

**NMED AIR QUALITY APPLICATION
TITLE V RENEWAL APPLICATION
El Paso Natural Gas Company, L.L.C.
Caprock Compressor Station**

Prepared By:

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April 2018

Project 193201.0079

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April , 2019

Mr. Ted Schooley
NMED Air Quality Bureau
525 Camino de los Marquez, Suite 1
Santa Fe, NM 87505

*RE: Application for Title V Renewal
El Paso Natural Gas Company L.L.C. – Caprock Compressor Station*

Dear Mr. Schooley:

On behalf of El Paso Natural Gas Company L.L.C., a Kinder Morgan Company, we are submitting this application for a Title V Renewal for the Caprock Compressor Station. The facility is located approximately 16 miles northwest of Tatum, NM. The facility is currently authorized to operate under NSR Permit 3261-M1; the Title V Operating Permit being updated is P132-R3.

The format and content of this application are consistent with Bureau's current policy regarding Title V applications. Title V Permit P132-R3 expires on April 28, 2020. This application is being submitted accordance with 20.2.70.300.B.2 NMAC, requiring a timely application for a Title V renewal be submitted at least 12 months prior to the date if permit expiration.

Enclosed are two hard copies of the application, including an original certification and two discs containing the electronic files. Please feel free to contact either myself at (505) 266-6611 or Richard Duarte, Senior EHS Engineer with El Paso Natural Gas Company L.L.C., at (505) 831-7763 if you have any questions regarding this application.

Sincerely,

Jane Romero-Kotovskiy
Senior Consultant

Cc: Richard Duarte
Trinity Project File: 193201.0079

<p>Mail Application To:</p> <p>New Mexico Environment Department Air Quality Bureau Permits Section 525 Camino de los Marquez, Suite 1 Santa Fe, New Mexico, 87505</p> <p>Phone: (505) 476-4300 Fax: (505) 476-4375 www.env.nm.gov/aqb</p>		<p>For Department use only:</p> <p>AIRS No.:</p>
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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. For NOI applications, submit the entire UA1, UA2, and UA3 applications on a single CD (no copies are needed). For NOIs, hard copies of UA1, Tables 2A, 2D & 2F, Section 3 and the signed Certification Page are required.

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: a 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.: N/A in the amount of N/A
 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.
 This facility qualifies to receive assistance from the Small Business Environmental Assistance program (SBEAP) and qualifies for 50% of the normal application and permit fees. Enclosed is a check for 50% of the normal application fee which will be verified with the Small Business Certification Form for your company.
 This facility qualifies to receive assistance from the Small Business Environmental Assistance Program (SBEAP) but does not qualify for 50% of the normal application and permit fees. To see if you qualify for SBEAP assistance and for the small business certification form go to https://www.env.nm.gov/aqb/sbap/small_business_criteria.html).

Citation: Please provide the **low level citation** under which this application is being submitted: **20.2.70.300.B.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 (see 1 st 3 to 5 #s of permit IDEA ID No.): 572	Updating Permit/NOI #: P132-R3
1	Facility Name: Caprock Compressor Station	Plant primary SIC Code (4 digits): 4922	
		Plant NAIC code (6 digits): 486210	
a	Facility Street Address (If no facility street address, provide directions from a prominent landmark): From Tatum, NM head west on US-380 W and go approximately 16.2 miles. Turn left onto Epperson Lane and go approximately 0.6 miles and the destination will be on the right.		
2	Plant Operator Company Name: El Paso Natural Gas Company, L.L.C.	Phone/Fax: (520) 663-4200 / (520) 663-4259	
a	Plant Operator Address: 5151 E. Broadway Blvd., Suite 1680, Tucson, AZ 85711		

b	Plant Operator's New Mexico Corporate ID or Tax ID: 46-0809216	
3	Plant Owner(s) name(s): El Paso Natural Gas Company, L.L.C.	Phone/Fax: (520) 663-4200 / (520) 663-4259
a	Plant Owner(s) Mailing Address(s): 5151 E. Broadway Blvd., Suite 1680, Tucson, AZ 85711	
4	Bill To (Company): El Paso Natural Gas Company, L.L.C.	Phone/Fax: 520-663-4200 / 520-663-4259
a	Mailing Address: 5151 E. Broadway Blvd., Suite 1680 Tucson, AZ, 85711	E-mail: Ricardo_Duarte@kindermorgan.com
5	<input checked="" type="checkbox"/> Preparer: Trinity Consultants <input checked="" type="checkbox"/> Consultant: Jane Romero-Kotovskiy	Phone/Fax: 505-266-6611
a	Mailing Address: 9400 Holly Ave NE, Building 3, Suite 300 Albuquerque, NM 87122	E-mail: jromero@trinityconsultants.com
6	Plant Operator Contact: Charles Lueras	Phone/Fax: (575) 627-5636 / (575) 627-5682
a	Address: 5151 E. Broadway Blvd., Suite 1680 Tucson, AZ, 85711	E-mail: Charles_Lueras@KinderMorgan.com
7	Air Permit Contact: Richard Duarte	Title: Senior EHS Engineer
a	E-mail: Ricardo_Duarte@KinderMorgan.com	Phone/Fax: (505) 831-7763 / N/A
b	Mailing Address: 7445 Pan American Freeway West, Suite 202, NE Albuquerque, NM 87109	

Section 1-B: Current Facility Status

1.a	Has this facility already been constructed? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.b If yes to question 1.a, is it currently operating in New Mexico? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3	Is the facility currently shut down? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, give month and year of shut down (MM/YY): N/A
4	Was this facility constructed before 8/31/1972 and continuously operated since 1972? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
6	Does this facility have a Title V operating permit (20.2.70 NMAC)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, the permit No. is: P-132-R3
7	Has this facility been issued a No Permit Required (NPR)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, the NPR No. is: N/A
8	Has this facility been issued a Notice of Intent (NOI)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, the NOI No. is: N/A
9	Does this facility have a construction permit (20.2.72/20.2.74 NMAC)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, the permit No. is: NSR 3261M1
10	Is this facility registered under a General permit (GCP-1, GCP-2, etc.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, the register No. is: N/A

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: 37.5 MMScf*	Daily: 900 MMscf*	Annually: 382,500 MMscf*
b	Proposed	Hourly: 37.5 MMScf*	Daily: 900 MMscf*	Annually: 382,500 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: 37.5 MMScf*	Daily: 900 MMscf*	Annually: 382,500 MMscf*
b	Proposed	Hourly: 37.5 MMScf*	Daily: 900 MMscf*	Annually: 382,500 MMscf*

*Provided for informational purposes only; Not intended to be an enforceable condition.

Section 1-D: Facility Location Information

1	Section: 25	Range: 33E	Township: 11S	County: Lea	Elevation (ft): 4,237
2	UTM Zone: <input type="checkbox"/> 12 or <input checked="" type="checkbox"/> 13			Datum: <input type="checkbox"/> NAD 27 <input type="checkbox"/> NAD 83 <input checked="" type="checkbox"/> WGS 84	
a	UTM E (in meters, to nearest 10 meters): 632,610 m E			UTM N (in meters, to nearest 10 meters): 3,688,980 m N	
b	AND Latitude (deg., min., sec.): 33°19'54.7"			Longitude (deg., min., sec.): -103°34'30.5"	
3	Name and zip code of nearest New Mexico town: Tatum, 88267				
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): From Tatum, NM head west on US-380 W and go approximately 16.2 miles. Turn left onto Epperson Lane and go approximately 0.6 miles and the destination will be on the right.				
5	The facility is 16 miles NW of Tatum, NM.				
6	Status of land at facility (check one): <input checked="" type="checkbox"/> Private <input type="checkbox"/> Indian/Pueblo <input type="checkbox"/> Federal BLM <input type="checkbox"/> Federal Forest Service <input type="checkbox"/> Other				
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: Municipalities: None. Indian Tribes: None. Counties: Lea County, Chaves County				
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/aqb/modeling/class1areas.html)? <input type="checkbox"/> Yes <input type="checkbox"/> No (20.2.72.206.A.7 NMAC) If yes, list all with corresponding distances in kilometers: N/A – this application is being submitted under 20.2.70 NMAC				
9	Name nearest Class I area: Salt Creek Wilderness Area				
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): 77.7 km				
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: 1650 meters				
12	Method(s) used to delineate the Restricted Area: Continuous Fencing “ 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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, what is the name and permit number (if known) of the other facility? N/A				

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: N/A		<input type="checkbox"/> AM <input type="checkbox"/> PM	End: N/A <input type="checkbox"/> AM <input type="checkbox"/> PM
3	Month and year of anticipated start of construction: N/A			
4	Month and year of anticipated construction completion: N/A			
5	Month and year of anticipated startup of new or modified facility: N/A			
6	Will this facility operate at this site for more than one year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, specify: N/A
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a	If yes, NOV date or description of issue: N/A		NOV Tracking No: N/A
b	Is this application in response to any issue listed in 1-F, 1 or 1a above? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, provide the 1c & 1d info below:		
c	Document Title: N/A	Date: N/A	Requirement # (or page # and paragraph #): N/A
d	Provide the required text to be inserted in this permit: N/A		
2	Is air quality dispersion modeling or modeling waiver being submitted with this application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
4	Will this facility be a source of federal Hazardous Air Pollutants (HAP)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
a	If Yes, what type of source? <input type="checkbox"/> Major (<input type="checkbox"/> ≥10 tpy of any single HAP OR <input type="checkbox"/> ≥25 tpy of any combination of HAPS) OR <input checked="" type="checkbox"/> Minor (<input checked="" type="checkbox"/> <10 tpy of any single HAP AND <input checked="" type="checkbox"/> <25 tpy of any combination of HAPS)		
5	Is any unit exempt under 20.2.72.202.B.3 NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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	<input type="checkbox"/> I have filled out Section 18, "Addendum for Streamline Applications." <input checked="" type="checkbox"/> N/A (This is not a Streamline application.)
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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.): Philip L. Baca (20.2.70.300.D.2 NMAC):	Phone: (520) 663-4224
a	R.O. Title: Operations Director Division 1	R.O. e-mail: Philip_Baca@kindermorgan.com
b	R. O. Address: 5151 E. Broadway Blvd, Suite 1680 Tucson, AZ 85711	
2	Alternate Responsible Official: Joseph E McLaughlin (20.2.70.300.D.2 NMAC):	Phone: (713) 369-9847
a	A. R.O. Title: Vice President of Operations	A. R.O. e-mail: joe_mclaughlin@kindermorgan.com
b	A. R. O. Address: 1001 Louisiana, Suite 1000, Houston, TX 77002	
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): El Paso Natural Gas Company L.L.C. was formerly named "El Paso Natural Gas Company" (until 8/6/2012); both names may appear on operating permits and refer to the same company.	
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.): Kinder Morgan, Inc.	
a	Address of Parent Company: 1001 Louisiana St., Suite 1000, Houston, TX 77002	
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.): N/A – El Paso Natural Gas Company L.L.C. has no subsidiaries	
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations: Richard Duarte (505) 831-7763	
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: States: None. Local pollution control programs: None. Indian Tribes and Pueblos: None.	

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** does not need to be 2-hole punched, but **must be double sided**. 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 on compact disk(s) (CD). For 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.
- 4) If **air dispersion modeling** is required by the application type, include the **NMED Modeling Waiver OR** one additional electronic copy of the air dispersion modeling including the input and output files. The dispersion modeling **summary report only** should be submitted as hard copy(ies) unless otherwise indicated by the Bureau. The complete dispersion modeling study, including all input/output files, should be submitted electronically as part of the electronic submittal.
- 5) If 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.

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

- 1) All required electronic documents shall be submitted in duplicate (2 separate CDs). 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 with the number of additional hard copies corresponding to the number of CD copies required. 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 3 electronic files (**2 MSWord docs**: Universal Application section 1 and Universal Application section 3-19) and **1 Excel file** of the tables (Universal Application section 2) on the CD(s). 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 # (0 for original, 1, 2, etc.; which will help keep track of subsequent partial update(s) to the original submittal. The footer information should not be modified by the applicant.

Table of Contents

Section 1:	General Facility Information
Section 2:	Tables
Section 3:	Application Summary
Section 4:	Process Flow Sheet
Section 5:	Plot Plan Drawn to Scale
Section 6:	All Calculations
Section 7:	Information Used to Determine Emissions
Section 8:	Map(s)
Section 9:	Proof of Public Notice
Section 10:	Written Description of the Routine Operations of the Facility
Section 11:	Source Determination
Section 12:	PSD Applicability Determination for All Sources & Special Requirements for a PSD Application
Section 13:	Discussion Demonstrating Compliance with Each Applicable State & Federal Regulation
Section 14:	Operational Plan to Mitigate Emissions
Section 15:	Alternative Operating Scenarios
Section 16:	Air Dispersion Modeling
Section 17:	Compliance Test History
Section 18:	Addendum for Streamline Applications (streamline applications only)
Section 19:	Requirements for the Title V (20.2.70 NMAC) Program (Title V applications only)
Section 20:	Other Relevant Information
Section 21:	Addendum for Landfill Applications
Section 22:	Certification Page

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	Controlled by Unit #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) ⁴	Replacing Unit No.
							Date of Construction/ Reconstruction ²	Emissions vented to Stack #				
A-01	Regenerative Cycle Turbine	General Electric	M3702R	127602	7,040 hp	6,026 hp	1/1/1957	N/A	3100 0203	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							~1957	A-01				
A-02	Regenerative Cycle Turbine	General Electric	M3572R	127605	5,700 hp	4,879 hp	1/1/1958	N/A	3100 0203	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							~1958	A-02				
AUX-A1	Backup Auxiliary Reciprocating Engine	CAT	G3406 TA	CTS00251	201 hp	201 hp	Unknown	N/A	2020 0253	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	4SRB	N/A
							10/10/2002	AUX-A1				
F-001	Facility Wide Fugitives	-	-	-	-	-	-	-	3108 8811	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							-	-				
SMM/M1	Startup, Shutdown, Maintenance and	-	-	-	-	-	-	-	2020 0253	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							-	-				
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		

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-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		Controlled by Unit #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) ⁴	Replacing Unit No.
							Date of Construction/ Reconstruction ²	Emissions vented to Stack #					
A-01	Regenerative Cycle Turbine	General Electric	M3702R	127602	7,040 hp	6,026 hp	1/1/1957	N/A	31000203	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A	
							~1957	A-01					
A-02	Regenerative Cycle Turbine	General Electric	M3572R	127605	5,700 hp	4,879 hp	1/1/1958	N/A	31000203	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A	
							~1958	A-02					
AUX-A1	Backup Auxiliary Reciprocating Engine	CAT	G3406 TA	CTS00251	201 hp	201 hp	Unknown	N/A	20100202	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	4SRB	N/A	
							10/10/2002	AUX-A1					
F-001	Facility Wide Fugitives	-	-	-	-	-	-	-	31088811	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A	
							-	-					
SMM/M1	Startup, Shutdown, Maintenance and	-	-	-	-	-	-	-	31088811	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A	
							-	-					
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced			
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced			
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced			
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced			
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced			
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced			
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced			

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 Activities¹ (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 <http://www.env.nm.gov/aqb/forms/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 Once
			Serial No.	Capacity Units	Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Installation /Construction ²	
T-001	Lube Oil Tank	-	-	7,440	-	-	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			-	gal	IA List Item #5	Aug-57	
T-002	Coolant (Ambitrol of Equivalent) Tank	-	-	1,600	-	-	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			-	gal	IA List Item #5	Aug-57	
T-003	Used Oil/Water Tank	-	-	1,000	-	-	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			-	gal	IA List Item #5	Apr-85	
T-004	Coolant (Ambitrol of Equivalent) Tank	-	-	1,110	-	-	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			-	gal	IA List Item #5	Jan-74	
T-005	Used Oil Tank	-	-	1,000	-	-	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			-	gal	IA List Item #5	Apr-85	
T-006	Used Oil Tank	-	-	250	-	-	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			-	gal	IA List Item #5	Apr-85	
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced

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-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		TSP ²		PM10		PM2.5		H ₂ S		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
A-01	45.90	201.04	7.50	32.85	0.74	3.22	0.41	1.80	-	-	0.35	1.55	0.35	1.55	-	-	-	-
A-02	39.30	172.13	7.87	34.47	0.72	3.17	0.36	1.57	-	-	0.31	1.35	0.31	1.35	-	-	-	-
AUX-A1	**	**	**	**	**	**	**	**	-	-	**	**	**	**	**	**	**	**
F-001	-	-	-	-	0.44	1.9	-	-	-	-	-	-	-	-	-	-	-	-
Totals	85.20	373.17	15.37	67.32	1.90	8.34	0.77	3.37	0.00	0.00	0.66	2.90	0.66	2.90	-	-	-	-

¹ Significant Figures Examples: One significant figure – 0.03, 3, 0.3. Two significant figures – 0.34, 34, 3400, 3.4

² TSP emission standard was repealed on November 30, 2018.

