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NOV 29 2023

Air Quality Bureau

**NMED AIR QUALITY BUREAU
TITLE V RENEWAL AND SIGNIFICANT REVISION**

**TARGA MIDSTREAM SERVICES LLC
Eunice Gas Plant**

COPY



TARGA

Prepared By:

TRINITY CONSULTANTS

9400 Holly Ave NE
Building 3, Suite 300
Albuquerque, NM 87122
(505) 266-6611

November 2023

Project 233201.0166

P109-R4

Trinity
Consultants 



9400 Holly Ave NE, Bldg 3, Ste 300, Albuquerque, NM 87122 / P 505.266.6611 / trinityconsultants.com

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November 28, 2023

NOV 29 2023

Permit Programs Manager
NMED Air Quality Bureau
525 Camino de los Marquez Suite 1
Santa Fe, NM 87505-1816

Air Quality Bureau

RE: *Application for Title V Significant Modification and Renewal
Targa Midstream Services LLC; Eunice Gas Plant*

To Whom It May Concern:

On behalf of Targa Midstream Services LLC, Trinity Consultants is submitting an application for the Eunice Gas Plant, currently authorized to operate under NSR Permit No. 0067-M11-R8 and Title V Operating Permit No. P-109-R3M1. With this application, Targa seeks to renew the current Title V permit, P-109-R3M1. This Title V renewal application is being submitted within twelve months of the current Title V permit expiration date of November 24, 2024, in accordance with 20.2.70.300.B.2. NMAC.

Targa is also submitting this application pursuant to 20.2.70.404.C.(1) NMAC, which requires a Title V Significant Permit Modification application within twelve (12) months after commencing operation. Targa is submitting a Title V Significant Permit Modification application so that the Title V Permit will incorporate changes to the facility that were incorporated in the following NSR Permits: 0067-M11-R4, 0067-M11-R5, 0067-M11-R6, 0067M11-R7, and 0067M11-R8.

The format and content of this application are consistent with the Bureau's current policy regarding Title V renewal and significant modification applications. Enclosed is the hard copy of the application and original certification. Electronic files will be provided upon request from our assigned permit engineer. Please feel free to contact me by email at rreese@trinityconsultants.com if you have any questions regarding this application.

Sincerely,

TRINITY CONSULTANTS

Jaimy Karacaoglu
Consultant

Cc: Robert Andries (Targa Midstream Services, LLC)
Rob Liles (Trinity Consultants)

Trinity Project File: 233201.0166

HEADQUARTERS

12700 Park Central Dr, Ste 2100, Dallas, TX 75251 / P 800.229.6655 / P 972.661.8100 / F 972.385.9203

Mail Application To: New Mexico Environment Department Air Quality Bureau Permits Section 525 Camino de los Marquez, Suite 1 Santa Fe, New Mexico, 87505 Phone: (505) 476-4300 Fax: (505) 476-4375 www.env.nm.gov/aqb		For Department use only: <div style="text-align: center;"> RECEIVED NOV 29 2023 Air Quality Bureau </div>
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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.

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

Acknowledgements:

- ☒ I acknowledge that a pre-application meeting is available to me upon request. ☒ Title V Operating, Title IV Acid Rain, and NPR applications have no fees.
- ☐ \$500 NSR application Filing Fee enclosed **OR** ☐ The full permit fee associated with 10 fee points (required w/ streamline applications).
- ☐ Check No.: NA in the amount of NA
- ☒ I acknowledge the required submittal format for the hard copy application is printed double sided 'head-to-toe', 2-hole punched (except the Sect. 2 landscape tables is printed 'head-to-head'), numbered tab separators. Incl. a copy of the check on a separate page.
- ☒ I acknowledge there is an annual fee for permits in addition to the permit review fee: www.env.nm.gov/air-quality/permit-fees-2/.
- ☐ This facility qualifies for the small business fee reduction per 20.2.75.11.C. NMAC. The full \$500.00 filing fee is included with this application and I understand the fee reduction will be calculated in the balance due invoice. The Small Business Certification Form has been previously submitted or is included with this application. (Small Business Environmental Assistance Program Information: www.env.nm.gov/air-quality/small-biz-eap-2/.)

Citation: Please provide the **low level citation** under which this application is being submitted: **20.2.70.300.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: 609	Updating Permit/NOI #: P109-R3M1
1	Facility Name: Eunice Gas Processing Plant	Plant primary SIC Code (4 digits): 1321	
		Plant NAIC code (6 digits): 211112	
a	Facility Street Address (If no facility street address, provide directions from a prominent landmark): Travel east on E. Texas Avenue from the intersection with Main Street in Eunice, NM approximately 0.75 miles, then south on S. 4th Street approximately one mile to the plant gate.		

2	Plant Operator Company Name: Targa Midstream Services LLC	Phone/Fax: (505) 394-2534 / (505) 394-2714
a	Plant Operator Address: PO Box 1909, Eunice, NM 88231	
b	Plant Operator's New Mexico Corporate ID or Tax ID: 1948249	
3	Plant Owner(s) name(s): Versado Gas Processors LLC	Phone/Fax: (432) 688-0555 / (432) 688-0552
a	Plant Owner(s) Mailing Address(s): PO Box 1909, Eunice, NM 88231	
4	Bill To (Company): Targa Midstream Services LLC	Phone/Fax: (575) 394-2534 / (575) 394-2714
a	Mailing Address: PO Box 1909, Eunice, NM 88231	E-mail: rwoodell@targaresources.com
5	☒ Preparer: Jalmy Karacaoglu ☒ Consultant: Trinity Consultants	Phone/Fax: (505) 266-6611 / NA
a	Mailing Address: 9400 Holly Ave Bldg 3 Suite B Albuquerque, NM 87122	E-mail: jaimy.karacaoglu@trinityconsultants.com
6	Plant Operator Contact: Amber Groves	Phone/Fax: (575) 810-6023 / (575) 394-2714
a	Address: PO Box 1909, Eunice, NM 88231	E-mail: agroves@targaresources.com
7	Air Permit Contact: Robert Andries	Title: Senior Environmental Specialist
a	E-mail: randries@targaresources.com	Phone/Fax: (713) 584 - 1360 / NA
b	Mailing Address: 811 Louisiana St., Houston, TX 77002	
c	The designated Air permit Contact will receive all official correspondence (i.e. letters, permits) from the Air Quality Bureau.	

