Pinyon Environmental, Inc.

Corporate Headquarters
3222 South Vance Street, Suite 200, Lakewood, CO 80227
T: 303.980.5200 F: 303.980.0089
www.pinyon-env.com

May 24, 2024

New Mexico Environmental Department
Air Quality Bureau
Permits Section
525 Camino de los Marquez, Suite No. 1
Santa Fe, NM 87505-1816

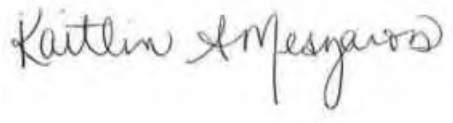
Subject: Crusoe Energy Systems, Inc. Gold State Facility - Minor Source Construction Permit Application
Lea County, New Mexico

On behalf of Crusoe Energy Systems, Inc. (Crusoe), please find attached a Minor Source Construction Permit Application to add seven (7) for a total of twelve (12) Waukesha P9394GSI 2,500 horsepower natural gas generator engines to the Gold State Facility in Lea County, New Mexico. Currently, the facility is permitted under Streamline Permit 10145. The required facility information, tables, application summary, and dispersion modeling report are included with this application. A check is included to cover the NSR fee of $500.

Should you have any questions or comments about the application, please contact Kaitlin Meszaros by email at meszaros@pinyon-env.com or by phone at 631-245-0308. Thank you for your assistance in this matter.

Sincerely,

PINYON ENVIRONMENTAL, INC.,



Kaitlin A Meszaros
Air Quality Specialist

cc: Laura Pritchard, Crusoe Energy Systems, Inc.
Michael Duplantis, Crusoe Energy Systems, Inc.

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Minor Source Construction Permit Application

Crusoe Energy Systems, Inc.
Gold State Facility
Lea County, New Mexico

Pinyon Project No.:
1/19-1347-01

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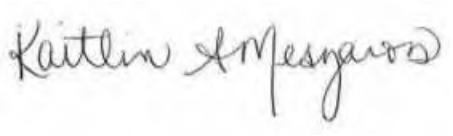
May 24, 2024

Minor Source Construction Permit Application

Crusoe Energy Systems, Inc.
Gold State Facility
Lea County, New Mexico

Pinyon Project No.:
1/19-1347-01

Prepared by:



Kaitlin Meszaros

Reviewed by:

Dustin Collins

Table of Contents

Section 1: Facility Information

Mail Application To:		**For Department use only:**
New Mexico Environment Department Air Quality Bureau Permits Section 525 Camino de los Marquez, Suite 1 Santa Fe, New Mexico, 87505 Phone: (505) 476-4300 Fax: (505) 476-4375 www.env.nm.gov/aqb		

Universal Air Quality Permit Application

Use this application for NOI, NSR, or Title V sources.

Use this application for: the initial application, modifications, technical revisions, and renewals. For technical revisions, complete Sections, 1-A, 1-B, 2-E, 3, 9 and any other sections that are relevant to the requested action; coordination with the Air Quality Bureau permit staff prior to submittal is encouraged to clarify submittal requirements and to determine if more or less than these sections of the application are needed. Use this application for streamline permits as well.

This application is submitted as (check all that apply)**:** ☐ Request for a No Permit Required Determination (no fee)
☐ **Updating** an application currently under NMED review. Include this page and all pages that are being updated (no fee required).
Construction Status: ☐ Not Constructed ☐ Existing Permitted (or NOI) Facility ☐ Existing Non-permitted (or NOI) Facility
Minor Source: ☐ NOI 20.2.73 NMAC ☒ 20.2.72 NMAC application or revision ☐ 20.2.72.300 NMAC Streamline application
Title V Source: ☐ Title V (new) ☐ Title V renewal ☐ TV minor mod. ☐ TV significant mod. ☐ TV Acid Rain: ☐ New ☐ Renewal
PSD Major Source: ☐ PSD major source (new) ☐ Minor Modification to a PSD source ☐ a PSD major modification

Acknowledgements:

☒ I acknowledge that a pre-application meeting is available to me upon request. ☐ Title V Operating, Title IV Acid Rain, and NPR applications have no fees.

☒ $500 NSR application Filing Fee enclosed OR × The full permit fee associated with 10 fee points (required w/ streamline applications).

☒ Check No.: 104272 in the amount of **$500.00**

☒ I acknowledge the required submittal format for the hard copy application is printed double sided 'head-to-toe', 2-hole punched (except the Sect. 2 landscape tables is printed 'head-to-head'), numbered tab separators. Incl. a copy of the check on a separate page.

☒ I acknowledge there is an annual fee for permits in addition to the permit review fee: www.env.nm.gov/air-quality/permit-fees-2/.

☐ This facility qualifies for the small business fee reduction per 20.2.75.11.C. NMAC. The full $500.00 filing fee is included with this application and I understand the fee reduction will be calculated in the balance due invoice. The Small Business Certification Form has been previously submitted or is included with this application. (Small Business Environmental Assistance Program Information: www.env.nm.gov/air-quality/small-biz-eap-2/.)

Citation: Please provide the **low level citation** under which this application is being submitted: **20.2.72.300.D.2 NMAC**
(e.g. application for a new minor source would be 20.2.72.200.A NMAC, one example for a Technical Permit Revision is 20.2.72.219.B.1.b NMAC, a Title V acid rain application would be: 20.2.70.200.C NMAC)

Section 1 – Facility Information

Section 1-A: Company Information

		AI # if known: 41141	Updating Permit/NOI #:
1	Facility Name: Gold State Facility	Plant primary SIC Code (4 digits): 1389	
		Plant NAIC code (6 digits): 213112	
a	Facility Street Address (If no facility street address, provide directions from a prominent landmark): From Hobbs, follow US-63 W for 14.4 miles to NM-529. Turn right onto NM-529 and follow for 9.3 miles. Facility on the right.		
2	Plant Operator Company Name: Crusoe Energy Systems, Inc.	Phone/Fax: 720-795-6484	
a	Plant Operator Address: 1641 California Street Denver, CO 80202		

b	Plant Operator's New Mexico Corporate ID or Tax ID:	
3	Plant Owner(s) name(s): Crusoe Energy Systems, Inc.	Phone/Fax: 970-749-8615
a	Plant Owner(s) Mailing Address(s): 255 Fillmore Street Denver, CO 80206	
4	Bill To (Company): Crusoe Energy Systems, Inc.	Phone/Fax: 970-749-8615
a	Mailing Address: 255 Fillmore Street Denver, CO 80206	E-mail: lpritchard@crusoeenergy.com
5	☒ Preparer: Kaitlin Meszaros ☒ Consultant: Kaitlin Meszaros	Phone/Fax: 970-749-8615
a	Mailing Address: 3222 S Vance St Suite 200	E-mail: meszaros@pinyon-env.com
6	Plant Operator Contact: Michael Duplantis	Phone/Fax: 631-245-0308
a	Address: 255 Fillmore Street Denver, CO 80206	E-mail: lpritchard@crusoeenergy.com
7	Air Permit Contact: Laura Pritchard	Title: Environmental Specialist
a	E-mail: lpritchard@crusoeenergy.com	Phone/Fax: 970-749-8615
b	Mailing Address: 255 Fillmore Street Denver, CO 80206	
c	The designated Air permit Contact will receive all official correspondence (i.e. letters, permits) from the Air Quality Bureau.	

Section 1-B: Current Facility Status

1.a	Has this facility already been constructed? ☒ Yes ☐ No	1.b If yes to question 1.a, is it currently operating in New Mexico? ☒ Yes ☐ No
2	If yes to question 1.a, was the existing facility subject to a Notice of Intent (NOI) (20.2.73 NMAC) before submittal of this application? ☐ Yes ☒ No	If yes to question 1.a, was the existing facility subject to a construction permit (20.2.72 NMAC) before submittal of this application? ☒ Yes ☐ No
3	Is the facility currently shut down? ☐ Yes ☒ No	If yes, give month and year of shut down (MM/YY):
4	Was this facility constructed before 8/31/1972 and continuously operated since 1972? ☐ Yes ☒ No	
5	If Yes to question 3, has this facility been modified (see 20.2.72.7.P NMAC) or the capacity increased since 8/31/1972? ☐ Yes ☐ No ☒ N/A	
6	Does this facility have a Title V operating permit (20.2.70 NMAC)? ☐ Yes ☒ No	If yes, the permit No. is: P-
7	Has this facility been issued a No Permit Required (NPR)? ☐ Yes ☒ No	If yes, the NPR No. is:
8	Has this facility been issued a Notice of Intent (NOI)? ☐ Yes ☒ No	If yes, the NOI No. is:
9	Does this facility have a construction permit (20.2.72/20.2.74 NMAC)? ☒ Yes ☐ No	If yes, the permit No. is: Streamline Level 1 10145
10	Is this facility registered under a General permit (GCP-1, GCP-2, etc.)? ☐ Yes ☒ No	If yes, the register No. is:

Section 1-C: Facility Input Capacity & Production Rate

1	What is the facility's maximum input capacity, specify units (reference here and list capacities in Section 20, if more room is required)			
a	Current	Hourly: 0.15 MMscf	Daily: 2.5 MMscf	Annually: 913.5 MMscf
b	Proposed	Hourly: 0.36 MMscf	Daily: 6 MMscf	Annually: 2,192.4 MMscf
2	What is the facility's maximum production rate, specify units (reference here and list capacities in Section 20, if more room is required)			
a	Current	Hourly: 10 MW	Daily: 240 MW	Annually: 87,600 MW
b	Proposed	Hourly: 24 MW	Daily: 576 MW	Annually: 210,240 MW

Section 1-D: Facility Location Information

1	Latitude (decimal degrees): 32.708766	Longitude (decimal degrees): -103.536927	County: Lea	Elevation (ft): 3990
2	UTM Zone: ☐ 12 or ☒ 13	Datum: ☒ NAD 83 ☐ WGS 84		
a	UTM E (in meters, to nearest 10 meters): 637266	UTM N (in meters, to nearest 10 meters): 3619939		
3	Name and zip code of nearest New Mexico town: Hobbs, 88240			
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): From Hobbs, follow US-63 W for 14.4 miles to NM-529. Turn right onto NM-529 and follow for 9.3 miles. Facility on the right.			
5	The facility is 27 (distance) miles west (direction) of Hobbs (nearest town).			
6	Land Status of facility (check one): ☒ Private ☐ Indian/Pueblo ☐ Government ☐ BLM ☐ Forest Service ☐ Military			
7	List all municipalities, Indian tribes, and counties within a ten (10) mile radius (20.2.72.203.B.2 NMAC) of the property on which the facility is proposed to be constructed or operated: N/A			
8	**20.2.72** NMAC applications **only**: Will the property on which the facility is proposed to be constructed or operated be closer than 50 km (31 miles) to other states, Bernalillo County, or a Class I area (see www.env.nm.gov/air-quality/modeling-publications/)? ☐ Yes ☒ No (20.2.72.206.A.7 NMAC) If yes, list all with corresponding distances in kilometers:			
9	Name nearest Class I area: Carlsbad Caverns National Park			
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): 110			
11	Distance (meters) from the perimeter of the Area of Operations (AO is defined as the plant site inclusive of all disturbed lands, including mining overburden removal areas) to nearest residence, school or occupied structure: 6,550.6			
12	Method(s) used to delineate the Restricted Area: Facility has signage and is gravelled to delineate boundary "**Restricted Area**" is an area to which public entry is effectively precluded. Effective barriers include continuous fencing, continuous walls, or other continuous barriers approved by the Department, such as rugged physical terrain with steep grade that would require special equipment to traverse. If a large property is completely enclosed by fencing, a restricted area within the property may be identified with signage only. Public roads cannot be part of a Restricted Area.			
13	Does the owner/operator intend to operate this source as a portable stationary source as defined in 20.2.72.7.X NMAC? ☒ Yes ☐ No A portable stationary source is not a mobile source, such as an automobile, but a source that can be installed permanently at one location or that can be re-installed at various locations, such as a hot mix asphalt plant that is moved to different job sites.			
14	Will this facility operate in conjunction with other air regulated parties on the same property? ☐ No ☒ Yes If yes, what is the name and permit number (if known) of the other facility? **FME3 Gold Rush CTB (Facility ID 5226)**			

*** The sources under ownership and operatorship of Crusoe shall not be aggregated with the production facility sources on the same site location as they will be owned and operated by a separate company. Crusoe will not have environmental control over the other company's emissions sources and the other company will not have environmental control over Crusoe's emissions sources.**

Section 1-E: Proposed Operating Schedule (The 1-E.1 & 1-E.2 operating schedules may become conditions in the permit.)

1	Facility **maximum** operating ($\frac{\text{hours}}{\text{day}}$): 24	($\frac{\text{days}}{\text{week}}$): 7	($\frac{\text{weeks}}{\text{year}}$): 52	($\frac{\text{hours}}{\text{year}}$): 8760		
2	Facility's maximum daily operating schedule (if less than 24 $\frac{\text{hours}}{\text{day}}$)? Start:	☐AM ☐PM	End:	☐AM ☐PM		
3	Month and year of anticipated start of construction: February 2024 (streamline permit construction) August 2024 (modification construction)					
4	Month and year of anticipated construction completion: February 2024 (streamline permit construction) August 2024 (modification construction)					
5	Month and year of anticipated startup of new or modified facility: March 2024 (streamline permit construction) August 2024 (modification construction)3					
6	Will this facility operate at this site for more than one year? ☒ Yes ☐ No					

Section 1-F: Other Facility Information

1	Are there any current Notice of Violations (NOV), compliance orders, or any other compliance or enforcement issues related to this facility? ☐ Yes ☒ No If yes, specify:		
a	If yes, NOV date or description of issue:		NOV Tracking No:
b	Is this application in response to any issue listed in 1-F, 1 or 1a above? ☐ Yes ☒ No If Yes, provide the 1c & 1d info below:		
c	Document Title:	Date:	Requirement # (or page # and paragraph #):
d	Provide the required text to be inserted in this permit:		
2	Is air quality dispersion modeling or modeling waiver being submitted with this application? ☒ Yes ☐ No		
3	Does this facility require an "Air Toxics" permit under 20.2.72.400 NMAC & 20.2.72.502, Tables A and/or B? ☐ Yes ☒ No		
4	Will this facility be a source of federal Hazardous Air Pollutants (HAP)? ☒ Yes ☐ No		
a	If Yes, what type of source? ☐ **Major** (☐ ≥10 tpy of any single HAP **OR** ☐ ≥25 tpy of any combination of HAPS) **OR** ☒ **Minor** (☐ <10 tpy of any single HAP **AND** ☒ <25 tpy of any combination of HAPS)		
5	Is any unit exempt under 20.2.72.202.B.3 NMAC? ☐ Yes × No		
a	If yes, include the name of company providing commercial electric power to the facility: _____ Commercial power is purchased from a commercial utility company, which specifically does not include power generated on site for the sole purpose of the user.		

Section 1-G: Streamline Application (This section applies to 20.2.72.300 NMAC Streamline applications only)

1	☐ I have filled out Section 18, "Addendum for Streamline Applications."	☒ N/A (This is not a Streamline application.)

Section 1-H: Current Title V Information - Required for all applications from TV Sources

(Title V-source required information for all applications submitted pursuant to 20.2.72 NMAC (Minor Construction Permits), or 20.2.74/20.2.79 NMAC (Major PSD/NNSR applications), and/or 20.2.70 NMAC (Title V))

1	Responsible Official (R.O.) (20.2.70.300.D.2 NMAC):		Phone:
a	R.O. Title:	R.O. e-mail:	
b	R. O. Address:		
2	Alternate Responsible Official (20.2.70.300.D.2 NMAC):		Phone:
a	A. R.O. Title:	A. R.O. e-mail:	
b	A. R. O. Address:		
3	Company's Corporate or Partnership Relationship to any other Air Quality Permittee (List the names of any companies that have operating (20.2.70 NMAC) permits and with whom the applicant for this permit has a corporate or partnership relationship):		
4	Name of Parent Company ("Parent Company" means the primary name of the organization that owns the company to be permitted wholly or in part.):		
a	Address of Parent Company:		
5	Names of Subsidiary Companies ("Subsidiary Companies" means organizations, branches, divisions or subsidiaries, which are owned, wholly or in part, by the company to be permitted.):		
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations:		

7	Affected Programs to include Other States, local air pollution control programs (i.e. Bernalillo) and Indian tribes: Will the property on which the facility is proposed to be constructed or operated be closer than 80 km (50 miles) from other states, local pollution control programs, and Indian tribes and pueblos (20.2.70.402.A.2 and 20.2.70.7.B)? If yes, state which ones and provide the distances in kilometers:

Section 1-I – Submittal Requirements

Each 20.2.73 NMAC (**NOI**), a 20.2.70 NMAC (**Title V**), a 20.2.72 NMAC (**NSR** minor source), or 20.2.74 NMAC (**PSD**) application package shall consist of the following:

Hard Copy Submittal Requirements:

1) One hard copy **original signed and notarized application package** **printed double sided** **'head-to-toe'** **2-hole punched** as we bind the document on top, not on the side; except Section 2 (landscape tables), which should be head-to-head. Please use **numbered tab separators** in the hard copy submittal(s) as this facilitates the review process. For NOI submittals only, hard copies of UA1, Tables 2A, 2D & 2F, Section 3 and the signed Certification Page are required. Please include a copy of the check on a separate page.

2) If the application is for a minor NSR, PSD, NNSR, or Title V application, include one working hard **copy** for Department use. This copy should be printed in book form, 3-hole punched, and **must be double sided**. Note that this is in addition to the head-to-to 2-hole punched copy required in 1) above. Minor NSR Technical Permit revisions (20.2.72.219.B NMAC) only need to fill out Sections 1-A, 1-B, 3, and should fill out those portions of other Section(s) relevant to the technical permit revision. TV Minor Modifications need only fill out Sections 1-A, 1-B, 1-H, 3, and those portions of other Section(s) relevant to the minor modification. NMED may require additional portions of the application to be submitted, as needed.

3) The entire NOI or Permit application package, including the full modeling study, should be submitted electronically. Electronic files for applications for NOIs, any type of General Construction Permit (GCP), or technical revisions to NSRs must be submitted with compact disk (CD) or digital versatile disc (DVD). For these permit application submittals, **two** CD copies are required (in sleeves, not crystal cases, please), with additional CD copies as specified below. NOI applications require only a single CD submittal. Electronic files for other New Source Review (construction) permits/permit modifications or Title V permits/permit modifications can be submitted on CD/DVD or sent through AQB's secure file transfer service.

Electronic files sent by (check one):

☐ CD/DVD attached to paper application

☒ Secure electronic transfer. Air Permit Contact Name Kaitlin Meszaros, Email meszaros@pinyon-env.com Phone number 720-614-5598.

a. If the file transfer service is chosen by the applicant, after receipt of the application, the Bureau will email the applicant with instructions for submitting the electronic files through a secure file transfer service. Submission of the electronic files through the file transfer service needs to be completed within 3 business days after the invitation is received, so the applicant should ensure that the files are ready when sending the hard copy of the application. The applicant will not need a password to complete the transfer. **Do not use the file transfer service for NOIs, any type of GCP, or technical revisions to NSR permits.**

4) Optionally, the applicant may submit the files with the application on compact disk (CD) or digital versatile disc (DVD) following the instructions above and the instructions in 5 for applications subject to PSD review.

5) If **air dispersion modeling** is required by the application type, include the **NMED Modeling Waiver** and/or electronic air dispersion modeling report, input, and output files. The dispersion modeling ***summary report only*** should be submitted as hard copy(ies) unless otherwise indicated by the Bureau.

6) If the applicant submits the electronic files on CD and the application is subject to PSD review under 20.2.74 NMAC (PSD) or NNSR under 20.2.79 NMC include,
   a. one additional CD copy for US EPA,
   b. one additional CD copy for each federal land manager affected (NPS, USFS, FWS, USDI) and,
   c. one additional CD copy for each affected regulatory agency other than the Air Quality Bureau.

   If the application is submitted electronically through the secure file transfer service, these extra CDs do not need to be submitted.

Electronic Submittal Requirements [in addition to the required hard copy(ies)]:

1) All required electronic documents shall be submitted as 2 separate CDs or submitted through the AQB secure file transfer service. Submit a single PDF document of the entire application as submitted and the individual documents comprising the application.

2) The documents should also be submitted in Microsoft Office compatible file format (Word, Excel, etc.) allowing us to access the text and formulas in the documents (copy & paste). Any documents that cannot be submitted in a Microsoft Office compatible format shall be saved as a PDF file from within the electronic document that created the file. If you are unable to provide Microsoft office compatible electronic files or internally generated PDF files of files (items that were not created electronically: i.e. brochures, maps, graphics, etc,), submit these items in hard copy format. We must be able to review the formulas and inputs that calculated the emissions.

3) It is preferred that this application form be submitted as 4 electronic files (3 MSWord docs: Universal Application section 1 [UA1], Universal Application section 3-19 [UA3], and Universal Application 4, the modeling report [UA4]) and 1 Excel file of the tables (Universal Application section 2 [UA2]). Please include as many of the 3-19 Sections as practical in a single MS Word electronic document. Create separate electronic file(s) if a single file becomes too large or if portions must be saved in a file format other than MS Word.

4) The electronic file names shall be a maximum of 25 characters long (including spaces, if any). The format of the electronic Universal Application shall be in the format: "A-3423-FacilityName". The "A" distinguishes the file as an application submittal, as opposed to other documents the Department itself puts into the database. Thus, all electronic application submittals should begin with "A-". Modifications to existing facilities should use the core permit number (i.e. '3423') the Department assigned to the facility as the next 4 digits. Use 'XXXX' for new facility applications. The format of any separate electronic submittals (additional submittals such as non-Word attachments, re-submittals, application updates) and Section document shall be in the format: "A-3423-9-description", where "9" stands for the section # (in this case Section 9-Public Notice). Please refrain, as much as possible, from submitting any scanned documents as this file format is extremely large, which uses up too much storage capacity in our database. Please take the time to fill out the header information throughout all submittals as this will identify any loose pages, including the Application Date (date submitted) & Revision number (0 for original, 1, 2, etc.; which will help keep track of subsequent partial update(s) to the original submittal. Do not use special symbols (#, @, etc.) in file names. The footer information should not be modified by the applicant.

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Section 2: Tables

Table 2-A: Regulated Emission Sources

Unit and stack numbering must correspond throughout the application package. If applying for a NOI under 20.2.73 NMAC, equipment exemptions under 2.72.202 NMAC do not apply.