³With the changes to MACT ZZZZ, unit AUX-A1 is no longer an insignificant activity. However, it is not subject to any emission limitations under MACT ZZZZ or permitting under 20.2.72 NMAC; therefore, no emissions are displayed.

"-" Denotes emissions of this pollutant are not expected.

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 ₂ O ton/yr	CH ₄ ton/yr	SF ₆ ton/yr	PFC/HFC ton/yr ²									Total GHG Mass Basis ton/yr ⁴	Total CO ₂ e ton/yr ⁵
Unit No.	GWPs¹	1	298	25	22,800	footnote 3										
A-01	mass GHG	27371.6	0.052	0.52											27372.2	
	CO ₂ e	27371.6	15.4	12.9												27399.9
A-02	mass GHG	23988.6	0.045	0.45											23989.1	
	CO ₂ e	23988.6	13.5	11.3												24013.3
F-001	mass GHG	4.9	-	127.9											132.83	
	CO ₂ e	4.9	-	3198.3												3203.2
SSM	mass GHG	10	-	450											460.0	
	CO ₂ e	10	-	11250												11260.0
AUX-A1	mass GHG	**	**	**											**	
	CO ₂ e	**	**	**												**
	mass GHG															
	CO ₂ e															
	mass GHG															
	CO ₂ e															
	mass GHG															
	CO ₂ e															
	mass GHG															
	CO ₂ e															
	mass GHG															
	CO ₂ e															
Total	mass GHG														51954.1	
	CO ₂ e															65876.4

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 CO₂e 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).

Routine or predictable emissions during Startup, Shutdown, and Maintenance (SSM): 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.

This application is being submitted for the renewal of Operating Permit P132-R3 for Caprock Compressor Station. The facility is owned and operated by El Paso Natural Gas Company, LLC (EPNG), a Kinder Morgan company. This submittal is pursuant to 20.2.70.300.B.2 NMAC, which requires a Title V renewal application be submitted at least twelve months prior to expiration of the current permit. Title V Permit P132-R3 expires on April 28, 2020.

Caprock Compressor Station is currently permitted under Operating Permit P132-R3 (issued April 28, 2015) and NSR Permit 3261M1 (issued December 29, 2014).

The facility compresses natural gas for transportation purposes. Equipment at this facility includes one General Electric Company M3702R (Frame 3) regenerative cycle turbine, one General Electric Company M3572R (Frame 3) regenerative cycle turbine (units A-01 and A-02, respectively), and a CAT G3408 TA auxiliary reciprocating engine for the emergency power (unit AUX-A1).

Additional emissions at this facility result from facility-wide fugitives (unit F-001) and startup, shutdown, and routine maintenance (unit SSM). Insignificant activities include six storage tanks (T-001 to T-006) used to store lube oil, used oil and coolant.

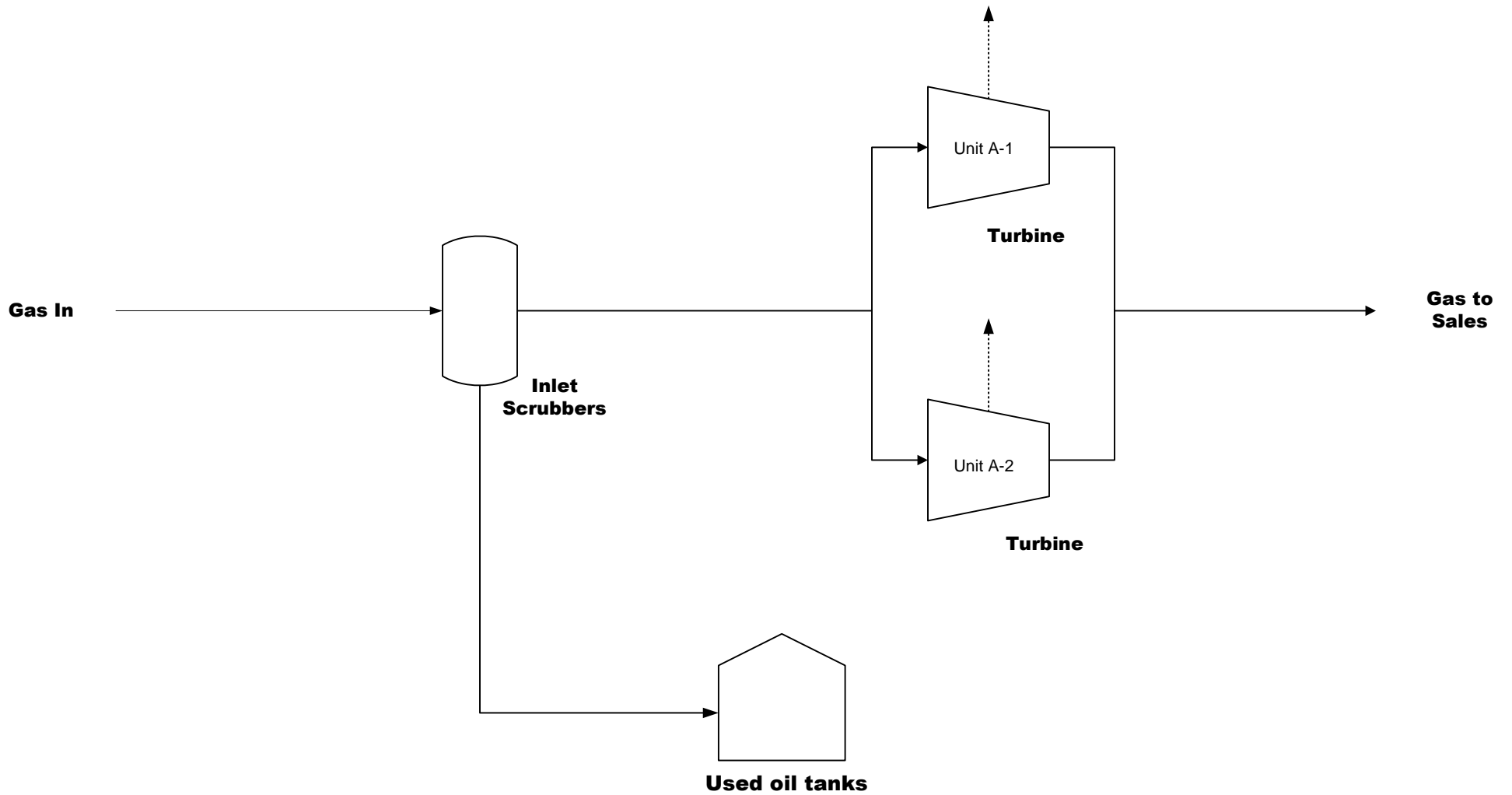
No physical changes or emissions changes have made to Caprock compressor station since the previous Title V Renewal, except updating the GHG Global Warming Potential and updating contact information where applicable.

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.

A process flow diagram for the facility is attached.



**Process Flow Diagram
Caprock Compressor Station**

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.

A plot plan is attached.

GENERAL NOTES

- ESD VALVE AND SWITCH LOCATION PLAN**
- 1 30" SUCTION BLOCK VALVE (WEST FLOW)
 - 2 30" DISCHARGE BLOCK VALVE (WEST FLOW)
 - 3 30" MAINLINE BLOCK VALVE
 - 4 6" DISCHARGE VENT BLOCK VALVE
 - 5 24" DISCHARGE BLOCK VALVE (EAST FLOW) VO-9113
 - 6 30" SUCTION BLOCK VALVE (EAST FLOW) VO-9112
 - 7 30" DISCHARGE BLOCK VALVE (EAST FLOW) VO-9110
 - 8 4" UNIT No.1 VENT VALVE
 - 9 4" UNIT No.2 VENT VALVE
 - 10 FUEL RUN BLOCK VALVE
 - 11 20" LUSK LINE DISCHARGE BLOCK VALVE
 - 12 20" LUSK LINE SUCTION BLOCK VALVE

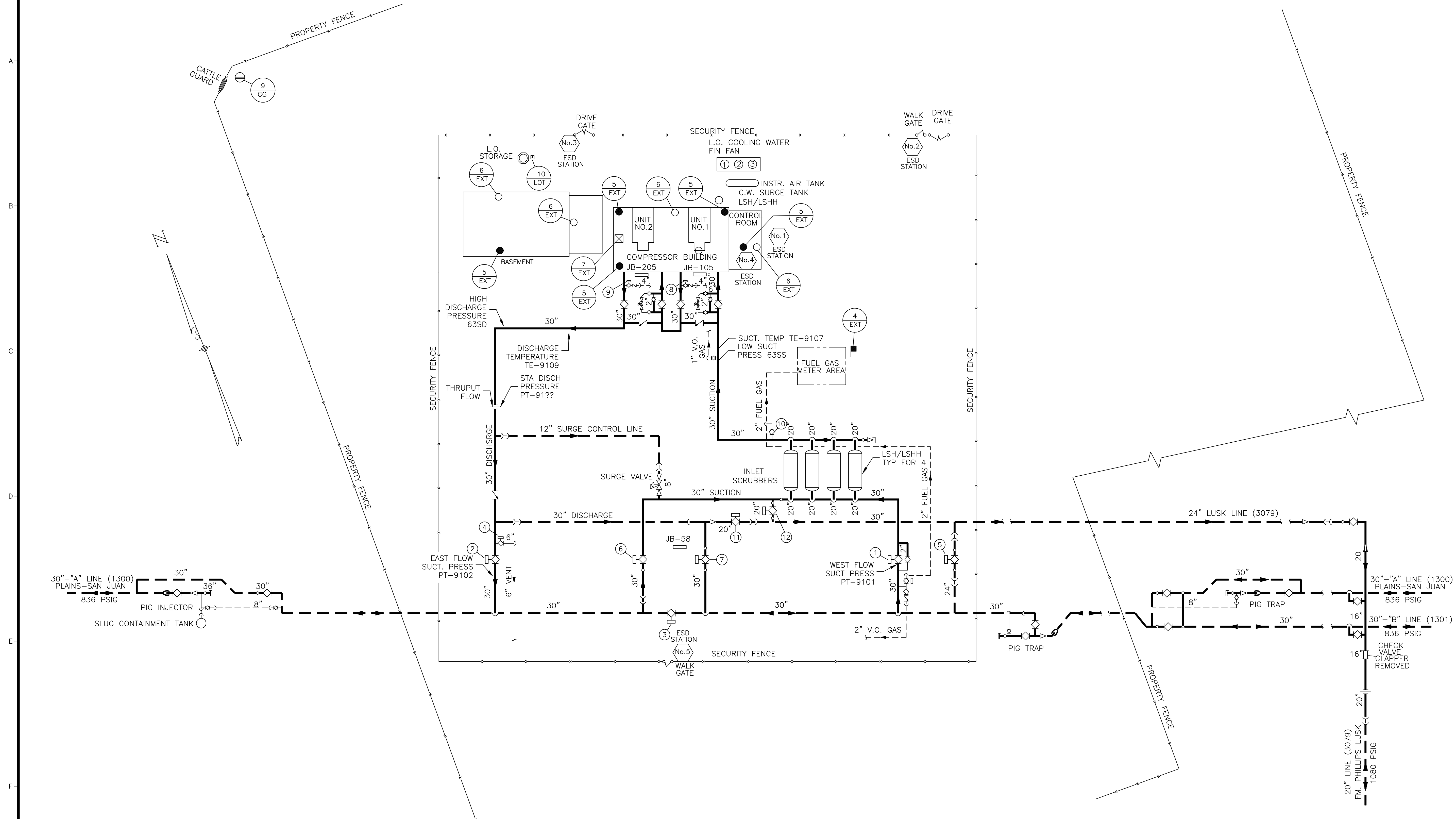
- FIRE CONTROL EQUIPMENT LEGEND**
- 1 FH - FIRE HYDRANT (1 1/2" HOSE)
 - 2 HSE - 200# D.C. EXT. (IN HOUSE)
 - 3 HCH - HOSE CART HOUSE
 - 4 EXT - 20# D.C. EXT. (IN BOX)
 - 5 EXT - 20# D.C. EXT. (ON WALL)
 - 6 EXT - 15# CO₂
 - 7 EXT - 200# D.C. EXT.
 - 8 ESD - EMERGENCY SHUT-DOWN
 - 9 CG - CATTLE GUARD
 - 10 LOT - LUBE OIL TANKS

NO.	DATE	BY	DESCRIPTION	PROJ. ID	APPR.
10	3/27/08	RLC	GENERAL AS-BUILT	-	MVL
9	8/16/07	DLS	AS-BUILT PIP 2007 LINE 1300/1301	107961	BDK
8	11/22/06	RLC	PIP 2007 LINE 1300/1301	107961	DRF
8	11/22/06	RLC	INCORPORATED CMP-CR-4	-	DRF
7	11/14/03	REE	COMPLIANCE ESD REVIEW	O&M	-
6	8/15/01	EML	ADDED INSTRUMENTATION AND ESD #10	-	-
5	4/4/96	FB	REVISED PER FIELD MARKED PRINT	-	-
4	5/19/95	WFA	REVISED PER FIELD MARKED PRINT	-	-



ESD VALVE AND SWITCH LOCATION PLAN AND FIRE CONTROL EQUIPMENT PLAN
CAPROCK COMPRESSOR STATION
COMPLIANCE

Division:	ALBUQUERQUE	Op. Area:	ROSWELL
State:	NEW MEXICO	Co./Par.:	LEA
Section:	25	Township:	11S
Range:	33E	Project ID:	107961
Scale:	NTS	Type:	ACAD
Appr:	NA	Date:	
File name:	CMP-CR-2.DWG		
Sheet:	1	Rev:	1



MAJOR GAS PIPING - SYMBOLS

--- BLOCK VALVE	--- TEE TURNED DOWN
--- BLOCK VALVE W/ OPERATOR (ESD)	--- 45° TURNED DOWN
--- CHECK VALVE	--- 90° TURNED DOWN
--- REGULATOR OR CONTROL VALVE	--- HINGED CLOSURE
--- BUTTERFLY VALVE	--- BLIND FLANGE
--- METER RUN	--- WELD CAP
--- RELIEF VALVE PLAN VIEW	--- ABOVE GROUND PIPING
--- BLOWOFF - PLAN (2" & LARGER)	--- BELOW GROUND PIPING
--- VALVE BELOW A 90° ELL - PLAN	--- NUMBER ON LINE INDICATES LINE SIZE
--- REDUCER	--- ARROW ON LINE INDICATES FLOW
--- VENT STACK	--- UPPER LINE
	--- LOWER LINE

USE THESE SYMBOLS TO CREATE OR CHANGE MAJOR GAS DWG.

