IMPACTS ANALYSIS RESULTS					
Pollutant/Avg. Period	Modeled Concentration (µg/m³)	Background Concentration (µg/m³)	Total Concentration (µg/m³)	Standard (µg/m³)	Exceed NvAAQS?
PM _{2.5} 24-hour	15.6	8.0	23.6	35	No
PM _{2.5} Annual	2.18	2.3	4.48	12.0	No
PM ₁₀ 24-hour	25.2	10.2	35.4	150	No
PM ₁₀ Annual	2.18	0	2.18	50	No
NO ₂ 1-hour	182	0	182	188	No
NO ₂ Annual	11.8	0	11.8	100	No
SO ₂ 1-hour	116	0	116	196	No
SO ₂ 3-hour	89.8	0	89.8	1,300	No
SO ₂ 24-hour	24.3	0	24.3	365	No
SO ₂ Annual	2.61	0	2.61	80	No
CO 1-hour	1,192	0	1,192	40,500	No
CO 8-hour	286	0	286	10,500	No

6.3 Increment Tracking Modeling Analysis Results

Increment Tracking modeling results for annual NO₂ and 24-hour and annual PM₁₀ at the point of maximum impact are presented in Table 5. An electronic copy of the Excel file where calculations were made at each receptor is included with the application package. The only reason why 24-hour PM₁₀ impacts show an exceedance of the increment limits is because the existing increment consumption concentrations at these receptors already exceeded the increment limits. Modeled concentrations from the Project at these receptors did not exceed the SILs, so the Project is not considered to contribute to increment threshold exceedances. The modeling analysis demonstrates the Project's compliance with NDEP's Increment Tracking program.

TABLE 5 PERU RIDGE INCREMENT MODELING RESULTS										
HA-83 Offsite PMI Receptor #	Modeled Concentrations (µg/m³)		SIL (µg/m³)	Project Exceeds SIL?	Existing Increment Consumption (µg/m³)		Total Concentration (µg/m³)		Increment Limit (µg/m³)	Exceeds Limit?
	Met Year 1	Met Year 2			Met Year 1	Met Year 2	Met Year 1	Met Year 2		
Annual NO ₂										
1756	0.319	0.407	1	No	19.5	17.1	19.8	17.5	25	No
Annual PM ₁₀										
1597	0.342	0.366	1	No	9.61	9.31	9.95	9.68	17	No
24-hour PM ₁₀										
1541	0.644	0.860	5	No	36.1	30.8	36.7	31.7	30	Yes*

*Exceeds Increment Limit only because of existing increment consumption. Project impacts do not exceed the SIL and are negligible.

6.4 Ozone Analysis

As with the pollutants discussed above, ozone concentrations are regulated under the NvAAQS. However, ozone is a secondary pollutant formed in the atmosphere by reaction of precursor species, rather than being directly emitted by facilities. As such, AERMOD is not an appropriate tool to assess ozone impacts as AERMOD does not capture the complex chemistry needed to simulate ozone. Instead, a screening analysis is performed to determine ozone impacts from the proposed Facility.

The Scheffe screening tables were used to evaluate the Facility's ozone contribution to demonstrate compliance with the 1-hour ozone NvAAQS. A Facility contribution of 0.013 ppm ozone was obtained. This is lower than the NvAAQS of 0.070 ppm. Accordingly, the NvAAQS have been satisfied for ozone.

The Scheffe screening calculations are shown in Attachment C.

7.0 CONCLUSIONS

The results of this air dispersion modeling analysis demonstrate that the proposed Peru Ridge Technology Center Project will not cause or contribute to air pollution in violation of a NvAAQ Standard. As shown in Table 4, the NvAAQS are not exceeded. As shown in Table 5, an Increment Tracking modeling analysis demonstrates that the Project is in compliance with NDEP's Increment Tracking program. An ozone screening analysis determined that the Project is in compliance with the NvAAQS.