Section 1-B: Current Facility Status

1.a	Has this facility already been constructed? ☒ Yes ☐ No	1.b If yes to question 1.a, is it currently operating in New Mexico? ☒ Yes ☐ No
2	If yes to question 1.a, was the existing facility subject to a Notice of Intent (NOI) (20.2.73 NMAC) before submittal of this application? ☐ Yes ☒ No	If yes to question 1.a, was the existing facility subject to a construction permit (20.2.72 NMAC) before submittal of this application? ☒ Yes ☐ No
3	Is the facility currently shut down? ☐ Yes ☒ No	If yes, give month and year of shut down (MM/YY): N/A
4	Was this facility constructed before 8/31/1972 and continuously operated since 1972? ☒ Yes ☐ No	
5	If Yes to question 3, has this facility been modified (see 20.2.72.7.P NMAC) or the capacity increased since 8/31/1972? ☐ Yes ☐ No ☒ N/A	
6	Does this facility have a Title V operating permit (20.2.70 NMAC)? ☒ Yes ☐ No	If yes, the permit No. is: P109-R3M1
7	Has this facility been issued a No Permit Required (NPR)? ☐ Yes ☒ No	If yes, the NPR No. is: N/A
8	Has this facility been issued a Notice of Intent (NOI)? ☐ Yes ☒ No	If yes, the NOI No. is: N/A
9	Does this facility have a construction permit (20.2.72/20.2.74 NMAC)? ☒ Yes ☐ No	If yes, the permit No. is: 0067-M11-R8
10	Is this facility registered under a General permit (GCP-1, GCP-2, etc.)? ☐ Yes ☒ 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: 4.79 MMscf	Daily: 115 MMscf	Annually: 41,975 MMscf
b	Proposed	Hourly: 4.79 MMscf	Daily: 115 MMscf	Annually: 41,975 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: 4.79 MMscf	Daily: 115 MMscf	Annually: 41,975 MMscf

b	Proposed	Hourly: 4.79 MMscf	Daily: 115 MMscf	Annually: 41,975 MMscf
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Section 1-D: Facility Location Information

1	Section: 3	Range: 37E	Township: 22S	County: Lea	Elevation (ft): 3,400
2	UTM Zone: ☐ 12 or ☒ 13			Datum: ☐ NAD 27 ☐ NAD 83 ☒ WGS 84	
a	UTM E (in meters, to nearest 10 meters): 674,200 m			UTM N (in meters, to nearest 10 meters): 3,589,000 m	
b	AND Latitude (deg., min., sec.): 32° 25' 28"			Longitude (deg., min., sec.): -103° 8' 50"	
3	Name and zip code of nearest New Mexico town: Eunice, NM 88231				
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): From the intersection of N. Main Street and E. Texas Avenue in Eunice, travel east on Texas Avenue for about 0.7 miles and turn right on S. 4th Street. Travel for about 0.7 miles the facility will be at the end of the road.				
5	The facility is 1 mile southeast of Eunice, NM.				
6	Status of land at facility (check one): ☒ Private ☐ Indian/Pueblo ☐ Federal BLM ☐ Federal Forest Service ☐ Other (specify)				
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: Eunice Indian Tribes: None Counties: Lea County, NM; Andrews County, TX; Gaines County, TX				
8	20.2.72 NMAC applications only: Will the property on which the facility is proposed to be constructed or operated be closer than 50 km (31 miles) to other states, Bernalillo County, or a Class I area (see www.env.nm.gov/air-quality/modeling-publications/)? ☒ Yes ☐ No (20.2.72.206.A.7 NMAC) If yes, list all with corresponding distances in kilometers: 7 km from Texas				
9	Name nearest Class I area: Carlsbad Caverns National Park				
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): 118.3 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: 700 m				
12	Method(s) used to delineate the Restricted Area: 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? ☐ Yes ☒ No A portable stationary source is not a mobile source, such as an automobile, but a source that can be installed permanently at one location or that can be re-installed at various locations, such as a hot mix asphalt plant that is moved to different job sites.				
14	Will this facility operate in conjunction with other air regulated parties on the same property? ☒ No ☐ Yes If yes, what is the name and permit number (if known) of the other facility?				

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	($\frac{\text{hours}}{\text{year}}$): 8,760
2	Facility's maximum daily operating schedule (if less than 24 $\frac{\text{hours}}{\text{day}}$)? Start: N/A		☐ AM ☐ PM	End: N/A ☐ AM ☐ PM
3	Month and year of anticipated start of construction: Upon Receipt of Permit			
4	Month and year of anticipated construction completion: Upon Receipt of Permit			
5	Month and year of anticipated startup of new or modified facility: Upon Receipt of Permit			

6	Will this facility operate at this site for more than one year? ☒ Yes ☐ No
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Section 1-F: Other Facility Information

1	Are there any current Notice of Violations (NOV), compliance orders, or any other compliance or enforcement issues related to this facility? ☒ Yes ☐ No If yes, specify: TAR-0609-1802		
a	If yes, NOV date or description of issue: On February 4, 2019, NMED issued an NOV for 26 excess emissions events from May-August 2018. Targa met with NMED to explain series of events around the 26 events included in this NOV and submitted a written response on 4/1/19. On May 6, 2019, Targa executed a Tolling Agreement for the matter. Targa received a second tolling agreement January 29, 2020 and submitted the signed agreement the same day. Targa and NMED executed a Second Amended Tolling Agreement on September 23, 2020. On January 7, 2021, NMED informed Targa that it is drafting a final settlement agreement for this matter. Targa has not received a final settlement agreement to date. The second tolling agreement was signed on September 23, 2020 and the NOV was tolled until June 30, 2021. To date, Targa has not heard from NMED. As of <u>June 1, 2023</u> , there is no update.		NOV Tracking No: TAR-0609-1802
b	Is this application in response to any issue listed in 1-F, 1 or 1a above? ☐ Yes ☒ No If Yes, provide the 1c & 1d info below:		
c	Document Title: 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? ☐ Yes ☒ No		
3	Does this facility require an "Air Toxics" permit under 20.2.72.400 NMAC & 20.2.72.502, Tables A and/or B? ☐ Yes ☒ No		
4	Will this facility be a source of federal Hazardous Air Pollutants (HAP)? ☒ Yes ☐ No		
a	If Yes, what type of source? ☒ Major (☒ ≥10 tpy of any single HAP OR ☒ ≥25 tpy of any combination of HAPS) OR ☐ Minor (☐ <10 tpy of any single HAP AND ☐ <25 tpy of any combination of HAPS)		
5	Is any unit exempt under 20.2.72.202.B.3 NMAC? ☐ Yes ☒ No		
a	If yes, include the name of company providing commercial electric power to the facility: Excel Commercial Electric Power Commercial power is purchased from a commercial utility company, which specifically does not include power generated on site for the sole purpose of the user.		