Unit Number[1]	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture[2] / Date of Construction/ Reconstruction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)[4]	Replacing Unit No.
GEN 1	Engine 1	Waukesha	9394 GSI	TBD	2,500 hp	2,500 hp	2023	NSRC/AFRC	20200202	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	SI / 4SRB	N/A
GEN 2	Engine 2	Waukesha	9394 GSI	TBD	2,500 hp	2,500 hp	2023	NSRC/AFRC	20200202	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	SI / 4SRB	N/A
GEN 3	Engine 3	Waukesha	9394 GSI	TBD	2,500 hp	2,500 hp	2023	NSRC/AFRC	20200202	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	SI / 4SRB	N/A
GEN 4	Engine 4	Waukesha	9394 GSI	TBD	2,500 hp	2,500 hp	2023	NSRC/AFRC	20200202	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	SI / 4SRB	N/A
GEN 5	Engine 5	Waukesha	9394 GSI	TBD	2,500 hp	2,500 hp	2023	NSRC/AFRC	20200202	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	SI / 4SRB	N/A
GEN 6	Engine 6	Waukesha	9394 GSI	TBD	2,500 hp	2,500 hp	2024	NSRC/AFRC	20200202	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	SI / 4SRB	N/A
GEN 7	Engine 7	Waukesha	9394 GSI	TBD	2,500 hp	2,500 hp	2024	NSRC/AFRC	20200202	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	SI / 4SRB	N/A
GEN 8	Engine 8	Waukesha	9394 GSI	TBD	2,500 hp	2,500 hp	2024	NSRC/AFRC	20200202	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	SI / 4SRB	N/A
GEN 9	Engine 9	Waukesha	9394 GSI	TBD	2,500 hp	2,500 hp	2024	NSRC/AFRC	20200202	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	SI / 4SRB	N/A
GEN 10	Engine 10	Waukesha	9394 GSI	TBD	2,500 hp	2,500 hp	2024	NSRC/AFRC	20200202	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	SI / 4SRB	N/A
GEN 11	Engine 11	Waukesha	9394 GSI	TBD	2,500 hp	2,500 hp	2024	NSRC/AFRC	20200202	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	SI / 4SRB	N/A
GEN 12	Engine 12	Waukesha	9394 GSI	TBD	2,500 hp	2,500 hp	2024	NSRC/AFRC	20200202	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	SI / 4SRB	N/A
SSM	Startup, Shutdown Maintenance Emissions	--	--	--	--	10 ton/yr	2023	N/A		☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A

[1] Unit numbers must correspond to unit numbers in the previous permit unless a complete cross reference table of all units in both permits is provided.

[2] Specify dates required to determine regulatory applicability.

[3] To properly account for power conversion efficiencies, generator set rated capacity shall be reported as the rated capacity of the engine in horsepower, not the kilowatt capacity of the generator set.

[4] "4SLB" means four stroke lean burn engine, "4SRB" means four stroke rich burn engine, "2SLB" means two stroke lean burn engine, "CI" means compression ignition, and "SI" means spark ignition

Table 2-B: Insignificant Activities[1] (20.2.70 NMAC) OR Exempted Equipment (20.2.72 NMAC)

All 20.2.70 NMAC (Title V) applications must list all Insignificant Activities in this table. All 20.2.72 NMAC applications must list Exempted Equipment in this table. If equipment listed on this table is exempt under 20.2.72.202.B.5, include emissions calculations and emissions totals for 202.B.5 "similar functions" units, operations, and activities in Section 6, Calculations. Equipment and activities exempted under 20.2.72.202 NMAC may not necessarily be Insignificant under 20.2.70 NMAC (and vice versa). Unit & stack numbering must be consistent throughout the application package. Per Exemptions Policy 02-012.00 (see http://www.env.nm.gov/aqb/permit/aqb_pol.html), 20.2.72.202.B NMAC Exemptions do not apply, but 20.2.72.202.A NMAC exemptions do apply to NOI facilities under 20.2.73 NMAC. List 20.2.72.301.D.4 NMAC Auxiliary Equipment for Streamline applications in Table 2-A. The List of Insignificant Activities (for TV) can be found online at https://www.env.nm.gov/wp-content/uploads/sites/2/2017/10/InsignificantListTitleV.pdf. TV sources may elect to enter both TV Insignificant Activities and Part 72 Exemptions on this form.

Unit Number	Source Description	Manufacturer	Model No.	Max Capacity	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5)	Date of Manufacture /Reconstruction[2]	For Each Piece of Equipment, Check Onc
			Serial No.	Capacity Units	Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Installation /Construction[2]	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	☐Existing (unchanged) ☐To Be Removed ☐New/Additional ☐Replacement Unit ☐To Be Modified ☐To Be Replaced
							☐Existing (unchanged) ☐To Be Removed ☐New/Additional ☐Replacement Unit ☐To Be Modified ☐To Be Replaced
							☐Existing (unchanged) ☐To Be Removed ☐New/Additional ☐Replacement Unit ☐To Be Modified ☐To Be Replaced
							☐Existing (unchanged) ☐To Be Removed ☐New/Additional ☐Replacement Unit ☐To Be Modified ☐To Be Replaced
							☐Existing (unchanged) ☐To Be Removed ☐New/Additional ☐Replacement Unit ☐To Be Modified ☐To Be Replaced
							☐Existing (unchanged) ☐To Be Removed ☐New/Additional ☐Replacement Unit ☐To Be Modified ☐To Be Replaced
							☐Existing (unchanged) ☐To Be Removed ☐New/Additional ☐Replacement Unit ☐To Be Modified ☐To Be Replaced
							☐Existing (unchanged) ☐To Be Removed ☐New/Additional ☐Replacement Unit ☐To Be Modified ☐To Be Replaced
							☐Existing (unchanged) ☐To Be Removed ☐New/Additional ☐Replacement Unit ☐To Be Modified ☐To Be Replaced
							☐Existing (unchanged) ☐To Be Removed ☐New/Additional ☐Replacement Unit ☐To Be Modified ☐To Be Replaced
							☐Existing (unchanged) ☐To Be Removed ☐New/Additional ☐Replacement Unit ☐To Be Modified ☐To Be Replaced
							☐Existing (unchanged) ☐To Be Removed ☐New/Additional ☐Replacement Unit ☐To Be Modified ☐To Be Replaced
							☐Existing (unchanged) ☐To Be Removed ☐New/Additional ☐Replacement Unit ☐To Be Modified ☐To Be Replaced

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[1] Insignificant activities exempted due to size or production rate are defined in 20.2.70.300.D.6, 20.2.70.7.Q NMAC, and the NMED/AQB List of Insignificant Activities, dated September 15, 2008. Emissions from these insignificant activities do not need to be reported, unless specifically requested.

[2] Specify date(s) required to determine regulatory applicability.

Table 2-C: Emissions Control Equipment

Unit and stack numbering must correspond throughout the application package. Only list control equipment for TAPs if the TAP's maximum uncontrolled emissions rate is over its respective threshold as listed in 20.2.72 NMAC, Subpart V, Tables A and B. In accordance with 20.2.72.203.A(3) and (8) NMAC, 20.2.70.300.D(5)(b) and (e) NMAC, and 20.2.73.200.B(7) NMAC, the permittee shall report all control devices and list each pollutant controlled by the control device regardless if the applicant takes credit for the reduction in emissions.

Control Equipment Unit No.	Control Equipment Description	Date Installed	Controlled Pollutant(s)	Controlling Emissions for Unit Number(s)[1]	Efficiency (% Control by Weight)	Method used to Estimate Efficiency
GEN 1	NSRC/AFRC	N/A	NOx, CO, VOC & Formaldehyde	NSCR 1	NOx (99%) CO (95%) VOC (75%) Formaldehyde (98%)	Manufacturer's Specifications
GEN 2	NSRC/AFRC	N/A	NOx, CO, VOC & Formaldehyde	NSCR 2	NOx (99%) CO (95%) VOC (75%) Formaldehyde (98%)	Manufacturer's Specifications
GEN 3	NSRC/AFRC	N/A	NOx, CO, VOC & Formaldehyde	NSCR 3	NOx (99%) CO (95%) VOC (75%) Formaldehyde (98%)	Manufacturer's Specifications
GEN 4	NSRC/AFRC	N/A	NOx, CO, VOC & Formaldehyde	NSCR 4	NOx (99%) CO (95%) VOC (75%) Formaldehyde (98%)	Manufacturer's Specifications
GEN 5	NSRC/AFRC	N/A	NOx, CO, VOC & Formaldehyde	NSCR 5	NOx (99%) CO (95%) VOC (75%) Formaldehyde (98%)	Manufacturer's Specifications
GEN 6	NSRC/AFRC	N/A	NOx, CO, VOC & Formaldehyde	NSCR 6	NOx (99%) CO (95%) VOC (75%) Formaldehyde (98%)	Manufacturer's Specifications
GEN 7	NSRC/AFRC	N/A	NOx, CO, VOC & Formaldehyde	NSCR 7	NOx (99%) CO (95%) VOC (75%) Formaldehyde (98%)	Manufacturer's Specifications
GEN 8	NSRC/AFRC	N/A	NOx, CO, VOC & Formaldehyde	NSCR 8	NOx (99%) CO (95%) VOC (75%) Formaldehyde (98%)	Manufacturer's Specifications
GEN 9	NSRC/AFRC	N/A	NOx, CO, VOC & Formaldehyde	NSCR 9	NOx (99%) CO (95%) VOC (75%) Formaldehyde (98%)	Manufacturer's Specifications
GEN 10	NSRC/AFRC	N/A	NOx, CO, VOC & Formaldehyde	NSCR 10	NOx (99%) CO (95%) VOC (75%) Formaldehyde (98%)	Manufacturer's Specifications
GEN 11	NSRC/AFRC	N/A	NOx, CO, VOC & Formaldehyde	NSCR 11	NOx (99%) CO (95%) VOC (75%) Formaldehyde (98%)	Manufacturer's Specifications
GEN 12	NSRC/AFRC	N/A	NOx, CO, VOC & Formaldehyde	NSCR 12	NOx (99%) CO (95%) VOC (75%) Formaldehyde (98%)	Manufacturer's Specifications

[1] List each control device on a separate line. For each control device, list all emission units controlled by the control device.

Table 2-D: Maximum Emissions (under normal operating conditions)

☐ **This Table was intentionally left blank because it would be identical to Table 2-E.**

Maximum Emissions are the emissions at maximum capacity and prior to (in the absence of) pollution control, emission-reducing process equipment, or any other emission reduction. Calculate the hourly emissions using the worst case hourly emissions for each pollutant. For each pollutant, calculate the annual emissions as if the facility were operating at maximum plant capacity without pollution controls for 8760 hours per year, unless otherwise approved by the Department. List Hazardous Air Pollutants (HAP) & Toxic Air Pollutants (TAPs) in Table 2-I. Unit & stack numbering must be consistent throughout the application package. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or 1.41E-4).

Unit No.	NOx		CO		VOC		SOx		PM[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
GEN 1	68.45	299.8	32.35	141.7	0.66	2.90	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 2	68.45	299.8	32.35	141.7	0.66	2.90	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 3	68.45	299.8	32.35	141.7	0.66	2.90	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 4	68.45	299.8	32.35	141.7	0.66	2.90	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 5	68.45	299.8	32.35	141.7	0.66	2.90	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 6	68.45	299.8	32.35	141.7	0.66	2.90	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 7	68.45	299.8	32.35	141.7	0.66	2.90	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 8	68.45	299.8	32.35	141.7	0.66	2.90	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 9	68.45	299.8	32.35	141.7	0.66	2.90	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 10	68.45	299.8	32.35	141.7	0.66	2.90	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 11	68.45	299.8	32.35	141.7	0.66	2.90	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 12	68.45	299.8	32.35	141.7	0.66	2.90	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
Totals	821.4	3,598	388.2	1,700	7.92	34.80	0.12	0.60	0.72	2.88	0.72	2.88	0.72	2.88	0.00	0.00	0.00	0.00

[1]**Condensable Particulate Matter:** Include condensable particulate matter emissions for PM10 and PM2.5 if the source is a combustion source. Do not include condensable particulate matter for PM unless PM is set equal to PM10 and PM2.5. Particulate matter (PM) is not subject to an ambient air quality standard, but PM is a regulated air pollutant under PSD (20.2.74 NMAC) and Title V (20.2.70 NMAC).

Table 2-E: Requested Allowable Emissions

Unit & stack numbering must be consistent throughout the application package. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or $1.41E^{-4}$).

Unit No.	NOx		CO		VOC		SOx		PM[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
GEN 1	0.83	3.62	1.65	7.24	0.17	0.75	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 2	0.83	3.62	1.65	7.24	0.17	0.75	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 3	0.83	3.62	1.65	7.24	0.17	0.75	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 4	0.83	3.62	1.65	7.24	0.17	0.75	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 5	0.83	3.62	1.65	7.24	0.17	0.75	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 6	0.83	3.62	1.65	7.24	0.17	0.75	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 7	0.83	3.62	1.65	7.24	0.17	0.75	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 8	0.83	3.62	1.65	7.24	0.17	0.75	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 9	0.83	3.62	1.65	7.24	0.17	0.75	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 10	0.83	3.62	1.65	7.24	0.17	0.75	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 11	0.83	3.62	1.65	7.24	0.17	0.75	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
GEN 12	0.83	3.62	1.65	7.24	0.17	0.75	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24	-	-	-	-
SSM	-	-	-	-	*	10	-	-	-	-	-	-	-	-	-	-	-	-
Totals	9.96	43.44	19.80	86.88	2.04	19.00	0.12	0.6	0.72	2.88	0.72	2.88	0.72	2.88	0	0	0	0

[1] **Condensable Particulate Matter:** Include condensable particulate matter emissions for PM10 and PM2.5 if the source is a combustion source. Do not include condensable particulate matter for PM unless PM is set equal to PM10 and PM2.5. Particulate matter (PM) is not subject to an ambient air quality standard, but it is a regulated air pollutant under PSD (20.2.74 NMAC) and Title V (20.2.70 NMAC).

* Hourly emissions are not requested for SSM.

Table 2-F: Additional Emissions during Startup, Shutdown, and Routine Maintenance (SSM)

☐ This table is intentionally left blank since all emissions at this facility due to routine or predictable startup, shutdown, or scehduled maintenance are no higher than those listed in Table 2-E and a malfunction emission limit is not already permitted or requested. If you are required to report GHG emissions as described in Section 6a, include any GHG emissions during Startup, Shutdown, and/or Scheduled Maintenance (SSM) in Table 2-P. Provide an explanations of SSM emissions in Section 6 and 6a.

All applications for facilities that have emissions during routine our predictable startup, shutdown or scheduled maintenance (SSM)[1], including NOI applications, must include in this table the Maximum Emissions during routine or predictable startup, shutdown and scheduled maintenance (20.2.7 NMAC, 20.2.72.203.A.3 NMAC, 20.2.73.200.D.2 NMAC). In Section 6 and 6a, provide emissions calculations for all SSM emissions reported in this table. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (https://www.env.nm.gov/aqb/permit/aqb_pol.html) for more detailed instructions. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or 1.41E-4).

Unit No.	NOx		CO		VOC		SOx		PM[2]		PM10[2]		PM2.5[2]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
SSM	---	---	---	---	---	10	---	---	---	--	---	--	---	--	---	--	---	--
Totals	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0

[1] **For instance**, if the short term steady-state Table 2-E emissions are 5 lb/hr and the SSM rate is 12 lb/hr, enter 7 lb/hr in this table. If the annual steady-state Table 2-E emissions are 21.9 TPY, and the number of scheduled SSM events result in annual emissions of 31.9 TPY, enter 10.0 TPY in the table below.

[2] **Condensable Particulate Matter:** Include condensable particulate matter emissions for PM10 and PM2.5 if the source is a combustion source. Do not include condensable particulate matter for PM unless PM is set equal to PM10 and PM2.5. Particulate matter (PM) is not subject to an ambient air quality standard, but it is a regulated air pollutant under PSD (20.2.74 NMAC) and Title V (20.2.70 NMAC).

Table 2-G: Stack Exit and Fugitive Emission Rates for Special Stacks

☑ I have elected to leave this table blank because this facility does not have any stacks/vents that split emissions from a single source or combine emissions from more than one source listed in table 2-A. Additionally, the emission rates of all stacks match the Requested allowable emission rates stated in Table 2-E.

Use this table to list stack emissions (requested allowable) from split and combined stacks. List Toxic Air Pollutants (TAPs) and Hazardous Air Pollutants (HAPs) in Table 2-I. List all fugitives that are associated with the normal, routine, and non-emergency operation of the facility. Unit and stack numbering must correspond throughout the application package. Refer to Table 2-E for instructions on use of the "-" symbol and on significant figures.

Stack No.	Serving Unit Number(s) from Table 2-A	NOx		CO		VOC		SOx		PM		PM10		PM2.5		☐ H_2S or ☐ Lead	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Totals:																	

Table 2-H: Stack Exit Conditions

Unit and stack numbering must correspond throughout the application package. Include the stack exit conditions for each unit that emits from a stack, including blowdown venting parameters and tank emissions. If the facility has multiple operating scenarios, complete a separate Table 2-H for each scenario and, for each, type scenario name here:

Stack Number	Serving Unit Number(s) from Table 2-A	Orientation (H=Horizontal V=Vertical)	Rain Caps (Yes or No)	Height Above Ground (ft)	Temp. (F)	Flow Rate		Moisture by Volume (%)	Velocity (ft/sec)	Inside Diameter (ft)
						(acfs)	(dscfs)			
1	GEN 1	Vertical	No	21.48	1,091	171.2	78.46	0	78.46	1.67
2	GEN 2	Vertical	No	21.48	1,091	171.2	78.46	0	78.46	1.67
3	GEN 3	Vertical	No	21.48	1,091	171.2	78.46	0	78.46	1.67
4	GEN 4	Vertical	No	21.48	1,091	171.2	78.46	0	78.46	1.67
5	GEN 5	Vertical	No	21.48	1,091	171.2	78.46	0	78.46	1.67
6	GEN 6	Vertical	No	21.48	1,091	171.2	78.46	0	78.46	1.67
7	GEN 7	Vertical	No	21.48	1,091	171.2	78.46	0	78.46	1.67
8	GEN 8	Vertical	No	21.48	1,091	171.2	78.46	0	78.46	1.67
9	GEN 9	Vertical	No	21.48	1,091	171.2	78.46	0	78.46	1.67
10	GEN 10	Vertical	No	21.48	1,091	171.2	78.46	0	78.46	1.67
11	GEN 11	Vertical	No	21.48	1,091	171.2	78.46	0	78.46	1.67
12	GEN 12	Vertical	No	21.48	1,091	171.2	78.46	0	78.46	1.67

Table 2-I: Stack Exit and Fugitive Emission Rates for HAPs and TAPs

In the table below, report the Potential to Emit for each HAP from each regulated emission unit listed in Table 2-A, only if the entire facility emits the HAP at a rate greater than or equal to one (1) ton per year For each such emission unit, HAPs shall be reported to the nearest 0.1 tpy. Each facility-wide Individual HAP total and the facility-wide Total HAPs shall be the sum of all HAP sources calculated to the nearest 0.1 ton per year. Per 20.2.72.403.A.1 NMAC, facilities not exempt [see 20.2.72.402.C NMAC] from TAP permitting shall report each TAP that has an uncontrolled emission rate in excess of its pounds per hour screening level specified in 20.2.72.502 NMAC. TAPs shall be reported using one more significant figure than the number of significant figures shown in the pound per hour threshold corresponding to the substance. Use the HAP nomenclature as it appears in Section 112 (b) of the 1990 CAAA and the TAP nomenclature as it listed in 20.2.72.502 NMAC. Include tank-flashing emissions estimates of HAPs in this table. For each HAP or TAP listed, fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected or the pollutant is emitted in a quantity less than the threshold amounts described above.

Stack No.	Unit No.(s)	Total HAPs		Formaldehyde ☑ HAP or ☐ TAP		Acetaldehyde ☑ HAP or ☐ TAP		Acrolein ☑ HAP or ☐ TAP		Benzene ☑ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
GEN 1	GEN 1	0.17	0.74	0.01	0.02	0.05	0.26	0.06	0.25	0.03	0.15								
GEN 2	GEN 2	0.17	0.74	0.01	0.02	0.05	0.26	0.06	0.25	0.03	0.15								
GEN 3	GEN 3	0.17	0.74	0.01	0.02	0.05	0.26	0.06	0.25	0.03	0.15								
GEN 4	GEN 4	0.17	0.74	0.01	0.02	0.05	0.26	0.06	0.25	0.03	0.15								
GEN 5	GEN 5	0.17	0.74	0.01	0.02	0.05	0.26	0.06	0.25	0.03	0.15								
GEN 6	GEN 6	0.17	0.74	0.01	0.02	0.05	0.26	0.06	0.25	0.03	0.15								
GEN 7	GEN 7	0.17	0.74	0.01	0.02	0.05	0.26	0.06	0.25	0.03	0.15								
GEN 8	GEN 8	0.17	0.74	0.01	0.02	0.05	0.26	0.06	0.25	0.03	0.15								
GEN 9	GEN 9	0.17	0.74	0.01	0.02	0.05	0.26	0.06	0.25	0.03	0.15								
GEN 10	GEN 10	0.17	0.74	0.01	0.02	0.05	0.26	0.06	0.25	0.03	0.15								
GEN 11	GEN 11	0.17	0.74	0.01	0.02	0.05	0.26	0.06	0.25	0.03	0.15								
GEN 12	GEN 12	0.17	0.74	0.01	0.02	0.05	0.26	0.06	0.25	0.03	0.15								
Totals:		2.06	8.83	0.06	0.24	0.6	3.12	0.72	3.00	0.36	1.80								

Table 2-J: Fuel

Specify fuel characteristics and usage. Unit and stack numbering must correspond throughout the application package.

Unit No.	Fuel Type (low sulfur Diesel, ultra low sulfur diesel, Natural Gas, Coal, …)	Fuel Source: purchased commercial, pipeline quality natural gas, residue gas, raw/field natural gas, process gas (e.g. SRU tail gas) or other	Specify Units				
			Lower Heating Value	Hourly Usage	Annual Usage	% Sulfur	% Ash
GEN 1	Field Gas	Field Gas	1,020 Btu/scf	21 Mscf/hr	182.7 MMscf/yr	0.03	0.00
GEN 2	Field Gas	Field Gas	1,020 Btu/scf	21 Mscf/hr	182.7 MMscf/yr	0.03	0.00
GEN 3	Field Gas	Field Gas	1,020 Btu/scf	21 Mscf/hr	182.7 MMscf/yr	0.03	0.00
GEN 4	Field Gas	Field Gas	1,020 Btu/scf	21 Mscf/hr	182.7 MMscf/yr	0.03	0.00
GEN 5	Field Gas	Field Gas	1,020 Btu/scf	21 Mscf/hr	182.7 MMscf/yr	0.03	0.00
GEN 6	Field Gas	Field Gas	1,020 Btu/scf	21 Mscf/hr	182.7 MMscf/yr	0.03	0.00
GEN 7	Field Gas	Field Gas	1,020 Btu/scf	21 Mscf/hr	182.7 MMscf/yr	0.03	0.00
GEN 8	Field Gas	Field Gas	1,020 Btu/scf	21 Mscf/hr	182.7 MMscf/yr	0.03	0.00
GEN 9	Field Gas	Field Gas	1,020 Btu/scf	21 Mscf/hr	182.7 MMscf/yr	0.03	0.00
GEN 10	Field Gas	Field Gas	1,020 Btu/scf	21 Mscf/hr	182.7 MMscf/yr	0.03	0.00
GEN 11	Field Gas	Field Gas	1,020 Btu/scf	21 Mscf/hr	182.7 MMscf/yr	0.03	0.00
GEN 12	Field Gas	Field Gas	1,020 Btu/scf	21 Mscf/hr	182.7 MMscf/yr	0.03	0.00

Table 2-K: Liquid Data for Tanks Listed in Table 2-L

For each tank, list the liquid(s) to be stored in each tank. If it is expected that a tank may store a variety of hydrocarbon liquids, enter "mixed hydrocarbons" in the Composition column for that tank and enter the corresponding data of the most volatile liquid to be stored in the tank. If tank is to be used for storage of different materials, list all the materials in the "All Calculations" attachment, run the newest version of TANKS on each, and use the material with the highest emission rate to determine maximum uncontrolled and requested allowable emissions rate. The permit will specify the most volatile category of liquids that may be stored in each tank. Include appropriate tank-flashing modeling input data. Use additional sheets if necessary. Unit and stack numbering must correspond throughout the application package.