ATTACHMENT A
MODELING INPUTS

PERU RIDGE FACILITY POINT SOURCE PARAMETERS											
Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	J420_01	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL	See Emission Rates in Att. B	285384.92	4378491.42
POINT	J420_02	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285381.43	4378497.58
POINT	J420_03	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285378.76	4378502.29
POINT	J420_04	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285375.22	4378508.55
POINT	J420_05	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285372.57	4378513.21
POINT	J420_06	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285369.19	4378519.18
POINT	J420_07	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285366.47	4378523.99
POINT	J420_08	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285363.15	4378529.85
POINT	J420_09	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285360.59	4378534.38
POINT	J420_10	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285357.06	4378540.40
POINT	J420_11	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285354.43	4378545.25
POINT	J420_12	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285351.01	4378551.27

PERU RIDGE FACILITY POINT SOURCE PARAMETERS

Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	J420_13	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL	See Emission Rates in Att. B	285339.47	4378573.10
POINT	J420_14	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285336.41	4378578.86
POINT	J420_15	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285333.21	4378584.18
POINT	J420_16	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285329.75	4378589.96
POINT	J420_17	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285327.61	4378594.12
POINT	J420_18	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285323.88	4378600.52
POINT	J420_19	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285321.56	4378605.11
POINT	J420_20	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285317.95	4378611.45
POINT	J420_21	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285315.41	4378615.96
POINT	J420_22	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285312.03	4378621.94
POINT	J420_23	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285309.22	4378626.89
POINT	J420_24	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285305.72	4378633.06

PERU RIDGE FACILITY POINT SOURCE PARAMETERS											
Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	J420_25	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL	See Emission Rates in Att. B	285401.67	4378496.37
POINT	J420_26	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285398.51	4378501.96
POINT	J420_27	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285395.77	4378506.84
POINT	J420_28	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285392.03	4378513.29
POINT	J420_29	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285389.51	4378518.09
POINT	J420_30	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285386.01	4378524.33
POINT	J420_31	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285383.32	4378529.14
POINT	J420_32	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285379.90	4378535.25
POINT	J420_33	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285377.36	4378539.78
POINT	J420_34	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285374.21	4378545.42
POINT	J420_35	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285371.37	4378550.48
POINT	J420_36	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285368.02	4378556.45

PERU RIDGE FACILITY POINT SOURCE PARAMETERS

Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	J420_37	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL	See Emission Rates in Att. B	285355.83	4378579.23
POINT	J420_38	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285352.61	4378585.00
POINT	J420_39	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285349.76	4378589.89
POINT	J420_40	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285346.25	4378595.89
POINT	J420_41	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285343.58	4378600.77
POINT	J420_42	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285340.29	4378606.63
POINT	J420_43	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285337.82	4378611.61
POINT	J420_44	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285334.15	4378617.66
POINT	J420_45	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285331.56	4378622.06
POINT	J420_46	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285328.24	4378628.28
POINT	J420_47	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285325.42	4378633.02
POINT	J420_48	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285322.11	4378639.33

PERU RIDGE FACILITY POINT SOURCE PARAMETERS											
Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	J420_49	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL	See Emission Rates in Att. B	285419.74	4378510.05
POINT	J420_50	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285416.31	4378516.17
POINT	J420_51	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285413.71	4378520.82
POINT	J420_52	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285410.22	4378527.04
POINT	J420_53	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285407.50	4378531.91
POINT	J420_54	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285404.07	4378538.02
POINT	J420_55	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285401.64	4378542.37
POINT	J420_56	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285398.32	4378548.29
POINT	J420_57	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285395.76	4378552.86
POINT	J420_58	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285392.24	4378559.15
POINT	J420_59	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285389.65	4378563.78
POINT	J420_60	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285386.06	4378570.33

PERU RIDGE FACILITY POINT SOURCE PARAMETERS

Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	J420_61	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL	See Emission Rates in Att. B	285374.62	4378593.36
POINT	J420_62	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285371.33	4378599.23
POINT	J420_63	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285368.56	4378604.19
POINT	J420_64	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285365.18	4378610.22
POINT	J420_65	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285362.33	4378614.69
POINT	J420_66	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285358.87	4378620.86
POINT	J420_67	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285356.32	4378625.42
POINT	J420_68	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285352.93	4378631.47
POINT	J420_69	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285350.14	4378636.46
POINT	J420_70	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285347.14	4378641.82
POINT	J420_71	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285344.31	4378646.86
POINT	J420_72	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285340.99	4378652.80