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

1	☐ I have filled out Section 18, "Addendum for Streamline Applications." ☒ N/A (This is not a Streamline application.)
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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.) (20.2.70.300.D.2 NMAC): Jimmy Oxford		Phone: (940) 220-2493
a	R.O. Title: Vice President Operations	R.O. e-mail: JOxford@targaresources.com	
b	R. O. Address: 4401 North I-35, Suite 303 Denton, Texas 76207		
2	Alternate Responsible Official (20.2.70.300.D.2 NMAC): N/A		Phone: N/A
a	A. R.O. Title: N/A	A. R.O. e-mail: N/A	
b	A. R. O. Address: N/A		

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): Targa Resources, Inc.
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.): Targa Resources, Inc.
a	Address of Parent Company: 811 Louisiana Suite 2100, Houston, TX 77002-1400
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.): None
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations: Robert Andries - (713) 584 - 1360
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: Texas – 7 km

Section 1-I – Submittal Requirements

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

Hard Copy Submittal Requirements:

- 1) One hard copy **original signed and notarized application package printed double sided 'head-to-toe' 2-hole punched** as we bind the document on top, not on the side; except Section 2 (landscape tables), which should be **head-to-head**. Please use **numbered tab separators** in the hard copy submittal(s) as this facilitates the review process. For NOI submittals only, hard copies of UA1, Tables 2A, 2D & 2F, Section 3 and the signed Certification Page are required. **Please include a copy of the check on a separate page.**
- 2) If the application is for a minor NSR, PSD, NNSR, or Title V application, include one working hard **copy** for Department use. This **copy** should be printed in book form, 3-hole punched, and **must be double sided**. Note that this is in addition to the head-to-toe 2-hole punched copy required in 1) above. **Minor NSR Technical Permit revisions (20.2.72.219.B NMAC) only need to fill out Sections 1-A, 1-B, 3, and should fill out those portions of other Section(s) relevant to the technical permit revision.** TV Minor Modifications need only fill out Sections 1-A, 1-B, 1-H, 3, and those portions of other Section(s) relevant to the minor modification. NMED may require additional portions of the application to be submitted, as needed.
- 3) The entire NOI or Permit application package, including the full modeling study, should be submitted electronically. Electronic files for applications for NOIs, any type of General Construction Permit (GCP), or technical revisions to NSRs must be submitted with compact disk (CD) or digital versatile disc (DVD). For these permit application submittals, **two CD** copies are required (in sleeves, not crystal cases, please), with additional CD copies as specified below. NOI applications require only a **single CD** submittal. Electronic files for other New Source Review (construction) permits/permit modifications or Title V permits/permit modifications can be submitted on CD/DVD or sent through AQB's secure file transfer service.

Electronic files sent by (check one):

☐ CD/DVD attached to paper application

☒ Secure electronic transfer. Air Permit Contact Name Jaimy Karacaoglu, Email jaimy.karacaoglu@trinityconsultants.com

Phone number (505) 266-6611.

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

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

- 5) If **air dispersion modeling** is required by the application type, include the **NMED Modeling Waiver** and/or electronic air dispersion modeling report, input, and output files. The dispersion modeling **summary report only** should be submitted as hard copy(ies) unless otherwise indicated by the Bureau.
- 6) If the applicant submits the electronic files on CD and the application is subject to PSD review under 20.2.74 NMAC (PSD) or NNSR under 20.2.79 NMC include,
 - a. one additional CD copy for US EPA,
 - b. one additional CD copy for each federal land manager affected (NPS, USFS, FWS, USDI) and,
 - c. one additional CD copy for each affected regulatory agency other than the Air Quality Bureau.

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

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

- 1) All required electronic documents shall be submitted as 2 separate CDs or submitted through the AQB secure file transfer service. Submit a single PDF document of the entire application as submitted and the individual documents comprising the application.
- 2) The documents should also be submitted in Microsoft Office compatible file format (Word, Excel, etc.) allowing us to access the text and formulas in the documents (copy & paste). Any documents that cannot be submitted in a Microsoft Office compatible format shall be saved as a PDF file from within the electronic document that created the file. If you are unable to provide Microsoft office compatible electronic files or internally generated PDF files of files (items that were not created electronically: i.e. brochures, maps, graphics, etc.), submit these items in hard copy format. We must be able to review the formulas and inputs that calculated the emissions.
- 3) It is preferred that this application form be submitted as 4 electronic files (**3 MSWord docs**: Universal Application section 1 [UA1], Universal Application section 3-19 [UA3], and Universal Application 4, the modeling report [UA4]) and **1 Excel file** of the tables (Universal Application section 2 [UA2]). Please include as many of the 3-19 Sections as practical in a single MS Word electronic document. Create separate electronic file(s) if a single file becomes too large or if portions must be saved in a file format other than MS Word.
- 4) The **electronic file names** shall be a maximum of 25 characters long (including spaces, if any). The format of the electronic Universal Application shall be in the format: "A-3423-FacilityName". The "A" distinguishes the file as an application submittal, as opposed to other documents the Department itself puts into the database. Thus, all electronic application submittals should begin with "A-". Modifications to existing facilities should use the **core permit number** (i.e. '3423') the Department assigned to the facility as the next 4 digits. Use 'XXXX' for new facility applications. The format of any separate electronic submittals (additional submittals such as non-Word attachments, re-submittals, application updates) and Section document shall be in the format: "A-3423-9-description", where "9" stands for the **section #** (in this case Section 9-Public Notice). Please refrain, as much as possible, from submitting any scanned documents as this file format is extremely large, which uses up too much storage capacity in our database. Please take the time to fill out the **header information** throughout all submittals as this will identify any loose pages, including the Application Date (date submitted) & Revision number (0 for original, 1, 2, etc.; which will help keep track of subsequent partial update(s) to the original submittal. Do not use special symbols (#, @, etc.) in file names. The footer information should not be modified by the applicant.