Tank No.	SCC Code	Material Name	Composition	Liquid Density (lb/gal)	Vapor Molecular Weight (lb/lb*mol)	Average Storage Conditions		Max Storage Conditions	
						Temperature (°F)	True Vapor Pressure (psia)	Temperature (°F)	True Vapor Pressure (psia)

Table 2-L: Tank Data

Include appropriate tank-flashing modeling input data. Use an addendum to this table for unlisted data categories. Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary. See reference Table 2-L2. Note: 1.00 bbl = 10.159 M3 = 42.0 gal

Tank No.	Date Installed	Materials Stored	Seal Type (refer to Table 2-LR below)	Roof Type (refer to Table 2-LR below)	Capacity		Diameter (M)	Vapor Space (M)	Color (from Table VI-C)		Paint Condition (from Table VI-C)	Annual Throughput (gal/yr)	Turn-overs (per year)
					(bbl)	(M^3)			Roof	Shell			

Table 2-P: Greenhouse Gas Emissions

Applications submitted under 20.2.70, 20.2.72, & 20.2.74 NMAC are required to complete this Table. Power plants, Title V major sources, and PSD major sources must report and calculate all GHG emissions for each unit. Applicants must report potential emission rates in short tons per year (see Section 6.a for assistance). Include GHG emissions during Startup, Shutdown, and Scheduled Maintenance in this table. For minor source facilities that are not power plants, are not Title V, or are not PSD, there are three options for reporting GHGs 1) report GHGs for each individual piece of equipment; 2) report all GHGs from a group of unit types, for example report all combustion source GHGs as a single unit and all venting GHG as a second separate unit; OR 3) check the following box.

☑ By checking this box, the applicant acknowledges the total CO2e emissions are less than 75,000 tons per year.

		CO_2 ton/yr	N_2O ton/yr	CH_4 ton/yr	SF_6 ton/yr	PFC/HFC ton/yr[2]									Total GHG Mass Basis ton/yr[4]	Total CO_2e ton/yr[5]
Unit No.	**GWPs [1]**	**1**	**298**	**25**	**22,800**	**footnote 3**										
GEN1	**mass GHG**	10,900	0.021	0.21	0	0									10,900	10,912
	CO_2e	10,900	6.26	5.25	0	0										
GEN2	**mass GHG**	10,900	0.021	0.21	0	0									10,900	10,912
	CO_2e	10,900	6.26	5.25	0	0										
GEN3	**mass GHG**	10,900	0.021	0.21	0	0									10,900	10,912
	CO_2e	10,900	6.26	5.25	0	0										
GEN4	**mass GHG**	10,900	0.021	0.21	0	0									10,900	10,912
	CO_2e	10,900	6.26	5.25	0	0										
GEN5	**mass GHG**	10,900	0.021	0.21	0	0									10,900	10,912
	CO_2e	10,900	6.26	5.25	0	0										
GEN6	**mass GHG**	10,900	0.021	0.21	0	0									10,900	10,912
	CO_2e	10,900	6.26	5.25	0	0										
GEN7	**mass GHG**	10,900	0.021	0.21	0	0									10,900	10,912
	CO_2e	10,900	6.26	5.25	0	0										
GEN8	**mass GHG**	10,900	0.021	0.21	0	0									10,900	10,912
	CO_2e	10,900	6.26	5.25	0	0										
GEN9	**mass GHG**	10,900	0.021	0.21	0	0									10,900	10,912
	CO_2e	10,900	6.26	5.25	0	0										
GEN10	**mass GHG**	10,900	0.021	0.21	0	0									10,900	10,912
	CO_2e	10,900	6.26	5.25	0	0										
GEN11	**mass GHG**	10,900	0.021	0.21	0	0									10,900	10,912
	CO_2e	10,900	6.26	5.25	0	0										
GEN12	**mass GHG**	10,900	0.021	0.21	0	0									10,900	10,912
	CO_2e	10,900	6.26	5.25	0	0										
	mass GHG															
	CO2e															
Total	**mass GHG**	130,800	0.25	2.52	0	0	0	0	0	0	0	0	0	0	130,803	130,938
	CO_2e	130,800	75.10	63.00	0	0										

[1] **GWP** (Global Warming Potential): Applicants must use the most current GWPs codified in Table A-1 of 40 CFR part 98. GWPs are subject to change, therefore, applicants need to check 40 CFR 98 to confirm GWP values.

[2] For **HFCs** or **PFCs** describe the specific HFC or PFC compound and use a separate column for each individual compound.

[3] For each new compound, enter the appropriate GWP for each HFC or PFC compound from Table A-1 in 40 CFR 98.

[4] Green house gas emissions on a **mass basis** is the ton per year green house gas emission before adjustment with its GWP.

[5] **CO_2e** means Carbon Dioxide Equivalent and is calculated by multiplying the TPY mass emissions of the green house gas by its GWP.

Section 3

Application Summary

The **Application Summary** shall include a brief description of the facility and its process, the type of permit application, the applicable regulation (i.e. 20.2.72.200.A.X, or 20.2.73 NMAC) under which the application is being submitted, and any air quality permit numbers associated with this site. If this facility is to be collocated with another facility, provide details of the other facility including permit number(s). In case of a revision or modification to a facility, provide the lowest level regulatory citation (i.e. 20.2.72.219.B.1.d NMAC) under which the revision or modification is being requested. Also describe the proposed changes from the original permit, how the proposed modification will affect the facility's operations and emissions, de-bottlenecking impacts, and changes to the facility's major/minor status (both PSD & Title V).

The **Process Summary** shall include a brief description of the facility and its processes.

Startup, Shutdown, and Maintenance (SSM) routine or predictable emissions: Provide an overview of how SSM emissions are accounted for in this application. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) for more detailed instructions on SSM emissions.

Application Summary: Crusoe Energy Systems, Inc. (Crusoe) is submitting this application to authorize the installation and operation of seven (7) additional, for a total of twelve (12) Waukesha 9394 GSI generator engines each rated at 2,500 hp located at the Franklin Mountain Energy, LLC Gold State CTB (Site ID 5226) in Lea County. Currently the Crusoe Gold State Facility is permitted under Streamline Level 1 permit 10145. Each generator engines will be fueled by field gas from the well pad that would otherwise be flared and be used to power small data centers. Each generator engine is built with a non-selective reduction catalyst (NSRC) device and equipped with an air-fuel ratio (AFR) controller.

The sources under ownership and operatorship of Crusoe shall not be aggregated with the production facility sources on the same site location as they will be owned and operated by a separate company. Crusoe will not have environmental control over the other company's emissions sources and the other company will not have environmental control over Crusoe's emissions sources.

Crusoe requests a relocation provision similar to the streamline permit. While some projects may last at one location for some years,Crusoe's operation will depend on gas decline and other takeaway options which makes the timeline somewhat unpredictable. When these engines move, they will be operated in the same function.

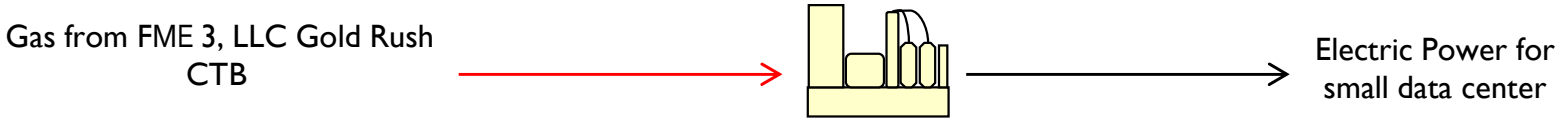
Process Summary: Oil and Gas Support Services (major SIC code 13)

SSM Summary: Crusoe requests up to 10 tons per year (tpy) of VOC SSM emissions.

Section 4

Process Flow Sheet

A **process flow sheet** and/or block diagram indicating the individual equipment, all emission points and types of control applied to those points. The unit numbering system should be consistent throughout this application.



12 x 2,500 hp Waukesha 9394 GSI Engines (GEN 1-12)

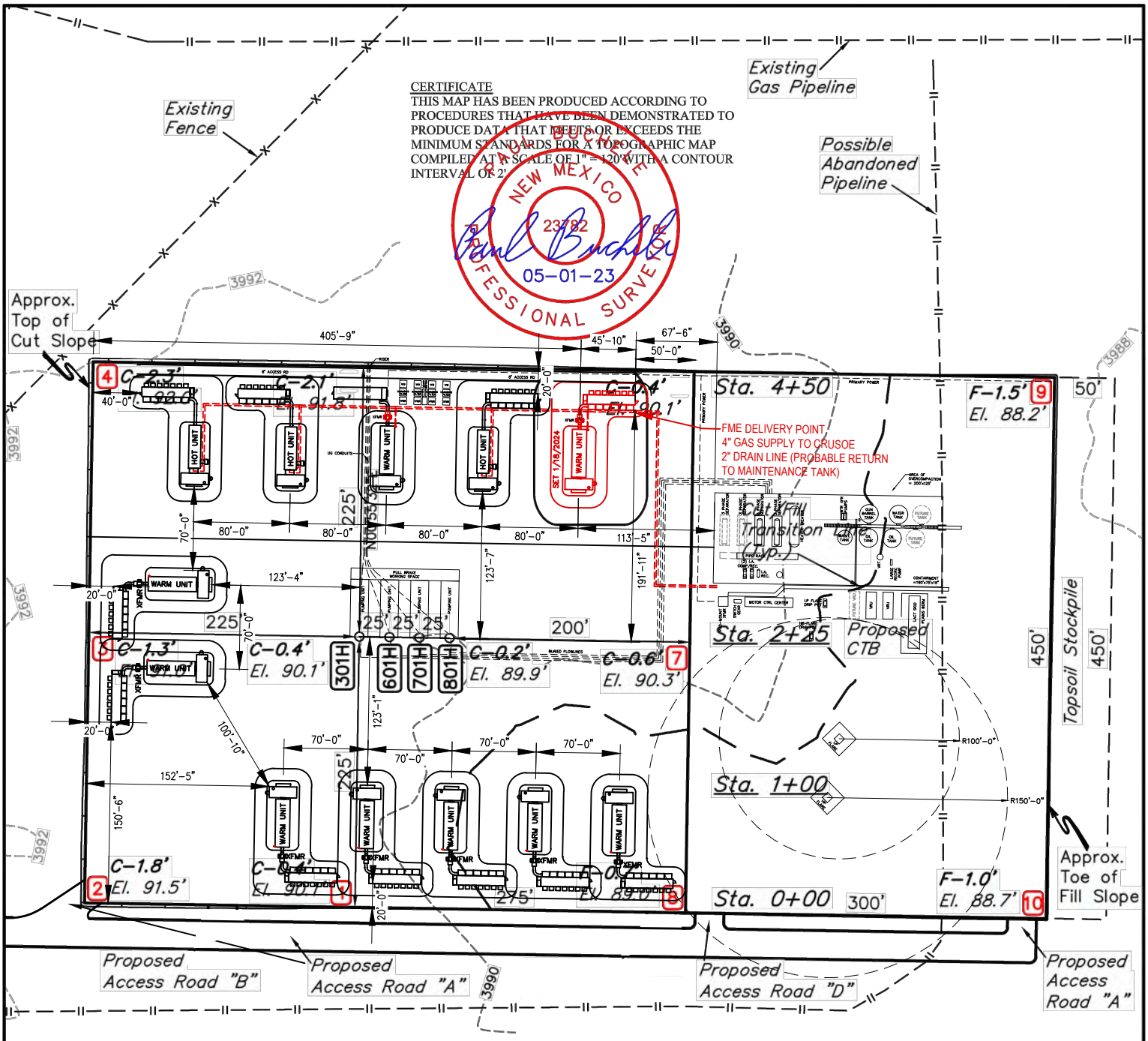
Gas
Electricity

Process Flow Diagram
Crusoe Energy Systems, Inc.
Gold State Facility
Lea County, New Mexico

Section 5

Plot Plan Drawn to Scale

A **plot plan drawn to scale** showing emissions points, roads, structures, tanks, and fences of property owned, leased, or under direct control of the applicant. This plot plan must clearly designate the restricted area as defined in UA1, Section 1-D.12. The unit numbering system should be consistent throughout this application.



FINISHED GRADE ELEVATION = **3989.7'**

NOTES:

- Contours shown at 2' intervals.
- Cut/Fill slopes 1 1/2:1 (Typ.).
- Underground utilities shown on this sheet are for visualization purposes only, actual locations to be determined prior to construction.
- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00" (NAD 83)

FRANKLIN MOUNTAIN ENERGY 3, LLC

GOLD RUSH PAD
NW 1/4 NW 1/4, SECTION 35, T18S, R34E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SURVEYED BY	J.H., C.S.	04-27-23	SCALE
DRAWN BY	N.D.T.	05-01-23	1" = 120'

LOCATION LAYOUT

UINTAH ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

Section 6

All Calculations

Show all calculations used to determine both the hourly and annual controlled and uncontrolled emission rates. All calculations shall be performed keeping a minimum of three significant figures. Document the source of each emission factor used (if an emission rate is carried forward and not revised, then a statement to that effect is required). If identical units are being permitted and will be subject to the same operating conditions, submit calculations for only one unit and a note specifying what other units to which the calculations apply. All formulas and calculations used to calculate emissions must be submitted. The "Calculations" tab in the UA2 has been provided to allow calculations to be linked to the emissions tables. Add additional "Calc" tabs as needed. If the UA2 or other spread sheets are used, all calculation spread sheet(s) shall be submitted electronically in Microsoft Excel compatible format so that formulas and input values can be checked. Format all spread sheets and calculations such that the reviewer can follow the logic and verify the input values. Define all variables. If calculation spread sheets are not used, provide the original formulas with defined variables. Additionally, provide subsequent formulas showing the input values for each variable in the formula. All calculations, including those calculations are imbedded in the Calc tab of the UA2 portion of the application, the printed Calc tab(s), should be submitted under this section.

Tank Flashing Calculations: The information provided to the AQB shall include a discussion of the method used to estimate tank-flashing emissions, relative thresholds (i.e., NOI, permit, or major source (NSPS, PSD or Title V)), accuracy of the model, the input and output from simulation models and software, all calculations, documentation of any assumptions used, descriptions of sampling methods and conditions, copies of any lab sample analysis. If Hysis is used, all relevant input parameters shall be reported, including separator pressure, gas throughput, and all other relevant parameters necessary for flashing calculation.

SSM Calculations: It is the applicant's responsibility to provide an estimate of SSM emissions or to provide justification for not doing so. In this Section, provide emissions calculations for Startup, Shutdown, and Routine Maintenance (SSM) emissions listed in the Section 2 SSM and/or Section 22 GHG Tables and the rational for why the others are reported as zero (or left blank in the SSM/GHG Tables). Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) for more detailed instructions on calculating SSM emissions. If SSM emissions are greater than those reported in the Section 2, Requested Allowables Table, modeling may be required to ensure compliance with the standards whether the application is NSR or Title V. Refer to the Modeling Section of this application for more guidance on modeling requirements.

Glycol Dehydrator Calculations: The information provided to the AQB shall include the manufacturer's maximum design recirculation rate for the glycol pump. If GRI-Glycalc is used, the full input summary report shall be included as well as a copy of the gas analysis that was used.

Road Calculations: Calculate fugitive particulate emissions and enter haul road fugitives in Tables 2-A, 2-D and 2-E for:

1. If you transport raw material, process material and/or product into or out of or within the facility and have PER emissions greater than 0.5 tpy.
2. If you transport raw material, process material and/or product into or out of the facility more frequently than one round trip per day.

Significant Figures:

A. All emissions standards are deemed to have at least two significant figures, but not more than three significant figures.

B. At least 5 significant figures shall be retained in all intermediate calculations.

C. In calculating emissions to determine compliance with an emission standard, the following rounding off procedures shall be used:

(1) If the first digit to be discarded is less than the number 5, the last digit retained shall not be changed;

(2) If the first digit discarded is greater than the number 5, or if it is the number 5 followed by at least one digit other than the number zero, the last figure retained shall be increased by one unit; **and**

(3) If the first digit discarded is exactly the number 5, followed only by zeros, the last digit retained shall be rounded upward if it is an odd number, but no adjustment shall be made if it is an even number.

(4) The final result of the calculation shall be expressed in the units of the standard.

Control Devices: In accordance with 20.2.72.203.A(3) and (8) NMAC, 20.2.70.300.D(5)(b) and (e) NMAC, and 20.2.73.200.B(7) NMAC, the permittee shall report all control devices and list each pollutant controlled by the control device regardless if the applicant takes credit for the reduction in emissions. The applicant can indicate in this section of the application if they chose to not take credit for the reduction in emission rates. For notices of intent submitted under 20.2.73 NMAC, only uncontrolled emission rates can be considered to determine applicability unless the state or federal Acts require the control. This information is necessary to determine if federally enforceable conditions are necessary for the control device, and/or if the control device produces its own regulated pollutants or increases emission rates of other pollutants.

AIR EMISSIONS CALCULATION TOOL

Instructions for Completing the Equipment Calculation Forms

1. Click the **Start Button** below to reset the form to begin data entry.

2. The ***Air Emissions Calculation Tool*** initially loads with the **Core Data Information Form.** Once all information is entered on this form, the necessary equipment calculation pages will be created based on the information entered on the Core Data Information Form. The customized ***Air Emissions Calculation Tool*** should now be saved to your computer before entering any other information on the equipment calculation pages. **Warning,** every time you click on the **Start Button b**elow, the ***Air Emissions Calculation Tool*** will reset and all data entered will be lost.

3. Green/Blue colored information boxes require users to enter the required information for the subject facility. Default values may be changed if not appropriate for the facility.

4. Yellow colored boxes represent calculated values based on user information entered and may not be changed.

5. Yellow boxes with green/blue cross-hatching represent calculated values based on user information entered, however users may input data in these boxes, if necessary.

Start

Core Data Information

Mandatory - All appropriate Data Must Be Entered For All Boxes Below. This Data Will Automatically Create All Required Equipment Forms And Populate This Data In All Emissions Calculation Forms.

Date Field

Company Name:

Facility Name:

Max. Facility Gas Production (Mscf/d) (Mscf/h)

Max. Facility Oil Production (BOPD) (BOPH)

Max. Facility Produced Water (BWPD) (BWPH)

Permit/NOI/NPR Number

Select Application Type

AI# if Known

Elevation (ft.)

Sour Gas Streams at This Site?

Enter The Quantity Of All Air Emissions Sources Located At The Facility
(Leave Blank For Each Equipment Type That Is Not Present)

Equipment	Quantity	Equipment	Quantity
Amine Unit(s)		Compressor Engine (s)	
Dehydrator(s)		Enclosed Combustion Device(s) (ECD)	
Equipment Fugitives		Flare(s)	
Flash Tower/Ultra-Low Pressure Separator(s)^		Generator Engine (s)	1
Gunbarrel Separator(s)/Tank(s)		Heater(s), Heater Treaters	
Number of Paved Haul Roads Segments		Number of Unpaved Haul Road Segments	
Low Pressure Compressor(s)* & Compressor(s)*		Oil/Condensate Storage Tank(s)	
Oil/Condensate Truck Loading		Produced Water Storage Tank(s)	
Produced Water Truck Loading		Pumpjack Engine(s)	
Reboilers(s) (Amine Units)		Placeholder for Future Use	
Reboilers(s) (Glycol, others)		Startup, Shutdown & Maintenance and Malfunction	✓
Skim Oil or Slop Oil Tank(s)		Thermal Oxidizer(s) (TO)	
Vapor Combustion Device(s) (VCU)		Vapor Recovery Unit(s) (VRU)^	

Click Here to Generate Required Forms & Save to Your Computer

Complete all required forms that follow, for the equipment at the subject facility, based on the selections made above. Items with an * indicate an air emissions calculation form currently not required at this time and those with ^ indicate forms under construction at this time.

New Mexico Environment Department Air Quality Bureau Equipment Emissions Calculation Form

Date:	**Permit Number:** null-null
Company Name:	**AI# if Known:**
Facility Name:	**Elevation (ft.):**

Non-Emergency SI Rich Burn, Lean Burn & Clean Burn Natural Gas Fired Generator Engines (100% Load) & Stationary & Non-Road Diesel (≤600hp & >600hp) & Gasoline Generator Engines (≤600hp)

Enter data in green-shaded areas only! One engine per form unless like-kind engines

Emission Unit ID:	GEN 1
Engine Manufacturer:	Waukesha
Engine Model:	9394 GSI
Engine Serial #:	TBD
Engine Manuf. Date:	after 1/1/2011
Engine Type:	4SRB
Factory HP Rating	2,500
Allowable HP Rating	2,500
Engine BSFC (Btu/(Hp*Hr))	8,508
Fuel LHV, (BTU/SCF)	1,020
Fuel Sulfur (grains/dscf)	0.002

Engine Deration

- (●) No Deration
- ( ) Stationary - Naturally Aspirated
- ( ) Stationary - Turbo Aspirated
- ( ) Portable - Naturally Aspirated
- ( ) Portable - Turbo Aspirated

Quantity of Like-kind Engines:	1
Engine Description	Generator Engine
Hours/year	8,760
Fuel Type:	Field Gas

No Deration.

Notes: See manufacturer specifications for detailed emissions factors for NOx, CO, VOC, and HCHO. PM10, PM2.5, other HAPs, and SO2 emissions factors from AP-42 Section 3.2 Table 3.2-3.