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 rationale 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.

Emission units at Caprock Compressor Station include the following:

- One GE Frame 3 M3702R regenerative cycle turbine, unit A-01
- One GE Frame 3 M3572R regenerative cycle turbine, unit A-02
- One CAT G3408 TA auxiliary reciprocating engine for the backup generator, unit AUX-A1
- Facility-wide fugitive emissions, unit F-001
- Startup, shutdown and maintenance emissions, unit SSM

Turbines (A-01 and A-02)

The emission rates for NO_x, CO and VOC were calculated using testing data. A safety factor was used for the VOC emission rate. The SO₂ emission rate was calculated using a maximum sulfur content in the fuel of 5 grains/100scf. HAP emissions were calculated using GRI-HAPCalc 3.01. As a conservative measure, the ISO horsepower was used for these calculations instead of the site-rated horsepower. Test data is submitted with this Title V renewal to show that the turbines comply with the permitted limits.

Greenhouse gas emission rates were calculated and updated using the emission factors from Tables C-1 and C-2 in 40 CFR 98 Subpart C and the fuel consumption rate of the turbines.

CAT G3408 TA Engine (AUX-A1)

The emission factor for NO_x, CO, & VOC were calculated using manufacture specification. PM and HAP emissions was calculated based on U.S. EPA, AP-42, Section 3.2 Natural Gas-fired Reciprocating Engines, Table 3.2-3 Uncontrolled Emission Factors for 4-stroke rich-burn engines. SO₂ emissions were calculated based on fuel consumption and a maximum fuel sulfur content of 5 gr S/100 scf. Operation of AUX-A1 is limited to 500 hours per year.

Fugitives (F-001)

The fugitive emissions for the facility were calculated using a representative gas analysis and component count. HAP emissions for the fugitives were calculated using GRI-HAPCalc.

Startup, Shutdown and Maintenance (SSM)

Emissions from startup, shutdown, and maintenance were calculated using the predicted number of SSM events, the volume of gas blown down per event, and a representative inlet gas analysis

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 (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

Calculating GHG Emissions:

1. Calculate the ton per year (tpy) GHG mass emissions and GHG CO₂e 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 CO₂e 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 CO₂e 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 CO₂ 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)

Emission Summary

Unit	NO _x		CO		VOC		SO ₂		PM		H ₂ S		Total HAP		Acetaldehyde		Formaldehyde		CO ₂ e tpy
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	
A-01	45.90	201.04	7.50	32.85	0.74	3.22	0.41	1.80	0.35	1.55	-	-	0.65	2.83	0.27	1.18	0.26	1.15	27399.80
A-02	39.30	172.13	7.87	34.47	0.72	3.17	0.36	1.57	0.31	1.35	-	-	0.52	2.29	0.22	0.95	0.21	0.93	24013.38
F-001	-	-	-	-	0.44	1.94	-	-	-	-	-	-	0.0071	0.031	-	-	-	-	3203.23
AUX-A1 ¹	0.57	0.14	0.029	0.0072	0.018	0.0045	2.26	0.0070	0.028	0.0070	-	-	0.048	0.0027	0.0041	2.35E-04	0.030	1.72E-03	43.11
SSM/M1	-	-	-	-	*	10.0	-	-	-	-	0.056	0.0025	*	0.057	-	-	-	-	11260.00
Totals	85.77	373.32	15.40	67.33	1.92	18.34	3.03	3.38	0.69	2.91	0.056	0.0025	1.22	5.20	0.49	2.13	0.51	2.08	65919.53

Notes

¹With the changes to MACT ZZZZ, unit AUX-A1 is no longer an insignificant activity. However, it is not subject to any emission limitations under MACT ZZZZ or permitting under 20.2.72 NMAC.

"*" Denotes an hourly value is not appropriate for this emission type.

"-" Denotes emissions of this pollutant are not expected.

Unit: A-01
Description: GE Regenerative Cycle Turbine (model M3702R)

ISO Rating: 7040 hp
Site Rating: 6026 hp Site rating provided for informational purposes only; ISO rating used for calculations.
Fuel Heating Value: 931.9 Btu/scf
Fuel Consumption: 502.7 MMscf/yr
Heat Input: 53.5 MMBtu/hr Fuel consumption * Fuel Heating Value * 1 yr/8760 hours
Heat Input Rate: 7596.3 Btu/hp-hr Heat input / horsepower * 10⁶ Btu/MMBtu

Emission Calculations

NO _x	CO	VOC	SO ₂ ¹	TSP ^{4,5}	PM ₁₀	PM _{2.5}	Acetaldehyde ²	Formaldehyde ²	Total HAPs ²	
45.9	7.5	0.13		6.60E-03	6.60E-03	6.60E-03				lb/MMBtu
			5							lb/hr Permit limits, based on test data
45.9	7.5	0.13	0.41	0.35	0.35	0.35	0.27	0.26	0.65	grains S/100 scf
201.0	32.9	0.56	1.8	1.5	1.5	1.5	1.2	1.2	2.8	lb/hr
		475%								tons/yr
										Safety Factor
45.9	7.5	0.74	0.41	0.35	0.35	0.35	0.27	0.26	0.65	lb/hr (from above) * (1 + SF)
201.0	32.9	3.2	1.8	1.5	1.5	1.5	1.2	1.2	2.8	tons/yr (from above) * (1 + SF)

¹ SO₂ emission rate based on sulfur content of 5gr S/100scf

² HAP tpy emission rate from GRI-HAPCalc 3.01 calculated using ISO hp instead of derate hp;

³ For emission rates based on test data, testing data and regression analysis are included in this application

⁴ All PM lb/hr Emission Rate = EF (lb/MMBtu) * Fuel Consumption (MMBtu/hp-hr) * hp (ISO Rating value)
From lb/hr, tpy Emission Rate = lb/hr * Yearly Operating Hours * 1ton/2000lb

⁵ EF of all PM from AP42 3.1 table 3.1-2a: Emission Factors for Criteria Pollutants and Greenhouse Gases from Stationary Gas Turbines

GHG Emission Calculations

CO ₂	CH ₄	N ₂ O	
53.02	1.00E-03	1.00E-04	kg/MMBtu 40 CFR 98, Subpart C, Tables C-1 and C-2
24838074	468	47	kg / yr
27371.6	0.52	0.05	tons / yr
27371.6	12.9	15.4	tons/yr CO ₂ e

Unit: A-02
Description: GE Regenerative Cycle Turbine (model M3572R)

ISO Rating: 5700 hp
Site Rating: 4879 hp Site rating provided for informational purposes only; ISO rating used for calculations.
Fuel Heating Value: 931.9 Btu/scf
Fuel Consumption: 440.57 MMsfc/yr
Heat Input: 46.9 MMBtu/hr Fuel consumption * Fuel Heating Value * 1 yr/8760 hours
Heat Input Rate: 8222.5 Btu/hp-hr Heat input / horsepower * 10⁶ Btu/MMBtu

Criteria Pollutant Emission Calculations

NO _x	CO	VOC	SO ₂ ¹	TSP ^{4,5}	PM ₁₀	PM _{2.5}	Acetaldehyde ²	Formaldehyde ²	Total HAPs ²	
39.3	7.9	0.13		6.60E-03	6.60E-03	6.60E-03				lb/MMBtu
			5	0.31	0.31	0.31				lb/hr Permit limits, based on test data
										grains S/100 scf
39.3	7.9	0.13	0.36	0.31	0.31	0.31	0.22	0.21	0.52	lb/hr
172.1	34.5	0.55	1.6	1.4	1.4	1.4	0.95	0.93	2.3	tons/yr
		475%								Safety Factor
39.3	7.9	0.72	0.36	0.31	0.31	0.31	0.22	0.21	0.52	lb/hr (from above) * (1 + SF)
172.1	34.5	3.2	1.6	1.4	1.4	1.4	0.95	0.93	2.3	tons/yr (from above) * (1 + SF)

¹ SO₂ emission rate based on sulfur content of 5gr S/100scf

² HAP tpy emission rate from GRI-HAPCalc 3.01 calculated using ISO hp instead of derate hp;

³ For emission rates based on test data, testing data and regression analysis are included in this application

⁴ All PM lb/hr Emission Rate = EF (lb/MMBtu) * Fuel Consumption (MMBtu/hp-hr) * hp (ISO Rating value)
From lb/hr, tpy Emission Rate = lb/hr * Yearly Operating Hours * 1ton/2000lb

⁵ EF of all PM from AP42 3.1 table 3.1-2a: Emission Factors for Criteria Pollutants and Greenhouse Gases from Stationary Gas Turbines

GHG Emission Calculations

CO ₂	CH ₄	N ₂ O	
53.02	1.00E-03	1.00E-04	kg/mmBtu 40 CFR 98, Subpart C, Tables C-1 and C-2
21768272	411	41	kg / yr
23988.6	0.45	0.0452	tons / yr
23988.6	11.3	13.5	tons/yr CO ₂ e

Unit: F-001
Description: Facility-wide fugitives

Facility hours of operation per year: 8,760 hr/yr

Component Count and TOC calculation

Emission Source	Component Count ¹	Emission Factor ²		TOC (lb/hr)
		(kg/hr/source)	(lb/hr/source)	
Valves	486	0.0200	0.04409	21.429
Relief Valves	9	0.1880	0.41446	3.730
Open-Ended Lines	23	0.0220	0.04850	1.116
Compressor Seals	4	0.2040	0.44974	1.799
Pump Seals (Liq. Service)	0	0.0630	0.13889	0.000
Flanges & Connections	986	0.0011	0.00243	2.391
Total # of Components	1,508	Total TOC Emissions:		30.5

¹Based on EPNG representative component count per process unit multiplied by the number of process units

²Based on EPA-453/R-93-026 (Table 2-3: Gas Plant Average Emission Factors - Total Organic Compounds, TOC)

Gas Analysis

Component	MW	Dry vol/mol%	MW * dry vol %	Mass Fraction (dry)
Nitrogen	28.01	0.30%	0.085	0.50%
Oxygen	31.99	0.00%	0.000	0.00%
CO ₂	44.01	1.36%	0.598	3.56%
H ₂ S	34.08	0.00%	0.000	0.00%
Methane	16.04	96.45%	15.473	91.99%
Ethane	30.07	1.43%	0.430	2.56%
Propane	44.10	0.30%	0.134	0.79%
I-Butane	58.12	0.06%	0.034	0.20%
N-Butane	58.12	0.05%	0.031	0.19%
I-Pentane	72.15	0.02%	0.013	0.08%
N-Pentane	72.15	0.01%	0.009	0.05%
Hexanes +	86.18	0.02%	0.015	0.09%
Total		100.00%	16.82	100%

NMHC	1.9%	1.40%	mixture VOC wt%
NMEHC (VOC)	0.46%	95.94%	mixture TOC wt%

Fugitive Emissions Calculation

Fugitive TOC Emissions: 30.464 lb/hr

Fugitive VOC Emissions: 1.9 tpy VOC tpy = TOC lb/hr * (VOC mol% / TOC mol %) * 8760 hrs/yr / 2000 lb/ton
Fugitive CH₄ Emissions: 127.93 tpy
Fugitive CO₂ Emissions: 4.9 tpy

Sample Calculation:

$$\text{VOC tpy} = \frac{30.5 \text{ lb TOC}}{\text{hr}} * \frac{1.40\% \text{ VOC wt \%}}{95.94\% \text{ TOC wt \%}} * \frac{8760 \text{ hr}}{\text{yr}} \frac{1 \text{ ton}}{2000 \text{ lb}}$$

Fugitive HAP emissions (from GRI-HAPCalc):

Benzene	Toluene	Ethylbenzene	Xylenes	Total HAPs	
0.0049	0.0082	0.0004	0.0021	0.0156	tpy
100%	100%	100%	100%	100%	%
0.0022	0.0037	0.0002	0.0010	0.0071	lb/hr
0.0098	0.0164	0.0008	0.0042	0.0312	tpy

GRI-HAPCalc Safety Factor

Unit: SSM/M1
Description: Facility-wide SSM/M1 emissions

Gas Analysis (Typical)

VOC weight %:	2.00%	Nominal
CO2 weight %:	2.00%	Nominal
CH4 weight %:	90.00%	Nominal
Gas molecular weight:	17.00 lb/lb-mol	Nominal
Gas molar volume:	378.61 scf/lb-mol	Constant
Gas density:	0.0449 lb/scf	Gas MW / Molar volume

Turbine Blowdown Venting (BD-Unit)

SSM Emission Rates, Per Event

Event Description:	Planned Maintenance and Normal Shutdown	
Volume per event:	156 Mscf/event	Estimated (varies)
VOC Emissions:	140.1 lb/event	lb/scf * scf/event * VOC wt %

SSM Emission Rates, Annual

Annual volume:	2808 Mscf/yr	Expected blowdown volume
VOC Emissions:	1.3 tons/yr	lb/scf * scf/event * VOC wt % * ton/2000 lb

Turbine Starting Gas (BD-Unit)

SSM Emission Rates, Per Event

Event Description:	Normal Startup	
Volume per event:	150 Mscf/event	Estimated (varies)
VOC Emissions:	135 lb/event	lb/scf * scf/event * VOC wt %

SSM Emission Rates, Annual

Annual volume:	10819.5 Mscf/yr	Expected blowdown volume
VOC Emissions:	4.9 tons/yr	lb/scf * scf/event * VOC wt %

Facility Blowdown Venting (BD-ESD)

SSM Emission Rates, Per Event

Event Description:	Station ESD	
Volume per event:	156 Mscf/event	Estimated (varies)
VOC Emissions:	140 lb/event	lb/scf * scf/event * VOC wt %

SSM Emission Rates, Annual

Annual volume:	156 Mscf/yr	Assumes 1 event per year
VOC Emissions:	0.070 tons/yr	lb/event * event/year * ton/2000lb

Facility Blowdown Total

VOC Emissions:	10.0 tons/yr	
HAP emissions:	0.163 tons/yr	Assumes same HAP/VOC ratio as fugitives
CO2 Emissions:	10.0 tons/yr	VOC Emissions / %VOC * %CO2
CH4 Emissions:	450.0 tons/yr	VOC Emissions / %VOC * %CH4
CO2e Emissions:	11260.0 tons/yr	

VOC Emissions (SSM): 6.19

Facility-Wide SSM/M Total

VOC	HAP	CO2	CH4	CO2e
10.0	0.069	10.0	450.0	11260.0 tons/yr

Unit: SSM/M1
 Description: Facility-wide startup, shutdown, maintenance and malfunction emissions

Gas Analysis (Typical)

H_2S	$\frac{0.25}{100}$	gr H_2S scf	Nominal (Max amount allowed in pipeline quality natural gas)
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Turbine Blowdown Venting (BD-Unit)

SSM Emission Rates, Per Event

Event Description: **Planned Maintenance and Normal Shutdown**
 Volume per event: 156 Mscf/event Estimated (varies)
 H_2S Emissions: 0.056 lb/event gr/scf * scf/event * 1lb/7000gr

SSM Emission Rates, Annual

Annual volume: 2808 Mscf/yr Expected blowdown volume
 H_2S Emissions: 0.0005 tons/yr gr/scf * scf/event * 1lb/7000gr * ton/2000 lb

Turbine Starting Gas (BD-Unit)