PERU RIDGE FACILITY POINT SOURCE PARAMETERS

Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	J420_73	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL	See Emission Rates in Att. B	285436.14	4378515.08
POINT	J420_74	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285432.45	4378521.68
POINT	J420_75	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285429.88	4378526.27
POINT	J420_76	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285426.37	4378532.53
POINT	J420_77	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285423.77	4378537.18
POINT	J420_78	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285420.27	4378543.43
POINT	J420_79	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285417.90	4378547.65
POINT	J420_80	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285414.42	4378553.86
POINT	J420_81	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285411.72	4378558.69
POINT	J420_82	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285408.25	4378564.89
POINT	J420_83	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285405.57	4378569.67
POINT	J420_84	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285402.24	4378575.62

PERU RIDGE FACILITY POINT SOURCE PARAMETERS

Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	J420_85	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL	See Emission Rates in Att. B	285390.63	4378597.63
POINT	J420_86	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285387.17	4378603.81
POINT	J420_87	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285384.53	4378608.53
POINT	J420_88	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285381.02	4378614.80
POINT	J420_89	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285378.40	4378619.48
POINT	J420_90	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285375.04	4378625.47
POINT	J420_91	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285372.35	4378630.28
POINT	J420_92	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285368.79	4378636.64
POINT	J420_93	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285366.57	4378640.61
POINT	J420_94	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285363.14	4378646.73
POINT	J420_95	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285360.42	4378651.58
POINT	J420_96	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285357.02	4378657.66

PERU RIDGE FACILITY POINT SOURCE PARAMETERS

Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	J420_97	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL	See Emission Rates in Att. B	285454.19	4378528.55
POINT	J420_98	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285450.66	4378534.86
POINT	J420_99	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285447.92	4378539.74
POINT	J420_100	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285444.48	4378545.90
POINT	J420_101	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285441.96	4378550.40
POINT	J420_102	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285438.46	4378556.64
POINT	J420_103	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285435.77	4378561.45
POINT	J420_104	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285432.35	4378567.56
POINT	J420_105	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285429.66	4378572.35
POINT	J420_106	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285426.26	4378578.43
POINT	J420_107	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285423.55	4378583.27
POINT	J420_108	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285420.51	4378588.89

PERU RIDGE FACILITY POINT SOURCE PARAMETERS

Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	J420_109	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL	See Emission Rates in Att. B	285408.48	4378611.96
POINT	J420_110	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285405.30	4378617.50
POINT	J420_111	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285402.62	4378622.29
POINT	J420_112	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285399.20	4378628.38
POINT	J420_113	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285396.52	4378633.18
POINT	J420_114	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285393.10	4378639.28
POINT	J420_115	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285390.30	4378644.28
POINT	J420_116	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285386.95	4378650.26
POINT	J420_117	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285384.21	4378655.16
POINT	J420_118	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285380.85	4378661.15
POINT	J420_119	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285378.07	4378666.11
POINT	J420_120	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285374.61	4378672.30

PERU RIDGE FACILITY POINT SOURCE PARAMETERS

Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	J420_121	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL	See Emission Rates in Att. B	285470.43	4378533.10
POINT	J420_122	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285467.13	4378539.21
POINT	J420_123	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285464.34	4378544.19
POINT	J420_124	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285460.90	4378550.34
POINT	J420_125	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285458.28	4378555.01
POINT	J420_126	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285454.79	4378561.25
POINT	J420_127	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285452.17	4378565.93
POINT	J420_128	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285448.64	4378572.22
POINT	J420_129	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285445.99	4378576.95
POINT	J420_130	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285442.51	4378583.18
POINT	J420_131	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285439.84	4378587.94
POINT	J420_132	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285436.48	4378593.94