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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 #					
C-01	Reciprocating Engine	Clark	BA-6	36106	1,200 hp	1,200 hp	<1972 Pre - 1984	N/A C-01	2020 0252	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 2SLB	N/A
C-02	Reciprocating Engine	Clark	BA-6	36104	1,200 hp	1,200 hp	<1972 Pre - 1984	N/A C-02	2020 0252	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 2SLB	N/A
C-03	Reciprocating Engine	Clark	BA-6	36080	1,200 hp	1,200 hp	<1972 Pre - 1984	N/A C-03	2020 0252	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 2SLB	N/A
C-04	Reciprocating Engine	Clark	BA-6	36103	1,200 hp	1,200 hp	<1972 Pre - 1984	N/A C-04	2020 0252	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 2SLB	N/A
C-05	Reciprocating Engine	Clark	BA-6	36102	1,200 hp	1,200 hp	<1972 Pre - 1984	N/A C-05	2020 0252	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 2SLB	N/A
C-06	Reciprocating Engine	Clark	BA-6	36112	1,200 hp	1,200 hp	<1972 Pre - 1984	N/A C-06	2020 0252	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 2SLB	N/A
C-07	Reciprocating Engine	Clark	BA-6	36040	1,200 hp	1,200 hp	<1972 Pre - 1984	N/A C-07	2020 0252	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 2SLB	N/A
C-09	Reciprocating Engine	Clark	BA-6	36109	1,200 hp	1,200 hp	<1972 Pre - 1984	N/A C-09	2020 0252	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 2SLB	N/A
C-10	Reciprocating Engine	Clark	HBA-8	30123	1,600 hp	1,600 hp	<1972 Pre - 1984	N/A C-10	2020 0252	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 2SLB	N/A
C-11	Reciprocating Engine	Clark	HBA-8	30089	1,600 hp	1,600 hp	<1972 Pre- 1984	N/A C-11	2020 0252	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 2SLB	N/A
C-12	Reciprocating Engine	Clark	HBA-8	30126	1,600 hp	1,600 hp	<1972 Pre-1984	N/A C-12	2020 0252	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 2SLB	N/A
C-13	Reciprocating Engine	Clark	HBA-T-8	30313	2,050 hp	2,050 hp	<1972 Pre-1984	N/A C-13	2020 0252	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 2SLB	N/A
C-13A	Reciprocating Engine	Waukesha	L7042-GSIU	49880	1,200 hp	1,200 hp	1985 Post-1984	N/A C-13a	2020 0252	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 4SRB	N/A

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 #					
C-17A	Reciprocating Engine	Waukesha	L7042-GSIU	367551	1,200 hp	1,200 hp	November 1981	N/A	2020 0253	☐ Existing (unchanged) ☐ New/Additional ☒ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 4SRB	N/A
							Pre-1984	C-17a					
C-18A	Reciprocating Engine	Waukesha	L7042-GSIU	338488	1,200 hp	1,200 hp	1985	N/A	2020 0253	☐ Existing (unchanged) ☐ New/Additional ☒ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 4SRB	N/A
							Post-1984	C-18a					
C-19	Reciprocating Engine	Waukesha	L7042-GSIU	TAR 19 E	1,200 hp	1,200 hp	1995	N/A	2020 0253	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 4SRB	N/A
							Post-1984	C-19					
C-20	Reciprocating Engine	Waukesha	L7042-GSIU	250078	1,200 hp	1,200 hp	1995	N/A	2020 0253	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 4SRB	N/A
							Post-1984	C-20					
C-21	Reciprocating Engine	Waukesha	L7042-GSIU	C155801	1,200 hp	1,200 hp	April 2005	N/A	2020 0253	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 4SRB	N/A
							Post-1984	C-21					
C-22	Reciprocating Engine	Waukesha	L7042-GSIU	336249	1,200 hp	1,200 hp	1995	N/A	2020 0253	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI 4SRB	N/A
							Post-1984	C-22					
EC-1	Electric Motor Driven Compressor	Teco Westinghouse	ANZK-52	DT.E084023-3	3,000 hp	3,000 hp	2014	N/A	3100 0203	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							Post-2011	EC-1					
EC-2	Electric Motor Driven Compressor	Teco Westinghouse	ANZK-52	FT.E086011-1	3,000 hp	3,000 hp	2014	N/A	3100 0203	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							2016	EC-2					
EC-3	Electric Motor Driven Compressor	Teco Westinghouse	ANZK-52	DTE084023-1	3,000 hp	3,000 hp	2006	N/A	3100 0203	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							Unknown	EC-3					
AGI-C2	Electric Motor Driven Compressor	Teco Westinghouse	World Series	7A14AA-02	1,750 hp	1,750 hp	43891	N/A	3100 0203	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							TBD	AGI-C2					
B-01	Steam Boiler	Wickes - Type A	Unknown	61188B1D3N M-1505	100 MMBtu/hr	100 MMBtu/hr	<1972	N/A	1020 0602	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							Pre-1984	B-01					
B-02	Steam Boiler	Wickes - Type A	Unknown	61188B2D3N M-1506	100 MMBtu/hr	100 MMBtu/hr	<1972	N/A	1020 0602	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							Pre-1984	B-02					
RH-W	Regeneration Gas Heater (Standby)	Petrotherm	Unknown	H-70693A	10 MMBtu/hr	10 MMBtu/hr	1982	N/A	3100 0404	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							Pre-1984	RH-1					
RH-E	Regeneration Gas Heater	Born	Unknown	RSO1138	3.5 MMBtu/hr	3.5 MMBtu/hr	2001	N/A	3100 0404	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							Post-1984	RH-E					
H-02 ⁵	Hot Oil Heater	Unknown	Unknown	90658	2.7 MMscf/yr	2.7 MMscf/yr	2000	N/A	3100 0404	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							Post-1984	RH-01					
H-01	Glycol Dehydrator Heater	Wenco Energy	Unknown	XB48/24-20H	1.25 MMBtu/hr	1.25 MMBtu/hr	2000	N/A	3100 0302	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							Post-1984	H-01					