SSM Emission Rates, Per Event

Event Description: **Normal Startup**
 Volume per event: 150 Mscf/event Estimated (varies)
 H_2S Emissions: 0.054 lb/event gr/scf * scf/event * 1lb/7000gr

SSM Emission Rates, Annual

Annual volume: 10819.5 Mscf/yr Expected blowdown volume
 H_2S Emissions: 0.0019 tons/yr gr/scf * scf/event * 1lb/7000gr * ton/2000 lb

Facility Blowdown Venting (BD-ESD)

SSM Emission Rates, Per Event

Event Description: **Station ESD**
 Volume per event: 156 Mscf/event Estimated (varies)
 H_2S Emissions: 0.056 lb/event gr/scf * scf/event * 1lb/7000gr

SSM Emission Rates, Annual

Annual volume: 156 Mscf/yr Expected blowdown volume
 H_2S Emissions: 2.79E-05 tons/yr gr/scf * scf/event * 1lb/7000gr * ton/2000 lb

Facility H_2S Total: 0.0025 tons/yr

Facility Blowdown Total

H_2S Emissions: 0.0025 tons/yr

Facility-Wide SSM/M Total

$\frac{H_2S}{0.0025}$ tons/yr

Unit: AUX-A1
 Description: G3406 TA; 4-Stroke Rich Burn Engine

ISO Rating: 201 hp
 Site Rating: 201 hp
 Fuel consumption: 7329 BTU/bhp-hr
 Heat Input: 1.5 MMBtu/hr
 Fuel Heat Value: 931.9 BTU/scf
 Operation Time: 500 hr/yr

Emission Calculations

NOx	CO	VOC	SO ₂ ¹	PM	Acetaldehyde	Formaldehyde	Total HAPs		
19.7	1.0	0.63						g/bhp-hr	Engine Specificaiton
				0.019	0.0028	0.021	0.032	lb/MMBtu	AP-42 Table 3.2-3
			5					gr S/100scf	
0.57	0.029	0.018	2.26	0.028	0.0041	0.030	0.048	lb/hr	
0.14	0.007	0.0045	0.56	0.0070	2.35E-04	0.0017	0.0027	tons/yr	

¹SO₂ emission rate based on fuel sulfur content of 5 gr S/100scf and Site Rating
 SO₂ (lb/hr) = 5gr S/100scf * Heat input (Btu/hp-hr) * Site rating (hp) / Fuel Heating value (Btu/scf) * 1lb/7000gr * Stoichometric ratio (64/32)

GHG Emission Calculations

CO ₂	CH ₄	N ₂ O		
53.06	1.00E-03	1.00E-04	kg/MMBtu	40 CFR 98, Subpart C, Tables C-1 and C-2
1	25	298	GWP	40 CFR 98 Table A-1
39082	0.74	0.07	kg / yr	
43.1	0.00081	0.000081	tons / yr	
43.07	0.020	0.024	tons/yr CO ₂ e	

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.
-

The following items were used to calculate the emission for this application:

- Turbines (A-01 and A-02)
 - GRI-HAPCalc Output
 - 40 CFR 98 Subpart C, Tables C-1 and C-2
 - Test Data
- CAT G3406 Engine (AUX-1)
 - Manufacture Specification Sheet
 - U.S. EPA, AP-42, Section 3.2 Natural Gas-fired Reciprocating Engines
 - 40 CFR 98 Subpart C, Tables C-1 and C-2
- Fugitives (F-001)
 - GRI-HAPCalc Output

GRI-HAPCalc® 3.01
Turbine Report

Facility ID: CAPROCK	Notes:
Operation Type: COMPRESSOR STATION	
Facility Name: CAPROCK COMPRESSOR STATION	
User Name:	
Units of Measure: U.S. STANDARD	

Note: Emissions less than 5.00E-09 tons (or tonnes) per year are considered insignificant and are treated as zero. These emissions are indicated on the report with a "0". Emissions between 5.00E-09 and 5.00E-05 tons (or tonnes) per year are represented on the report with "0.0000".

Turbine Unit

Unit Name: A-1
 Hours of Operation: 8,760 Yearly
 Rate Power: 7040 hp
 Fuel Type: NATURAL GAS
 Emission Factor Set: FIELD > EPA > LITERATURE
 Additional EF Set: -NONE-

Calculated Emissions (ton/yr)

<u>Chemical Name</u>	<u>Emissions</u>	<u>Emission Factor</u>	<u>Emission Factor Set</u>
HAPs			
PAHs	0.0007	0.00000970 g/bhp-hr	EPA
Formaldehyde	1.1503	0.01693680 g/bhp-hr	GRI Field
Acetaldehyde	1.1774	0.01733570 g/bhp-hr	GRI Field
1,3-Butadiene	0.0042	0.00006160 g/bhp-hr	GRI Field
Acrolein	0.0177	0.00026000 g/bhp-hr	GRI Field
Propional	0.0587	0.00086500 g/bhp-hr	GRI Field
Propylene Oxide	0.0086	0.00012730 g/bhp-hr	EPA
Benzene	0.0366	0.00053840 g/bhp-hr	GRI Field
Toluene	0.0279	0.00041100 g/bhp-hr	GRI Field
Ethylbenzene	0.0095	0.00014050 g/bhp-hr	EPA
Xylenes(m,p,o)	0.0845	0.00124410 g/bhp-hr	GRI Field
2,2,4-Trimethylpentane	0.1090	0.00160530 g/bhp-hr	GRI Field
n-Hexane	0.1023	0.00150580 g/bhp-hr	GRI Field
Phenol	0.0075	0.00011010 g/bhp-hr	GRI Field
Naphthalene	0.0005	0.00000760 g/bhp-hr	GRI Field
2-Methylnaphthalene	0.0001	0.00000130 g/bhp-hr	GRI Field
Biphenyl	0.0224	0.00033050 g/bhp-hr	GRI Field
Phenanthrene	0.0000	0.00000050 g/bhp-hr	GRI Field
Chrysene	0.0001	0.00000100 g/bhp-hr	GRI Field
Beryllium	0.0000	0.00000010 g/bhp-hr	GRI Field
Phosphorus	0.0044	0.00006520 g/bhp-hr	GRI Field
Chromium	0.0006	0.00000820 g/bhp-hr	GRI Field
Manganese	0.0012	0.00001750 g/bhp-hr	GRI Field
Nickel	0.0004	0.00000610 g/bhp-hr	GRI Field
Cobalt	0.0001	0.00000160 g/bhp-hr	GRI Field

Arsenic	0.0000	0.00000060 g/bhp-hr	GRI Field
Selenium	0.0000	0.00000030 g/bhp-hr	GRI Field
Cadmium	0.0000	0.00000020 g/bhp-hr	GRI Field
Mercury	0.0002	0.00000270 g/bhp-hr	GRI Field
Lead	0.0002	0.00000340 g/bhp-hr	GRI Field

Total 2.8251

Criteria Pollutants

PM	1.9677	0.02897200 g/bhp-hr	EPA
CO	143.1924	2.10828420 g/bhp-hr	GRI Field
NMHC	13.1680	0.19387800 g/bhp-hr	GRI Field
NMEHC	0.6261	0.00921840 g/bhp-hr	EPA
NOx	85.0456	1.25216290 g/bhp-hr	GRI Field
SO2	0.0698	0.00102720 g/bhp-hr	GRI Field

Other Pollutants

Methane	67.0491	0.98719230 g/bhp-hr	GRI Field
Acetylene	0.4867	0.00716540 g/bhp-hr	GRI Field
Ethylene	0.9478	0.01395450 g/bhp-hr	GRI Field
Ethane	10.1935	0.15008370 g/bhp-hr	GRI Field
Propane	1.0867	0.01600000 g/bhp-hr	GRI Field
Isobutane	0.3260	0.00480000 g/bhp-hr	GRI Field
Butane	0.3532	0.00520000 g/bhp-hr	GRI Field
Cyclopentane	0.1121	0.00165110 g/bhp-hr	GRI Field
Butyrald/Isobutyraldehyde	0.0910	0.00134000 g/bhp-hr	GRI Field
n-Pentane	5.5116	0.08115000 g/bhp-hr	GRI Field
Cyclohexane	0.4159	0.00612400 g/bhp-hr	GRI Field
Methylcyclohexane	0.5998	0.00883120 g/bhp-hr	GRI Field
n-Octane	0.2166	0.00318890 g/bhp-hr	GRI Field
1,3,5-Trimethylbenzene	0.2038	0.00300000 g/bhp-hr	GRI Field
n-Nonane	0.0362	0.00053260 g/bhp-hr	GRI Field
CO2	32,795.7535	482.86607780 g/bhp-hr	EPA
Vanadium	0.0000	0.00000070 g/bhp-hr	GRI Field
Copper	0.0014	0.00002050 g/bhp-hr	GRI Field
Molybdenum	0.0014	0.00002030 g/bhp-hr	GRI Field
Barium	0.0016	0.00002290 g/bhp-hr	GRI Field

Unit Name: A-2

Hours of Operation: 8,760 Yearly
 Rate Power: 5700 hp
 Fuel Type: NATURAL GAS
 Emission Factor Set: FIELD > EPA > LITERATURE
 Additional EF Set: -NONE-

Calculated Emissions (ton/yr)

<u>Chemical Name</u>	<u>Emissions</u>	<u>Emission Factor</u>	<u>Emission Factor Set</u>
<u>HAPs</u>			
PAHs	0.0005	0.00000970 g/bhp-hr	EPA
Formaldehyde	0.9314	0.01693680 g/bhp-hr	GRI Field
Acetaldehyde	0.9533	0.01733570 g/bhp-hr	GRI Field
1,3-Butadiene	0.0034	0.00006160 g/bhp-hr	GRI Field
Acrolein	0.0143	0.00026000 g/bhp-hr	GRI Field

Propional	0.0476	0.00086500 g/bhp-hr	GRI Field
Propylene Oxide	0.0070	0.00012730 g/bhp-hr	EPA
Benzene	0.0296	0.00053840 g/bhp-hr	GRI Field
Toluene	0.0226	0.00041100 g/bhp-hr	GRI Field
Ethylbenzene	0.0077	0.00014050 g/bhp-hr	EPA
Xylenes(m,p,o)	0.0684	0.00124410 g/bhp-hr	GRI Field
2,2,4-Trimethylpentane	0.0883	0.00160530 g/bhp-hr	GRI Field
n-Hexane	0.0828	0.00150580 g/bhp-hr	GRI Field
Phenol	0.0061	0.00011010 g/bhp-hr	GRI Field
Naphthalene	0.0004	0.00000760 g/bhp-hr	GRI Field
2-Methylnaphthalene	0.0001	0.00000130 g/bhp-hr	GRI Field
Biphenyl	0.0182	0.00033050 g/bhp-hr	GRI Field
Phenanthrene	0.0000	0.00000050 g/bhp-hr	GRI Field
Chrysene	0.0001	0.00000100 g/bhp-hr	GRI Field
Beryllium	0.0000	0.00000010 g/bhp-hr	GRI Field
Phosphorus	0.0036	0.00006520 g/bhp-hr	GRI Field
Chromium	0.0005	0.00000820 g/bhp-hr	GRI Field
Manganese	0.0010	0.00001750 g/bhp-hr	GRI Field
Nickel	0.0003	0.00000610 g/bhp-hr	GRI Field
Cobalt	0.0001	0.00000160 g/bhp-hr	GRI Field
Arsenic	0.0000	0.00000060 g/bhp-hr	GRI Field
Selenium	0.0000	0.00000030 g/bhp-hr	GRI Field
Cadmium	0.0000	0.00000020 g/bhp-hr	GRI Field
Mercury	0.0001	0.00000270 g/bhp-hr	GRI Field
Lead	0.0002	0.00000340 g/bhp-hr	GRI Field
Total	2.2876		

Criteria Pollutants

PM	1.5932	0.02897200 g/bhp-hr	EPA
CO	115.9371	2.10828420 g/bhp-hr	GRI Field
NMHC	10.6616	0.19387800 g/bhp-hr	GRI Field
NMEHC	0.5069	0.00921840 g/bhp-hr	EPA
NOx	68.8579	1.25216290 g/bhp-hr	GRI Field
SO2	0.0565	0.00102720 g/bhp-hr	GRI Field

Other Pollutants

Methane	54.2869	0.98719230 g/bhp-hr	GRI Field
Acetylene	0.3940	0.00716540 g/bhp-hr	GRI Field
Ethylene	0.7674	0.01395450 g/bhp-hr	GRI Field
Ethane	8.2533	0.15008370 g/bhp-hr	GRI Field
Propane	0.8799	0.01600000 g/bhp-hr	GRI Field
Isobutane	0.2640	0.00480000 g/bhp-hr	GRI Field
Butane	0.2860	0.00520000 g/bhp-hr	GRI Field
Cyclopentane	0.0908	0.00165110 g/bhp-hr	GRI Field
Butyrald/Isobutyraldehyde	0.0737	0.00134000 g/bhp-hr	GRI Field
n-Pentane	4.4625	0.08115000 g/bhp-hr	GRI Field
Cyclohexane	0.3368	0.00612400 g/bhp-hr	GRI Field
Methylcyclohexane	0.4856	0.00883120 g/bhp-hr	GRI Field
n-Octane	0.1754	0.00318890 g/bhp-hr	GRI Field
1,3,5-Trimethylbenzene	0.1650	0.00300000 g/bhp-hr	GRI Field
n-Nonane	0.0293	0.00053260 g/bhp-hr	GRI Field
CO2	26,553.3800	482.86607780 g/bhp-hr	EPA
Vanadium	0.0000	0.00000070 g/bhp-hr	GRI Field

Copper	0.0011	0.00002050 g/bhp-hr	GRI Field
Molybdenum	0.0011	0.00002030 g/bhp-hr	GRI Field
Barium	0.0013	0.00002290 g/bhp-hr	GRI Field

98.36(e)(3)

Within 30 days of receipt of a written request from the Administrator, you shall submit explanations of the following:

98.36(e)(3)(i)

An explanation of how company records are used to quantify fuel consumption, if the Tier 1 or Tier 2 Calculation Methodology is used to calculate CO₂ emissions.

98.36(e)(3)(ii)

An explanation of how company records are used to quantify fuel consumption, if solid fuel is combusted and the Tier 3 Calculation Methodology is used to calculate CO₂ emissions.

98.36(e)(3)(iii)

An explanation of how sorbent usage is quantified.

98.36(e)(3)(iv)

An explanation of how company records are used to quantify fossil fuel consumption in units that uses CEMS to quantify CO₂ emissions and combusts both fossil fuel and biomass.

98.36(e)(3)(v)

An explanation of how company records are used to measure steam production, when it is used to calculate CO₂ mass emissions under §98.33(a)(2)(iii) or to quantify solid fuel usage under §98.33(c)(3).

98.36(e)(4)

Within 30 days of receipt of a written request from the Administrator, you shall submit the verification data and information described in paragraphs (e)(2)(iii), (e)(2)(v), and (e)(2)(vii) of this section.

[Amended at 75 FR page 79151, Dec. 17, 2010]

§ 98.37 Records that must be retained.

In addition to the requirements of §98.3(g), you must retain the applicable records specified in §§98.34(f) and (g), 98.35(b), and 98.36(e).