PERU RIDGE FACILITY POINT SOURCE PARAMETERS

Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	J420_133	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL	See Emission Rates in Att. B	285426.06	4378616.74
POINT	J420_134	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285422.57	4378622.97
POINT	J420_135	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285419.92	4378627.70
POINT	J420_136	Jenbacher J420 1.6 MW NG Engine	1434.1	10.09	0.509	44.07	710.372	VERTICAL		285416.78	4378633.36
POINT	BSE1	1,370 kW Volvo Penta BSE Genset	1434.1	2.9261	0.28346	58.02	705.372	VERTICAL		285350.15	4378559.44
POINT	BSE2	1,370 kW Volvo Penta BSE Genset	1434.1	2.9261	0.28346	58.02	705.372	VERTICAL		285358.11	4378570.48
POINT	BSE3	1,370 kW Volvo Penta BSE Genset	1434.1	2.9261	0.28346	58.02	705.372	VERTICAL		285384.64	4378578.46
POINT	BSE4	1,370 kW Volvo Penta BSE Genset	1434.1	2.9261	0.28346	58.02	705.372	VERTICAL		285391.79	4378588.87
POINT	BSE5	1,370 kW Volvo Penta BSE Genset	1434.1	2.9261	0.28346	58.02	705.372	VERTICAL		285418.40	4378596.26
POINT	BSE6	1,370 kW Volvo Penta BSE Genset	1434.1	2.9261	0.28346	58.02	705.372	VERTICAL		285426.88	4378608.87
POINT	DC1_01	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285391.56	4378900.95

PERU RIDGE FACILITY POINT SOURCE PARAMETERS

Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	DC1_02	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL	See Emission Rates in Att. B	285391.58	4378903.97
POINT	DC1_03	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285391.56	4378923.01
POINT	DC1_04	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285391.39	4378926.51
POINT	DC1_05	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285391.46	4378930.50
POINT	DC1_06	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285391.53	4378933.89
POINT	DC1_07	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285391.24	4378953.08
POINT	DC1_08	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285391.14	4378957.12

PERU RIDGE FACILITY POINT SOURCE PARAMETERS

Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	DC1_09	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL	See Emission Rates in Att. B	285391.21	4378960.66
POINT	DC1_10	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285391.20	4378964.03
POINT	DC1_11	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285390.94	4378983.65
POINT	DC1_12	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285390.91	4378986.98
POINT	DC1_13	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285390.95	4378991.50
POINT	DC1_14	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285390.91	4378995.00
POINT	DC1_15	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285390.75	4379013.81

PERU RIDGE FACILITY POINT SOURCE PARAMETERS

Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	DC1_16	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL	See Emission Rates in Att. B	285390.76	4379017.40
POINT	DC1_17	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285390.66	4379021.99
POINT	DC1_18	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285390.69	4379025.51
POINT	DC1_19	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285390.51	4379044.27
POINT	DC1_20	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285390.47	4379048.00
POINT	DC1_21	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285390.55	4379057.43
POINT	DC2_01	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285388.82	4379188.34

PERU RIDGE FACILITY POINT SOURCE PARAMETERS

Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	DC2_02	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL	See Emission Rates in Att. B	285388.76	4379191.88
POINT	DC2_03	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285388.49	4379210.81
POINT	DC2_04	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285388.44	4379214.48
POINT	DC2_05	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285388.38	4379218.65
POINT	DC2_06	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285388.40	4379221.92
POINT	DC2_07	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285388.08	4379241.25
POINT	DC2_08	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285387.98	4379244.62

PERU RIDGE FACILITY POINT SOURCE PARAMETERS

Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	DC2_09	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL	See Emission Rates in Att. B	285387.98	4379248.64
POINT	DC2_10	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285387.98	4379252.01
POINT	DC2_11	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285387.71	4379271.56
POINT	DC2_12	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285387.64	4379274.97
POINT	DC2_13	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285387.57	4379279.53
POINT	DC2_14	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285387.44	4379283.09
POINT	DC2_15	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285387.18	4379301.63

PERU RIDGE FACILITY POINT SOURCE PARAMETERS

Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	DC2_16	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL	See Emission Rates in Att. B	285387.17	4379305.26
POINT	DC2_17	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285387.07	4379309.85
POINT	DC2_18	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285387.03	4379313.62
POINT	DC2_19	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285386.84	4379332.39
POINT	DC2_20	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285386.78	4379336.12
POINT	DC3_01	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285268.76	4379055.62
POINT	DC3_02	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285268.97	4379045.92

PERU RIDGE FACILITY POINT SOURCE PARAMETERS

Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	DC3_03	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL	See Emission Rates in Att. B	285269.03	4379042.19
POINT	DC3_04	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285269.34	4379023.72
POINT	DC3_05	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285269.34	4379020.29
POINT	DC3_06	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285269.43	4379015.59
POINT	DC3_07	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285269.51	4379011.95
POINT	DC3_08	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285269.80	4378992.98
POINT	DC3_09	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285269.82	4378989.68