Unit Number ¹	Source Description	Make	Model #	Serial #	Manufact- urer's Rated Capacity ³ (Specify Units)	Requested Permitted Capacity ³ (Specify Units)	Date of Manufacture ²	Controlled by Unit #	Source Classi- fication 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 #					
G-01	Glycol Dehydrator	Unknown	Unknown	Unknown	150 MMscf/d	150 MMscf/d	2000	N/A	3100 0301	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	N/A	N/A
TK-1	Fixed Roof Storage Tank	N/A	N/A	11107	500 bbl	500 bbl	6/29/2006	N/A	4040 0311	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	N/A	N/A
TK-2	Fixed Roof Storage Tank	N/A	N/A	11108	500 bbl	500 bbl	6/29/2006	N/A	4040 0311	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	N/A	N/A
F-01 ⁶	Acid Gas Flare	John Zink	Unknown	X46561	5 MMscf/yr	5 MMscf/yr	Pre-1984	N/A	3060 0906	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	N/A	N/A
F-02 ⁶	Emergency Flare	Unknown	Unknown	Unknown	5 MMscf/yr	5 MMscf/yr	Pre-1984	N/A	3060 0904	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	N/A	N/A
ME9	Gasoline Tank	Bennett	3813	15T1118938	2,800 gal	2,800 gal	2000	N/A	4040 0311	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	N/A	N/A
FG-01 ⁷	Fugitive Emissions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3068 8811	☐ Existing (unchanged) ☐ New/Additional ☒ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	N/A	N/A
L-01	Condensate Loading Emissions	N/A	N/A	N/A	N/A	N/A	Pre-1984	N/A	4060 0137	☐ Existing (unchanged) ☐ New/Additional ☒ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	N/A	N/A
L-02	Condensate Loading Emissions	N/A	N/A	N/A	N/A	N/A	2015	N/A	4060 0137	☐ Existing (unchanged) ☐ New/Additional ☒ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	N/A	N/A
CT-1	Cooling Tower	Advance Cooling Towers	Unknown	Unknown	14,100 gpm	14,100 gpm	<1972	N/A	3850 0110	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	N/A	N/A
AM-01	Amine Still (heated by process steam)	A.O. Smith	Unknown	49-1053	550 gpm	550 gpm	Pre-1984	F-01 and AGL	3100 0305	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	N/A	N/A
EG-01	Diesel Emergency Generator	Caterpillar	Unknown	JAZ 03085	1341 hp	1341 hp	2015	N/A	2020 0102	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	N/A	N/A
EG-02	Diesel Air Compressor	John Deere	Unknown	Unknown	125 hp	125 hp	2015	N/A	2020 0102	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	N/A	N/A
FG-SEP ⁸	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3108 8811	☐ Existing (unchanged) ☐ New/Additional ☒ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	N/A	N/A
FUG-02 ⁹	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3108 8811	☐ Existing (unchanged) ☐ New/Additional ☒ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	N/A	N/A
SSM-VP	Vessel Purging SSM Emissions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3108 8811	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	N/A	N/A
SSM-CB	Compressor Blowdown SSM Emissions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3108 8811	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	N/A	N/A

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.
SSM-VRU	VRU - Downtime SSM Emissions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3108	☐ Existing (unchanged)	☐ To be Removed	N/A
							N/A	N/A	8811	☐ New/Additional	☐ Replacement Unit	
SSM-PP	Pump Purging SSM Emissions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3108	☒ Existing (unchanged)	☐ To be Removed	N/A
							N/A	N/A	8811	☐ New/Additional	☐ Replacement Unit	
SSM-AGI-C2	Startup, Shutdown and Maintenance - AGI Compressor	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3108	☒ Existing (unchanged)	☐ To be Removed	N/A
							N/A	N/A	8811	☐ New/Additional	☐ Replacement Unit	
M	Malfunction Emissions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3108	☒ Existing (unchanged)	☐ To be Removed	N/A
							N/A	N/A	8811	☐ New/Additional	☐ Replacement Unit	

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

⁵ This unit has been mislabeled in prior permits and applications. This hot oil heater services multiple processes at the facility.

⁶ Flare capacities listed are for pilot only.

⁷ Unit FG-01 includes the fugitive emissions from the redundant acid gas cooler (FUG-AGC).

⁸ Unit FUG-SEP includes the fugitive emissions from the new inlet separator.

⁹ Unit FUG-02 includes the fugitive emissions from the 3rd Stage Cooling unit.

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

Unit Number	Source Description	Manufacturer	Model No.	Max Capacity	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5)	Date of Manufacture /Reconstruction ²	For Each Piece of Equipment, Check One
			Serial No.	Capacity Units	Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Installation /Construction ²	
AGI-C1	Electric Compressor at AGI Well	TBD	TBD	TBD	Not a source of regulated pollutants	2010	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			Y6R-3815C	TBD		~2010	
TK-3	Gunbarrel (Fixed Roof Storage Tank)	N/A	N/A	500	Not a source of regulated pollutants	9/1/2007	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	bbl		Unknown	
Haul	Haul Road	N/A	N/A	N/A	20.2.72.202.B.5 NMAC	N/A	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	N/A	IA List Item #1.a	N/A	
ME10	Diesel Storage Tank	N/A	N/A	1,000	20.2.72.202.B.5 NMAC	2010	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	IA List Item #1.a	~2010	
ME11	Methanol Storage Tank	N/A	N/A	2,000	20.2.72.202.B.5 NMAC	~2012	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	IA List Item #1.a	~2012	
ME12	Used Engine Oil	N/A	N/A	42,000	20.2.72.202.B.2 NMAC	Unknown	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	IA List Item #5	Unknown	
ME13	Norkool Tank (Coolant)	N/A	N/A	500	20.2.72.202.B.2 NMAC	Unknown	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	IA List Item #5	Unknown	
L-NGL	Natural Gas Liquid Loadout	N/A	N/A	N/A	20.2.72.202.B.5 NMAC	N/A	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	N/A	IA List Item #1.a	N/A	
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced

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

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

Table 2-C: Emissions Control Equipment

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

Control Equipment Unit No.	Control Equipment Description	Date Installed	Controlled Pollutant(s)	Controlling Emissions for Unit Number(s) ¹	Efficiency (% Control by Weight)	Method used to Estimate Efficiency
C-13A	Catalytic Converter, AFR	1985	NO _x , CO, VOC	C-13A	NOX 80% CO 70% VOC 70%	Manufacturer's Data and Engineering Estimate
C-17A	Catalytic Converter, AFR	1981	NO _x , CO, VOC	C-17A	NOX 80% CO 70% VOC 70%	Manufacturer's Data and Engineering Estimate
C-18A	Catalytic Converter, AFR	1995	NO _x , CO, VOC	C-18	NOX 80% CO 70% VOC 70%	Manufacturer's Data and Engineering Estimate
C-19	Catalytic Converter, AFR	1995	NO _x , CO, VOC	C-19	NOX 80% CO 70% VOC 70%	Manufacturer's Data and Engineering Estimate
C-20	Catalytic Converter, AFR	1995	NO _x , CO, VOC	C-20	NOX 80% CO 70% VOC 70%	Manufacturer's Data and Engineering Estimate
C-21	Catalytic Converter, AFR	1995	NO _x , CO, VOC	C-21	NOX 80% CO 70% VOC 70%	Manufacturer's Data and Engineering Estimate
C-22	Catalytic Converter, AFR	1995	NO _x , CO, VOC	C-22	NOX 80% CO 70% VOC 70%	Manufacturer's Data and Engineering Estimate
VRU-1	Dehy VRU	Unknown	H ₂ S, VOC	G-01	100% (closed loop)	Engineering Estimate
VRU-2	Dehy VRU	Unknown	H ₂ S, VOC	G-01	100% (closed loop)	Engineering Estimate
VRU-3	Tanks/Loading VRU	Unknown	H ₂ S, VOC	TK-1, TK-2, L-01, L-02	TK-1, TK-2: 100% L-01, L-02: 70%	Engineering Estimate
F-01	Acid Gas Flare	Pre-1984	H ₂ S, VOC	AM-01	98%	Engineering Estimate
AGI	Acid Gas Injection Well	Unknown	H ₂ S, VOC	AM-01	100%	Engineering Estimate
N/A	Cooling Tower Drift Eliminator	Unknown	PM ₁₀ , PM _{2.5}	CT-1	100%	Manufacturer's Data