§ 98.38 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Table C-1 to Subpart C of Part 98 —Default CO₂ Emission Factors and High Heat Values for Various Types of Fuel

Fuel type	Default high heat value	Default CO ₂ emission factor
Coal and coke	mmBtu/short ton	kg CO ₂ /mmBtu
Anthracite	25.09	103.54
Bituminous	24.93	93.40
Subbituminous	17.25	97.02
Lignite	14.21	96.36
Coke	24.80	102.04
Mixed (Commercial sector)	21.39	95.26
Mixed (Industrial coking)	26.28	93.65
Mixed (Industrial sector)	22.35	93.91
Mixed (Electric Power sector)	19.73	94.38
Natural gas (Weighted U.S. Average)	mmBtu/scf 1.028 x 10 ⁻³	kg CO ₂ /mmBtu 53.02
Petroleum products	mmBtu/gallon	kg CO ₂ /mmBtu
Distillate Fuel Oil No. 1	0.139	73.25
Distillate Fuel Oil No. 2	0.138	73.96

Distillate Fuel Oil No. 4	0.146	75.04
Residual Fuel Oil No. 5	0.140	72.93
Residual Fuel Oil No. 6	0.150	75.10
Used Oil	0.135	74.00
Kerosene	0.135	75.20
Liquefied petroleum gases (LPG)	0.092	62.98
Propane	0.091	61.46
Propylene	0.091	65.95
Ethane	0.069	62.64
Ethanol	0.084	68.44
Ethylene	0.100	67.43
Isobutane	0.097	64.91
Isobutylene	0.103	67.74
Butane	0.101	65.15
Butylene	0.103	67.73
Naphtha (<401 deg F)	0.125	68.02
Natural Gasoline	0.110	66.83
Other Oil (>401 deg F)	0.139	76.22
Pentanes Plus	0.110	70.02
Petrochemical Feedstocks	0.129	70.97
Petroleum Coke	0.143	102.41
Special Naphtha	0.125	72.34
Unfinished Oils	0.139	74.49
Heavy Gas Oils	0.148	74.92
Lubricants	0.144	74.27
Motor Gasoline	0.125	70.22
Aviation Gasoline	0.120	69.25
Kerosene-Type Jet Fuel	0.135	72.22
Asphalt and Road Oil	0.158	75.36
Crude Oil	0.138	74.49
Other fuels-solid.	mmBtu/short ton	kg CO ₂ /mmBtu
Municipal Solid Waste	9.95 1	90.7
Tires	26.87	85.97
Plastics	38.00	75.00
Petroleum Coke	30.00	102.41
Other fuels (gaseous)	mmBtu/scf	kg CO ₂ /mmBtu
Blast Furnace Gas	0.092 x 10 ⁻³	274.32
Coke Oven Gas	0.599 x 10 ⁻³	46.85
Propane Gas	2.516 x 10 ⁻³	61.46
Fuel Gas 2	1.388 x 10 ⁻³	59.00
Biomass fuels—solid	mmBtu/short ton	kg CO ₂ /mmBtu
Wood and Wood Residuals	15.38	93.80
Agricultural Byproducts	8.25	118.17
Peat	8.00	111.84
Solid Byproducts	25.83	105.51
Biomass fuels—gaseous	mmBtu/scf	kg CO ₂ /mmBtu
Biogas (Captured methane)	0.841 x 10 ⁻³	52.07
Biomass Fuels—Liquid	mmBtu/gallon	kg CO ₂ /mmBtu
Ethanol	0.084	68.44
Biodiesel	0.128	73.84

Rendered Animal Fat	0.125	71.06
Vegetable Oil	0.120	81.55

¹ Use of this default HHV is allowed only for: (a) Units that combust MSW, do not generate steam, and are allowed to use Tier 1; (b) units that derive no more than 10 percent of their annual heat input from MSW and/or tires; and (c) small batch incinerators that combust no more than 1,000 tons of MSW per year.

² Reporters subject to subpart X of this part that are complying with § 98.243(d) or subpart Y of this part may only use the default HHV and the default CO₂ emission factor for fuel gas combustion under the conditions prescribed in § 98.243(d)(2)(i) and (d)(2)(ii) and § 98.252(a)(1) and (a)(2), respectively. Otherwise, reporters subject to subpart X or subpart Y shall use either Tier 3 (Equation C-5) or Tier 4.

Table C-2 to Subpart C of Part 98 —Default CH₄ and N₂O Emission Factors for Various Types of Fuel

Default CH₄ and N₂O Emission Factors for Various Types of Fuel

Fuel type	Default CH ₄ emission factor (kg CH ₄ /mmBtu)	Default N ₂ O emission factor (kg N ₂ O/mmBtu)
Coal and Coke (All fuel types in Table C-1)	1.1 x 10 ⁻⁰²	1.6 x 10 ⁻⁰³
Natural Gas	1.0 x 10 ⁻⁰³	1.0 x 10 ⁻⁰⁴
Petroleum (All fuel types in Table C-1)	3.0 x 10 ⁻⁰³	6.0 x 10 ⁻⁰⁴
Municipal Solid Waste	3.2 x 10 ⁻⁰²	4.2 x 10 ⁻⁰³
Tires	3.2 x 10 ⁻⁰²	4.2 x 10 ⁻⁰³
Blast Furnace Gas	2.2 x 10 ⁻⁰⁵	1.0 x 10 ⁻⁰⁴
Coke Oven Gas	4.8 x 10 ⁻⁰⁴	1.0 x 10 ⁻⁰⁴
Biomass Fuels—Solid (All fuel types in Table C-1)	3.2 x 10 ⁻⁰²	4.2 x 10 ⁻⁰³
Biogas	3.2 x 10 ⁻⁰³	6.3 x 10 ⁻⁰⁴
Biomass Fuels—Liquid (All fuel types in Table C-1)	1.1 x 10 ⁻⁰³	1.1 x 10 ⁻⁰⁴

Note: Those employing this table are assumed to fall under the IPCC definitions of the “Energy Industry” or “Manufacturing Industries and Construction”. In all fuels except for coal the values for these two categories are identical. For coal combustion, those who fall within the IPCC “Energy Industry” category may employ a value of 1g of CH₄/mmBtu.

[75 FR page 79154, Dec. 17, 2010]

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Data Summary

General Information

Start Date 23-Feb-11
 Company Paso Natural Gas
 Station Caprock

Unit Information

Unit No. 1
 Manufacturer GE
 Model Frame 3 Model C
 Version TURBINE
 Rated BHP 5,550
 Rated RPM 6,600
 Rated BSFC

Gas Analysis

Use Standard F-Factor?

Nitrogen 0.23 I - Butane 0.012
 Carbon Dioxide 1.209 N - Butane 0.014
 Methane 97.051 I - Pentane 0.035
 Ethane 0.52 N - Pentane 0.083
 Propane 0.072 Hexane + 0.037

Fuel Flow →

Pipe ID (in) Panel
 Tap Up
 Orifice ID (in) Atm P (PSIA)

99.26 Total

Test Data

	General Data					
Run	1	2	3	4	5	Average
Date	2/23/11	2/23/11	2/23/11			
Time	3:01 PM	3:30 PM	3:59 PM			
Condition	<input type="text"/>					

	1	2	3	Average
Horsepower	4,237.86	4,216.33	4,044.52	4,166.24
GP Speed	6,900.33	6,898.86	6,899.38	6,899.52
% GP Speed	104.55%	104.53%	104.54%	104.54%
PCDref (PSIG)				
PCDobs (PSIG)	65.00	65.00	64.86	64.95
LP Speed	5,940.43	5,939.43	5,930.95	5,936.94
T5 Temp (F)	868.0	869.1	871.4	869.5
Suct. Press. (PSIG)	527.57	528.52	529.19	528.43
Suct. Temp. (F)	71.00	71.19	72.00	71.40
Disc. Press. (PSIG)	628.38	629.19	630.05	629.21
Disc. Temp. (F)	98.86	99.00	99.00	98.95

	1	2	3	Average	
Fuel Data					
Fuel Static Press (PSIG)	NA	NA	NA		Calculated
Fuel Diff Press ("H ₂ O)	NA	NA	NA		
Fuel Temperature (°F)	NA	NA	NA		
Fuel Use (SCFH)	5,847.33	5,827.95	5,797.81	5,824.37	Panel
Heat Rate (BTU/HP-HR)	NA	NA	NA		Curve
Fuel Use (SCFH)	5,847.33	5,827.95	5,797.81	5,824.37	
Heat Rate (BTU/HP-HR)	1,248.74	1,250.95	1,297.35		
LDHV (BTU/SCF)	905.02	905.02	905.02	905.02	
UDHV (BTU/SCF)	1,000.80	1,000.80	1,000.80	1,000.80	
F-Factor (SCF/MMBTU)	8,687.67	8,687.67	8,687.67	8,687.67	

Emission Data

Use Bias Correction?

NO	46.19	49.19	49.90			48.43	ppm
NO ₂	6.86	6.29	6.38			6.51	ppm
NO _x	53.05	55.48	56.29			54.94	ppm
NO _x	1.99	2.06	2.73			2.26	lb/hr
NO _x Permit	45.90	45.90	45.90	45.90	45.90	45.90	lb/hr
CO	11.05	11.00	10.95			11.00	ppm
CO	0.25	0.25	0.32			0.27	lb/hr
CO Permit	7.50	7.50	7.50	7.50	7.50	7.50	lb/hr
O ₂	17.52	17.50	18.30			17.77	%



Data Summary

General Information

Start Date 23-Feb-11
 Company Paso Natural Gas
 Station Caprock

Unit Information

Unit No. 2
 Manufacturer GE
 Model Frame 3 Model C
 Version TURBINE
 Rated BHP 5,550
 Rated RPM 6,600
 Rated BSFC _____

Gas Analysis

Use Standard F-Factor?

Nitrogen 0.23 I - Butane 0.012
 Carbon Dioxide 1.209 N - Butane 0.014
 Methane 97.051 I - Pentane 0.035
 Ethane 0.52 N - Pentane 0.083
 Propane 0.072 Hexane + 0.037

Fuel Flow →

Pipe ID (in) _____ Panel _____
 Orifice ID (in) _____ Tap Up
 Atm P (PSIA) _____

99.26 Total

Test Data

General Data

Run	1	2	3	4	5	Average
Date	2/23/11	2/23/11	2/23/11			
Time	11:29 AM	11:58 AM	12:27 PM			
Condition	_____					

Operating Data

Horsepower	3,369.52	3,374.19	3,313.43			3,352.38
GP Speed	6,899.29	6,899.05	6,898.62			6,898.98
% GP Speed	104.53%	104.53%	104.52%			104.53%
PCDref (PSIG)						
PCDobs (PSIG)	44.00	44.00	44.00			44.00
LP Speed	5,939.57	5,940.00	5,923.62			5,934.40
T5 Temp (F)	920.2	922.1	923.9			922.1
Suct. Press. (PSIG)	513.19	515.14	517.19			515.17
Suct. Temp. (F)	58.14	59.00	59.90			59.02
Disc. Press. (PSIG)	618.38	620.38	622.05			620.27
Disc. Temp. (F)	86.86	87.76	88.24			87.62

Fuel Data

Fuel Static Press (PSIG)	NA	NA	NA			
Fuel Diff Press ("H ₂ O)	NA	NA	NA			Calculated
Fuel Temperature (°F)	NA	NA	NA			
Fuel Use (SCFH)	3,963.33	3,963.81	3,940.57			3,955.90 Panel
Heat Rate (BTU/HP-HR)	NA	NA	NA			Curve
Fuel Use (SCFH)	3,963.33	3,963.81	3,940.57			3,955.90
Heat Rate (BTU/HP-HR)	1,064.51	1,063.17	1,076.32			
LDHV (BTU/SCF)	905.02	905.02	905.02			905.02
UDHV (BTU/SCF)	1,000.80	1,000.80	1,000.80			1,000.80
F-Factor (SCF/MMBTU)	8,687.67	8,687.67	8,687.67			8,687.67

Emission Data

Use Bias Correction?

NO	40.81	41.57	42.62			41.67 ppm
NO ₂	9.00	9.00	9.00			9.00 ppm
NO _x	49.81	50.57	51.62			50.67 ppm
NO _x	1.59	1.61	1.24			1.48 lb/hr
NO _x Permit	45.90	45.90	45.90	45.90	45.90	45.90 lb/hr
CO	20.76	20.38	20.00			20.38 ppm
CO	0.40	0.40	0.29			0.36 lb/hr
CO Permit	7.50	7.50	7.50	7.50	7.50	7.50 lb/hr
O ₂	18.21	18.20	17.33			17.92 %

ENGINE SPEED:	1800	FUEL:	NATURAL GAS
COMPRESSION RATIO:	10.3:1	FUEL SYSTEM:	LPG IMPCO
AFTERCOOLER (°F):	130		
JACKET WATER (°F):	210	MIN. FUEL PRESS. (psig):	1.5
COOLING SYSTEM:	COMBINED	MIN. METHANE NUMBER:	80
IGNITION SYSTEM:	CDIS	MAX. RATED ALTITUDE (ft):	5000
EXHAUST MANIFOLD:	WET	AT AMBIENT TEMP (°F):	77
COMBUSTION:	STOICH	NO _x EMISSION LEVEL:	STD

RATING AND EFFICIENCY	NOTES	LOAD	100%	75%	50%
LHV OF FUEL		btu/scf	919.6	919.6	919.6
ENGINE POWER		bhp	301	226	151
ENGINE EFFICIENCY	(1)	%	34.7	32.7	29.5
THERMAL EFFICIENCY	(5)	%	50.1	52.2	55.5
TOTAL EFFICIENCY	(6)	%	84.8	84.9	85.0

ENGINE DATA					
FUEL CONSUMPTION	(1)	btu/bhp-hr	7329	7782	8637
AIR FLOW	(WET)	lb/hr	2136	1652	1144
AIR FLOW	(WET)	scfm	466	360	250
COMPRESSOR OUT PRESS.		in. Hg (abs)	45.4	42.4	37.5
COMPRESSOR OUT TEMP.		°F	203	177	147
INLET MAN. PRESS.		in. Hg (abs)	41.3	32.6	23.2
INLET MAN. TEMP.	(10)	°F	133	133	132
TIMING	(11)	°BTDC	22	22	22
EXHAUST STACK TEMP.		°F	977	968	957
EXHAUST FLOW (@STACK TEMP)	(WET)	cfm	1424	1086	756
EXHAUST FLOW	(WET)	lb/hr	2246	1740	1209

EMISSIONS					
NO _x (as NO ₂)	(9)	g/bhp-hr	19.7	20.4	18.7
CO	(9)	g/bhp-hr	1	1	1.1
THC	(9)	g/bhp-hr	4.2	4.5	4.7
NMHC	(9)	g/bhp-hr	0.63	0.68	0.71
EXHAUST O ₂ (DRY)		%	4.0	3.4	2.2
LAMBDA			1.24	1.19	1.12

HEAT BALANCE DATA					
LHV INPUT	(1)	btu/min	36767	29280	21664
HEAT REJ. TO JACKET	(2) (7)	btu/min	11946	10351	8638
HEAT REJ. TO A/C	(3) (8)	btu/min	694	352	94
HEAT REJ. TO ATMOSPHERE	(4)	btu/min	1471	1171	867
HEAT REJ. TO EXH (LHV to 77°F)	(2)	btu/min	9892	7831	5684
HEAT REJ. TO EXH (LHV to 350°F)	(2)	btu/min	6460	4944	3388

CONDITIONS AND DEFINITIONS

ENGINE RATING OBTAINED AND PRESENTED IN ACCORDANCE WITH ISO 3046/1 (STD. REF. CONDITIONS OF 25°C, 100 KPA).
NO OVERLOAD PERMITTED AT RATING SHOWN. CONSULT ALTITUDE CURVES FOR APPLICATIONS ABOVE MAXIMUM
RATED ALTITUDE AND/OR TEMPERATURE.