PERU RIDGE FACILITY POINT SOURCE PARAMETERS											
Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	DC3_10	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL	See Emission Rates in Att. B	285269.98	4378985.30
POINT	DC3_11	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285269.95	4378981.78
POINT	DC3_12	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285270.26	4378962.19
POINT	DC3_13	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285270.41	4378958.60
POINT	DC3_14	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285270.37	4378955.06
POINT	DC3_15	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285270.39	4378951.38
POINT	DC3_16	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285270.66	4378932.37

PERU RIDGE FACILITY POINT SOURCE PARAMETERS

Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	DC3_17	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL	See Emission Rates in Att. B	285270.67	4378928.89
POINT	DC3_18	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285270.88	4378924.49
POINT	DC3_19	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285270.78	4378921.19
POINT	DC3_20	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285271.02	4378902.17
POINT	DC3_21	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285270.98	4378898.75
POINT	DC4_01	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285264.43	4379335.24
POINT	DC4_02	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285264.47	4379331.50

PERU RIDGE FACILITY POINT SOURCE PARAMETERS											
Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	DC4_03	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL	See Emission Rates in Att. B	285264.65	4379312.73
POINT	DC4_04	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285264.61	4379309.13
POINT	DC4_05	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285264.62	4379304.64
POINT	DC4_06	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285264.64	4379300.93
POINT	DC4_07	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285264.95	4379282.17
POINT	DC4_08	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285265.05	4379278.65
POINT	DC4_09	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285264.97	4379274.08

PERU RIDGE FACILITY POINT SOURCE PARAMETERS

Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	DC4_10	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL	See Emission Rates in Att. B	285264.91	4379270.78
POINT	DC4_11	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285265.15	4379251.33
POINT	DC4_12	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285265.14	4379247.91
POINT	DC4_13	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285265.24	4379243.94
POINT	DC4_14	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285265.22	4379240.46
POINT	DC4_15	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285265.45	4379221.29
POINT	DC4_16	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285265.53	4379217.83

PERU RIDGE FACILITY POINT SOURCE PARAMETERS											
Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	DC4_17	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL	See Emission Rates in Att. B	285265.50	4379213.79
POINT	DC4_18	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285265.57	4379210.03
POINT	DC4_19	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285265.67	4379191.12
POINT	DC4_20	CAT 3516E 3.0 MW Diesel Emergency Engine	1420	18.288	0.3048	147.51	756.483	VERTICAL		285265.71	4379187.62
POINT	C32_1	CAT C32 1.25 MW Diesel Emergency Engine	1420	4.572	0.3048	64.718	703.483	VERTICAL		285288.38	4379543.42
POINT	C32_2	CAT C32 1.25 MW Diesel Emergency Engine	1420	4.572	0.3048	64.718	703.483	VERTICAL		285282.67	4379541.41
POINT	FIRE_1	Clarke C18H0 UFAD12 364 kW Fire Pump Engine	1420	6.2484	0.2033	55.683	784.817	VERTICAL		285471.32	4378925.17

PERU RIDGE FACILITY POINT SOURCE PARAMETERS											
Type	ID	Description	Base Elev. (m)	Height (m)	Diam. (m)	Exit Vel. (m/s)	Exit Temp. (K)	Release Type	Emission Rate (g/s)	UTM Location	
										X (m)	Y (m)
POINT	FIRE_2	Clarke C18H0 UFAD12 364 kW Fire Pump Engine	1420	6.2484	0.2033	55.683	784.817	VERTICAL	See Emission Rates in Att. B	285468.63	4378922.16

PERU RIDGE FACILITY AREA SOURCE PARAMETERS											
Type	ID	Description	Base Elev. (m)	Height (m)	Sigma Z (m)	Length X (m)	Length Y (m)	Rotation Angle (deg)	Emission Rate (g/s-m ²)	UTM Location	
										X (m)	Y (m)
AREA	PRS	CNG PRS Units	1434.1	3.6576	1.7008	11.477	81.231	-28.71	See Emission Rates in Att. B	285482.92	4378407.04