Hourly Fuel Flow Rate (MMSCF/hr)	0.020853
Annual Fuel Flow Rate (MMSCF/yr)	182.67228
Maximum Engine RPM	1,200
Exhaust Temperature (°F)	1,091
Exhaust Velocity (ft/sec)	78.46
Exhaust Flow (ACFM)	10,270
Stack Diameter (ft)	1.67
Stack Height (ft)	21.48

Select Source of Emission Factors

- ( ) AP-42 Emission Factors
- (●) Manufacturer Specs (Enter Appropriate Emission Factors Below) or Diesel Tier 1, 2, 3 or 4
- ( ) NSPS JJJJ; Engine Manuf. Between July 1, 2007-June 30, 2010 & Engine HP≥500HP
- ( ) NSPS JJJJ; Engine Manuf. On or after July 1, 2010 & Engine HP≥500HP
- ( ) NSPS JJJJ; Engine Manuf. Between July 1, 2008-Dec. 31, 2010 & Engine HP 100≤HP<500
- ( ) NSPS JJJJ; Engine Manuf. on or after Jan.1, 2011 & Engine HP 100≤HP<500
- ( ) NSPS JJJJ; Eng. Manuf. Betw. Jan. 1, 2008-June 30, 2010 & LB Engine HP 500≤HP<1350
- ( ) NSPS JJJJ; Engine Manuf. on or after July 1, 2010 & LB Engine HP 500≤HP<1350
- ( ) NSPS JJJJ; Engines < 100HP (Enter Appropriate Emission Factors Below)
- ( ) NSPS IIII; Stationary Diesel Engines

Emission Factors, Catalyst Control Efficiency & Safety Factor						Uncontrolled Emissions		Manufacturer Spec. Emissions		Controlled Emissions (includes SF)[1]	
Pollutant	Uncontrld. EF g/hp-hr	% Control Efficiency	% Safety Factor	Contrld EF g/(hp-hr)	Manuf. Specs g/hp-hr	lb/hr	Tons/yr	lb/hr	Tons/yr	lb/hr	Tons/yr
NOx^	12.42	98.79	0	0.15	0.15	68.4524	299.8215	0.8267	3.6209	0.8267	3.6209
CO	5.87	94.89	0	0.3	0.3	32.3523	141.7031	1.6534	7.2419	1.6534	7.2419
VOC*	0.12	75	0	0.03	0.031	0.6614	2.8969	0.1709	0.7485	0.1709	0.7485
Formaldehyde	0.05	0	0	0.05	0.001	0.2756	1.2071	0.0055	0.0241	0.2756	1.2071
TSP/PM10/PM2.5	0.01	0	0	0.01	0.01	0.0551	0.2413	0.0551	0.2413	0.0551	0.2413
[2]SO_2	0.002	100	0	0	0.002	0.011916	0.052192	0.011916	0.052192	0.011916	0.052192
AP-42 HAPs	lb/MMBtu										
Formaldehyde	0.0205	NA	NA	NA	NA	0.43604	1.90986	NA	NA	NA	NA
Acetaldehyde	0.00279	NA	NA	NA	NA	0.05934	0.25991	NA	NA	NA	NA
Acrolein	0.00263	NA	NA	NA	NA	0.05594	0.24502	NA	NA	NA	NA
Benzene	0.00158	NA	NA	NA	NA	0.03361	0.14721	NA	NA	NA	NA
Ethylbenzene	0.0000248	NA	NA	NA	NA	0.00053	0.00232	NA	NA	NA	NA
n-Hexane		NA	NA	NA	NA	0	0	NA	NA	NA	NA
Toluene	0.000558	NA	NA	NA	NA	0.01187	0.05199	NA	NA	NA	NA
Xylene	0.000195	NA	NA	NA	NA	0.00415	0	NA	NA	NA	NA
Total HAPs	NA	NA	NA	NA	NA	0.44104	1.91355	NA	NA	0.44	1.91

* Uncontrolled & Controlled VOC emissions include aldehyde emissions. VOC Emissions for JJJJ do not include aldehyde emissions. [1] For NOI's & NPR, controlled emissions cannot be less than JJJJ emissions. [2] SO2 EF (grains/scf or ppm) except for AP-42 EF in g/hp-hr for SO2 & EF Values for NOx, CO, VOC, TSP/PM_{10}/$PM_{2.5}$ in lb/hp-hr for large gasoline & diesel engines. ^NOx+NMHC Emission Factors for diesel engines assume 75% NOx and 25% VOC

Calculation Tool for Non-Emergency SI Rich Burn, Lean Burn & Clean Burn Natural Gas Fired Generator Engines (100% Load) & Large Stationary Diesel (≤600hp & >600hp) & Gasoline Generator Engines (≤600hp) Emissions

AP-42 Gas-Fired Engine Emission factors based on AP-42, Tables 3.2-1, 3.2-2 & 3.2-3 (July 2000)
https://www3.epa.gov/ttn/chief/ap42/ch03/final/c03s02.pdf
40 CFR Part 60 Subpart JJJJ Emission Factors based on §60.4233 & Table 1
http://www.ecfr.gov/cgi-bin/text-idx?node=sp40.7.60.jjjj
AP-42 Diesel & Gasoline Fired Engine Emission factors based on AP-42, Tables 3.3-1, 3.2-2, 3.4-1, 3.4-2, 3.4-3 & 3.4-4
https://www3.epa.gov/ttn/chief/ap42/ch03/final/c03s03.pdf
40 CFR Part 60 Subpart IIII Emission Factors based on §60.4233 & Table 1
http://www.ecfr.gov/cgi-bin/text-idx?node=sp40.7.60.iiii
EPA Tier 1-4 Nonroad Compression Ignition Emission Standards (EPA-42--B-16-022)
https://nepis.epa.gov/Exe/ZyNET.exe/P100OA05.txt?ZyActionD=ZyDocument&Client=EPA&Index=2011%20Thru%202015&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&UseQField=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5CZYFILES%5CINDEX%20DATA%5C11THRU15%5CTXT%5C00000019%5CP100OA05.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1

Emission factors for natural gas and field gas internal combustion engines may be based on AP-42, Tables 3.2-1, 3.2-2 or 3.2-3 or NSPS JJJJ emission standards or manufacturer specifications based on engine applicability.

NOx Sample Calculation Using AP-42 Emission Factors for a 500-HP 4-Stroke Rich Burn Engine

pph = NOx Emission Factor (EF) lb/MMBtu * Heat Value Btu/scf/1020 Btu/scf * Maximum Heat Input (MMBtu/hr) * Allowable HP * 1/1000000 MMBtu/Btu
= 2.21 lb/MMBtu * 1020 Btu/scf/1020Btu/scf * 7500 MMBtu/hr *500 hp * 1/1000000 MMBtu/Btu
=8.29 lb/hr

tpy =NOx Emission Factor (EF) lb/MMBtu * Heat Value Btu/scf/1020 Btu/scf * Maximum Heat Input (MMBtu/hr) * Allowable HP * 1/1000000 MMBtu/Btu * 8760 hrs/yr * 1/2000 tons/lbs
= 2.21 lb/MMBtu * 1020 Btu/scf/1020 Btu/scf * 0.5 MMBtu/hr * 1/1020 Btu/scf * 1000000/1 Btu/MMBtu * 8760 hrs/yr * 1ton/2000lbs
= 36.31 tpy

AP-42 SO_2 emissions based on 100% conversion of fuel sulfur to SO_2 and assumes sulfur content in natural gas of 2,000 grains/10^6 scf. The SO2 emission factor is converted to other natural gas sulfur contents by multiplying the SO_2 emission factor by the ratio of the site-specific sulfur content (grains/10^6 scf) to 2,000 grains/10^6 scf. For all other engines not using AP-42, The SO_2 emissions are based on grains S/scf. Fuel Heat values for Diesel = 0.137 MMBtu/gal; LPG = 0.0905 MMBtu/gal and Gasoline = 0.13 MMBtu/gal per AP-42 Appendix A, pg 5 & 6. SO2 emissions for all diesel engines not using AP-42, equals Gal Diesel/hr * diesel wt (lb)/gal * 15 ppm S * 64 lb SO2/32 lb S, where diesel weighs 7.1089 lb/gal.

NOx Sample Calculation Using NSPS JJJJ Emission Factors for a July 1, 2010 500-HP 4-Stroke Rich Burn Engine

pph = NOx Emission Factor (EF) g/hp-hr * 1/453.6 lbs/grams * Allowable HP
= 1 g/hp-hr * 1/453.6 lbs/grams * 500 hp
= 1.1 lb/hr

tpy =NOx Emission Factor (EF) g/hp-hr * 1/453.6 lbs/grams * Allowable HP * 8760 hrs/yr * 1/2000 tons/lbs
= 1 g/hp-hr * 1/453.6 lbs/grams * 500 hp * 8760 hrs/yr * 1ton/2000lbs
= 4.82 tpy

Technical Disclaimer
This document is intended to help you accurately determine stationary generator engine emissions. It does not supersede or replace any state or federal law, rule, or regulation. This guidance reflects the current understanding of how these units work and how they generate emissions, how they are monitored or tested, and what data are available for emissions determination, may change over time as the AQB continue scientific studies and as new information becomes available. The AQB welcome any data, information, or feedback that may improve our understanding of stationary generator engine emissions and thereby further improve determinations within the emissions inventory. The calculation methods represented are intended as an emissions calculation aid; alternate calculation methods may be equally acceptable if they are based upon, and adequately demonstrate, sound engineering assumptions or data. If you have a question regarding the acceptability of a given emissions determination method, contact the Permitting Section at 505-476-4300.

New Mexico Environment Department Air Quality Bureau Emissions Calculation Forms

Date: **Permit Number:**
Company Name: **AI# if Known:**
Facility Name: **Elevation (ft.):**

0

UnitID	NO_X		CO		VOC		SO_X		TSP		PM_{10}		$PM_{2.5}$		H_2S		Total HAP	
	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
ENG 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
ENG 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
ENG 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
ENG 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
ENG 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
ENG 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
ENG 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
ENG 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
GEN 1	0.83	3.62	1.65	7.24	0.17	0.75	0.01	0.05	0.06	0.24	0.06	0.24	0.06	0.24			0.44	1.91
GEN 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
GEN 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
GEN 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
GEN 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
GEN 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
GEN 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
GEN 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
PJENG 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
PJENG 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
PJENG 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
PJENG 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
PJENG 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
PJENG 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
PJENG 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
PJENG 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0
Page Totals	**0.83**	**3.62**	**1.65**	**7.24**	**0.17**	**0.75**	**0.01**	**0.05**	**0.06**	**0.24**	**0.06**	**0.24**	**0.06**	**0.24**			**0.44**	**1.91**

New Mexico Environment Department Air Quality Bureau Equipment Emissions Calculation Form

Date:	**Permit Number:** null-null
Company Name:	**AI# if Known:**
Facility Name:	**Elevation (ft.):**

Startup, Shutdown & Maintenance and Malfunction

- ○ No SSM emissions are expected from routine operations.
- ◉ Request up to 10 tpy of VOC SSM emissions.
- ○ Request site specific VOC & H2S SSM and enter information below.
- ○ Request site specific VOC & H2S SSM plus 10 tpy VOC and enter information below.
- ○ Request site specific combustion SSM and those emissions are included in Section 4 (attach calculations.)
- ○ Request 10 tpy VOC Malfunction emissions for GCP-O&G, GCP-6 or NSR permitting actions only.

	Blowdowns			Engine Startups		
Unit Numbers						
Quantity of Like-kind Blowdown Units or Engines	1					
Total Volume of Each Blowdown or Engine Startup Vent (acf)						
Duration of Event (Minutes)						
Maximum Blowdowns or Startups/hr	1					
Frequency of Blowdowns or Engine Startups (Events/yr)						
Total Actual Volume of Gas Vented (acf/yr)	0					
Pressure of Gas Inside Unit Before Venting (psig)						
Final Pressure (psia)	14.7					
Gas Temperature Prior to Venting (°F)						
Vented Gas Molecular Weight (lb/lb-mol						
Vented Gas VOC wt %						
Vented Total HAP wt %						
Vented Gas Benzene wt %						
Vented Gas H_2S wt %						

Startup, Shutdown and Maintenance Emissions (SSM) and Malfunction Emissions

SSM	VOC		Total HAP		Benzene		H_2S	
	PPH	TPY	PPH	TPY	PPH	TPY	PPH	TPY
SSM Blowdowns								
SSM Startups								
SSM Other (Attach Calculations)								
SSM Totals		**10**						
Malfunction Total								

Notes: VOC SSM emissions representative for the combined total of all five (5) engines.

Planned SSM Emissions

The venting emissions calculations herein should only be used when only gas (no liquids) is present in the unit. The calculation of the vented gas is based on the volume of the unit and assumes the unit is saturated with vapor at the pressure and temperature of the unit before venting occurs. If liquids are also present in the gas, please enter the calculated amounts in the SSM Other row only and submit separate calculations, since the calculations on this form do not account for the evaporation of liquids that may be present in the unit.

Calculations are based on the Ideal gas law: P(V) = n(R)(T)

VOC result = (((Pressure of Gas Inside the Unit Before Venting) * (Actual Volume of the Vented Unit)) / (Frequency of events) * (Molecular Weight) * VOC wt%)/(Ideal Gas Constant) * (Temperature of Gas Inside the Unit Before Venting)

Where the Ideal Gas Constant = 10.73159 (ft^3*psia)/R*lb-mol

For SSM combustion emissions, attach separate calculations.

Section 6.a

Green House Gas Emissions

(Submitting under 20.2.70, 20.2.72 20.2.74 NMAC)

Title V (20.2.70 NMAC), Minor NSR (20.2.72 NMAC), and PSD (20.2.74 NMAC) applicants must estimate and report greenhouse gas (GHG) emissions to verify the emission rates reported in the public notice, determine applicability to 40 CFR 60 Subparts, and to evaluate Prevention of Significant Deterioration (PSD) applicability. GHG emissions that are subject to air permit regulations consist of the sum of an aggregate group of these six greenhouse gases: carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Calculating GHG Emissions:

1. Calculate the ton per year (tpy) GHG mass emissions and GHG CO_2e emissions from your facility.
2. GHG mass emissions are the sum of the total annual tons of greenhouse gases without adjusting with the global warming potentials (GWPs). GHG CO_2e emissions are the sum of the mass emissions of each individual GHG multiplied by its GWP found in Table A-1 in 40 CFR 98 Mandatory Greenhouse Gas Reporting.
3. Emissions from routine or predictable start up, shut down, and maintenance must be included.
4. Report GHG mass and GHG CO_2e emissions in Table 2-P of this application. Emissions are reported in **short** tons per year and represent each emission unit's Potential to Emit (PTE).
5. All Title V major sources, PSD major sources, and all power plants, whether major or not, must calculate and report GHG mass and CO2e emissions for each unit in Table 2-P.
6. For minor source facilities that are not power plants, are not Title V, and are not PSD there are three options for reporting GHGs in Table 2-P: 1) report GHGs for each individual piece of equipment; 2) report all GHGs from a group of unit types, for example report all combustion source GHGs as a single unit and all venting GHGs as a second separate unit; 3) or check the following ☐ By checking this box, the applicant acknowledges the total CO2e emissions are less than 75,000 tons per year.

Sources for Calculating GHG Emissions:

- Manufacturer's Data
- AP-42 Compilation of Air Pollutant Emission Factors at http://www.epa.gov/ttn/chief/ap42/index.html
- EPA's Internet emission factor database WebFIRE at http://cfpub.epa.gov/webfire/
- 40 CFR 98 Mandatory Green House Gas Reporting except that tons should be reported in short tons rather than in metric tons for the purpose of PSD applicability.
- API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry. August 2009 or most recent version.
- Sources listed on EPA's NSR Resources for Estimating GHG Emissions at http://www.epa.gov/nsr/clean-air-act-permitting-greenhouse-gases:

Global Warming Potentials (GWP):
Applicants must use the Global Warming Potentials codified in Table A-1 of the most recent version of 40 CFR 98 Mandatory Greenhouse Gas Reporting. The GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to that of one unit mass of CO_2 over a specified time period.

"Greenhouse gas" for the purpose of air permit regulations is defined as the aggregate group of the following six gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. **(20.2.70.7 NMAC, 20.2.74.7 NMAC).** You may also find GHGs defined in 40 CFR 86.1818-12(a).

Metric to Short Ton Conversion:
Short tons for GHGs and other regulated pollutants are the standard unit of measure for PSD and title V permitting programs. 40 CFR 98 Mandatory Greenhouse Reporting requires metric tons.
1 metric ton = 1.10231 short tons (per Table A-2 to Subpart A of Part 98 – Units of Measure Conversions)

Generator Engine Emissions

Source Information

Emission Unit ID:	Single Engine	
Engine Make/Model	Waukesha 9394 GSI	
Service	Power Generation	
Controls - Y or N / Type	Y	NSRC/AFRC
Number of Operational Units	1	engine
Horsepower Rating[1]	2,500	horsepower
Fuel Consumption (BSFC)[1]	8,508	Btu/(hp-hr)
Heat Rating[2]	21.27	MMBtu/hr
Fuel Consumption[2]	182.7	MMscf/yr
Fuel Consumption[2]	20,853	scf/hr
Fuel Heating Value[3]	1,020	Btu/scf
Operating Hours	8,760	hrs/yr

Pollutant	Emission Factor		Uncontrolled Emissions		Emission Factor		Controlled Emissions		Source of Emissions Factors
	lb/MMBtu	g/hp-hr	lb/hr	ton/yr	lb/MMBtu	g/hp-hr	lb/hr	ton/yr	
NOx	-	12.42	68.5	300	-	0.15	0.83	3.62	Manufacturer Specifications
CO	-	5.87	32.4	142	-	0.30	1.65	7.24	Manufacturer Specifications
VOC	-	0.12	0.66	2.90	-	0.03	0.17	0.75	Manufacturer Specifications
SO_2	5.88E-04	-	0.013	0.055	5.88E-04	-	0.013	0.055	AP-42, Chapter 3.2, Table 3.2-3
PM_{10}	-	0.01	0.055	0.24	-	0.01	0.055	0.24	Manufacturer Specifications
$PM_{2.5}$	-	0.01	0.055	0.24	-	0.01	0.055	0.24	Manufacturer Specifications
1,1,2,2-Tetrachloroethane	2.53E-05	-	5.38E-04	2.36E-03	2.53E-05	-	5.38E-04	2.36E-03	AP-42, Chapter 3.2, Table 3.2-3
1,3-Butadiene	6.63E-04	-	1.41E-02	6.18E-02	6.63E-04	-	1.41E-02	6.18E-02	AP-42, Chapter 3.2, Table 3.2-3
Acetaldehyde	2.79E-03	-	5.93E-02	2.60E-01	2.79E-03	-	5.93E-02	2.60E-01	AP-42, Chapter 3.2, Table 3.2-3
Acrolein	2.63E-03	-	5.59E-02	2.45E-01	2.63E-03	-	5.59E-02	2.45E-01	AP-42, Chapter 3.2, Table 3.2-3
Benzene	1.58E-03	-	3.36E-02	1.47E-01	1.58E-03	-	3.36E-02	1.47E-01	AP-42, Chapter 3.2, Table 3.2-3
Ethylbenzene	2.48E-05	-	5.27E-04	2.31E-03	2.48E-05	-	5.27E-04	2.31E-03	AP-42, Chapter 3.2, Table 3.2-3
Formaldehyde	-	0.050	2.76E-01	1.21E+00	-	0.001	5.51E-03	2.41E-02	Manufacturer Specifications
Methanol	3.06E-03	-	6.51E-02	2.85E-01	3.06E-03	-	6.51E-02	2.85E-01	AP-42, Chapter 3.2, Table 3.2-3
Methylene Chloride	4.12E-05	-	8.76E-04	3.84E-03	4.12E-05	-	8.76E-04	3.84E-03	AP-42, Chapter 3.2, Table 3.2-3
PAH	1.41E-04	-	3.00E-03	1.31E-02	1.41E-04	-	3.00E-03	1.31E-02	AP-42, Chapter 3.2, Table 3.2-3
Toluene	5.58E-04	-	1.19E-02	5.20E-02	5.58E-04	-	1.19E-02	5.20E-02	AP-42, Chapter 3.2, Table 3.2-3
Xylenes	1.95E-04	-	4.15E-03	1.82E-02	1.95E-04	-	4.15E-03	1.82E-02	AP-42, Chapter 3.2, Table 3.2-3
Other HAPs[4]	2.10E-04	-	4.46E-03	1.95E-02	2.10E-04	-	4.46E-03	1.95E-02	AP-42, Chapter 3.2, Table 3.2-3
Total HAPs	1.19E-02		0.53	2.32	1.19E-02		0.26	1.13	
Pollutant	**Emission Factor**		**Uncontrolled Emissions**		**Emission Factor**		**Controlled Emissions**		**Source of Emissions Factors**
	kg/MMBtu	**g/hp-hr**	**lb/hr**	**ton/yr**	**kg/MMBtu**	**g/hp-hr**	**lb/hr**	**ton/yr**	
CO_2	53.06	-	2,488	10,900	53.06	-	2,488	10,900	40 CFR Part 98 Subpart C Table C-1
CH_4	0.001	-	0.047	0.21	0.001	-	0.047	0.21	40 CFR Part 98 Subpart C Table C-2
N_2O	0.0001	-	0.0047	0.021	0.0001	-	0.0047	0.021	40 CFR Part 98 Subpart C Table C-2
CO_2e	-	-	2,491	10,911	-	-	2,491	10,911	Global warming potentials of 40 CFR Part 98 Table A-1

Notes:

1. Manufactuer specifications.

2. Calculated values.

3. Minimum heating value specification for fuel gas.

4. Other HAPs include those HAPs listed in AP-42 below the detection thresholds.

Section 7

Information Used to Determine Emissions

Information Used to Determine Emissions shall include the following:

- ☒ If manufacturer data are used, include specifications for emissions units and control equipment, including control efficiencies specifications and sufficient engineering data for verification of control equipment operation, including design drawings, test reports, and design parameters that affect normal operation.
- ☐ If test data are used, include a copy of the complete test report. If the test data are for an emissions unit other than the one being permitted, the emission units must be identical. Test data may not be used if any difference in operating conditions of the unit being permitted and the unit represented in the test report significantly effect emission rates.
- ☒ If the most current copy of AP-42 is used, reference the section and date located at the bottom of the page. Include a copy of the page containing the emissions factors, and clearly mark the factors used in the calculations.
- ☐ If an older version of AP-42 is used, include a complete copy of the section.
- ☐ If an EPA document or other material is referenced, include a complete copy.
- ☐ Fuel specifications sheet.
- ☐ If computer models are used to estimate emissions, include an input summary (if available) and a detailed report, and a disk containing the input file(s) used to run the model. For tank-flashing emissions, include a discussion of the method used to estimate tank-flashing emissions, relative thresholds (i.e., permit or major source (NSPS, PSD or Title V)), accuracy of the model, the input and output from simulation models and software, all calculations, documentation of any assumptions used, descriptions of sampling methods and conditions, copies of any lab sample analysis.

__ AP-42 Section 3 Table 3.2-3 (4SRB) emissions factors were used for SO2 and HAPs other than formaldehyde calculations (7/2000). These are referenced in the AECT tool. GHGs determined using 40 CFR Part 98 Subpart C Table C-1 and C-2 emissions factors for natural gas (US Weighted Average).