- 1) FUEL CONSUMPTION TOLERANCE ACCORDING TO ISO 3046/1. TOLERANCE IS ±5% OF FULL LOAD DATA
- 2) HEAT REJECTION TO JACKET AND EXHAUST TOLERANCE IS ±10% OF FULL LOAD DATA.
- 3) HEAT REJECTION TO A/C TOLERANCE IS ±5% OF FULL LOAD DATA.
- 4) HEAT REJECTION TO ATMOSPHERE TOLERANCE IS ±50% OF FULL LOAD DATA.
- 5) THERMAL EFFICIENCY: JACKET WATER +EXH. HEAT TO 350°F
- 6) TOTAL EFFICIENCY: ENGINE EFF. + THERMAL EFF. TOLERANCE IS +/- 10% OF FULL LOAD DATA
- 7) TOTAL JW HEAT: JACKET HEAT + OIL COOLER HEAT (HEAT RATE BASED ON TREATED WATER)
- 8) TOTAL A/C HEAT: A/C HEAT x A/C HEAT REJ. FACTOR (HEAT RATE BASED ON TREATED WATER)
- 9) EMISSION DATA SHOWN ARE NOT TO EXCEED VALUES.
PUBLISHED PART LOAD DATA MAY REQUIRE ENGINE ADJUSTMENT.
- 10) MEASURED BETWEEN AFTERCOOLER OUTLET AND PLENUM ENTRY.
- 11) TIMING INDICATED IS FOR USE WITH A MINIMUM FUEL METHANE NUMBER SPECIFIED. CONSULT THE APPROPRIATE
FUEL USAGE GUIDE FOR TIMING AT OTHER METHANE NUMBERS.

FUEL USAGE GUIDE												
DERATE FACTOR/ENGINE TIMING vs METHANE NUMBER												
<30	30	35	40	45	50	55	60	65	70	75	80 to 100	
0	0/--	0/--	0/--	0/--	0/--	0/--	0/--	0/--	0/--	1.0/19	1.0/22	1.0/22

ALTITUDE DERATION FACTORS														
A	130	1.00	1.00	1.00	0.98	0.95	0.91	0.88	0.84	0.81	0.78	0.75	0.72	0.69
M	120	1.00	1.00	1.00	1.00	0.96	0.93	0.89	0.86	0.82	0.79	0.76	0.73	0.70
B	110	1.00	1.00	1.00	1.00	0.98	0.94	0.91	0.87	0.84	0.80	0.77	0.74	0.71
I	100	1.00	1.00	1.00	1.00	1.00	0.96	0.92	0.89	0.85	0.82	0.79	0.75	0.72
E	90	1.00	1.00	1.00	1.00	1.00	0.98	0.94	0.90	0.87	0.83	0.80	0.77	0.74
N	80	1.00	1.00	1.00	1.00	1.00	0.99	0.96	0.92	0.88	0.85	0.81	0.78	0.75
T	70	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.94	0.90	0.86	0.83	0.80	0.76
	60	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.95	0.92	0.88	0.85	0.81	0.78
(°F)	50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.94	0.90	0.86	0.83	0.79
		0	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000
ALTITUDE (FEET ABOVE SEA LEVEL)														

AFTERCOOLER HEAT REJECTION FACTORS														
A	130	1.80	1.96	2.13	2.30	2.47	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64
M	120	1.63	1.79	1.96	2.12	2.29	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46
B	110	1.47	1.63	1.79	1.95	2.12	2.29	2.29	2.29	2.29	2.29	2.29	2.29	2.29
I	100	1.31	1.46	1.62	1.78	1.94	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11
E	90	1.14	1.29	1.45	1.60	1.76	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93
N	80	1.00	1.12	1.28	1.43	1.59	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
T	70	1.00	1.00	1.11	1.26	1.41	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57
	60	1.00	1.00	1.00	1.08	1.24	1.39	1.39	1.39	1.39	1.39	1.39	1.39	1.39
(°F)	50	1.00	1.00	1.00	1.00	1.06	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
		0	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000
ALTITUDE (FEET ABOVE SEA LEVEL)														

FUEL USAGE GUIDE:

This table shows the derate factor required for a given fuel and what engine timing to use. Note that deration occurs as the methane number decreases. Methane number is a scale to measure ignition and burning characteristics of various fuels. Representative values are shown below.

Methane	100.00	
Ethane	44.00	Most dry pipeline natural gas has a methane number of 67 or above. The gas quality should be analyzed to
Propane	34.00	determine the percentage of each constituent and then determine the methane number. Consult the dealer or
n-Butane	10.00	factory for assistance.
Hydrogen	0.00	

ALTITUDE DERATION FACTORS:

This table shows the deration required for various ambient temperatures and altitudes. Use this information to help determine actual engine power for your site.

ACTUAL ENGINE RATING:

It is important to note that the Altitude/Temperature deration and the Fuel Usage Guide deration are not cumulative, i.e., they are not to be added together. The same is true for the Low Energy Fuel deration (reference the Caterpillar Methane Number Program) and the Fuel Usage Guide deration. However, the Altitude/Temperature deration and Low Energy Fuel deration are cumulative; and they must be added together in the method shown below. To determine the actual power available, take the lowest rating between 1) and 2).

- 1) (Altitude/Temperature Deration) + (Low Energy Fuel Deration)
- 2) Fuel Usage Guide Deration

Note: For NA's always add the Low Energy Fuel deration to the Altitude/Temperature deration. For TA engines only add the Low Energy Fuel deration to the Altitude/Temperature deration whenever the Altitude/Temperature deration is less than 1.0 (100%). This will give the actual rating for the engine at the conditions specified.

AFTERCOOLER HEAT REJECTION FACTORS:

Aftercooler heat rejection is given for standard conditions of 77°F and 500 ft altitude. To maintain a constant inlet air manifold temperature, as the ambient air temperature goes up, so must the heat rejection. As altitude increases, the turbocharger must work harder to overcome the lower atmospheric pressure. This increases the amount of heat that must be removed from the inlet air by the aftercooler. Use the aftercooler heat rejection factor to adjust for ambient and altitude conditions. Multiply this factor by the standard aftercooler heat rejection. Failure to properly account for these factors could result in detonation and cause the engine to shut down or fail.

Table 3.2-3. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE RICH-BURN
 ENGINES^a
 (SCC 2-02-002-53)

Pollutant	Emission Factor (lb/MMBtu) ^b (fuel input)	Emission Factor Rating
Criteria Pollutants and Greenhouse Gases		
NO _x ^c 90 - 105% Load	2.21 E+00	A
NO _x ^c <90% Load	2.27 E+00	C
CO ^c 90 - 105% Load	3.72 E+00	A
CO ^c <90% Load	3.51 E+00	C
CO ₂ ^d	1.10 E+02	A
SO ₂ ^e	5.88 E-04	A
TOC ^f	3.58 E-01	C
Methane ^g	2.30 E-01	C
VOC ^h	2.96 E-02	C
PM10 (filterable) ^{i,j}	9.50 E-03	E
PM2.5 (filterable) ^j	9.50 E-03	E
PM Condensable ^k	9.91 E-03	E
Trace Organic Compounds		
1,1,2,2-Tetrachloroethane ^l	2.53 E-05	C
1,1,2-Trichloroethane ^l	<1.53 E-05	E
1,1-Dichloroethane	<1.13 E-05	E
1,2-Dichloroethane	<1.13 E-05	E
1,2-Dichloropropane	<1.30 E-05	E
1,3-Butadiene ^l	6.63 E-04	D
1,3-Dichloropropene ^l	<1.27 E-05	E
Acetaldehyde ^{l,m}	2.79 E-03	C
Acrolein ^{l,m}	2.63 E-03	C
Benzene ^l	1.58 E-03	B
Butyr/isobutyraldehyde	4.86 E-05	D
Carbon Tetrachloride ^l	<1.77 E-05	E

Table 3.2-3. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE RICH-BURN ENGINES
(Concluded)

Pollutant	Emission Factor (lb/MMBtu) ^b (fuel input)	Emission Factor Rating
Chlorobenzene ¹	<1.29 E-05	E
Chloroform ¹	<1.37 E-05	E
Ethane ⁿ	7.04 E-02	C
Ethylbenzene ¹	<2.48 E-05	E
Ethylene Dibromide ¹	<2.13 E-05	E
Formaldehyde ^{1,m}	2.05 E-02	A
Methanol ¹	3.06 E-03	D
Methylene Chloride ¹	4.12 E-05	C
Naphthalene ¹	<9.71 E-05	E
PAH ¹	1.41 E-04	D
Styrene ¹	<1.19 E-05	E
Toluene ¹	5.58 E-04	A
Vinyl Chloride ¹	<7.18 E-06	E
Xylene ¹	1.95 E-04	A

^a Reference 7. Factors represent uncontrolled levels. For NO_x, CO, and PM-10, “uncontrolled” means no combustion or add-on controls; however, the factor may include turbocharged units. For all other pollutants, “uncontrolled” means no oxidation control; the data set may include units with control techniques used for NO_x control, such as PCC and SCR for lean burn engines, and PSC for rich burn engines. Factors are based on large population of engines. Factors are for engines at all loads, except as indicated. SCC = Source Classification Code. TOC = Total Organic Compounds. PM10 = Particulate Matter ≤ 10 microns (μm) aerodynamic diameter. A “<” sign in front of a factor means that the corresponding emission factor is based on one-half of the method detection limit.

^b Emission factors were calculated in units of (lb/MMBtu) based on procedures in EPA Method 19. To convert from (lb/MMBtu) to (lb/10⁶ scf), multiply by the heat content of the fuel. If the heat content is not available, use 1020 Btu/scf. To convert from (lb/MMBtu) to (lb/hp-hr) use the following equation:

$$\text{lb/hp-hr} = (\text{lb/MMBtu}) (\text{heat input, MMBtu/hr}) (1/\text{operating HP, 1/hp})$$

^c Emission tests with unreported load conditions were not included in the data set.

^d Based on 99.5% conversion of the fuel carbon to CO₂. CO₂ [lb/MMBtu] = (3.67)(%CON)(C)(D)(1/h), where %CON = percent conversion of fuel carbon to CO₂,

GRI-HAPCalc® 3.0
Fugitive Emissions Report

Facility ID:	CAPROCK	Notes:
Operation Type:	COMPRESSOR STATION	
Facility Name:	CAPROCK COMPRESSOR STATION	
User Name:		
Units of Measure:	U.S. STANDARD	

*Note: Emissions less than 5.00E-09 tons (or tonnes) per year are considered insignificant and are treated as zero. These emissions are indicated on the report with a "0".
Emissions between 5.00E-09 and 5.00E-05 tons (or tonnes) per year are represented on the report with "0.0000".*

Fugitive Emissions

Calculation Method: EPA Average Factors

User Inputs

<u>Component</u>	<u>Gas Service</u>	<u>Light Liquid Service</u>	<u>Heavy Liquid Service</u>
Connections:	737	0	0
Flanges	120	0	0
Open-Ended Lines:	14	0	0
Pumps:	0	0	0
Valves:	257	0	0
Others:	30	0	0

Calculated Emissions (ton/yr)

<u>Chemical Name</u>	<u>Emissions</u>
HAPs	
Benzene	0.0037
Toluene	0.0062
Ethylbenzene	0.0003
Xylenes(m,p,o)	0.0016
Total	0.0118
Criteria Pollutants	
NMHC	1.2712
NMEHC	0.5561

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	

A site map is attached.

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”)

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.

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. A copy of the certified letter receipts with post marks (20.2.72.203.B NMAC)
 2. 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. A copy of the property tax record (20.2.72.203.B NMAC).
 4. A sample of the letters sent to the owners of record.
 5. A sample of the letters sent to counties, municipalities, and Indian tribes.
 6. A sample of the public notice posted and a verification of the local postings.
 7. A table of the noticed citizens, counties, municipalities and tribes and to whom the notices were sent in each group.
 8. A copy of the public service announcement (PSA) sent to a local radio station and documentary proof of submittal.
 9. 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.
 10. 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.
 11. 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.
-

N/A - Application being submitted under 20.2.70 NMAC

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.

Caprock Compressor Station is a natural gas compressor station that compresses natural gas and delivers the compressed gas to a pipeline for mainline transportation. This facility consists primarily of one General Electric Company M3702R regenerative cycle turbine (unit A-01) and one General Electric Company M3572R regenerative cycle turbine (unit A-02) powering the compressors. The facility is designed to compress and transport pipeline quality natural gas. An auxiliary emergency generator engine (AUX-A1) is maintained at the facility to provide electric power in the event that service from the local utility is interrupted. Operation of AUX-A1 is limited to 500 hours per year.

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: Please refer to Table 2-A

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.

Yes **No**

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

Yes **No**

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

Yes **No**

C. Make a determination:

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):

Section 12

Section 12.A

PSD Applicability Determination for All Sources

(Submitting under 20.2.72, 20.2.74 NMAC)

A PSD applicability determination for all sources. For sources applying for a significant permit revision, apply the applicable requirements of 20.2.74.AG and 20.2.74.200 NMAC and to determine whether this facility is a major or minor PSD source, and whether this modification is a major or a minor PSD modification. It may be helpful to refer to the procedures for Determining the Net Emissions Change at a Source as specified by Table A-5 (Page A.45) of the EPA New Source Review Workshop Manual to determine if the revision is subject to PSD review.

A. This facility is:

- a minor PSD source before and after this modification (if so, delete C and D below).
- a major PSD source before this modification. This modification will make this a PSD minor source.
- an existing PSD Major Source that has never had a major modification requiring a BACT analysis.
- an existing PSD Major Source that has had a major modification requiring a BACT analysis
- a new PSD Major Source after this modification.