PERU RIDGE FACILITY BUILDING PARAMETERS										
Building ID	Description	Tier Number	Base Elevation (m)	Tier Height (m)	Diameter (m)	X Length (m)	Y Length (m)	Rotation Angle (deg)	UTM Location	
									X (m)	Y (m)
DC_BLDG	DC Building	1	1420	19.3	--	47.27	417.39	1	285310.42	4378913.02
C32GEN1	C32 Substation Gen 1 Enclosure	1	1420	3.75	--	2.99	14.27	24	285288.01	4379541.71
C32GEN2	C32 Substation Gen 2 Enclosure	1	1420	3.75	--	2.99	14.27	24	285282.10	4379539.16
LOGIST	Logistics Building	1	1420	10.97	--	--	--	--	285509.21	4378978.42
TNK1A	Large Tank A near DC1	1	1420	14.63	12.19	--	--	--	285272.13	4379107.48
TNK1B	Large Tank B near DC1	1	1420	14.63	12.19	--	--	--	285285.48	4379107.82
TNK2A	Large Tank A near DC2	1	1420	14.63	12.19	--	--	--	285286.07	4379091.57
TNK2B	Large Tank B near DC2	1	1420	14.63	12.19	--	--	--	285273.05	4379091.90
TNKLOG1	Large Tank 1 near Logistics Bldg.	1	1420	14.63	18.29	--	--	--	285455.18	4378988.41
TNKLOG2	Large Tank 2 near Logistics Bldg.	1	1420	14.63	18.29	--	--	--	285454.71	4378967.98
GBLD1	Generator Building 1	1	1420	12.93	--	22.18	173.41	1	285375.28	4378891.19
GBLD2	Generator Building 2	1	1420	12.93	--	22.18	173.41	1	285373.88	4379177.85
GBLD3	Generator Building 3	1	1420	12.93	--	22.18	173.41	1	285266.37	4378890.18
GBLD4	Generator Building 4	1	1420	12.93	--	22.18	173.41	1	285263.07	4379177.60
CSFCC	Central Security Fire Command Center	1	1420	6.25	--	--	--	--	285465.70	4378926.35
P1.1	P1 NG Engine Housing	1	1434.1	5.49	--	7.92	74.07	29	285383.00	4378486.31
P1.2	P1 NG Engine Housing	1	1434.1	5.49	--	7.92	74.07	29	285337.89	4378569.29

PERU RIDGE FACILITY BUILDING PARAMETERS										
Building ID	Description	Tier Number	Base Elevation (m)	Tier Height (m)	Diameter (m)	X Length (m)	Y Length (m)	Rotation Angle (deg)	UTM Location	
									X (m)	Y (m)
P1.3	P1 NG Engine Housing	1	1434.1	5.49	--	7.92	74.07	29	285399.07	4378492.60
P1.4	P1 NG Engine Housing	1	1434.1	5.49	--	7.92	74.07	29	285353.27	4378574.89
P1.5	P1 NG Engine Housing	1	1434.1	5.49	--	7.92	74.07	29	285418.00	4378505.82
P1.6	P1 NG Engine Housing	1	1434.1	5.49	--	7.92	74.07	29	285372.85	4378588.73
P1.7	P1 NG Engine Housing	1	1434.1	5.49	--	7.92	74.07	29	285434.03	4378511.37
P1.8	P1 NG Engine Housing	1	1434.1	5.49	--	7.92	74.07	29	285388.05	4378593.16
P1.9	P1 NG Engine Housing	1	1434.1	5.49	--	7.92	74.07	29	285452.68	4378524.13
P1.10	P1 NG Engine Housing	1	1434.1	5.49	--	7.92	74.07	29	285407.03	4378607.64
P1.11	P1 NG Engine Housing	1	1434.1	5.49	--	7.92	74.07	29	285467.58	4378530.13
P1.12	P1 NG Engine Housing	1	1434.1	5.49	--	7.92	24.38	29	285423.82	4378612.50
BSGEN_1	Black Start Generator 1 Housing	1	1434.1	3.75	--	3.53	10.4	116	285352.09	4378558.13
BSGEN_2	Black Start Generator 2 Housing	1	1434.1	3.75	--	3.53	10.4	116	285366.84	4378572.92
BSGEN_3	Black Start Generator 3 Housing	1	1434.1	3.75	--	3.53	10.4	116	285386.28	4378577.34
BSGEN_4	Black Start Generator 4 Housing	1	1434.1	3.75	--	3.53	10.4	116	285400.36	4378590.68
BSGEN_5	Black Start Generator 5 Housing	1	1434.1	3.75	--	3.53	10.4	116	285420.53	4378595.47