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

When one controls for C-01 - C-12, etc

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

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

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

Unit No.	NOx		CO		VOC		SOx		PM ¹		PM10 ¹		PM2.5 ¹		H 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
C-01	53.60	234.80	8.40	36.90	0.40	1.60	0.0073	0.032	0.14	0.60	0.10	0.45	0.10	0.45	-	-	-	-
C-02	53.60	234.80	8.40	36.90	0.40	1.60	0.0073	0.032	0.14	0.60	0.10	0.45	0.10	0.45	-	-	-	-
C-03	53.60	234.80	8.40	36.90	0.40	1.60	0.0073	0.032	0.14	0.60	0.10	0.45	0.10	0.45	-	-	-	-
C-04	53.60	234.80	8.40	36.90	0.40	1.60	0.0073	0.032	0.14	0.60	0.10	0.45	0.10	0.45	-	-	-	-
C-05	53.60	234.80	8.40	36.90	0.40	1.60	0.0073	0.032	0.14	0.60	0.10	0.45	0.10	0.45	-	-	-	-
C-06	53.60	234.80	8.40	36.90	0.40	1.60	0.0073	0.032	0.14	0.60	0.10	0.45	0.10	0.45	-	-	-	-
C-07	53.60	234.80	8.40	36.90	0.40	1.60	0.0073	0.032	0.14	0.60	0.10	0.45	0.10	0.45	-	-	-	-
C-08	53.60	234.80	8.40	36.90	0.40	1.60	0.0073	0.032	0.14	0.60	0.10	0.45	0.10	0.45	-	-	-	-
C-09	53.60	13.40	8.40	2.10	0.40	0.10	0.0073	0.0017	0.14	0.035	0.10	0.025	0.10	0.025	-	-	-	-
C-10	77.20	19.30	8.10	2.03	1.10	0.28	0.0088	0.0022	0.16	0.039	0.16	0.039	0.16	0.039	-	-	-	-
C-11	77.20	19.30	8.10	2.03	1.10	0.28	0.0088	0.0022	0.16	0.039	0.16	0.039	0.16	0.039	-	-	-	-
C-12	77.20	19.30	8.10	2.03	1.10	0.28	0.010	0.045	0.18	0.45	0.14	0.039	0.14	0.039	-	-	-	-
C-13	61.10	267.50	27.60	120.90	1.00	4.40	0.012	0.054	0.23	1.02	0.18	0.77	0.18	0.77	-	-	-	-
C-13A	26.50	116.00	26.50	116.00	3.40	14.70	0.0069	0.030	0.13	0.56	0.097	0.42	0.097	0.42	-	-	-	-
C-17A	26.50	116.00	26.50	116.00	3.40	14.70	0.0069	0.030	0.13	0.56	0.097	0.42	0.097	0.42	-	-	-	-
C-18A	26.50	116.00	26.30	115.19	10.67	46.73	0.0069	0.030	0.13	0.56	0.097	0.42	0.097	0.42	-	-	-	-
C-19	26.50	26.50	26.50	26.50	26.50	26.50	0.0069	0.030	0.13	0.56	0.097	0.42	0.097	0.42	-	-	-	-
C-20	26.50	116.00	26.50	116.00	3.40	14.70	0.0069	0.030	0.13	0.56	0.097	0.42	0.097	0.42	-	-	-	-
C-21	26.50	116.00	26.50	116.00	3.40	14.70	0.0069	0.030	0.13	0.56	0.097	0.42	0.097	0.42	-	-	-	-
C-22	26.50	116.00	26.50	116.00	3.40	14.70	0.0069	0.030	0.13	0.56	0.097	0.42	0.097	0.42	-	-	-	-
EC-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EC-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EC-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-01	20.60	90.00	1.50	6.60	0.10	0.20	0.067	0.29	0.76	3.33	0.76	3.33	0.76	3.33	-	-	-	-
B-02	20.60	90.00	1.50	6.60	0.10	0.20	0.067	0.29	0.76	3.33	0.76	3.33	0.76	3.33	-	-	-	-
RH-W	3.00	13.10	0.80	3.30	0.30	0.020	0.067	0.29	0.76	3.33	0.76	3.33	0.76	3.33	-	-	-	-
RH-E	0.35	1.53	0.29	1.28	0.0020	0.080	0.0024	0.010	0.027	0.12	0.027	0.12	0.027	0.12	-	-	-	-
H-02	0.30	1.20	0.20	1.00	0.010	0.060	0.00021	0.00091	0.0023	0.010	0.0023	0.010	0.0023	0.010	-	-	-	-
H-01	0.10	0.50	0.10	0.40	0.070	0.30	0.00084	0.0037	0.0095	0.042	0.0095	0.042	0.0095	0.042	-	-	-	-
G-01	-	-	-	-	149.20	653.80	-	-	-	-	-	-	-	-	-	-	-	-
TK-1	-	-	-	-	117.80	515.95	-	-	-	-	-	-	-	-	1.27	5.56	-	-