VHP - P9394GSI S5

Power Generation

ENGINE SPEED (rpm):	1200	NOx SELECTION (g/bhp-hr):	Catalyst
DISPLACEMENT (in3):	9388	COOLING SYSTEM:	JW, IC + OC
COMPRESSION RATIO:	9.7:1	INTERCOOLER WATER INLET (°F):	130
IGNITION SYSTEM:	ESM2	JACKET WATER OUTLET (°F):	180
EXHAUST MANIFOLD:	Water Cooled	JACKET WATER CAPACITY (gal):	148
COMBUSTION:	Rich Burn, Turbocharged	AUXILIARY WATER CAPACITY (gal):	16
ENGINE DRY WEIGHT (lbs):	33900	LUBE OIL CAPACITY (gal):	259
AIR/FUEL RATIO SETTING:	ESM2	MAX. EXHAUST BACKPRESSURE (in. H2O):	20
ENGINE SOUND LEVEL (dBA)	105	MAX. AIR INLET RESTRICTION (in. H2O):	15
IGNITION TIMING:	ESM2 Controlled	EXHAUST SOUND LEVEL (dBA)	108
FREQUENCY (Hz):	60	PHASE:	3
GENERATOR TYPE:	Synchronous	PHASE ROTATION:	T1-T2-T3

SITE CONDITIONS:

FUEL:	Natural Gas	ALTITUDE (ft):	5250
FUEL PRESSURE RANGE (psig):	43 - 60	MAXIMUM INLET AIR TEMPERATURE (°F):	100
FUEL HHV (BTU/ft3):	1,345.8	FUEL WKI:	56.2
FUEL LHV (BTU/ft3):	1,216.6		

SITE SPECIFIC TECHNICAL DATA

POWER RATING	UNITS		MAX RATING AT 100 °F AIR TEMP	SITE RATING AT MAXIMUM INLET AIR TEMPERATURE OF 100 °F		
				100%	75%	54%
CONTINUOUS ENGINE POWER	BHP		2500	2500	1875	1350
OVERLOAD	% 2/24 hr		0	0	-	-
ELECTRICAL EFFICIENCY (LHV)	%		33.1	33.1	33.0	31.6
GENERATOR OUTPUT	kWe		1660	1660	1245	894
GENERATOR kVA	kVA		2075	2075	1556	1118
based on 95.9% generator efficiency at 0.8 PF, no auxiliary engine driven equipment						
FUEL CONSUMPTION						
FUEL CONSUMPTION (LHV)	BTU/kWe-hr		10314	10314	10357	10798
FUEL CONSUMPTION (HHV)	BTU/kWe-hr		11409	11409	11457	11945
FUEL FLOW *based on fuel analysis LHV*	SCFM		235	235	177	132
HEAT REJECTION						
JACKET WATER (JW)	BTU/hr x 1000		5026	5026	3900	3035
LUBE OIL (OC)	BTU/hr x 1000		677	677	639	602
INTERCOOLER (IC)	BTU/hr x 1000		859	859	455	204
EXHAUST	BTU/hr x 1000		4428	4428	3200	2326
RADIATION	BTU/hr x 1000		558	558	519	493
EMISSIONS (ENGINE OUT):						
NOx (NO + NO2)	g/bhp-hr		12.42	12.42	13.68	14.11
CO	g/bhp-hr		5.87	5.87	5.31	4.83
THC	g/bhp-hr		0.43	0.43	0.60	0.77
NMHC	g/bhp-hr		0.197	0.197	0.273	0.354
NM,NEHC (VOC)	g/bhp-hr		0.124	0.124	0.172	0.223
CO2	g/bhp-hr		479	479	480	501
CO2e (Methane GWP: 25)	g/bhp-hr		484	484	489	512
CH2O	g/bhp-hr		0.050	0.050	0.050	0.050
CH4	g/bhp-hr		0.23	0.23	0.32	0.42
AIR INTAKE / EXHAUST GAS						
INDUCTION AIR FLOW	SCFM		3205	3205	2413	1807
EXHAUST GAS MASS FLOW	lb/hr		14899	14899	11218	8401
EXHAUST GAS FLOW *at exhaust temp, 14.5 psia*	ACFM		10270	10270	7534	5541
EXHAUST TEMPERATURE	°F		1091	1091	1051	1024

HEAT EXCHANGER SIZING[12]			
TOTAL JACKET WATER CIRCUIT (JW)	BTU/hr x 1000		5699
TOTAL AUXILIARY WATER CIRCUIT (IC + OC)	BTU/hr x 1000		1742

COOLING SYSTEM WITH ENGINE MOUNTED WATER PUMPS		
JACKET WATER PUMP MIN. DESIGN FLOW	GPM	850
JACKET WATER PUMP MAX. EXTERNAL RESTRICTION	psig	18
AUX WATER PUMP MIN. DESIGN FLOW	GPM	101
AUX WATER PUMP MAX. EXTERNAL RESTRICTION	psig	40

All data provided per the condtions listed in the notes section on page three.

Data Generated by EngCalc Program Version 4.2 INNIO Waukesha Gas Engines, Inc.

9/6/2022 2:03 PM

FUEL COMPOSITION

HYDROCARBONS:		Mole or Volume %
Methane	CH4	74.76
Ethane	C2H6	12.48
Propane	C3H8	6.33
Iso-Butane	I-C4H10	0.92
Normal Butane	N-C4H10	2.33
Iso-Pentane	I-C5H12	0.59
Normal Pentane	N-C5H12	0.93
Hexane	C6H14	0.53
Heptane	C7H16	0.11
Ethene	C2H4	0
Propene	C3H6	0
	SUM HYDROCARBONS	98.98
NON-HYDROCARBONS:		
Nitrogen	N2	0.15
Oxygen	O2	0
Helium	He	0
Carbon Dioxide	CO2	0.86
Carbon Monoxide	CO	0
Hydrogen	H2	0
Water Vapor	H2O	0
	TOTAL FUEL	99.99

FUEL:	Natural Gas
FUEL PRESSURE RANGE (psig):	43 - 60
FUEL WKI:	56.2
FUEL SLHV (BTU/ft3):	1195.39
FUEL SLHV (MJ/Nm3):	47.01
FUEL LHV (BTU/ft3):	1216.56
FUEL LHV (MJ/Nm3):	47.84
FUEL HHV (BTU/ft3):	1345.75
FUEL HHV (MJ/Nm3):	52.92
FUEL DENSITY (SG):	0.78

Standard Conditions per ASTM D3588-91 [60°F and 14.696psia] and ISO 6976:1996-02-01[25, V(0;101.325)].
Based on the fuel composition, supply pressure and temperature, liquid hydrocarbons may be present in the fuel. No liquid hydrocarbons are allowed in the fuel. The fuel must not contain any liquid water.
Waukesha recommends both of the following:
1) Dew point of the fuel gas to be at least 20°F (11°C) below the measured temperature of the gas at the inlet of the engine fuel regulator.
2) A fuel filter separator to be used on all fuels except commercial quality natural gas.
Refer to the 'Fuel and Lubrication' section of 'Technical Data' or contact the Waukesha Application Engineering Department for additional information on fuels, or LHV and WKI* calculations.
* Trademark of INNIO Waukesha Gas Engines Inc.

FUEL CONTAMINANTS

Total Sulfur Compounds	0	% volume
Total Halogen as Chloride	0	% volume
Total Ammonia	0	% volume
Siloxanes		
Tetramethyl silane	0	% volume
Trimethyl silanol	0	% volume
Hexamethyldisiloxane (L2)	0	% volume
Hexamethylcyclotrisiloxane (D3)	0	% volume
Octamethyltrisiloxane (L3)	0	% volume
Octamethylcyclotetrasiloxane (D4)	0	% volume
Decamethyltetrasiloxane (L4)	0	% volume
Decamethylcyclopentasiloxane (D5)	0	% volume
Dodecamethylpentasiloxane (L5)	0	% volume
Dodecamethylcyclohexasiloxane (D6)	0	% volume
Others	0	% volume

Total Sulfur Compounds	0 µg/BTU
Total Halogen as Chlorid	0 µg/BTU
Total Ammonia	0 µg/BTU
Total Siloxanes (as Si)	0 µg/BTU

Calculated fuel contaminant analysis will depend on the entered fuel composition and selected engine model.

No water or hydrocarbon condensates are allowed in the engine. Requires liquids removal.

NOTES

1. All data is based on engines with standard configurations unless noted otherwise.
2. Power rating is adjusted for fuel, site altitude, and site air inlet temperature, in accordance with ISO 3046/1 with tolerance of ± 3%.
3. Fuel consumption is presented in accordance with ISO 3046/1 with a tolerance of -0 / +5% at maximum rating. Fuel flow calculation based on fuel LHV and fuel consumption with a tolerance of -0/+5 %. For sizing piping and fuel equipment, it is recommended to include the 5% tolerance.
4. Heat rejection tolerances are ± 30% for radiation, and ± 8% for jacket water, lube oil, intercooler, and exhaust energy.
5. Emission levels for engines with Waukesha supplied 3-way catalyst are given at catalyst outlet flange. For all other engine models, emission levels are given at engine exhaust outlet flange prior to any after treatment. Values are based on a new engine operating at indicated site conditions, and adjusted to the specified timing and air/fuel ratio at rated load. Catalyst out emission levels represent emission levels the catalyst is sized to achieve. Manual adjustment may be necessary to achieve compliance as catalyst/engine age. Catalyst-out emission levels are valid for the duration of the engine warranty. Emissions are at an absolute humidity of 75 grains H2O/lb (10.71 g H2O/kg) of dry air. Emission levels may vary subject to instrumentation, measurement, ambient conditions, fuel quality, and engine variation. Engine may require adjustment on-site to meet emission values, which may affect engine performance and heat output. NOx, CO, THC, and NMHC emission levels are listed as a not to exceed limit, all other emission levels are estimated. CO2 emissions based on EPA Federal Register/Vol. 74, No. 209/Friday, October 30, 2009 Rules and Regulations 56398, 56399 (3) Tier 3 Calculation Methodology, Equation C-5.
6. Air flow is based on undried air with a tolerance of ± 7%.
7. Exhaust temperature given at engine exhaust outlet flange with a tolerance of ± 50°F (28°C).
8. Exhaust gas mass flow value is based on a "wet basis" with a tolerance of ± 7%.
9. Inlet air restrictions based on full rated engine load. Exhaust backpressure based on 175.76 PSI BMEP and 1200 RPM. Refer to the engine specification section of Waukesha's standard technical data for more information.
10. Cooling circuit capacity, lube oil capacity, and engine dry weight values are typical.
11. Fuel must conform to Waukesha's "Gaseous Fuel Specification" S7884-7 or most current version. Fuel may require treatment to meet current fuel specification.
12. Heat exchanger sizing values given as the maximum heat rejection of the circuit, with applied tolerances and an additional 5% reserve factor.
13. Fuel volume flow calculation in english units is based on 100% relative humidity of the fuel gas at standard conditions of 60°F and 14.696 psia (29.92 inches of mercury; 101.325 kPa).
14. Fuel volume flow calculation in metric units is based on 100% relative humidity of the fuel gas at a combustion temperature of 25°C and metering conditions of 0°C and 101.325 kPa (14.696 psia; 29.92 inches of mercury). This is expressed as [25, V(0;101.325)].
15. Engine sound data taken with the microphone at 1 m (3.3 ft) from the side of the engine at the approximate front-to-back centerline. Microphone height was at intake manifold level. Engine sound pressure data may be different at front, back and opposite side locations. Exhaust sound data taken with microphone 1 meter (3.3 ft) away and 1 meter (3.3 ft) to the side of the exhaust outlet.
16. Due to variation between test conditions and final site conditions, such as exhaust configuration and background sound level, sound pressure levels under site conditions may be different than those tabulated above.
17. Cooling system design flow is based on minimum allowable cooling system flow. Cooling system maximum external restriction is defined as the allowable restriction at the minimum cooling system flow.
18. Continuous Power Rating: The highest load and speed that can be applied 24 hours per day, seven days per week, 365 days per year except for normal maintenance at indicated ambient reference conditions and fuel. No engine overload power rating is available.
19. emPact emission compliance available for entire range of operable fuels; however, fuel system and/or O2 set point may need to be adjusted in order to maintain compliance.
20. In cold ambient temperatures, heating of the engine jacket water, lube oil and combustion air may be required. See Waukesha Technical Data.
21. Available Turndown Speed Range refers to the constant torque speed range available. Reduced power may be available at speeds outside of this range. Contact application engineering.

SPECIAL REQUIREMENTS

Site conditions over 100 °F or 1500 ft may require a special generator or radiator. Contact Application Engineering.

Gas Engine Exhaust Emission Levels

Waukesha's Engine Division approach to exhaust emission levels is to offer various stages of emission control technology. This approach allows the customer to select the exhaust emission level required for a particular installation.

The following tables indicate emission levels that are valid for new engines for the duration of the standard warranty period and are attainable by an engine in good operating condition running on commercial quality natural gas of 900 BTU/ft3 (35.38 MJ/m3 [25, V(0; 101.325)]) SLHV, Waukesha's Knock IndexTM of 91 or higher, 93% methane content by volume, and at ISO standard conditions. Emissions are based on standard engine timing at 91 WKITM with an absolute humidity of 42 grains/lb. Refer to engine specific WKITM Power & Timing curves for standard timing. Unless otherwise noted, these emission levels can be achieved across the continuous duty speed range and from 75% to 110% of the ISO Standard Power (continuous duty) rating.

Contact the local Waukesha representative or Waukesha's Application Engineering Department for emission values which can be obtained on a case-by-case basis for specific ratings, fuels, and site conditions. The tabulated emission levels for GL models are achieved at the standard engine settings. Trade off adjustments can be made to reduce emissions or fuel consumption, but not both. Contact the local Waukesha representative or Waukesha's Application Engineering Department for more information. As an aid in evaluating emission requirements, tables of approximate unit conversion factors for exhaust emission levels are included in this document. Waukesha emission control systems are designed for long life and consistent engine emission levels as listed in the following tables. It must be recognized, however, that engine condition and the quality of engine maintenance have a direct bearing on emission control. **A control system cannot compensate for engine or maintenance deficiencies**.

Reference the latest version of Waukesha Gas Engines Special Tools Catalog (form 398) for product offerings related to emission testing.

VHP* emPact Catalyst Out Emissions

MODEL	Catalyst	GRAMS/BHP-HR				
		NOx[1]	CO	THC	NMHC	PM 2.5[2]
L5794GSI	Option Code 1004/1004S	0.5	1.0	1.3	0.15	Not to exceed 0.010
	Option Code 1005/1004S	0.15	0.3			
L7042GSI S4	Option Code 1004/1004S	0.5	1.0	1.6	0.20	
	Option Code 1005/1004S	0.15	0.3			
L7042GSI S5	Option Code 1005/1005S	0.15	0.3	0.2	0.03	
L7044GSI	Option Code 1004/1004S	0.5	1.0	1.7	0.20	
	Option Code 1005/1004S	0.15	0.3			
L7044GSI S5	Option Code 1005/1005S	0.15	0.3	0.2	0.03	
P9394GSI	Option Code 1004/1004S	0.5	1.0	0.4	0.10	
	Option Code 1005/1004S	0.15	0.3			
P9394GSI S5	Option Code 1004/1004S	0.15	0.3	0.2	0.03	

[1] Emission levels are based on 900 -1200 rpm operation at 75-100% load and require GE-supplied (NSCR) catalyst.
[2] Particulates measured as filterable + condensable PM2.5 per EPA methods 201A/202.

VHP Engine Out Emission Levels (Rated Load & Speed)

MODEL	CARBURETOR SETTING	GRAMS/BHP-HR				% OBSERVED DRY		MASS AFR[2]	VOLUME AFR[2]	EXCESS AIR RATIO
		NOx[1]	CO	NMHC[4]	THC	CO	O_2			
G, GSI	Lowest Manifold (Best Power)	8.5	32.0	0.35	2.3	1.15	0.30	15.5:1	9.3:1	0.97
	Equal NOx & CO	12.0	12.0	0.35	2.3	0.45	0.30	15.9:1	9.6:1	0.99
	Catalytic Conv. Input (3-way[3])	13.0	9.0	0.30	2.0	0.38	0.30	15.95:1	9.6:1	0.99
	Standard (Best Economy)	22.0	1.5	0.25	1.5	0.02	1.35	17.0:1	10.2:1	1.06
F3524G F3514GSI F3524GSI	Catalytic Conv. Input (3-way[3])	16.0	13.0	0.20	1.0	0.38	0.30	15.95:1	9.6:1	0.995
L5794GSI#	Catalytic Conv. Input (3-way[3])	14.0	9.0	0.30	2.0	0.38	0.30	15.95:1	9.6:1	0.995
L7044G L7044GSI# L7042GSI S4#	Catalytic Conv. Input (3-way[3])	14.0	11.0	0.40	2.5	0.38	0.30	15.95:1	9.6:1	0.995
L7042GSI S5 L7044GSI S5	Catalytic Conv. Input (3-way[3])	13.0	10.0	0.30	0.9	0.38	0.30	15.95:1	9.6:1	0.999
GL	Standard	1.5	2.65	1.00	5.5	0.06	9.8	28.0:1	16.8:1	1.74
L5774LT	Standard	2.6	2.0	0.60	4.0	0.04	8.0	24.7:1	14.8:1	1.54
L5794LT	Standard	2.6	2.0	0.60	4.0	0.04	7.8	24.5:1	14.7:1	1.52
P9394GSI	Catalytic Conv. Input (3-way[3])	11.6	10.8	0.2	0.7	0.38	0.30	15.95:1	9.6:1	0.999
P9394GSI S5	Catalytic Conv. Input (3-way[3])	12.1	6.4	0.18	0.5	0.38	0.30	15.95:1	9.6:1	0.999

Models without Waukesha-supplied catalyst included as part of the emPact Emission Control System.

2. Air/fuel ratio values are based on a natural gas fuel with a stoichiometric mass air/fuel ratio of 16.05:1 and a H/C ratio of 3.85. Refer to S7884-7, or latest revision, for the complete gaseous fuel specification for Waukesha gas engines.
3. Consult with individual catalyst manufacturers for their preferred air/fuel ratio set point and specific post-catalyst emission values.
4. Non-Methane Hydrocarbons (NMHC) includes all hydrocarbon gasses in the exhaust except for methane (CH_4). This value can be used for Reactive Organic Gasses (ROG), Reactive Organic Compounds (ROC), and Volatile Organic Compounds (VOC).

Formaldehyde Emission Levels

The following table provides formaldehyde (CH_2O) levels that are valid for new engines for the duration of the standard warranty period and are attainable by an engine in good operating condition running on commercial quality natural gas of 900 BTU/ft^3 (35.38 MJ/m^3 [25, V(0; 101.325)]) SLHV, Waukesha Knock Index of 91 or higher, 93% methane content by volume, and at ISO standard conditions. Values are based on standard engine timing at 91 WKI with an absolute humidity of 42 grains/lb. Refer to engine specific WKI Power & Timing curves for standard timing. Unless otherwise noted, these emission levels can be achieved across the continuous duty speed range at the load levels tabulated. ***Contact the local Waukesha gas engine representative or Waukesha's Application Engineering Department for emission values which can be obtained on a case-by-case basis for specific ratings, fuels, and site conditions.***

MODEL	LOCATION	CARB. SETTING	CH_2O GRAMS/BHP-HR PERCENT LOAD		% OBSERVED DRY CO	% OBSERVED DRY O_2	MASS AFR[2]	VOLUME AFR[2]	EXCESS AIR RATIO
			100%	75%					
AT25GL	Engine Out	Lean Burn	0.18	0.20	0.06	9.8	28.0:1	16.8:1	1.74
275GL/AT27GL	Engine Out	Lean Burn	0.18	0.20	0.06	9.8	28.0:1	16.8:1	1.74
		Ultra Lean	0.18	0.20	0.05	11.2	32.0:1	19.2:1	2.00
275GL+	Engine Out	Lean Burn	0.28	0.31	0.04	11.6	34.0:1	20.4:1	2.10
12V275GL+ w/ESM2 Fuel Flex	Engine Out	Lean Burn	0.41	0.41	0.04	11.5	32.8:1	19.7:1	2.05
16V275GL+ w/ESM2 Fuel Flex	Engine Out	Lean Burn	0.30	0.30	0.05	11.5	32.8:1	19.7:1	2.05
12V220GL/ APG 2000 18V220GL/ APG 3000	Engine Out	Ultra Lean	0.23	0.29	0.09-0.15	12.3-13.4	32.1-35.3	19.3-21.2	2.03 - 2.20
16V150LTD/ APG 1000	Engine Out	Lean Burn	0.14	0.15	0.07	9.5-9.6	26.9-27.2	16.2-16.4	1.68-1.7
VHP G, GSI	Engine Out	Rich Burn	0.05	0.05	0.02 – 1.15	0.30 – 1.35	15.5:1 – 17.0:1	9.3:1 – 10.2:1	0.97 – 1.06
VHP Series 4 GSI	Engine Out	Rich Burn	0.05	0.05	0.02 – 0.45	0.30 – 1.35	15.85:1 – 17.0:1	9.5:1 – 10.2:1	0.99 – 1.06
VHP Series 4 GSI**	Catalyst Out	Rich Burn	0.001	0.001	n/a	n/a	n/a	n/a	n/a
L7042GSI S5 L7044GSI S5 P9394GSI S5	Engine Out	Lean Burn	0.05	0.07	0.02 – 0.45	0.30 – 1.35	15.85:1 – 17.0:1	9.5:1 – 10.2:1	0.99 – 1.06
L7042GSI S5 **L7044GSI S5** **P9394GSI S5**	Catalyst Out	Lean Burn	0.001	0.001	n/a	n/a	n/a	n/a	n/a
L5774LT L5794LT	Engine Out	Lean Burn	0.22	0.25	0.04	7.8 – 8.0	24.5:1 – 24.7:1	14.7:1 – 14.8:1	1.52 – 1.54
VHP GL	Engine Out	Lean Burn	0.29	0.34	0.06	9.8	28.0:1	16.8:1	1.74
VGF G, GSID, SE	Engine Out	Rich Burn	0.05	0.05	0.20 – 1.1	0.18 – 2.4	15.5:1 – 18.0:1	9.3:1 – 10.8:1	0.97 – 1.12
VGF-SE**	Catalyst Out	Rich Burn	0.001	0.001	n/a	n/a	n/a	n/a	n/a
VGF GL, GLD, GLD/2	Engine Out	Lean Burn	0.19	0.22	0.03 – 0.04	7.8 – 9.0	21.5:1 – 25.4:1	13.9:1 – 15.2:1	1.53 – 1.65

** Models with Waukesha-supplied catalyst included as part of the emPact Emission Control System.

LABORATORY SERVICES Natural Gas Analysis
www.permianls.com
575.397.3713 2609 W Marland Hobbs NM 88240

C6+ Gas Analysis Report

Sample Point Code	Sample Point Name	Sample Point Location
15800G	T191563107	Cable Sales Meter

Source Laboratory	Lab File No	Container Identity	Sampler
Laboratory Services	2023062959	0843	Adrian Byrd - Spot

District	Area Name	Field Name	Facility Name
USA	USA	USA	New Mexico

Date Sampled	Date Effective	Date Received	Date Reported
Jan 19, 2023 10:50	Jan 19, 2023 10:50	Jan 19, 2023 15:36	Jan 20, 2023

Ambient Temp (°F)	Flow Rate (Mcf)	Analyst	Press PSI @ Temp °F Source Conditions
42.00		0	42 @ 53