PERU RIDGE FACILITY BUILDING PARAMETERS										
Building ID	Description	Tier Number	Base Elevation (m)	Tier Height (m)	Diameter (m)	X Length (m)	Y Length (m)	Rotation Angle (deg)	UTM Location	
									X (m)	Y (m)
BSGEN_6	Black Start Generator 6 Housing	1	1434.1	3.75	--	3.53	10.4	116	285435.33	4378610.94

ATTACHMENT B

MODELING SCENARIOS AND EMISSION RATES

PERU RIDGE FACILITY MODELING P1 GAS ENGINE EMISSION RATES PER STACK (G/SEC)

Period	Analysis Description	NO₂	CO	SO₂	PM₁₀	PM_{2.5}
Annual	NvAAQS and Increment (Maximum Hourly Emissions)	0.0283	--	0.00845	0.00563	0.00563
24-hour	NvAAQS and Increment (Maximum Hourly Emissions)	--	--	0.00894	0.00596	0.00596
8-hour	NvAAQS (Maximum Hourly Emissions)	--	0.0310	--	--	--
3-hour	NvAAQS (Maximum Hourly Emissions)	--	--	0.00894	--	--
1-hour	NvAAQS (Maximum Hourly Emissions)	0.0299	0.0310	0.00894	--	--

PERU RIDGE FACILITY MODELING CNG PRS UNIT AREA SOURCE EMISSION RATES (G/SEC-M²)

Period	Analysis Description	NO₂	CO	SO₂	PM₁₀	PM_{2.5}
Annual	NvAAQS and Increment (Maximum Hourly Emissions)	4.32E-05	--	--	--	--
24-hour	NvAAQS and Increment (Maximum Hourly Emissions)	--	--	--	--	--
8-hour	NvAAQS (Maximum Hourly Emissions)	--	--	--	--	--
3-hour	NvAAQS (Maximum Hourly Emissions)	--	--	--	--	--
1-hour	NvAAQS (Maximum Hourly Emissions)	4.32E-05	--	--	--	--

PERU RIDGE FACILITY MODELING BLACK START ENGINE GENSET EMISSION RATES PER STACK (G/SEC)

Period	Analysis Description	NO₂	CO	SO₂	PM₁₀	PM_{2.5}
Annual	Increment (Annualized Emissions)	0.00174	--	--	5.95E-05	--
	NvAAQS (Maximum Hourly Emissions)	0.152	--	0.00270	0.00521	0.00521
24-hour	Increment (Annualized Emissions)	--	--	--	5.95E-05	--
	NvAAQS (Maximum Hourly Emissions)	--	--	0.00270	0.00521	0.00521
8-hour	NvAAQS (Maximum Hourly Emissions)	--	0.0251	--	--	--
3-hour	NvAAQS (Maximum Hourly Emissions)	--	--	0.00270	--	--
1-hour	NvAAQS CO (Maximum Hourly Emissions) NO ₂ and SO ₂ (Annualized Emissions)	0.00174	0.0251	3.08E-05	--	--

PERU RIDGE FACILITY MODELING DC ENGINE EMISSION RATES PER STACK (G/SEC)

Period	Analysis Description	NO₂	CO	SO₂	PM₁₀	PM_{2.5}
Annual	Increment (Annualized Emissions)	0.00471	--	--	0.000278	--
	NvAAQS (Maximum Hourly Emissions)	0.412	--	0.00536	0.0244	0.0244
24-hour	Increment (Annualized Emissions)	--	--	--	0.000278	--
	NvAAQS (Maximum Hourly Emissions)	--	--	0.00536	0.0244	0.0244
8-hour	NvAAQS (Maximum Hourly Emissions)	--	0.161	--	--	--
3-hour	NvAAQS (Maximum Hourly Emissions)	--	--	0.00536	--	--
1-hour	NvAAQS CO (Maximum Hourly Emissions) NO ₂ and SO ₂ (Annualized Emissions)	0.00471	0.161	6.12E-05	--	--