Unit No.	NO _x		CO		VOC		SO _x		PM ¹		PM10 ¹		PM2.5 ¹		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
TK-2	-	-	-	-	117.80	515.95	-	-	-	-	-	-	-	-	1.27	5.56	-	-
F-01 ¹	0.030	0.12	0.060	0.20	-	-	0.00039	0.0017	-	-	-	-	-	-	-	-	-	-
F-02 ¹	0.030	0.12	0.06	0.20	-	-	0.00039	0.00169	-	-	-	-	-	-	-	-	-	-
ME9	-	-	-	-	-	2.12	-	-	-	-	-	-	-	-	-	-	-	-
FG-01**	-	-	-	-	9.08	39.75	-	-	-	-	-	-	-	-	0.027	0.12	-	-
L-01	-	-	-	-	65.48	27.15	-	-	-	-	-	-	-	-	0.36	0.15	-	-
L-02	-	-	-	-	65.48		-	-	-	-	-	-	-	-	0.36		-	-
CT-1	-	-	-	-	-	-	-	-	3.48	15.26	0.97	4.28	-	-	-	-	-	-
AM-01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EG-01	14.60	63.80	0.38	1.68	0.030	0.13	0.016	0.071	0.059	0.26	0.059	0.26	0.059	0.26	-	-	-	-
EG-02	0.035	0.051	0.31	0.45	0.66	0.97	0.26	0.37	0.051	0.075	0.051	0.075	0.051	0.075	-	-	-	-
FG-SEP ²	-	-	-	-	0.28	1.24	-	-	-	-	-	-	-	-	0.0056	0.024	-	-
FUG-02 ³	-	-	-	-	0.0511	0.2237	-	-	-	-	-	-	-	-	0.022	0.10	-	-
Totals	1020.24	3200.12	318.00	1167.68	588.52	1923.00	0.63	1.92	8.76	36.07	5.62	22.24	4.65	17.96	3.32	11.50	-	-

¹Emissions from F-01 and F-02 are pilot-only emission rates. Emissions from SSM from these units are in Table 2-F.

²Unit FUG-SEP includes the fugitive emissions from the new inlet separator.

³Unit FUG-02 includes the fugitive emissions from the new i3rd stage cooling unit.

G, d, Tk 1, Tk 2 = large VOCs

Engines = large NO_x

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).

no NOx
reduction
↓

Unit No.	NOx		CO		VOC		SOx		PM ¹		PM10 ¹		PM2.5 ¹		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
C-01	53.60	234.80	8.40	36.90	0.40	1.60	0.0073	0.032	0.14	0.60	0.10	0.45	0.10	0.45	-	-	-	-
C-02	53.60	234.80	8.40	36.90	0.40	1.60	0.0073	0.032	0.14	0.60	0.10	0.45	0.10	0.45	-	-	-	-
C-03	53.60	234.80	8.40	36.90	0.40	1.60	0.0073	0.032	0.14	0.60	0.10	0.45	0.10	0.45	-	-	-	-
C-04	53.60	234.80	8.40	36.90	0.40	1.60	0.0073	0.032	0.14	0.60	0.10	0.45	0.10	0.45	-	-	-	-
C-05	53.60	234.80	8.40	36.90	0.40	1.60	0.0073	0.032	0.14	0.60	0.10	0.45	0.10	0.45	-	-	-	-
C-06	53.60	234.80	8.40	36.90	0.40	1.60	0.0073	0.032	0.14	0.60	0.10	0.45	0.10	0.45	-	-	-	-
C-07	53.60	234.80	8.40	36.90	0.40	1.60	0.0073	0.032	0.14	0.60	0.10	0.45	0.10	0.45	-	-	-	-
C-08	53.60	234.80	8.40	36.90	0.40	1.60	0.0073	0.032	0.14	0.60	0.10	0.45	0.10	0.45	-	-	-	-
C-09	53.60	13.40	8.40	2.10	0.40	0.10	0.0073	0.0017	0.14	0.035	0.10	0.025	0.10	0.025	-	-	-	-
C-10	77.20	19.30	8.10	2.03	1.10	0.28	0.0088	0.0022	0.16	0.039	0.16	0.039	0.16	0.039	-	-	-	-
C-11	77.20	19.30	8.10	2.03	1.10	0.28	0.0088	0.0022	0.16	0.039	0.16	0.039	0.16	0.039	-	-	-	-
C-12	77.20	19.30	8.10	2.03	1.10	0.28	0.010	0.045	0.18	0.45	0.14	0.039	0.14	0.039	-	-	-	-
C-13	61.10	267.50	27.60	120.90	1.00	4.40	0.012	0.054	0.23	1.02	0.18	0.77	0.18	0.77	-	-	-	-
C-13A	5.30	23.20	7.90	34.80	4.20	18.50	0.0069	0.030	0.13	0.56	0.10	0.42	0.10	0.42	-	-	-	-
C-17A	5.30	23.20	7.90	34.80	4.20	18.50	0.0069	0.030	0.13	0.56	0.10	0.42	0.10	0.42	-	-	-	-
C-18A	5.30	23.20	7.90	34.80	4.20	18.50	0.0069	0.030	0.13	0.56	0.10	0.42	0.10	0.42	-	-	-	-
C-19	5.30	23.20	7.90	34.80	4.20	18.50	0.0069	0.030	0.13	0.56	0.10	0.42	0.10	0.42	-	-	-	-
C-20	5.30	23.20	7.90	34.80	4.20	18.50	0.0069	0.030	0.13	0.56	0.10	0.42	0.10	0.42	-	-	-	-
C-21	5.30	23.20	7.90	34.80	4.20	18.50	0.0069	0.030	0.13	0.56	0.10	0.42	0.10	0.42	-	-	-	-
C-22	5.30	23.20	7.90	34.80	4.20	18.50	0.0069	0.030	0.13	0.56	0.10	0.42	0.10	0.42	-	-	-	-
EC-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EC-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EC-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-01	20.60	90.00	1.50	6.60	0.10	0.20	0.067	0.29	0.76	3.33	0.76	3.33	0.76	3.33	-	-	-	-
B-02	20.60	90.00	1.50	6.60	0.10	0.20	0.067	0.29	0.76	3.33	0.76	3.33	0.76	3.33	-	-	-	-
RH-W	3.00	13.10	0.80	3.30	0.30	0.020	0.067	0.29	0.76	3.33	0.76	3.33	0.76	3.33	-	-	-	-
RH-E	0.35	1.53	0.29	1.28	0.0020	0.080	0.0024	0.010	0.027	0.12	0.027	0.12	0.027	0.12	-	-	-	-
H-02	0.30	1.20	0.20	1.00	0.010	0.060	0.00021	0.00091	0.0023	0.010	0.0023	0.010	0.0023	0.010	-	-	-	-
H-01	0.10	0.50	0.10	0.40	0.070	0.30	0.00084	0.0037	0.0095	0.042	0.0095	0.042	0.0095	0.042	-	-	-	-
G-01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-1 ²	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Unit No.	NOx		CO		VOC		SOx		PM ¹		PM10 ¹		PM2.5 ¹		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
TK-2 ²	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-01 ³	0.030	0.12	0.060	0.20	-	-	0.00039	0.0017	-	-	-	-	-	-	-	-	-	-
F-02 ³	0.030	0.12	0.060	0.20	-	-	0.00039	0.0017	-	-	-	-	-	-	-	-	-	-
ME9	-	-	-	-	-	2.12	-	-	-	-	-	-	-	-	-	-	-	-
FG-01**	-	-	-	-	9.08	39.75	-	-	-	-	-	-	-	-	0.027	0.12	-	-
L-01	-	-	-	-	19.65	8.15	-	-	-	-	-	-	-	-	0.11	0.045	-	-
L-02	-	-	-	-	19.65		-	-	-	-	-	-	-	-	0.11		-	-
CT-1	-	-	-	-	-	-	-	-	3.48	15.26	0.97	4.28	-	-	-	-	-	-
AM-01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EG-01	14.60	63.80	0.38	1.68	0.030	0.13	0.016	0.071	0.059	0.26	0.059	0.26	0.059	0.26	-	-	-	-
EG-02	0.035	0.051	0.31	0.45	0.66	0.97	0.26	0.37	0.051	0.075	0.051	0.075	0.051	0.075	-	-	-	-
FG-SEP*	-	-	-	-	0.280	1.24	-	-	-	-	-	-	-	-	0.0056	0.024	-	-
FUG-02 ⁴	-	-	-	-	0.0511	0.2237	-	-	-	-	-	-	-	-	0.022	0.10	-	-
Totals	871.84	2640.02	188.00	689.59	87.28	201.07	0.63	1.92	8.76	36.07	5.62	22.24	4.65	17.96	0.27	0.28	-	-