B. This facility **[is or is not]** one of the listed 20.2.74.501 Table I – PSD Source Categories. The “project” emissions for this modification are **[significant or not significant]**. **[Discuss why.]** The “project” emissions listed below **[do or do not]** only result from changes described in this permit application, thus no emissions from other **[revisions or modifications, past or future]** to this facility. Also, specifically discuss whether this project results in “de-bottlenecking”, or other associated emissions resulting in higher emissions. The project emissions (before netting) for this project are as follows [see Table 2 in 20.2.74.502 NMAC for a complete list of significance levels]:

- a. NOx: **XX.X** TPY
- b. CO: **XX.X** TPY
- c. VOC: **XX.X** TPY
- d. SOx: **XX.X** TPY
- e. TSP (PM): **XX.X** TPY
- f. PM10: **XX.X** TPY
- g. PM2.5: **XX.X** TPY
- h. Fluorides: **XX.X** TPY
- i. Lead: **XX.X** TPY
- j. Sulfur compounds (listed in Table 2): **XX.X** TPY
- k. GHG: **XX.X** TPY

C. Netting **[is required, and analysis is attached to this document.] OR [is not required (project is not significant)] OR [Applicant is submitting a PSD Major Modification and chooses not to net.]**

D. BACT is **[not required for this modification, as this application is a minor modification.] OR [required, as this application is a major modification. List pollutants subject to BACT review and provide a full top down BACT determination.]**

E. If this is an existing PSD major source, or any facility with emissions greater than 250 TPY (or 100 TPY for 20.2.74.501 Table 1 – PSD Source Categories), determine whether any permit modifications are related, or could be considered a single project with this action, and provide an explanation for your determination whether a PSD modification is triggered

N/A – This application is being submitted under 20.2.70 NMAC

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 RELEVANT 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/>

Table of STATE REGULATIONS:

STATE REGULATIONS 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	General Provisions apply to Notice of Intent, Construction, and Title V permit applications.
20.2.3 NMAC	Ambient Air Quality Standards NMAAQS	Yes	Facility	20.2.3 NMAC is a SIP approved regulation that limits the maximum allowable concentration of Total Suspended Particulates, Sulfur Compounds, Carbon Monoxide and Nitrogen Dioxide. This facility meets maximum allowable concentrations of TSP, SO ₂ , H ₂ S, CO, and NO _x under this regulation.
20.2.7 NMAC	Excess Emissions	Yes	Facility	This regulation establishes requirements for the facility if operations at the facility result in any 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 practices for minimizing emissions. The facility will also notify the NMED of any excess emission per 20.2.7.110 NMAC. All Title V major sources are subject to Air Quality Control Regulations, as defined in 20.2.7 NMAC, and are thus subject to the requirements of this regulation.
20.2.33 NMAC	Gas Burning Equipment - Nitrogen Dioxide	No	N/A	Caprock Compressor Station does not have any existing gas burning equipment with a heat input of greater than 1,000,000 MMBtu/yr. The facility is not subject to this regulation and does not have emission sources that meet the applicability requirements under 20.2.34.108 NMAC
20.2.34 NMAC	Oil Burning Equipment: NO ₂	No	N/A	This facility does not have any oil burning equipment with a heat input of greater than 1,000,000 MMBtu/yr. The facility is not subject to this regulation and does not have emission sources that meet the applicability requirements under 20.2.34.108 NMAC.
20.2.35 NMAC	Natural Gas Processing Plant – Sulfur	No	N/A	This regulation establishes sulfur emission standards for natural gas processing plants. This facility does not meet the definition of a “natural gas processing plant”, as defined in 20.2.35.7 NMAC.
20.2.37 and 20.2.36 NMAC	Petroleum Processing Facilities and Petroleum Refineries	No	N/A	This purpose of this regulation is to minimize emissions from petroleum or natural gas processing facilities. Caprock Compressor Station does not meet the definition of a “petroleum processing facility” as defined in 20.2.37.7 NMAC.
20.2.38 NMAC	Hydrocarbon Storage Facility	No	N/A	This facility is not a tank battery operating in conjunction with a petroleum production or processing facility, as defined in 20.2.38.7 NMAC.
20.2.39 NMAC	Sulfur Recovery Plant - Sulfur	No	N/A	This regulation establishes sulfur emission standards for sulfur recovery plants which are not part of petroleum or natural gas processing facilities. This regulation does not apply to the facility because Caprock Compressor Station does not have a sulfur recovery plant.
20.2.61.109 NMAC	Smoke & Visible Emissions	No	A-01, A-02, AUX-A1	This regulation establishes controls on smoke and visible emissions from certain sources, including stationary combustion equipment. Units A-01, A-02 and AUX-A1 are stationary combustion equipment, which comply by using pipeline-quality natural gas.
20.2.70 NMAC	Operating Permits	Yes	Facility	This regulation establishes requirements for obtaining an operating permit. Caprock Compressor Station is a Title V major source and is therefore subject to this NMAC
20.2.71 NMAC	Operating Permit Fees	Yes	Facility	This regulation establishes a schedule of operating permit emission fees. The facility is subject to 20.2.70 NMAC and is therefore subject to requirements of this regulation.
20.2.72 NMAC	Construction Permits	yes	Facility	This regulation establishes the requirements for obtaining a construction permit. This facility is subject to 20.2.72 NMAC and has been issued NSR Permit 3261M1.
20.2.73 NMAC	NOI & Emissions Inventory Requirements	Yes	Facility	This regulation establishes emission inventory requirements. The facility meets the applicability requirements of 20.2.73.300 NMAC. The facility will meet all applicable reporting requirements under 20.2.73.300.B.1 NMAC.

<u>STATE REGU-LATIONS CITATION</u>	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.)
20.2.74 NMAC	Permits – Prevention of Significant Deterioration (PSD)	Yes	Facility	This regulation establishes requirements for obtaining a prevention of significant deterioration permit. Caprock Compressor Station is an existing PSD major source. The facility has not undergone a major modification and does not currently require a PSD permit.
20.2.75 NMAC	Construction Permit Fees	No	Facility	This regulation establishes a schedule of operating permit emission fees. The facility is subject to 20.2.71 NMAC (Operating Permit Emission Fees) and, therefore, is not subject to the requirements of this regulation, per 20.2.75.11.E. In the event of an NSR permit action, EPNG would be required to pay the appropriate filing and review fees.
20.2.77 NMAC	New Source Performance	No	Units subject to 40 CFR 60	This regulation establishes state authority to implement new source performance standards (NSPS) for stationary sources. Caprock Compressor Station does not have any units subject to a New Source Performance Standard (NSPS). Accordingly, this regulation does not apply.
20.2.78 NMAC	Emission Standards for HAPS	No	Units Subject to 40 CFR 61	This regulation establishes state authority to implement emission standards for hazardous air pollutants subject to 40 CFR Part 61. This facility does not emit hazardous air pollutants which are subject to the requirements of 40 CFR Part 61 and is therefore not subject to this regulation.
20.2.79 NMAC	Permits – Nonattainment Areas	No	Facility	This regulation establishes the requirements for obtaining a nonattainment area permit. This facility is not located in a non-attainment area and therefore is not subject to this regulation.
20.2.80 NMAC	Stack Heights	No	N/A	This regulation establishes requirements for the evaluation of stack heights and other dispersion techniques. The units with emissions routed to a stack were constructed before December 31, 1970 and, therefore, are not subject to this regulation (20.2.80.110.A)
20.2.82 NMAC	MACT Standards for source categories of HAPS	No	Units Subject to 40 CFR 63	The facility does not have any units subject to a MACT standard, as amended through December 31, 2010. The portion of the MACT ZZZZ that covers AUX-A1 was promulgated after December 31, 2010. Units A-01 and A-02 are not subject to any MACT standards.

Table of Applicable FEDERAL REGULATIONS:

<u>FEDERAL REGU-LATIONS CITATION</u>	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. Caprock Compressor Station meets all applicable national ambient air quality standards for PM ₁₀ , PM _{2.5} , SO ₂ , H ₂ S, CO, and NO _x under this regulation.
NSPS 40 CFR 60, Subpart A	General Provisions	No	Units subject to 40 CFR 60	This regulation defines general provisions for relevant standards that have been set under this part. The facility is not subject to this regulation because no NSPS Subparts apply.
NSPS 40 CFR60.40a, Subpart Da	Subpart Da, Performance Standards for Electric Utility Steam Generating Units	No	N/A	This regulation establishes standards of performance for electric utility steam generating units. This regulation does not apply because this facility does not operate any electric utility steam generating units.

<u>FEDERAL REGU- LATIONS CITATION</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NSPS 40 CFR60.40b Subpart Db	Electric Utility Steam Generating Units	No	N/A	This regulation establishes standards of performance for industrial-commercial-institutional steam generating units. This regulation does not apply because this facility does not operate any industrial-commercial-institutional steam generating units.
40 CFR 60.40c, Subpart Dc	Standards of Performance for Small Industrial- Commercial- Institutional Steam Generating Units	No	N/A	This regulation establishes standards of performance for small industrial-commercial-institutional steam generating units. This regulation does not apply because this facility does not operate any small industrial-commercial-institutional steam generating units.
NSPS 40 CFR 60, Subpart Ka	Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984	No	N/A	This regulation establishes performance standards for storage vessels for petroleum liquids for which construction, reconstruction, or modification commenced after May 18, 1978, and prior to July 23, 1984. The capacities of the tanks at the facility are less than 40,000 gallons and are not subject to this regulation. [40 CFR Part 60.110(a)]
NSPS 40 CFR 60, Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984	No	N/A	This facility does not have any tanks with a storage capacity equal to or greater than 75 cubic meters used to store volatile organic liquids (VOL) for which construction, reconstruction or modification commenced after July 23, 1984.
NSPS 40 CFR 60.330 Subpart GG	Stationary Gas Turbines	No	N/A	The General Electric regenerative cycle turbines at Caprock Compressor Station were constructed prior to October 3, 1977. These turbines have not been modified or reconstructed since October 3, 1977. Accordingly, these units are not subject to this subpart.
NSPS 40 CFR 60, Subpart KKK	Leaks of VOC from Onshore Gas Plants	No	N/A	This regulation defines standards of performance for equipment leaks of VOC emissions from onshore natural gas processing plants for which construction, reconstruction, or modification commenced after January 20, 1984, and on or before August 23, 2011. This regulation does not apply as the facility is not a gas plant.
NSPS 40 CFR Part 60 Subpart LLL	Standards of Performance for Onshore Natural Gas Processing: SO ₂ Emissions	No	N/A	This regulation establishes standards of performance for SO ₂ emissions from onshore natural gas processing for which construction, reconstruction, or modification of the amine sweetening unit commenced after January 20, 1984 and on or before August 23, 2011. This regulation does not apply as this facility is not a natural gas processing plant.

<u>FEDERAL REGU- LATIONS CITATION</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
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 regulation establishes standards of performance for crude oil and natural gas production, transmission and distribution. The facility does not have any affected units that have been modified or reconstructed on or after August 23, 2011. [40 CFR 60.5360]
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 regulation establishes standards of performance for crude oil and natural gas facilities for which construction, modification or reconstruction commenced after September 18, 2015. The facility was constructed prior to the applicability date of the regulation. No units are subject to this regulation.
NSPS 40 CFR 60 Subpart IIII	Standards of performance for Stationary Compression Ignition Internal Combustion Engines	No	N/A	This facility does not contain stationary compression Ignition Internal Combustion Engines; therefore, this regulation does not apply.
NSPS 40 CFR Part 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	No	N/A	This regulation establishes standards of performance for stationary spark ignition combustion engines. AUX-A1 is a stationary SI ICE which was constructed prior to June 12, 2006. Accordingly, this regulation does not apply.
NSPS 40 CFR 60 Subpart TTTT	Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units	No	N/A	This facility does not contain stationary compression ignition internal combustion engines; therefore, this regulation does not apply.
NSPS 40 CFR 60 Subpart UUUU	Emissions Guidelines for Greenhouse Gas Emissions and Compliance Times for Electric Utility Generating Units	No	N/A	This facility does not contain any electric generating units, therefore this regulation does not apply; therefore this regulation does not apply.
NSPS 40 CFR 60, Subparts WWW, XXX, Cc, and Cf	Standards of performance for Municipal Solid Waste (MSW) Landfills	No	N/A	This regulation does not apply because this facility is not a Landfill.

<u>FEDERAL REGU- LATIONS CITATION</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NESHAP 40 CFR 61 Subpart A	General Provisions	No (Potentially)	Units Subject to 40 CFR 61	Caprock Compressor Station does not emit or have threshold quantities of regulated substances at the facility and/or the facility is not involved in the triggering activity. Subpart M could potentially apply and is discussed below.
NESHAP 40 CFR 61 Subpart E	National Emission Standards for Mercury	No	N/A	This regulation establishes a national emission standard for mercury. The facility does not have stationary sources which process mercury ore to recover mercury, use mercury chlor-alkali cells to produce chlorine gas and alkali metal hydroxide, and incinerate or dry wastewater treatment plant sludge [40 CFR Part 61.50]. The facility is not subject to this regulation.
NESHAP 40 CFR 61 Subpart M	National Emission Standards for Asbestos	No (Potentially)	N/A	This standard does not apply to the facility under normal operating conditions; however, in the case of asbestos demolition, Subpart M would apply.
NESHAP 40 CFR 61 Subpart V	National Emission Standards for Equipment Leaks (Fugitive Emission Sources)	No	N/A	This regulation establishes national emission standards for equipment leaks (fugitive emission sources). The facility does not have equipment that operates in volatile hazardous air pollutant (VHAP) service [40 CFR Part 61.240]. The regulated activities subject to this regulation do not take place at this facility. The facility is not subject to this regulation.
MACT 40 CFR 63, Subpart A	General Provisions	Yes	Units Subject to 40 CFR 63	This regulation defines general provisions for relevant standards that have been set under this part. Unit AUX-A1 is subject to MACT ZZZZ.
MACT 40 CFR 63.760 Subpart HH	Oil and Natural Gas Production Facilities	No	N/A	This regulation establishes national emission standards for hazardous air pollutants from oil and natural gas production facilities. This facility is not an Oil or Natural Gas Production Facility, as defined by this regulation therefore it is not subject to this regulation.
MACT 40 CFR 63 Subpart HHH	Natural Gas Transmission and Storage Facilities	No	N/A	This facility is not a major source of HAPS, nor does it contain an affected unit. As stated in 63.1270(c), a facility that does not contain an affected source is not subject to the requirements of this subpart.
MACT 40 CFR 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Major Industrial, Commercial, and Institutional Boilers & Process Heaters	No	N/A	This facility does not contain industrial, commercial, and institutional boilers & process heaters; therefore, this regulation does not apply.
MACT 40 CFR 63 Subpart YYYY	National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines	No	N/A	This regulation establishes national emission and operating limitations for HAP emissions from stationary combustion turbines located at major sources of HAPs. This facility is not a major source of HAPs and, therefore, units A-01 and A-02 are not subject this MACT

<u>FEDERAL REGU- LATIONS CITATION</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
MACT 40 CFR 63 Subpart UUUUU	National Emission Standards for Hazardous Air Pollutants Coal & Oil Fire Electric Utility Steam Generating Unit	No	N/A	This facility does not contain any coal and Oil fire electric Utility steam generating units, therefore, this regulation does not apply
MACT 40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE MACT)	Yes	AUX- A1	This regulation defines national emissions standards for HAPs for stationary reciprocating Internal Combustion Engines. Unit AUX-A1 is an existing (constructed prior to 6/12/2006) auxiliary reciprocating engine for the backup generator located at an area source of HAPs. The unit is subject to the operation and maintenance requirements of the subpart.
40 CFR 64	Compliance Assurance Monitoring	Yes	N/A	This regulation defines compliance assurance monitoring. Caprock Compressor Station is a Title V major source. However, none of the units at the facility are required to use a control device to achieve compliance with an emission limit.
40 CFR 68	Chemical Accident Prevention	No	N/A	This facility is regulated under DOT Office of Pipeline Safety Regulations (49 CFR 192, 193 and 195); therefore, it is not subject to this regulation. This regulation arises from section 112(r) of the Clean Air Act and establishes thresholds based on inventoried quantities of specific substances in process. As established at 40 CFR 68.3, the term “stationary source” does not apply to the transportation of any regulated substance or any other extremely hazardous substance under the provisions of this part, provided that such transportation is regulated under 49 CFR parts 192, 193, or 195 (DOT Office of Pipeline Safety Regulations).
Title IV – Acid Rain 40 CFR 72	Acid Rain	No	N/A	This part establishes the acid rain program. This part does not apply because the facility is not covered by this regulation. [40 CFR Part 72.6]
Title IV – Acid Rain 40 CFR 73	Sulfur Dioxide Allowance Emissions	No	N/A	This regulation establishes sulfur dioxide allowance emissions for certain types of facilities. This part does not apply because the facility is not the type covered by this regulation [40 CFR Part 73.2].
Title IV-Acid Rain 40 CFR 75	Continuous Emissions Monitoring	No	N/A	This facility does not generate commercial electric power or electric power for sale, therefore this regulation does not apply
Title IV – Acid Rain 40 CFR 76	Acid Rain Nitrogen Oxides Emission Reduction Program	No	N/A	This regulation establishes an acid rain nitrogen oxides emission reduction program. This regulation applies to each coal-fired utility unit that is subject to an acid rain emissions limitation or reduction requirement for SO ₂ . This part does not apply because the facility does not operate any coal-fired units [40 CFR Part 76.1].