PERU RIDGE FACILITY MODELING SUBSTATION ENGINE EMISSION RATES PER STACK (G/SEC)

Period	Analysis Description	NO₂	CO	SO₂	PM₁₀	PM_{2.5}
Annual	Increment (Annualized Emissions)	0.0330	--	--	0.000106	--
	SIL and NvAAQS (Maximum Hourly Emissions)	2.89	--	0.00229	0.00931	0.00931
24-hour	Increment (Annualized Emissions)	--	--	--	0.000106	--
	SIL and NvAAQS (Maximum Hourly Emissions)	--	--	0.00229	0.00931	0.00931
8-hour	SIL and NvAAQS (Maximum Hourly Emissions)	--	0.0978	--	--	--
3-hour	SIL and NvAAQS (Maximum Hourly Emissions)	--	--	0.00229	--	--
1-hour	SIL and NvAAQS CO (Maximum Hourly Emissions) NO ₂ and SO ₂ (Annualized Emissions)	0.0330	0.0978	2.61E-05	--	--

PERU RIDGE FACILITY MODELING FIRE PUMP ENGINE EMISSION RATES PER STACK (G/SEC)

Period	Analysis Description	NO₂	CO	SO₂	PM₁₀	PM_{2.5}
Annual	Increment (Annualized Emissions)	0.00136	--	--	9.19E-05	--
	SIL and NvAAQS (Maximum Hourly Emissions)	0.297	--	0.126	0.0201	0.0201
24-hour	Increment (Annualized Emissions)	--	--	--	9.19E-05	--
	SIL and NvAAQS (Maximum Hourly Emissions)	--	--	0.126	0.0201	0.0201
8-hour	SIL and NvAAQS (Maximum Hourly Emissions)	--	0.192	--	--	--
3-hour	SIL and NvAAQS (Maximum Hourly Emissions)	--	--	0.126	--	--
1-hour	SIL and NvAAQS CO (Maximum Hourly Emissions) NO ₂ and SO ₂ (Annualized Emissions)	0.00136	0.192	0.000576	--	--

ATTACHMENT C

SCHEFFE OZONE CALCULATIONS

Peru Ridge Technology Center
Ozone Emissions Calculations - Scheffe Method

March 5, 2026

Scheffe Table Ozone Estimation

<https://ndep.nv.gov/uploads/air-permitting-docs/scheffe-model.pdf>

Parameter	Value	Note
Estimated Daily Max. VOC Emission Rate (ton/day)	0.1612	Based on PTE divided by 365 days in a year
Annual Estimated VOC Emission Rate (tpy)	58.85	
Annual Estimated NOx Emission Rate (tpy)	159.1	
Ratio VOC/NOx Emissions	0.36988	Since Ratio is <5.2, used column 3 in Scheffe screening table (below)
Annual VOC Emissions from Max. Daily Rate (tpy)	58.85	Annual total based on the maximum daily rate multiplied by 365
Ozone increase - Interpolate to 62.02 tpy VOC (pphm)	1.295	
Ozone Increase (ppm)	0.013	pphm * 0.01 = ppm
Federal Ozone NAAQS/Nevada Standard (NAC 445B.22097) (ppm)	0.070	
Exceeds NAAQS/NvAAQS?	No	

Scheffe Method, Table 1. Ozone Increment as a function of NMOC emissions and NMOC/NOx ratios.

Tons NMOC/Tons NOx (PPMC/PPM)

Rural (<5.2 NMOC/NOx ratio)

VOC (NMOC) Emissions (TPY)	pphm	ppm
50	1.1	0.011
75	1.2	0.012
100	1.4	0.014
300	1.7	0.017
500	1.9	0.019
750	2.3	0.023
1000	2.7	0.027
1500	3.3	0.033
2000	3.7	0.037
3000	4.3	0.043
5000	4.8	0.048
7500	5.1	0.051
10000	5.4	0.054

* multiply pphm by 0.01 to obtain ppm