Operator	Lab Source Description
Franklin Mountain Energy	NG

Component	Normalized Mol %	Un-Normalized Mol %	GPM
H2S (H2S)	0.0000	0	
Nitrogen (N2)	6.4290	6.429	
CO2 (CO2)	0.3320	0.332	
Methane (C1)	56.0460	56.046	
Ethane (C2)	16.6720	16.672	4.4330
Propane (C3)	12.4320	12.432	3.4060
I-Butane (IC4)	1.2320	1.232	0.4010
N-Butane (NC4)	3.7130	3.713	1.1640
I-Pentane (IC5)	0.8260	0.826	0.3000
N-Pentane (NC5)	0.7990	0.799	0.2880
Hexanes Plus (C6+)	1.5190	1.519	0.6550
TOTAL	100.0000	100.0000	10.6470

Method(s): Gas C6+ - GPA 2261, Extended Gas - GPA 2286, Calculations - GPA 2172

Analyzer Information

Device Type:	Gas Chromatograph	Device Make:	Shimadzu
Device Model:	GC-2014	Last Cal Date:	Jan 3, 2023

Gross Heating Values (Real, BTU/ft³)

14.696 PSI @ 60.00 Â°F		14.65 PSI @ 60.00 Â°F	
Dry	Saturated	Dry	Saturated
1,483.3	1,459.4	1,478.7	1,454.8

Calculated Total Sample Properties

GPA2145-16 *Calculated at Contract Conditions

Relative Density Real	Relative Density Ideal
0.9335	0.9286

Molecular Weight
26.8954

C6+ Group Properties

Assumed Composition

C6 - 60.000% C7 - 30.000% C8 - 10.000%

Field H2S
1 PPM

PROTREND STATUS:
Passed By Validator on Jan 23, 2023

DATA SOURCE:
Imported

PASSED BY VALIDATOR REASON:
First sample taken @ this point, composition looks reasonable

VALIDATOR:
Brooke Rush

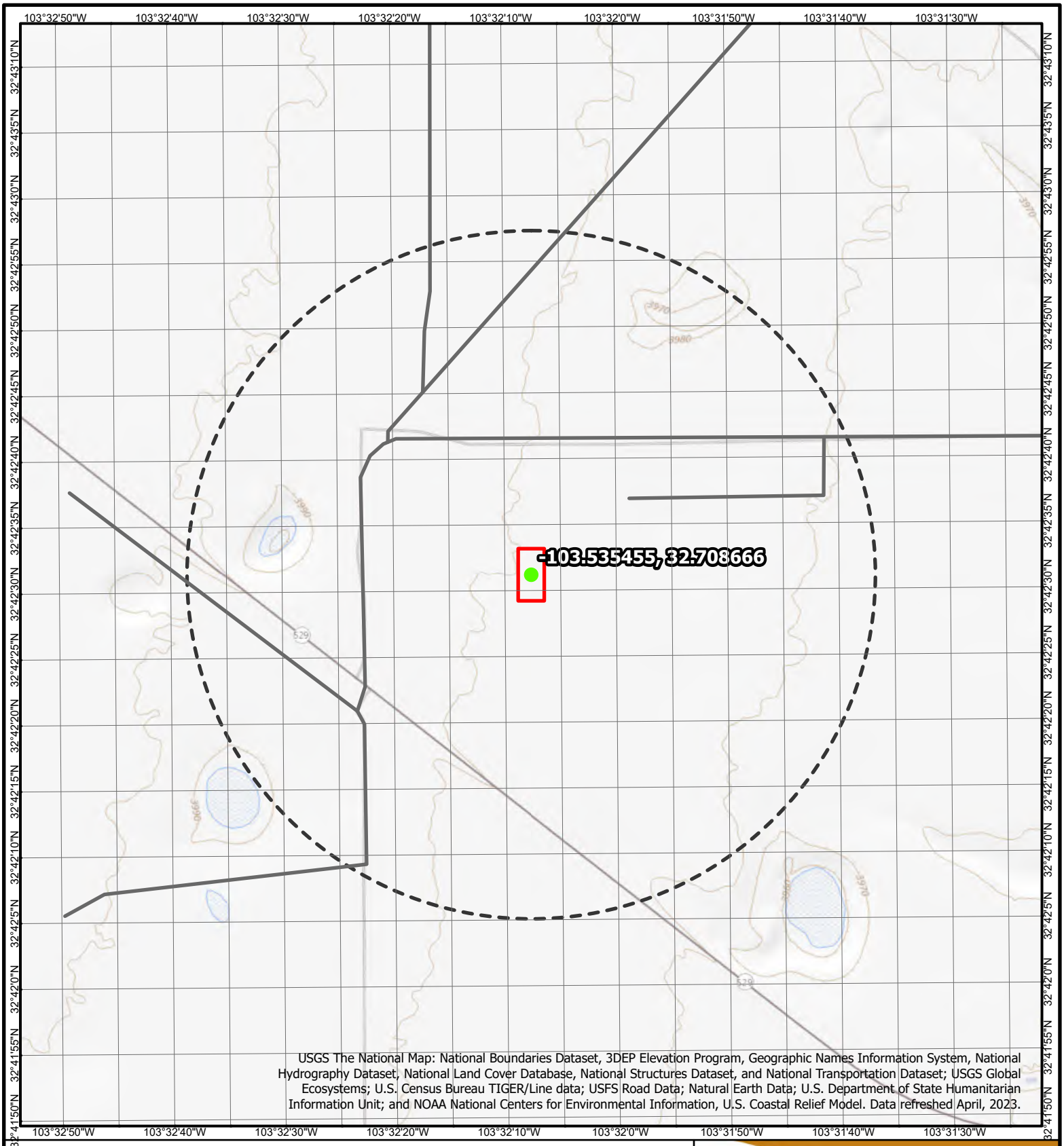
VALIDATOR COMMENTS:
OK

Section 8

Map(s)

A map such as a 7.5 minute topographic quadrangle showing the exact location of the source. The map shall also include the following:

The UTM or Longitudinal coordinate system on both axes	An indicator showing which direction is north
A minimum radius around the plant of 0.8km (0.5 miles)	Access and haul roads
Topographic features of the area	Facility property boundaries
The name of the map	The area which will be restricted to public access
A graphical scale	



N

Legend

- Facility Boundary
- 0.5 Mile Buffer
- Access Roads

0 500 1,000 Feet

Pinyon Environmental, Inc.

SITE LOCATION

Gold State Facility

Crusoe Energy Systems Inc.

Lea County, New Mexico

Site Location: Lea County, New Mexico	Drawn By: AMS	Figure 1
Pinyon Project Number: 1/19-1347-01	Reviewed By: SD	Date: 10/17/2023

Document Path: Z:\PROJECTS\2019\119134701 Air Quality Services December 2019\Figures\ArcPro\119134701 Air Quality Services December 2019\119134701 Air Quality Services December 2019.aprx

Section 9

Proof of Public Notice

(for NSR applications submitting under 20.2.72 or 20.2.74 NMAC)

(This proof is required by: 20.2.72.203.A.14 NMAC "Documentary Proof of applicant's public notice")

X I have read the AQB "Guidelines for Public Notification for Air Quality Permit Applications"

This document provides detailed instructions about public notice requirements for various permitting actions. It also provides public notice examples and certification forms. Material mistakes in the public notice will require a re-notice before issuance of the permit. **Not available online.**

Unless otherwise allowed elsewhere in this document, the following items document proof of the applicant's Public Notification. Please include this page in your proof of public notice submittal with checkmarks indicating which documents are being submitted with the application.

New Permit and **Significant Permit Revision** public notices must include all items in this list.

Technical Revision public notices require only items 1, 5, 9, and 10.

Per the Guidelines for Public Notification document mentioned above, include:

1. X A copy of the certified letter receipts with post marks (20.2.72.203.B NMAC) **will be submitted upon receipt**
2. X A list of the places where the public notice has been posted in at least four publicly accessible and conspicuous places, including the proposed or existing facility entrance. (e.g: post office, library, grocery, etc.)
3. N/A A copy of the property tax record (20.2.72.203.B NMAC).
4. N/A A sample of the letters sent to the owners of record.
5. X A sample of the letters sent to counties, municipalities, and Indian tribes. **See following pages**
6. X A sample of the public notice posted and a verification of the local postings.
7. X A table of the noticed citizens, counties, municipalities and tribes and to whom the notices were sent in each group.
8. X A copy of the public service announcement (PSA) sent to a local radio station and documentary proof of submittal.
9. X A copy of the classified or legal ad including the page header (date and newspaper title) or its affidavit of publication stating the ad date, and a copy of the ad. When appropriate, this ad shall be printed in both English and Spanish. **See following pages**
10. X A copy of the display ad including the page header (date and newspaper title) or its affidavit of publication stating the ad date, and a copy of the ad. When appropriate, this ad shall be printed in both English and Spanish. **See following pages**
11. N/A A map with a graphic scale showing the facility boundary and the surrounding area in which owners of record were notified by mail. This is necessary for verification that the correct facility boundary was used in determining distance for notifying land owners of record.

Section 9 Proof of Public Notice

Hardcopy and Portal Submittals – complete this section

General Posting of Notice

I, ___Michael Duplantis_____, the undersigned, certify that on MAY 17, 2024, I posted a true and correct copy of the attached Public Notice in a publicly accessible and conspicuous place, visible from the nearest public road, at the entrance of the property on which the facility is, or is proposed to be, located.

Signed this 21ST day of MAY, 2024.

Signature 5/21/2024 Date

Michael Duplantis Printed Name

HSE Director, Crusoe Energy Systems, Inc. Title

Newspaper Publication of Notice

☒ An original or copy of the actual newspaper advertisement posted in a newspaper in general circulation in the applicable county is attached. The original or copy of the advertisement includes the header showing the date and newspaper or publication title.

OR

☐ **An affidavit from the newspaper or publication in general circulation in the applicable county stating that the advertisement was published is attached. The affidavit includes the date of the advertisement's publication, and a legible photocopy of the entire ad.**

Signature 5/21/2024 Date

MichealDuplantis Printed Name

HSE Director Title {APPLICANT OR RELATIONSHIP TO APPLICANT}

1. A copy of the letter sent to Cassie Corley with Lea County on May 24, 2024 is included in this section. Delivery confirmation will be submitted upon receipt.
2. Photos of the location where the public notice are included in this section. Many locations did not allow public posting so these locations are the nearest, available locations. They include in order within this section:
    1. The Facility Location
    2. The CVS in Hobbs, NM
    3. The Crusoe Energy Machinery Shop in Hobbs, NM
    4. The Hobbs Public Library
3. Crusoe is leasing this property from the oil and gas facility owner. Crusoe does not own the property to pay tax.
4. There are no property owners within a 1/2 mile radius of the facility. A map of the property owner parcels is included in this section demonstrating no nearby property owners to notify.
5. A copy of the letter sent to Cassie Corley with Lea County on May 24, 2024 is included in this section.
7. The public notice posted in various locations and proof of posting is posted as indicated in #2.
8. The PSA announcement sent to the radio station Noal Mark Broadcasting Corporation was released on May 24, 2024. Email proof is included in this section.
9. The newspaper ad and affidavit of publication is included in this section.
10. The affidavit of the newspaper ad and affidavit of publication is included in this section
11. No property owners were notified based on the responses in #4.

Notice to Neighbors, Indian Tribes, Counties, and/or Municipalities

(20.2.72.203.C NMAC)

May 24. 2024

Cassie Corley
Environmental Services
Animal Control, Environmental Enforcement, Permitting, Addressing, Floodplain Supervisor
100 North Main
Lovington, NM 88260

Dear Cassie,

Crusoe Energy Systems, Inc announces its application submittal to the New Mexico Environment Department for an air quality permit for the modification of its oil and gas infrastructure facility. The expected date of application submittal to the Air Quality Bureau is May 24, 2024.

The exact location for the proposed facility known as Gold State Facility, is/will be at latitude 32 deg, 42 min, 32 sec and longitude -103 deg, 32 min, 13 sec. The approximate location of this facility is 27.0 miles west of Hobbs in Lea County.

The proposed modification consists of the addition of seven (7) Waukesha P9394GSI 2,500 horsepower natural gas generator engines for a total of twelve (12) at the Facility.

The estimated maximum quantities of any regulated air contaminant will be as follows in pound per hour (pph) and tons per year (tpy) and may change slightly during the course of the Department's review:

Pollutant:	Pounds per hour	Tons per year
PM_{10}	0.72 pph	2.88 tpy
$PM_{2.5}$	0.72 pph	2.88 tpy
Sulfur Dioxide (SO_2)	0.12 pph	0.60 tpy
Nitrogen Oxides (NO_x)	9.96 pph	43.44 tpy
Carbon Monoxide (CO)	19.80 pph	86.88 tpy
Volatile Organic Compounds (VOC)	2.04 pph	19.00 tpy
Total sum of all Hazardous Air Pollutants (HAPs)	2.06 pph	8.83 tpy
Green House Gas Emissions as Total CO_2e	n/a	130,938 tpy

The standard operating schedule of this facility will be continuous.

The owner and/or operator of the Plant is:
Michael Duplantis
Crusoe Energy Systems, Inc.
255 Fillmore Street
Denver, CO 80206

If you have any comments about the construction or operation of this facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to this address: Permit Programs Manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1; Santa Fe, New Mexico; 87505-1816. Other comments and questions may be submitted verbally. (505) 476-4300; 1 800 224-7009.

Please refer to the company name and facility name, or send a copy of this notice along with your comments, since the Department may have not yet received the permit application. Please include a legible return mailing address with your comments. Once the Department has performed a preliminary review of the application and its air quality impacts, the Department's notice will be published in the legal section of a newspaper circulated near the facility location.

Attención
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Sincerely,
Michael Duplantis
Crusoe Energy Systems, Inc.
255 Fillmore Street
Denver, CO 80206

Notice of Non-Discrimination
NMED does not discriminate on the basis of race, color, national origin, disability, age or sex in the administration of its programs or activities, as required by applicable laws and regulations. NMED is responsible for coordination of compliance efforts and receipt of inquiries concerning non-discrimination requirements implemented by 40 C.F.R. Part 7, including Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions about this notice or any of NMED's non-discrimination programs, policies or procedures, or if you believe that you have been discriminated against with respect to a NMED program or activity, you may contact: Non-Discrimination Coordinator, NMED, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, nd.coordinator@env.nm.gov. You may also visit our

website at https://www.env.nm.gov/non-employee-discrimination-complaint-page/ to learn how and where to file a complaint of discrimination.

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LOVINGTON, NM 88260
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NOTICE

Crusoe Energy Systems, Inc. announces its intent to apply to the New Mexico Environment Department for an air quality minor source construction permit**.** The name of this facility is **Gold State Facility**. The expected date of the submittal of our registration form to the Air Quality Bureau is **May 13, 2024.** This notice is a requirement according to New Mexico air quality regulations.

The exact location of the facility is/will be **32.70877, -103.53693.** The approximate location of this site is **24.3** miles **west** of **Hobbs** in **Lea** county. The standard operating schedule of this facility will be continuous.

Air emissions of any regulated air contaminant will be less than or equal to :

	Tons per year (TPY)
1. Nitrogen Oxides (NO_x)	43.44
2. Carbon Monoxide (CO)	86.88
3. Volatile Organic Compounds (VOC) (stack)	19.00
4. Particulate Matter (PM10)	2.88
5. Particulate Matter (PM2.5)	2.88
6. Sulfur Dioxide (SO_2)	0.60
7. Hydrogen Sulfide (H2S)	<1
8. Any one (1) Hazardous Air Pollutant (HAP)	<10
9. Sum of all Hazardous Air Pollutants (HAPs)	< 25

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Denver, CO 80206

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Company Name
Facility Name
May 13, 2024
NOTICE
Company Name
Facility Name
May 13, 2024


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May 13, 2024
Company Name
Facility Name
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4. Particulate Matter (PM10) 2.88
5. Particulate Matter (PM2.5) 2.88
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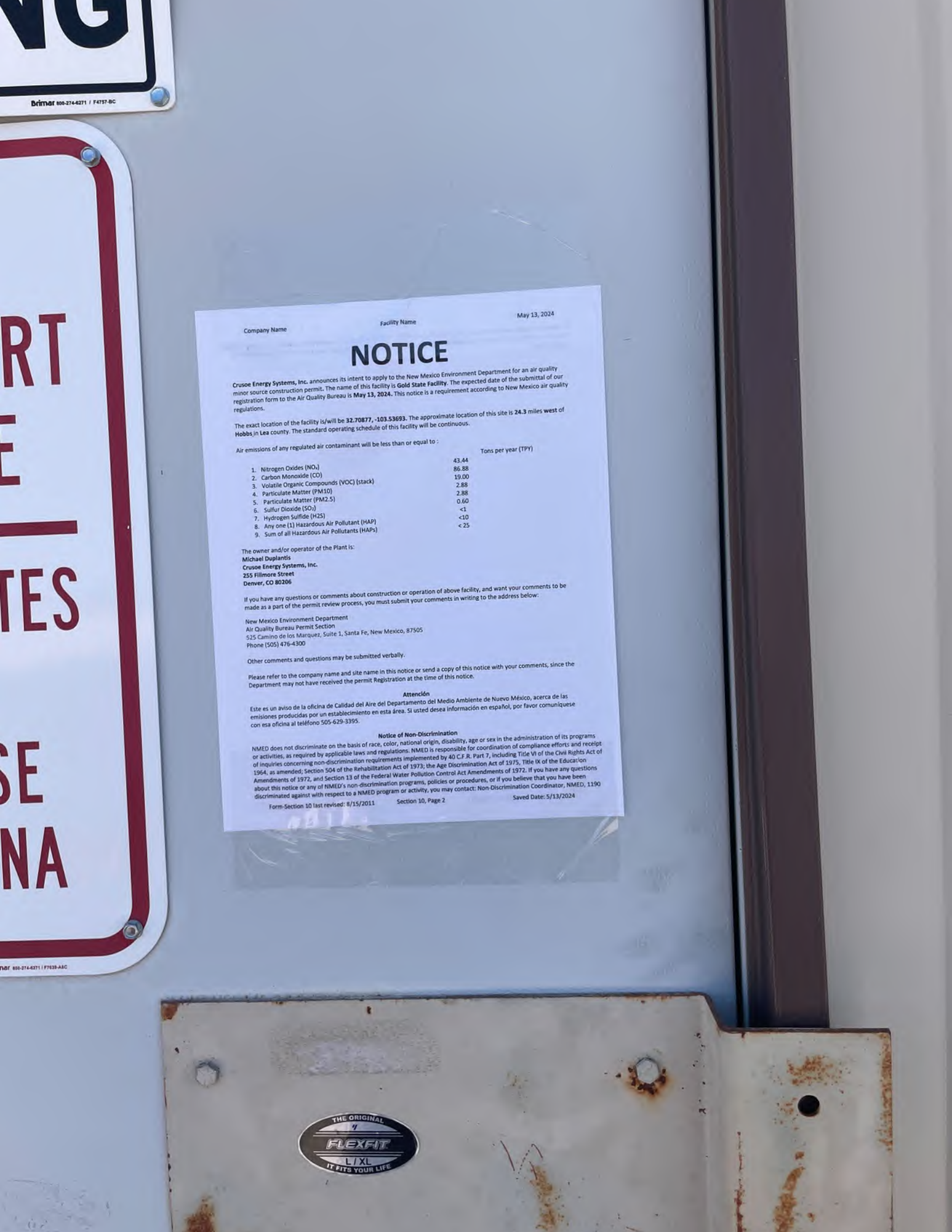
Form-Section 10 last revised: 8/15/2011
Section 10, Page 2
Saved Date: 5/13/2024
CVS Health
Hello, we are hiring!
With our colleague discount card, receive a 30% discount on CVS Pharmacy® Brand; a 20% discount on all other purchases and cvs.com over-the-counter purchases; and 2% back in Extra Bucks on all purchases.
Comprehensive benefits package offered!
Make a positive impact in YOUR community.
Apply today!
Text CVS
to 29000.



Company Name Facility Name May 13, 2024

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Senior Center

he Community Garden? : The Community Garden
roes, peppers and fresh basil! Come help us care for
lants! There will be watering cans located near the
plants for use!

the Community Garden? : Located in the Courtyard,
in the center of the building!

se sign in before use, we'd love to see you all out there!
Any questions, please stop by the offices!

Company Name Facility Name May 13, 2024

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Form-Section 10 last revised: 8/15/2011 Section 10, Page 2 Saved Date: 5/13/2024

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Improve your English or learn another language with *Rosetta Stone Library Solution*. This is an effective, easy-to-use program that allows you to learn a new language on your own time.

Choose from 30 languages:

- Arabic
- Chinese (Mandarin)
- Dari
- Dutch
- English (American)
- English (British)
- Filipino (Tagalog)
- Hebrew
- Hindi
- Indonesian
- Irish
- Italian
- Japanese
- Polish
- Portuguese (Brazil)
- Russian
- Spanish (Latin America)
- Spanish (Spain)
- Swahili

Guidance Center of Lea County
Substance Abuse Counseling

YOU ARE NOT ALONE


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Kaitlin Meszaros

From: Anthony Der Tatevasion
Sent: Wednesday, May 22, 2024 3:41 PM
To: Aaron Forrister
Subject: RE: [EXTERNAL] Re: Public Service Announcement Cost Estimate

Hi Aaron,

Below is the announcement I would like to have read. If you could please send me an invoice and the preferred method of payment, that would be great.

Crusoe Energy Systems, Inc. announces its application submittal to the New Mexico Environment Department for an air quality permit for the modification of its oil and gas infrastructure facility. The exact location of the Facility, known as Gold State Facility, is at latitude 32 deg, 42 min, 32 sec and longitude -103 deg, 32 min, 13 sec. The approximate location of this Facility is 27.0 miles west of Hobbs in Lea County. The proposed modification requests the addition of seven (7) Waukesha P9394GSI 2,500 horsepower natural gas generator engines for a total of twelve (12) at the Facility. Additional information regarding this notice can be found at the Hobbs Public Library, CVS Pharmacy at 715 W Bender Blvd, and Crusoe's field office in Hobbs.

Thanks!

Anthony Der Tatevasion
Air Quality Specialist
Pinyon Environmental, Inc.
D: 720.614.5603

From: Aaron Forrister <aaron@noalmark.com>
Sent: Wednesday, May 15, 2024 4:34 PM
To: Anthony Der Tatevasion <dertatevasion@pinyon-env.com>
Subject: [EXTERNAL] Re: Public Service Announcement Cost Estimate

Hi Anthony,

The fee is $75 per announcement. We do them all the time and would be happy to help.

Aaron Forrister, CRMC

New Mexico Market Manager

KZOR-KIXN-KPZA-KEJL-KLEA-KBIM FM-KBIM

575-318-7217 mobile

575-397-4969 office

575-393-4310 fax

619 North Turner

Hobbs, NM 88240

Noalmark Broadcasting Corporation and its stations do not discriminate in advertising contracts on the basis of race or ethnicity, and will not accept any advertising which is intended to discriminate on the basis of race or ethnicity. Advertiser represents and warrants that it is not purchasing advertising time from Noalmark Broadcasting Corporation or its stations that is intended to discriminate on the basis of race or ethnicity.