<u>FEDERAL REGU- LATIONS CITATION</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
Title VI – 40 CFR 82	Protection of Stratospheric Ozone	Yes	Facility	EPNG owns appliances containing CFCs and is therefore subject to this requirement. However, this requirement imposes no obligations on the facility beyond those imposed on any individual or corporate owner of such appliances, and is mentioned here only in the interest of being thorough. EPNG uses only certified technicians for the maintenance, service, repair and disposal of appliances and maintains the appropriate records for this requirement.
CAA Section 112(r)	Hazardous Air Pollutants Prevention of Accidental Releases	No	N/A	As established at 40 CFR 68.3, the term “stationary source” does not apply to the transportation of any regulated substance or any other extremely hazardous substance under the provisions of this part, provided that such transportation is regulated under 49 CFR parts 192, 193, or 195 (DOT Office of Pipeline Safety Regulations).

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.
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EPNG maintains the required planning and excess emission mitigation documents at Caprock Compressor Station.

Section 15

Alternative Operating Scenarios

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

Alternative Operating Scenarios: Provide all information required by the department to define alternative operating scenarios. This includes process, material and product changes; facility emissions information; air pollution control equipment requirements; any applicable requirements; monitoring, recordkeeping, and reporting requirements; and compliance certification requirements. Please ensure applicable Tables in this application are clearly marked to show alternative operating scenario.

Construction Scenarios: When a permit is modified authorizing new construction to an existing facility, NMED includes a condition to clearly address which permit condition(s) (from the previous permit and the new permit) govern during the interval between the date of issuance of the modification permit and the completion of construction of the modification(s). There are many possible variables that need to be addressed such as: Is simultaneous operation of the old and new units permitted and, if so for example, for how long and under what restraints? In general, these types of requirements will be addressed in Section A100 of the permit, but additional requirements may be added elsewhere. Look in A100 of our NSR and/or TV permit template for sample language dealing with these requirements. Find these permit templates at: https://www.env.nm.gov/aqb/permit/aqb_pol.html. Compliance with standards must be maintained during construction, which should not usually be a problem unless simultaneous operation of old and new equipment is requested.

In this section, under the bolded title “Construction Scenarios”, specify any information necessary to write these conditions, such as: conservative-realistic estimated time for completion of construction of the various units, whether simultaneous operation of old and new units is being requested (and, if so, modeled), whether the old units will be removed or decommissioned, any PSD ramifications, any temporary limits requested during phased construction, whether any increase in emissions is being requested as SSM emissions or will instead be handled as a separate Construction Scenario (with corresponding emission limits and conditions, etc).

The term “alternative operating scenario” is not defined by regulation. EPNG understands this term to apply to one or more sources that may routinely operate with alternative fuels or raw materials and/or on a significantly different schedule that may potentially affect emissions. Based on this understanding, Caprock Compressor Station does not have any alternative operating scenarios.

Units at the facility may be shut down from time to time due to factors including, but not limited to, market demand, maintenance, malfunctions, and emergency shutdowns. Operating in alternative modes and temporary shutdowns are not alternative operating scenarios, as EPNG understands them.

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.	
Reporting existing pollutants that were not previously reported.	
Reporting existing pollutants where the ambient impact is being addressed for the first time.	
Title V application (new, renewal, significant, or minor modification. 20.2.70 NMAC). See #3 above.	X
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.

Dispersion modeling is not required as part of this Title V operating permit renewal application. A modeled demonstration of compliance with National Ambient Air Quality Standards (NAAQS) and New Mexico Ambient Air Quality Standards (NMAAQs) was submitted to satisfy items of the NMED and EPNG settlement agreement effective June 3, 2005. NSR Permit 3261 was issued on the basis of the compliance demonstration. No changes have been made affecting regulated equipment or emissions at the facility since compliance was demonstrated.

Section 17

Compliance Test History

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

To show compliance with existing NSR permits conditions, you must submit a compliance test history. The table below provides an example.

Compliance Test History Table

Unit No.	Test Description	Test Date
A-01	Portable analyzer for NO _x and CO	02/23/2011
A-02	Portable analyzer for NO _x and CO	02/23/2011

No periodic monitoring has occurred in recent years, because units A-01 and A-02 have qualified for no testing per B108D(2). In short, they operated have less than 25% of the monitoring period and therefore no monitoring has required since 2011.

Section 19

Requirements for Title V Program

Do not print this section unless this is a Title V application.

Who Must Use this Attachment:

- * Any major source as defined in 20.2.70 NMAC.
 - * Any source, including an area source, subject to a standard or other requirement promulgated under Section 111 - Standards of Performance for New Stationary Sources, or Section 112 Hazardous Air Pollutants, of the 1990 federal Clean Air Act ("federal Act"). Non-major sources subject to Sections 111 or 112 of the federal Act are exempt from the obligation to obtain a 20.2.70 NMAC operating permit until such time that the EPA Administrator completes rulemakings that require such sources to obtain operating permits. In addition, sources that would be required to obtain an operating permit solely because they are subject to regulations or requirements under Section 112(r) of the federal Act are exempt from the requirement to obtain an Operating Permit.
 - * Any Acid Rain source as defined under title IV of the federal Act. The Acid Rain program has additional forms. See <http://www.env.nm.gov/aqb/index.html>. Sources that are subject to both the Title V and Acid Rain regulations are encouraged to submit both applications simultaneously.
 - * Any source in a source category designated by the EPA Administrator ("Administrator"), in whole or in part, by regulation, after notice and comment.
-

Caprock Compressor Station is a major source, as defined in 20.2.70 NMAC.

19.1 - 40 CFR 64, Compliance Assurance Monitoring (CAM) (20.2.70.300.D.10.e NMAC)

Any source subject to 40CFR, Part 64 (Compliance Assurance Monitoring) must submit all the information required by section 64.7 with the operating permit application. The applicant must prepare a separate section of the application package for this purpose; if the information is already listed elsewhere in the application package, make reference to that location. Facilities not subject to Part 64 are invited to submit periodic monitoring protocols with the application to help the AQB to comply with 20.2.70 NMAC. Sources subject to 40 CFR Part 64, must submit a statement indicating your source's compliance status with any enhanced monitoring and compliance certification requirements of the federal Act.

After reasonable inquiry, EPNG states that the facility does not meet the applicability requirements of 40 CFR 64.2. Specifically, no sources at the facility are controlled major sources of regulated pollutants. EPNG will submit the necessary items should the facility or requirements change such that this regulation becomes applicable.

19.2 - Compliance Status (20.2.70.300.D.10.a & 10.b NMAC)

Describe the facility's compliance status with each applicable requirement at the time this permit application is submitted. This statement should include descriptions of or references to all methods used for determining compliance. This statement should include descriptions of monitoring, recordkeeping and reporting requirements and test methods used to determine compliance with all applicable requirements. Refer to Section 2, Tables 2-N and 2-O of the Application Form as necessary. (20.2.70.300.D.11 NMAC) For facilities with existing Title V permits, refer to most recent Compliance Certification for existing requirements. Address new requirements such as CAM, here, including steps being taken to achieve compliance.

EPNG believes that Caprock Compressor Station is in compliance with each applicable requirement identified in Section 19.2. This belief was formed after reasonable inquiry. In the event that EPNG should discover new information affecting the compliance status of the facility, EPNG will make appropriate notification and/or take corrective action. Pursuant to Condition A109 of Title V Permit P132-R3, EPNG has certified compliance with the terms of conditions of the permit. The most recent certification was submitted by the January 31st deadline. Since that time, EPNG has continued to be in compliance with applicable requirements.

19.3 - Continued Compliance (20.2.70.300.D.10.c NMAC)

Provide a statement that your facility will continue to be in compliance with requirements for which it is in compliance at the time of permit application. This statement must also include a commitment to comply with other applicable requirements as they come into effect during the permit term. This compliance must occur in a timely manner or be consistent with such schedule expressly required by the applicable requirement.

As described in Section 19.2, after reasonable inquiry EPNG states that Caprock Compressor Station will continue to operate in compliance with applicable requirements. Additionally, EPNG will meet additional applicable requirements that become effective during the permit term in a timely manner or on such a time schedule as expressly required by the applicable requirement. In the event EPNG should discover new information affecting the compliance status of the facility, EPNG will make appropriate notifications and/or take corrective actions as appropriate.

19.4 - Schedule for Submission of Compliance (20.2.70.300.D.10.d NMAC)

You must provide a proposed schedule for submission to the department of compliance certifications during the permit term. This certification must be submitted annually unless the applicable requirement or the department specifies a more frequent period. A sample form for these certifications will be attached to the permit.

Condition A109 of Operating Permit P132-R3 requires EPNG to submit compliance certification reports to the New Mexico Environment Department (NMED) Air Quality Bureau (aqb) and to the EPA no later than January 31st of each year.

19.5 - Stratospheric Ozone and Climate Protection

In addition to completing the four (4) questions below, you must submit a statement indicating your source's compliance status with requirements of Title VI, Section 608 (National Recycling and Emissions Reduction Program) and Section 609 (Servicing of Motor Vehicle Air Conditioners).

1. Does your facility have any air conditioners or refrigeration equipment that uses CFCs, HCFCs or other ozone-depleting substances? **Yes** **No**
2. Does any air conditioner(s) or any piece(s) of refrigeration equipment contain a refrigeration charge greater than 50 lbs? **Yes** **No**
(If the answer is yes, describe the type of equipment and how many units are at the facility.)
3. Do your facility personnel maintain, service, repair, or dispose of any motor vehicle air conditioners (MVACs) or appliances ("appliance" and "MVAC" as defined at 82. 152)? **Yes** **No**
3. Cite and describe which Title VI requirements are applicable to your facility (i.e. 40 CFR Part 82, Subpart A through G.)

40 CFR 82 Subpart F. El Paso Natural Gas Company owns appliances containing regulated refrigerants. EPNG outsources services and repairs of its air conditioners at Caprock Compressor Station to refrigeration companies who utilize certified technicians.

19.6 - Compliance Plan and Schedule

Applications for sources, which are not in compliance with all applicable requirements at the time the permit application is submitted to the department, must include a proposed compliance plan as part of the permit application package. This plan shall include the information requested below:

A. Description of Compliance Status: (20.2.70.300.D.11.a NMAC)

A narrative description of your facility's compliance status with respect to all applicable requirements (as defined in 20.2.70 NMAC) at the time this permit application is submitted to the department.

B. Compliance plan: (20.2.70.300.D.11.B NMAC)

A narrative description of the means by which your facility will achieve compliance with applicable requirements with which it is not in compliance at the time you submit your permit application package.

C. Compliance schedule: (20.2.70.300D.11.c NMAC)

A schedule of remedial measures that you plan to take, including an enforceable sequence of actions with milestones, which will lead to compliance with all applicable requirements for your source. This schedule of compliance must be at least as stringent as that contained in any consent decree or administrative order to which your source is subject. The obligations of any consent decree or administrative order are not in any way diminished by the schedule of compliance.

D. Schedule of Certified Progress Reports: (20.2.70.300.D.11.d NMAC)

A proposed schedule for submission to the department of certified progress reports must also be included in the compliance schedule. The proposed schedule must call for these reports to be submitted at least every six (6) months.

E. Acid Rain Sources: (20.2.70.300.D.11.e NMAC)

If your source is an acid rain source as defined by EPA, the following applies to you. For the portion of your acid rain source subject to the acid rain provisions of title IV of the federal Act, the compliance plan must also include any additional requirements under the acid rain provisions of title IV of the federal Act. Some requirements of title IV regarding the schedule and methods the source will use to achieve compliance with the acid rain emissions limitations may supersede the requirements of title V and 20.2.70 NMAC. You will need to consult with the Air Quality Bureau permitting staff concerning how to properly meet this requirement.

NOTE: The Acid Rain program has additional forms. See <http://www.env.nm.gov/aqb/index.html>. Sources that are subject to both the Title V and Acid Rain regulations are **encouraged** to submit both applications **simultaneously**.

EPNG states that Caprock Compressor Station is in compliance with the applicable requirements in this section. No compliance plan, compliance schedule, or compliance reports are required.

19.7 - 112(r) Risk Management Plan (RMP)

Any major sources subject to section 112(r) of the Clean Air Act must list all substances that cause the source to be subject to section 112(r) in the application. The permittee must state when the RMP was submitted to and approved by EPA.

Caprock Compressor Station is not subject to the requirements of 40 CFR 68, Chemical Accident Prevention Provisions. The definitions in 40 CFR 68.3 state the term "stationary source" does not apply to transportation of any regulated substance or any other extremely hazardous substance under the provisions of this part, provided that such transportation is regulated under 49 CFR Parts 192, 193 or 195 (DOT Office of Pipeline Safety Regulations). Caprock Compressor Station is regulated under the DOT Office of Pipeline Safety Regulations and, therefore, is not subject to 112(r).

19.8 - Distance to Other States, Bernalillo, Indian Tribes and Pueblos

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 NMAC)?

(If the answer is yes, state which apply and provide the distances.)

Caprock Compressor Station is not within 50 miles of other states, local pollution control programs, or Indian tribes and pueblos.

19.9 - Responsible Official

Responsible Official: Philip L. Baca

R.O. Title: Operations Director Division 1

R.O. Address: 5151 E. Broadway Blvd, Suite 1680 Tucson, AZ 85711

Phone: (520) 663-4224

R.O. Email: Philip_Baca@kindermorgan.com

Section 20

Other Relevant Information

Other relevant information. Use this attachment to clarify any part in the application that you think needs explaining. Reference the section, table, column, and/or field. Include any additional text, tables, calculations or clarifying information.

Additionally, the applicant may propose specific permit language for AQB consideration. In the case of a revision to an existing permit, the applicant should provide the old language and the new language in track changes format to highlight the proposed changes. If proposing language for a new facility or language for a new unit, submit the proposed operating condition(s), along with the associated monitoring, recordkeeping, and reporting conditions. In either case, please limit the proposed language to the affected portion of the permit.

EPNG would like to identify the North American Energy Standards Board (NAESB) Day as the basis for records tracking at Caprock Compressor Station and other facilities.

The United States uses six different standardized time zones from east to west; the energy industry uses a seventh time zone developed by the NAESB. This Board serves as an industry platform for the development and promotion of industry practices and standards that lead to the seamless marketing of wholesale and retail natural gas and electricity. Since 2003, the NAESB Day has been recognized by its customers, the business community, participants, and federal and state regulatory entities. As such, a NAESB Day is a 24-hour period derived from a uniform time zone that occurs simultaneously nationwide and is the basis of EPNG's COMET data acquisition system "day" data. Unit information defined and stored according to the NAESB Day includes monitored gas flows or volumes, hours of operation, maintenance and repair activities, and routine emissions.

Data obtained from outside agencies (including test reports and summaries) or submitted pursuant to 20.2.7 NMAC reporting requirements is based on the "day" as defined by the local time zone.

Section 22: Certification

Company Name: El Paso Natural Gas Co., LLC

I, Philip L. Baca, 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 18th day of April, 2019, upon my oath or affirmation, before a notary of the State of

Arizona.

Philip L. Baca
*Signature

4-18-19
Date

Philip L.
Printed Name

Director
Title

Scribed and sworn before me on this 18 day of April, 2019.

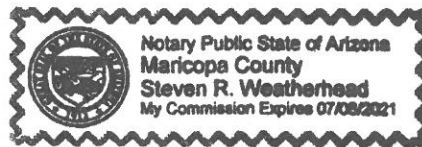
My authorization as a notary of the State of Arizona expires on the

6th day of July, 2021.

[Signature]
Notary's Signature

4-18-19
Date

Steven R. Weatherhead
Notary's Printed Name



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