From: Anthony Der Tatevasion <dertatevasion@pinyon-env.com>
Sent: Wednesday, May 15, 2024 2:21 PM
To: Aaron Forrister <aaron@noalmark.com>
Subject: Public Service Announcement Cost Estimate

Good afternoon,

I'm reaching out to get an estimated cost for a public service announcement to be read on your radio station. It would be a brief message, no more than a couple of sentences.

Thank you,

Anthony Der Tatevasion
Air Quality Specialist
Pinyon Environmental, Inc.
3222 S Vance St Suite 200
Lakewood, CO 80227
P: 303.980.5200 | **D:** 720.614.5603
E: dertatevasion@pinyon-env.com

Affidavit of Publication

STATE OF NEW MEXICO
COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated
May 17, 2024
and ending with the issue dated
May 17, 2024.

Publisher

Sworn and subscribed to before me this
17th day of May 2024.

Business Manager

My commission expires
January 29, 2027
(Seal)

STATE OF NEW MEXICO
NOTARY PUBLIC
GUSSIE RUTH BLACK
COMMISSION # 1087526
COMMISSION EXPIRES 01/29/2027

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said publication has been made.

LEGAL NOTICE
May 17, 2024

NOTICE

Crusoe Energy Systems, Inc. announces its intent to apply to the New Mexico Environment Department for an air quality minor source construction permit. The name of this facility is **Gold State Facility**. The expected date of the submittal of our registration form to the Air Quality Bureau is **May 17, 2024**. This notice is a requirement according to New Mexico air quality regulations.

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#00290456

67118011 00290456

ANTHONY DER TATEVASION
PINYON ENVIRONMENTAL, INC.
3222 S. VANCE ST., STE 200
LAKEWOOD, CO 80227

Section 10

Written Description of the Routine Operations of the Facility

---

A written description of the routine operations of the facility. Include a description of how each piece of equipment will be operated, how controls will be used, and the fate of both the products and waste generated. For modifications and/or revisions, explain how the changes will affect the existing process. In a separate paragraph describe the major process bottlenecks that limit production. The purpose of this description is to provide sufficient information about plant operations for the permit writer to determine appropriate emission sources.

The purpose of the equipment is to take purchased gas from the adjacent FME3 facility that would otherwise be flared to use as fuel in order to power small data centers. The modification to the facility will permit Crusoe to purchase additional stranded gas and reduce the potential amount of flared gas from the production facility.

Stranded gas will be sold to Crusoe via a custody transfer meter and routed to the Waukesha 9394 GSI generators. The generators use the purchased gas as fuel to generate electricity for small data centers that will also be onsite. The generation of electricity for the data centers is only limited by the amount of gas sold to Crusoe. In times when insufficient gas is sold to Crusoe at the Gold State Facility, units may be temporarily shutdown.

Section 11

Source Determination

Source submitting under 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC

Sources applying for a construction permit, PSD permit, or operating permit shall evaluate surrounding and/or associated sources (including those sources directly connected to this source for business reasons) and complete this section. Responses to the following questions shall be consistent with the Air Quality Bureau's permitting guidance, Single Source Determination Guidance, which may be found on the Applications Page in the Permitting Section of the Air Quality Bureau website.

Typically, buildings, structures, installations, or facilities that have the same SIC code, that are under common ownership or control, and that are contiguous or adjacent constitute a single stationary source for 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC applicability purposes. Submission of your analysis of these factors in support of the responses below is optional, unless requested by NMED.

A. Identify the emission sources evaluated in this section (list and describe)**:**
Crusoe Gold State Facility and FME3 Gold Rush CTB

B. Apply the 3 criteria for determining a single source:

SIC Code: Surrounding or associated sources belong to the same 2-digit industrial grouping (2-digit SIC code) as this facility, OR surrounding or associated sources that belong to different 2-digit SIC codes are support facilities for this source.

X Yes **☐ No**

Common Ownership or Control: Surrounding or associated sources are under common ownership or control as this source.

☐ Yes **X No**

Contiguous or Adjacent: Surrounding or associated sources are contiguous or adjacent with this source.

X Yes **☐ No**

C. Make a determination:

X The source, as described in this application, constitutes the entire source for 20.2.70, 20.2.72, 20.2.73, or 20.2.74 NMAC applicability purposes. If in "A" above you evaluated only the source that is the subject of this application, all "**YES**" boxes should be checked. If in "A" above you evaluated other sources as well, you must check **AT LEAST ONE** of the boxes "**NO**" to conclude that the source, as described in the application, is the entire source for 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC applicability purposes.

☐ The source, as described in this application, **does not** constitute the entire source for 20.2.70, 20.2.72, 20.2.73, or 20.2.74 NMAC applicability purposes (A permit may be issued for a portion of a source). The entire source consists of the following facilities or emissions sources (list and describe): **N/A Facilities are non-aggregated**

Section 13

Determination of State & Federal Air Quality Regulations

This section lists each state and federal air quality regulation that may apply to your facility and/or equipment that are stationary sources of regulated air pollutants.

Not all state and federal air quality regulations are included in this list. Go to the Code of Federal Regulations (CFR) or to the Air Quality Bureau's regulation page to see the full set of air quality regulations.

Required Information for Specific Equipment:
For regulations that apply to specific source types, in the 'Justification' column **provide any information needed to determine if the regulation does or does not apply**. **For example**, to determine if emissions standards at 40 CFR 60, Subpart IIII apply to your three identical stationary engines, we need to know the construction date as defined in that regulation; the manufacturer date; the date of reconstruction or modification, if any; if they are or are not fire pump engines; if they are or are not emergency engines as defined in that regulation; their site ratings; and the cylinder displacement.

Required Information for Regulations that Apply to the Entire Facility:
See instructions in the 'Justification' column for the information that is needed to determine if an 'Entire Facility' type of regulation applies (e.g. 20.2.70 or 20.2.73 NMAC).

Regulatory Citations for Regulations That Do Not, but Could Apply:
If there is a state or federal air quality regulation that does not apply, but you have a piece of equipment in a source category for which a regulation has been promulgated, you must **provide the low level regulatory citation showing why your piece of equipment is not subject to or exempt from the regulation. For example** if you have a stationary internal combustion engine that is not subject to 40 CFR 63, Subpart ZZZZ because it is an existing 2 stroke lean burn stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, your citation would be 40 CFR 63.6590(b)(3)(i). **We don't want a discussion of every non-applicable regulation, but if it is possible a regulation could apply, explain why it does not. For example,** if your facility is a power plant, you do not need to include a citation to show that 40 CFR 60, Subpart OOO does not apply to your non-existent rock crusher.

Regulatory Citations for Emission Standards:
For each unit that is subject to an emission standard in a source specific regulation, such as 40 CFR 60, Subpart OOO or 40 CFR 63, Subpart HH, include the low level regulatory citation of that emission standard. Emission standards can be numerical emission limits, work practice standards, or other requirements such as maintenance. **Here are examples:** a glycol dehydrator is subject to the general standards at 63.764C(1)(i) through (iii); an engine is subject to 63.6601, Tables 2a and 2b; a crusher is subject to 60.672(b), Table 3 and all transfer points are subject to 60.672(e)(1)

Federally Enforceable Conditions:
All federal regulations are federally enforceable. All Air Quality Bureau State regulations are federally enforceable except for the following: affirmative defense portions at 20.2.7.6.B, 20.2.7.110(B)(15), 20.2.7.11 through 20.2.7.113, 20.2.7.115, and 20.2.7.116; 20.2.37; 20.2.42; 20.2.43; 20.2.62; 20.2.63; 20.2.86; 20.2.89; and 20.2.90 NMAC. Federally enforceable means that EPA can enforce the regulation as well as the Air Quality Bureau and federally enforceable regulations can count toward determining a facility's potential to emit (PTE) for the Title V, PSD, and nonattainment permit regulations.

INCLUDE ANY OTHER INFORMATION NEEDED TO COMPLETE AN APPLICABILITY DETERMINATION OR THAT IS RELEVENT TO YOUR FACILITY'S NOTICE OF INTENT OR PERMIT.

EPA Applicability Determination Index for 40 CFR 60, 61, 63, etc: http://cfpub.epa.gov/adi/

To save paper and to standardize the application format, delete this sentence, and begin your submittal for this attachment on this page.

Table for State Regulations:

State Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
20.2.1 NMAC	General Provisions	Yes	Facility	This facility is requesting coverage under a minor source construction permit and will comply with the requirements under this regulation.
20.2.3 NMAC	Ambient Air Quality Standards NMAAQS	Yes	Facility	20.2.3 NMAC is a State Implementation Plan (SIP) approved regulation that limits the maximum allowable concentration of Sulfur Compounds, Carbon Monoxide and Nitrogen Dioxide. The facility meets the maximum allowable concentration of Sulfur Compounds, Carbon Monoxide and Nitrogen Dioxide.
20.2.7 NMAC	Excess Emissions	Yes	Facility	This regulation establishes requirements for the facility if operations at the facility result in excess emissions. The owner or operator will operate the source at the facility having an excess emission, to the extent practicable, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. The facility will also notify the NMED of any excess emissions per 20.2.7.110 NMAC.
20.2.23 NMAC	Fugitive Dust Control	No	N/A	This facility is requesting coverage under a streamline permit, is not a fugitive dust source listed at 20.2.23.108.A NMAC and is not located in an area subject to a mitigation plan pursuant to 40 CFR 51.930.
20.2.33 NMAC	Gas Burning Equipment - Nitrogen Dioxide	No	N/A	This regulation does not apply to internal combustion equipment such as engines. It only applies to external combustion equipment such as heaters or boilers.
20.2.34 NMAC	Oil Burning Equipment: NO_2	No	N/A	This regulation does not apply to internal combustion equipment such as engines. It only applies to external combustion equipment such as heaters or boilers.
20.2.35 NMAC	Natural Gas Processing Plant - Sulfur	No	N/A	This facility is not a natural gas processing plant that use a Sulfur Recovery Unit to reduce sulfur emissions.
20.2.37 and 20.2.36 NMAC	Petroleum Processing Facilities and Petroleum Refineries	N/A	N/A	These regulations were repealed by the Environmental Improvement Board. If you had equipment subject to 20.2.37 NMAC before the repeal, your combustion emission sources are now subject to 20.2.61 NMAC.
20.2.38 NMAC	Hydrocarbon Storage Facility	No	N/A	This facility does not have storage tanks at petroleum production facilities, processing facilities, tanks batteries, or hydrocarbon storage facilities.
20.2.39 NMAC	Sulfur Recovery Plant - Sulfur	No	N/A	This facility is not a sulfur recovery plant that is part of petroleum or natural gas processing facilities.
20.2.50 NMAC	Oil and Gas Sector – Ozone Precursor Pollutants	Yes	GEN 1-12	This regulation establishes emission standards for volatile organic compounds (VOC) and oxides of nitrogen (NOx) for oil and gas production, processing, compression, and transmission sources. 20.2.50 NMAC subparts below: Include the construction status of applicable units as “New”, “Existing”, “Relocation of Existing”, or “Reconstructed” as defined by this Part in your justification: Check the box for the subparts that are applicable: ☒113 – Engines and Turbines ☐114 – Compressor Seals ☐115 – Control Devices and Closed Vent Systems ☐116 – Equipment Leaks and Fugitive Emissions ☐ 117 – Natural Gas Well Liquid Unloading ☐ 118 – Glycol Dehydrators ☐ 119 – Heaters ☐ 120 – Hydrocarbon Liquid Transfers ☐121 – Pig Launching and Receiving ☐122 – Pneumatic Controllers and Pumps

State Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
				☐ 123 – Storage Vessels ☐124 – Well Workovers ☐ 125 – Small Business Facilities ☐126 – Produced Water Management Unit ☐127 – Flowback Vessels and Preproduction Operations
20.2.61.109 NMAC	Smoke & Visible Emissions	Yes	GEN 1-12	This regulation that limits opacity to 20% applies to Stationary Combustion Equipment, such as engines, boilers, heaters, and flares unless your equipment is subject to another state regulation that limits particulate matter such as 20.2.19 NMAC (see 20.2.61.109 NMAC). **If equipment at your facility was subject to the repealed regulation 20.2.37 NMAC it is now subject to 20.2.61 NMAC.**
20.2.70 NMAC	Operating Permits	No	N/A	Applies if your facility's potential to emit (PTE) is 100 tpy or more of any regulated air pollutant other than HAPs; and/or a HAPs PTE of 10 tpy or more for a single HAP or 25 or more tpy for combined HAPs; is subject to a 20.2.79 NMAC nonattainment permit; or is a facility subject to a federal regulation that requires you to obtain a Title V permit such as landfills or air curtain incinerators.
20.2.71 NMAC	Operating Permit Fees	No	N/A	If subject to 20.2.70 NMAC and your permit includes numerical ton per year emission limits, you are subject to 20.2.71 NMAC and normally applies to the entire facility.
20.2.72 NMAC	Construction Permits	Yes	Facility	The facility is submitting a minor source construction permit for the addition of seven (7) generator engine to the facility.
20.2.73 NMAC	NOI & Emissions Inventory Requirements	No	N/A	The NOI application does not apply to this facility.
20.2.74 NMAC	Permits – Prevention of Significant Deterioration (PSD)	No	N/A	The facility is not PSD major source.
20.2.75 NMAC	Construction Permit Fees	Yes	Facility	The construction permit fees apply to this facility.
20.2.77 NMAC	New Source Performance	Yes	GEN 1-12	This is a stationary source which is subject to the requirements of 40 CFR Part 60.
20.2.78 NMAC	Emission Standards for HAPS	No	N/A	This regulation establishes state authority to implement performance standards for sources subject to 40 CFR Part 61. This facility does not have any sources subject to this regulation. Therefore, this regulation does not apply.
20.2.79 NMAC	Permits – Nonattainment Areas	No	N/A	The facility is not in a nonattainment area.
20.2.80 NMAC	Stack Heights	No	N/A	This facility meets the conditions of 20.2.72.301.D1.
20.2.82 NMAC	MACT Standards for source categories of HAPS	Yes	GEN 1-12	This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 63.

Table for Applicable Federal Regulations:

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
40 CFR 50	NAAQS	Yes	Facility	This regulation defines National Ambient Air Quality Standards (NAAQS). The facility meets all applicable NAAQS for NO_X, CO, SO_2, H_2S, PM_{10}, and $PM_{2.5}$ under this regulation.
NSPS 40 CFR 60, Subpart A	General Provisions	Yes	GEN 1-12	This regulation establishes federal authority to implement new source performance standards (NSPS) for stationary sources. Emission units GEN 1-5 at this facility are subject to NSPS JJJJ. Therefore, this regulation applies.
NSPS 40 CFR Part 60 Subpart OOOO	Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution for which construction, modification or reconstruction commenced after August 23, 2011 and before September 18, 2015	No	N/A	This facility will commence construction after September 18th, 2015. Therefore, this subpart does not apply.
NSPS 40 CFR Part 60 Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced **After** September 18, 2015	No	N/A	This facility will commence construction after September 18th, 2015. However, no emission units at the facility are subject to subpart OOOOa requirements. Therefore, this regulation does not apply. Similarly, the modification to this facility does not trigger a modification under the affected facility definitions in NSPS 40 CFR Part 60 Subpart OOOOb.
NSPS 40 CFR 60 Subpart IIII	Standards of performance for Stationary Compression Ignition Internal Combustion Engines	No	N/A	There are no compression ignition engines installed at this facility. Therefore, this regulation does not apply
NSPS 40 CFR Part 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	Yes	GEN 1-12	Emission units GEN 1-12 are subject to NSPS JJJJ due to the engine size and date of manufacture. Therefore, this subpart applies.
MACT 40 CFR 63, Subpart A	General Provisions	Yes	GEN 1-12	Emission units GEN 1-12 are subject to MACT ZZZZ. Therefore, this regulation applies.
MACT 40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary	Yes	GEN 1-12	Emission units GEN 1-12 will comply with MACT ZZZZ by complying with NSPS JJJJ pursuant to 40 CFR 63.6590(c).

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
	Reciprocating Internal Combustion Engines (**RICE MACT**)			

Section 14

Operational Plan to Mitigate Emissions

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

☐ **Title V Sources** (20.2.70 NMAC)**:** By checking this box and certifying this application the permittee certifies that it has developed an **Operational Plan to Mitigate Emissions During Startups, Shutdowns, and Emergencies** defining the measures to be taken to mitigate source emissions during startups, shutdowns, and emergencies as required by 20.2.70.300.D.5(f) and (g) NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.

☒ **NSR** (20.2.72 NMAC)**, PSD** (20.2.74 NMAC) **& Nonattainment** (20.2.79 NMAC) **Sources:** By checking this box and certifying this application the permittee certifies that it has developed an **Operational Plan to Mitigate Source Emissions During Malfunction, Startup, or Shutdown** defining the measures to be taken to mitigate source emissions during malfunction, startup, or shutdown as required by 20.2.72.203.A.5 NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.

☒ **Title V** (20.2.70 NMAC)**, NSR** (20.2.72 NMAC)**, PSD** (20.2.74 NMAC) **& Nonattainment** (20.2.79 NMAC) **Sources:** By checking this box and certifying this application the permittee certifies that it has established and implemented a Plan to Minimize Emissions During Routine or Predictable Startup, Shutdown, and Scheduled Maintenance through work practice standards and good air pollution control practices as required by 20.2.7.14.A and B NMAC. This plan shall be kept on site or at the nearest field office to be made available to the Department upon request. This plan should not be submitted with this application.

Section 16

Air Dispersion Modeling

1) Minor Source Construction (20.2.72 NMAC) and Prevention of Significant Deterioration (PSD) (20.2.74 NMAC) ambient impact analysis (modeling): Provide an ambient impact analysis as required at 20.2.72.203.A(4) and/or 20.2.74.303 NMAC and as outlined in the Air Quality Bureau's Dispersion Modeling Guidelines found on the Planning Section's modeling website. If air dispersion modeling has been waived for one or more pollutants, attach the AQB Modeling Section modeling waiver approval documentation.
2) SSM Modeling: Applicants must conduct dispersion modeling for the total short term emissions during routine or predictable startup, shutdown, or maintenance (SSM) using realistic worst case scenarios following guidance from the Air Quality Bureau's dispersion modeling section. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) for more detailed instructions on SSM emissions modeling requirements.
3) Title V (20.2.70 NMAC) ambient impact analysis: Title V applications must specify the construction permit and/or Title V Permit number(s) for which air quality dispersion modeling was last approved. Facilities that have only a Title V permit, such as landfills and air curtain incinerators, are subject to the same modeling required for preconstruction permits required by 20.2.72 and 20.2.74 NMAC.

What is the purpose of this application?	Enter an X for each purpose that applies
New PSD major source or PSD major modification (20.2.74 NMAC). See #1 above.	
New Minor Source or significant permit revision under 20.2.72 NMAC (20.2.72.219.D NMAC). See #1 above. **Note:** Neither modeling nor a modeling waiver is required for VOC emissions.	X
Reporting existing pollutants that were not previously reported.	
Reporting existing pollutants where the ambient impact is being addressed for the first time.	X
Title V application (new, renewal, significant, or minor modification. 20.2.70 NMAC). See #3 above.	
Relocation (20.2.72.202.B.4 or 72.202.D.3.c NMAC)	
Minor Source Technical Permit Revision 20.2.72.219.B.1.d.vi NMAC for like-kind unit replacements.	
Other: i.e. SSM modeling. See #2 above.	
This application does not require modeling since this is a No Permit Required (NPR) application.	
This application does not require modeling since this is a Notice of Intent (NOI) application (20.2.73 NMAC).	
This application does not require modeling according to 20.2.70.7.E(11), 20.2.72.203.A(4), 20.2.74.303, 20.2.79.109.D NMAC and in accordance with the Air Quality Bureau's Modeling Guidelines.	

Check each box that applies:

☐ See attached, approved modeling **waiver for all** pollutants from the facility.
☐ See attached, approved modeling **waiver for some** pollutants from the facility.
☒ Attached in Universal Application Form 4 (UA4) is a **modeling report for all** pollutants from the facility.
☐ Attached in UA4 is a **modeling report for some** pollutants from the facility.
☐ No modeling is required.

Universal Application 4

Air Dispersion Modeling Report

Refer to and complete Section 16 of the Universal Application form (UA3) to assist your determination as to whether modeling is required. If, after filling out Section 16, you are still unsure if modeling is required, e-mail the completed Section 16 to the AQB Modeling Manager for assistance in making this determination. If modeling is required, a modeling protocol would be submitted and approved prior to an application submittal. The protocol should be emailed to the modeling manager. A protocol is recommended but optional for minor sources and is required for new PSD sources or PSD major modifications. Fill out and submit this portion of the Universal Application form (UA4), the "Air Dispersion Modeling Report", only if air dispersion modeling is required for this application submittal. This serves as your modeling report submittal and should contain all the information needed to describe the modeling. No other modeling report or modeling protocol should be submitted with this permit application.

16-A: Identification

1	Name of facility:	Gold State Facility
2	Name of company:	Crusoe Energy Systems, Inc.
3	Current Permit number:	10145
4	Name of applicant's modeler:	Anthony Der Tatevasion
5	Phone number of modeler:	821.721.5436
6	E-mail of modeler:	dertatevasion@pinyon-env.com

16-B: Brief

1	Was a modeling protocol submitted and approved?	Yes☒	No☐
2	Why is the modeling being done?	Adding New Equipment	
3	Describe the permit changes relevant to the modeling.		
	The facility is currently permitted under NSR Permit No: 10145 for the following equipment: five (5) Waukesha 9394GSI generator engines. The proposed modification will include the installation of seven (7) additional Waukesha 9394GSI generator engines.		
4	What geodetic datum was used in the modeling?	NAD83	
5	How long will the facility be at this location?	TBD	
6	Is the facility a major source with respect to Prevention of Significant Deterioration (PSD)?	Yes☐	No☒

7	Identify the Air Quality Control Region (AQCR) in which the facility is located	155	
8	List the PSD baseline dates for this region (minor or major, as appropriate).		
	NO2	3/16/1988	
	SO2	7/28/1978	
	PM10	2/20/1979	
	PM2.5	11/13/2013	
9	Provide the name and distance to Class I areas within 50 km of the facility (300 km for PSD permits).		
	N/A – The facility is 113.8 km from the Class I area Carlsbad Caverns National Park.		
10	Is the facility located in a non-attainment area? If so describe below	Yes☐	No☒
11	Describe any special modeling requirements, such as streamline permit requirements.		
	N/A – no special modeling requirements.		

16-C: Modeling History of Facility

Describe the modeling history of the facility, including the air permit numbers, the pollutants modeled, the National Ambient Air Quality Standards (NAAQS), New Mexico AAQS (NMAAQS), and PSD increments modeled. (Do not include modeling waivers).

	Pollutant	Latest permit and modification number that modeled the pollutant facility-wide.	Date of Permit	Comments
1	CO	N/A		
	NO_2			
	SO_2			
	H_2S			
	PM2.5			
	PM10			
	Lead			
	Ozone (PSD only)			
	NM Toxic Air Pollutants (20.2.72.402 NMAC)			

16-D: Modeling performed for this application

For each pollutant, indicate the modeling performed and submitted with this application.
Choose the most complicated modeling applicable for that pollutant, i.e., culpability analysis assumes ROI and cumulative analysis were also performed.

1	Pollutant	ROI	Cumulative analysis	Culpability analysis	Waiver approved	Pollutant not emitted or not changed.
	CO	☒	☐	☐	☐	☐
	NO_2	☐	☒	☐	☐	☐
	SO_2	☒	☐	☐	☐	☐
	H_2S	☐	☐	☐	☐	☒
	PM2.5	☒	☒ 24-hour	☐	☐	☐
	PM10	☒	☐	☐	☐	☐
	Lead	☐	☐	☐	☐	☒
	Ozone	☐ see 16-L	☐	☐	☐	☐
	State air toxic(s) (20.2.72.402 NMAC)	☐	☐	☐	☐	☒

16-E: New Mexico toxic air pollutants modeling

1 List any New Mexico toxic air pollutants (NMTAPs) from Tables A and B in 20.2.72.502 NMAC that are modeled for this application.
N/A – no NMTAPs were modeled for this application.

2 List any NMTAPs that are emitted but not modeled because stack height correction factor. Add additional rows to the table below, if required. N/A – no NMTAPs were modeled for this application.

Pollutant	Emission Rate (pounds/hour)	Emission Rate Screening Level (pounds/hour)	Stack Height (meters)	Correction Factor	Emission Rate/ Correction Factor

16-F: Modeling options

1	Was the latest version of AERMOD used with regulatory default options? If not explain below.	Yes☒	No☐

16-G: Surrounding source modeling

1	Date of surrounding source retrieval	5/9/2024

2 If the surrounding source inventory provided by the Air Quality Bureau was believed to be inaccurate, describe how the sources modeled differ from the inventory provided. If changes to the surrounding source inventory were made, use the table below to describe them. Add rows as needed.

AQB Source ID	Description of Corrections

	5226ACT, 5226EQPT2, 5226EQPT3, 5226EQPT4, 5226EQPT5, 5226EQPT6, 5226EQPT12, 5226EQPT13	Per discussion with Sufi Mustafa via email and phone on Friday, May 10, Franklin Mountain Energy, LLC Gold Rush CTB recently obtained a permit and is likely still under construction. It was determined the stack parameters of the SSM-Flare and heaters seem unrealistic; therefore, Pinyon was instructed to exclude these sources from the NO_2 and $PM_{2.5}$ cumulative model runs. Additionally, Pinyon was instructed to exclude the standby generators from the NO_2 and $PM_{2.5}$ cumulative model runs.
	10050EQPT2, 10050EQPT3, 10050EQPT4, 10050EQPT5, 10050EQPT6	Per discussion with Sufi Mustafa via email and phone on Friday, May 10, regarding the Gold Rush CTB, Franklin Mountain Energy, LLC Satellite CTB has the same stack parameters for the heaters as the Gold Rush CTB; therefore, these sources have also been excluded from the NO_2 and $PM_{2.5}$ cumulative model runs.

16-H: Building and structure downwash

1	How many buildings are present at the facility?	14	
2	How many above ground storage tanks are present at the facility?	0	
3	Was building downwash modeled for all buildings and tanks? If not explain why below.	Yes☒	No☐
4	Building comments	One miner box (building) per generator and two control rooms (building)	

16-I: Receptors and modeled property boundary

1	"Restricted Area" is an area to which public entry is effectively precluded. Effective barriers include continuous fencing, continuous walls, or other continuous barriers approved by the Department, such as rugged physical terrain with a steep grade that would require special equipment to traverse. If a large property is completely enclosed by fencing, a restricted area within the property may be identified with signage only. Public roads cannot be part of a Restricted Area. A Restricted Area is required in order to exclude receptors from the facility property. If the facility does not have a Restricted Area, then receptors shall be placed within the property boundaries of the facility. Describe the fence or other physical barrier at the facility that defines the restricted area.					
	A fenceline surrounds the Crusoe facility boundary as shown in the updated plot plan provided with this application (Section 5)					
2	Receptors must be placed along publicly accessible roads in the restricted area. Are there public roads passing through the restricted area?				Yes☐	No☒
3	Are restricted area boundary coordinates included in the modeling files?				Yes☒	No☐
4	Describe the receptor grids and their spacing. The table below may be used, adding rows as needed.					
	Grid Type	Shape	Spacing	Start distance from restricted area or center of facility	End distance from restricted area or center of facility	Comments
	Fenceline	Rectangle	25 meters	0 meters	0 meters	
	Cartesian	Circle	50 meters	0 meters	1 kilometer	
	Cartesian	Circle	100 meters	1 kilometer	2 kilometers	

	Cartesian	Circle	250 meters	2 kilometer	5 kilometers	
5	Describe receptor spacing along the fence line.					
	25 meter spacing on the fenceline					
6	Describe the PSD Class I area receptors.					
	The facility is 113.8 km from the Class I area Carlsbad Caverns National Park. Class I area impacts are negligible for minor sources over 50 km from a Class I area. Modeling is not required.					

16-J: Modeling Scenarios

1	Identify, define, and describe all modeling scenarios. Examples of modeling scenarios include using different production rates, times of day, times of year, simultaneous or alternate operation of old and new equipment during transition periods, etc. Alternative operating scenarios should correspond to all parts of the Universal Application and should be fully described in Section 15 of the Universal Application (UA3).		
	The modeling analysis was performed under a normal operating scenario of 8,760 hours per year operation for all generators.		
2	Which scenario produces the highest concentrations? Why?		
	N/A – Only one operating scenario was modeled for each pollutant. This is considered the highest concentration scenario.		
3	Were emission factor sets used to limit emission rates or hours of operation? (This question pertains to the "SEASON", "MONTH", "HROFDY" and related factor sets, not to the factors used for calculating the maximum emission rate.)	Yes☐	No☒
4	If so, describe factors for each group of sources. List the sources in each group before the factor table for that group. (Modify or duplicate table as necessary. It's ok to put the table below section 16-K if it makes formatting easier.) Sources:		

5	Hour of Day	Factor	Hour of Day	Factor								
	1		13									
	2		14									
	3		15									
	4		16									
	5		17									
	6		18									
	7		19									
	8		20									
	9		21									
	10		22									
	11		23									
	12		24									
	If hourly, variable emission rates were used that were not described above, describe them below.											
	N/A											

6	Were different emission rates used for short-term and annual modeling? If so describe below.	Yes☐	No☒

16-K: NO_2 Modeling

1	Which types of NO_2 modeling were used? Check all that apply.	
	☒	ARM2
	☐	100% NO_X to NO_2 conversion
	☐	PVMRM
	☐	OLM
	☐	Other:
2	Describe the NO_2 modeling.	
	ARM2 was used with default options (0.5 minimum ratio, 0.9 maximum ratio) to determine the conversion of NO_X to NO_2. Compliance with 1-hour NO_2 NAAQS is also a surrogate compliance demonstration with the 24-hour NMAAQS for NO_2. The maximum total 1-hour NO_2 concentration (facility + cumulative impact) is 30.50 µg/m^3, which occurs 245 m southwest of the center of the facility. The Hobbs-Jefferson 1-hour 98th percentile background concentration of 65.8 µg/m^3 was added to the maximum total 1-hour NO_2 concentration for a total of 96.30 µg/m^3. This is 51% of the NMAAQS. The maximum total annual NO_2 concentration (facility + cumulative impact) is 2.10 µg/m^3, which occurred 160 m north of the center of the facility for the model year 2019. The Hobbs-Jefferson annual background concentration of 9.3 µg/m^3 was added to the maximum total annual NO_2 concentration for a total of 11.40 µg/m^3. This is 12% of the NMAAQS.	
3	Were default NO_2/NO_X ratios (0.5 minimum, 0.9 maximum or equilibrium) used? If not describe and justify the ratios used below.	Yes☒ / No☐
4	Describe the design value used for each averaging period modeled.	
	1-hour: High eighth high Annual One Year Annual Average	

16-L: Ozone Analysis

1	NMED has performed a generic analysis that demonstrates sources that are minor with respect to PSD do not cause or contribute to any violations of ozone NAAQS. The analysis follows. The basis of the ozone SIL is documented in *Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program*, EPA, April 17, 2018 and associated documents. NMED accepts this SIL basis and incorporates it into this permit record by reference. Complete documentation of the ozone concentration analysis using MERPS is included in the New Mexico Air Quality Bureau Air Dispersion Modeling Guidelines.
2	The MERP values presented in Table 10 and Table 11 of the NM AQB Modeling Guidelines that produce the highest concentrations indicate that facilities emitting no more than 250 tons/year of NO_X and no more than 250 tons/year of VOCs will cause less formation of O_3 than the O_3 significance level. $$[O_3]_{8-hou} = \left(\frac{250 \frac{ton}{yr}}{340_{MERP_{NOX}}} + \frac{250 \frac{ton}{yr}}{4679_{ME \quad VOC}} \right) \times 1.96 \text{ µg/m}^3$$ =1.546 µg/m^3, which is below the significance level of 1.96 µg/m^3. Sources that produce ozone concentrations below the ozone SIL do not cause or contribute to air contaminant levels exceeding the ozone NAAQS.

3	Does the facility emit at least 250 tons per year of NO_X or at least 250 tons per year of VOCs? Sources that emit at least 250 tons per year of NO_X or at least 250 tons per year of VOCs are covered by the analysis above and require an individual analysis.	Yes☐	No☒

5	For new PSD Major Sources or PSD major modifications, if MERPs were used to account for ozone fill out the information below. If another method was used describe below.				
	NO_X (ton/yr)	$MERP_{NOX}$	VOCs (ton/yr)	$MERP_{VOC}$	$[O_3]_{8\text{-hour}}$
	43.44	340	19.00	9,578	0.25

16-M: Particulate Matter Modeling

1	Select the pollutants for which plume depletion modeling was used.	
	☐	PM2.5
	☐	PM10
	☒	None
2	Describe the particle size distributions used. Include the source of information.	
	N/A- plume depletion modeling was not used for particulate matter modeling.	

3	Does the facility emit at least 40 tons per year of NO_X or at least 40 tons per year of SO_2? Sources that emit at least 40 tons per year of NO_X or at least 40 tons per year of SO_2 are considered to emit significant amounts of precursors and must account for secondary formation of PM2.5.	Yes☒	No☐
4	Was secondary PM modeled for PM2.5?	Yes☐	No☒

5	If MERPs were used to account for secondary PM2.5 fill out the information below. If another method was used describe below.				
	Pollutant	NO_X	SO_2		$[PM2.5]_{24\text{-hour}}$
	$MERP_{annual}$	26,780	14,978		0.0075
	$MERP_{24\text{-hour}}$	7,331	1,981		$[PM2.5]_{annual}$
	Emission rate (ton/yr)	43.44	0.60		0.00033
	Both the secondary 24-hour and annual PM2.5 concentrations are below the respective standards of 1.2 and 0.2 ug/m3, respectively.				

16-N: Setback Distances

1	Portable sources or sources that need flexibility in their site configuration requires that setback distances be determined between the emission sources and the restricted area boundary (e.g. fence line) for both the initial location and future locations. Describe the setback distances for the initial location.
	N/A – no setback distances were determined.
2	Describe the requested, modeled, setback distances for future locations, if this permit is for a portable stationary source. Include a haul road in the relocation modeling.
	N/A – no setback distances were determined.

16-O: PSD Increment and Source IDs

1	The unit numbers in the Tables 2-A, 2-B, 2-C, 2-E, 2-F, and 2-I should match the ones in the modeling files. Do these match? If not, provide a cross-reference table between unit numbers if they do not match below.	Yes☒	No☐

Unit Number in UA-2	Unit Number in Modeling Files

2	The emission rates in the Tables 2-E and 2-F should match the ones in the modeling files. Do these match? If not, explain why below.	Yes☒	No☐
	SSM emissions are only VOCs and not included in the modeling files. SSM is included in O_3 MERP analysis.		
3	Have the minor NSR exempt sources or Title V Insignificant Activities" (Table 2-B) sources been modeled? NA – no minor source exempt sources or Title V Insignificant Activities	Yes☐	No☒

4 Which units consume increment for which pollutants?

Unit ID	NO_2	SO_2	PM10	PM2.5

5	PSD increment description for sources. (for unusual cases, i.e., baseline unit expanded emissions after baseline date).	

6	Are all the actual installation dates included in Table 2A of the application form, as required? This is necessary to verify the accuracy of PSD increment modeling. If not please explain how increment consumption status is determined for the missing installation dates below.	Yes☒	No☐

16-P: Flare Modeling

1 For each flare or flaring scenario, complete the following **N/A – no flares will be permitted with this application**.

Flare ID (and scenario)	Average Molecular Weight	Gross Heat Release (cal/s)	Effective Flare Diameter (m)

16-Q: Volume and Related Sources

1	Were the dimensions of volume sources different from standard dimensions in the Air Quality Bureau (AQB) Modeling Guidelines? If not please explain how increment consumption status is determined for the missing installation dates below.	Yes☐	No☒
	N/A – only point sources were modeled for this application.		
2	Describe the determination of sigma-Y and sigma-Z for fugitive sources.		
	N/A – only point sources were modeled for this application.		
3	Describe how the volume sources are related to unit numbers. Or say they are the same.		

	N/A – only point sources were modeled for this application.
4	Describe any open pits.
	N/A – only point sources were modeled for this application.
5	Describe emission units included in each open pit.
	N/A – only point sources are included in this application.

16-R: Background Concentrations

1	Were NMED provided background concentrations used? Identify the background station used below. If non-NMED provided background concentrations were used describe the data that was used.	Yes☒	No☐
	CO: N/A		
	NO_2: Hobbs-Jefferson (350250008)		
	PM2.5: Hobbs-Jefferson (350450019)		
	PM10: N/A		
	SO_2: N/A		
	Other:		
	Comments: The 1-hour and 8-hour CO, 1-hour SO_2 (surrogate for all SO_2 standards), annual $PM_{2.5}$, and 24-hour and annual PM_{10} concentrations were all below the significance level (Table 18). No cumulative analysis is required.		
2	Were background concentrations refined to monthly or hourly values? If so describe below.	Yes☐	No☒

16-S: Meteorological Data

1	Was NMED provided meteorological data used? If so select the station used. Hobbs	Yes☒	No☐
2	If NMED provided meteorological data was not used describe the data set(s) used below. Discuss how missing data were handled, how stability class was determined, and how the data were processed.		
	N/A – NMED provided meteorological data used.		

16-T: Terrain

1	Was complex terrain used in the modeling? If not, describe why below.	Yes☒	No☐
2	What was the source of the terrain data?		
	Elevations of receptors, facility sources, and surrounding sources were obtained from USGS GeoTIFF files using AERMAP.		

16-U: Modeling Files

Describe the modeling files: AERMOD summary files in the folder below. Supporting AERMAP and BPIP files used in all ROI/SIA and cumulative analyses also included

	File name (or folder and file name)	Pollutant(s)	Purpose (ROI/SIA, cumulative, culpability analysis, other)
1	Gold State_1Hour & 8HourCO.BST	CO	ROI/SIA
	Gold State_1HourNO2.BST	NO_2	cumulative
	Gold State_AnnNO2.BST	NO_2	cumulative
	Gold State_24PM10.BST	PM_{10}	ROI/SIA
	Gold State_AnnPM10.BST	PM_{10}	ROI/SIA
	Gold State_24HourPM2.5.BST	$PM_{2.5}$	cumulative
	Gold State_AnnPM2.5.BST	$PM_{2.5}$	ROI/SIA
	Gold State_1HourSO2.BST	SO_2	ROI/SIA
	Gold State_AnnSO2.BST	SO_2	ROI/SIA
	BPIP	CO, PM10, PM2.5, NO2, SO2	ROI/SIA and cumulative
	AERMAP	CO, PM10, PM2.5, NO2, SO2	ROI/SIA and cumulative

16-V: PSD New or Major Modification Applications

1	A new PSD major source or a major modification to an existing PSD major source requires additional analysis. Was preconstruction monitoring done (see 20.2.74.306 NMAC and PSD Preapplication Guidance on the AQB website)?	Yes☐	No☐
2	If not, did AQB approve an exemption from preconstruction monitoring?	Yes☐	No☐
3	Describe how preconstruction monitoring has been addressed or attach the approved preconstruction monitoring or monitoring exemption.		
4	Describe the additional impacts analysis required at 20.2.74.304 NMAC.		
5	If required, have ozone and secondary PM2.5 ambient impacts analyses been completed? If so describe below.	Yes☐	No☐

16-W: Modeling Results

1	If ambient standards are exceeded because of surrounding sources, a culpability analysis is required for the source to show that the contribution from this source is less than the significance levels for the specific pollutant. Was culpability analysis performed? If so describe below.	Yes☐	No☒
	Not required		
2	Identify the maximum concentrations from the modeling analysis. Rows may be modified, added and removed from the table below as necessary.		

Pollutant, Time Period and Standard	Modeled Facility Concentration (µg/m3)	Modeled Concentration with Surrounding Sources (µg/m3)	Secondary PM (µg/m3)	Background Concentration (µg/m3)	Cumulative Concentration (µg/m3)	Value of Standard (µg/m3)	Percent of Standard	Location		
								UTM E (m)	UTM N (m)	Elevation (m)
CO 1-hour SIL	105.2	N/A	N/A	N/A	N/A	2,000	5%	637000.00	3620050.00	1217.07
CO 8-hour SIL	82.0	N/A	N/A	N/A	N/A	500	16%	637050.00	3619800.00	1216.62
NO_2 1-hour NMAAQS	30.50	30.50	N/A	65.8	96.30	188.03	51%	637000.00	3619750.00	1216.65
NO_2 annual NMAAQS	2.08	2.10	N/A	9.3	11.40	94.02	12%	637100.00	3620100.00	1217.04
NO_2 annual Class II PSD Increment	2.08	2.10	N/A	9.3	11.40	25	46%	637100.00	3620100.00	1217.04
PM_{10} 24-hour SIL	1.51	N/A	N/A	N/A	1.51	5.0	30%	637100.00	3619750.00	1216.19
PM_{10} Annual SIL	0.15	N/A	N/A	N/A	0.15	1.0	15%	637100.00	3620100.00	1217.04
$PM_{2.5}$ 24-hour NAAQS	0.71	0.71	0.0075	16.5	17.21	35	49%	637050.00	3619800.00	1216.62
$PM_{2.5}$ 24-hour Class II PSD Increment	1.2	1.2	N/A	N/A (above increment included surrounding sources)	1.2	9	13%	637050.00	3619800.00	1216.62

Pollutant, Time Period and Standard	Modeled Facility Concentration (µg/m3)	Modeled Concentration with Surrounding Sources (µg/m3)	Secondary PM (µg/m3)	Background Concentration (µg/m3)	Cumulative Concentration (µg/m3)	Value of Standard (µg/m3)	Percent of Standard	Location		
								UTM E (m)	UTM N (m)	Elevation (m)
$PM_{2.5}$ annual SIL	0.15	N/A	N/A	N/A	0.15	0.2	75%	637100.00	3620100.00	1217.04
SO_2 1-hour/ 3-hour/24-hour SIL	0.76	N/A	N/A	N/A	0.76	5 (lowest)	15%	637000.00	3620050.00	1217.07
SO_2 annual SIL	0.03	N/A	N/A	N/A	0.03	1	3%	637100.00	3620100.00	1217.04

16-X: Summary/conclusions

	A statement that modeling requirements have been satisfied and that the permit can be issued.
1	This modeling analysis demonstrates that operation of the facility described in this report neither causes nor contributes to any exceedances of applicable air quality standards. The standards relevant at this facility are NAAQS for CO, NO_2, PM_{10}, $PM_{2.5}$, and SO_2; NMAAQS for CO, NO_2, and SO_2.

Section 22: Certification

Company Name: Crusoe Energy Systems, Inc.

I, Michael Duplantis, hereby certify that the information and data submitted in this application are true and as accurate as possible, to the best of my knowledge and professional expertise and experience.

Signed this 13th day of May, 2024, upon my oath or affirmation, before a notary of the State of

Colorado.

*Signature

5/16/2024
Date

Michael Duplantis
Printed Name

HSE Director
Title

Scribed and sworn before me on this 13th day of May, 2024.

My authorization as a notary of the State of Colorado expires on the

4th day of February, 2026.

Katherine Whitesell
Notary's Signature

May 16, 2024
Date

Katherine Whitesell
Notary's Printed Name

KATHERINE WHITESELL
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20224004811
MY COMMISSION EXPIRES FEBRUARY 4, 2026

*For Title V applications, the signature must be of the Responsible Official as defined in 20.2.70.7.AE NMAC.

Compliance History Form

Air Permit Application
Compliance History Disclosure Form

Pursuant to Subsection 74-2-7(S) of the New Mexico Air Quality Control Act ("AQCA"), NMSA §§ 74-2-1 to -17, the New Mexico Environment Department ("Department") may deny any permit application or revoke any permit issued pursuant to the AQCA if, within ten years immediately preceding the date of submission of the permit application, the applicant met any one of the criteria outlined below. In order for the Department to deem an air permit application administratively complete, or issue an air permit for those permits without an administrative completeness determination process, the applicant must complete this Compliance History Disclosure Form as specified in Subsection 74-2-7(P). An existing permit holder (permit issued prior to June 18, 2021) shall provide this Compliance History Disclosure Form to the Department upon request.

Permittee/Applicant Company Name		**Expected Application Submittal Date**
Crusoe Energy Systems, Inc.		05/03/2024
Permittee/Company Contact	**Phone**	**Email**
Laura Pritchard	970-749-8615	lpritchard@crusoeenergy.com

	Within the 10 years preceding the expected date of submittal of the application, has the permittee or applicant:	
1	Knowingly misrepresented a material fact in an application for a permit?	☐ Yes ☒ No
2	Refused to disclose information required by the provisions of the New Mexico Air Quality Control Act?	☐ Yes ☒ No
3	Been convicted of a felony related to environmental crime in any court of any state or the United States?	☐ Yes ☒ No
4	Been convicted of a crime defined by state or federal statute as involving or being in restraint of trade, price fixing, bribery, or fraud in any court of any state or the United States?	☐ Yes ☒ No
5a	Constructed or operated any facility for which a permit was sought, including the current facility, without the required air quality permit(s) under 20.2.70 NMAC, 20.2.72 NMAC, 20.2.74 NMAC, 20.2.79 NMAC, or 20.2.84 NMAC?	☐ Yes ☒ No
5b	If "No" to question 5a, go to question 6. If "Yes" to question 5a, state whether each facility that was constructed or operated without the required air quality permit met at least one of the following exceptions: a. The unpermitted facility was discovered after acquisition during a timely environmental audit that was authorized by the Department; or b. The operator of the facility estimated that the facility's emissions would not require an air permit, **and** the operator applied for an air permit within 30 calendar days of discovering that an air permit was required for the facility.	☐ Yes ☐ No
6	Had any permit revoked or permanently suspended for cause under the environmental laws of any state or the United States?	☐ Yes ☒ No
7	For each "yes" answer, please provide an explanation and documentation.	