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

² Dehy regenerator, TK-1 and TK-2 to be routed to VRU as a closed-loop system - Good

³ Emissions from F-01 and F-02 are pilot-only emission rates. Emissions from SSM from these units are in Table 2-F.

⁴ Unit FUG-02 includes the fugitive emissions from the new 3rd Stage Cooling unit.

* Unit FUG-SEP includes the fugitive emissions from the new inlet separator.

** FG-01 includes fugitive emissions from Acid Gas Cooling (FUG-AGC).

*** Total fugitive emissions are 41.2 tons per year.

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

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

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

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

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

[illegible]

Table 2-H: Stack Exit Conditions

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

Stack Number	Serving Unit Number(s) from Table 2-A	Orientation (H-Horizontal V=Vertical)	Rain Caps (Yes or No)	Height Above Ground (ft)	Temp. (F)	Flow Rate		Moisture by Volume (%)	Velocity (ft/sec)	Inside Diameter (ft)
						(acfs)	(dscfs)			
C-01	C-01	V	No	70	690	201.3	N/A	N/A	145.0	1.3
C-02	C-02	V	No	70	690	201.3	N/A	N/A	145.0	1.3
C-03	C-03	V	No	70	690	201.3	N/A	N/A	145.0	1.3
C-04	C-04	V	No	70	690	201.3	N/A	N/A	145.0	1.3
C-05	C-05	V	No	70	690	201.3	N/A	N/A	145.0	1.3
C-06	C-06	V	No	70	690	201.3	N/A	N/A	145.0	1.3
C-07	C-07	V	No	70	690	201.3	N/A	N/A	145.0	1.3
C-08	C-08	V	No	70	690	201.3	N/A	N/A	145.0	1.3
C-09	C-09	V	No	70	690	201.3	N/A	N/A	145.0	1.3
C-10	C-10	V	No	70	750	293.4	N/A	N/A	134.0	1.7
C-11	C-11	V	No	70	750	293.4	N/A	N/A	134.0	1.7
C-12	C-12	V	No	70	750	293.4	N/A	N/A	134.0	1.7
C-13	C-13	V	No	70	600	354.8	N/A	N/A	113.0	2.0
C-13A	C-13A	V	No	50	940	97.3	N/A	N/A	180.0	0.83
C-17A	C-17	V	No	50	940	97.3	N/A	N/A	180.0	0.83
C-18A	C-18	V	No	50	940	97.3	N/A	N/A	180.0	0.83
C-19	C-19	V	No	50	940	97.3	N/A	N/A	180.0	0.83
C-20	C-20	V	No	50	940	97.3	N/A	N/A	180.0	0.83
C-21	C-21	V	No	50	940	97.3	N/A	N/A	180.0	0.83
C-22	C-22	V	No	50	940	97.3	N/A	N/A	180.0	0.83
B-01	B-01	V	No	30	500	401.9	N/A	N/A	32.0	4.0
B-02	B-02	V	No	30	500	401.9	N/A	N/A	32.0	4.0
RH-W	RH-W	V	No	31	700	44.5	N/A	N/A	6.3	3.0
RH-E	RH-E	V	No	31	700	44.5	N/A	N/A	6.3	3.0
H-02	RH-02	V	No	31	700	111.3	N/A	N/A	63.0	1.5

Stack Number	Serving Unit Number(s) from Table 2-A	Orientation (H=Horizontal V=Vertical)	Rain Caps (Yes or No)	Height Above Ground (ft)	Temp. (F)	Flow Rate		Moisture by Volume (%)	Velocity (ft/sec)	Inside Diameter (ft)
						(acfs)	(dscfs)			
H-01	H-01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
G-01	G-01	V	No	160	1800	297.2	N/A	N/A	56.0	2.6
EG-01 ¹	EG-01	V	No	6	710.3	-	-	-	59.4	0.23
EG-02 ¹	EG-02	V	No	4	710.3	-	-	-	59.4	0.23
F-01	F-01	V	No	165	1800	13.0	N/A	N/A	66.0	0.5
F-02	F-02	V	No	165	1800	13.0	N/A	N/A	66.0	0.5

¹ Temperature and velocity are based on modeling guidelines for diesel engines.

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

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

Stack No.	Unit No.(s)	Total HAPs		Formaldehyde ☑ HAP or ☐ TAP		Methanol HAP or ☐ TAP		Acetaldehyde ☑ HAP or ☐ TAP		Acrolein HAP or ☐ TAP		Benzene HAP or ☐ TAP		Toluene HAP or ☐ TAP		Xylenes HAP or ☐ TAP		Trimethylpentane ☑ HAP or ☐ TAP		n-Hexane HAP or ☐ TAP		Styrene ☑ HAP or ☐ TAP	
				lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
C-01	C-01	0.97	4.23	0.59	2.6	0.039	0.17	0.062	0.27	0.034	0.15	-	-	0.023	0.10	0.034	0.15	0.073	0.32	0.041	0.18	0.066	0.29
C-02	C-02	0.97	4.23	0.59	2.6	0.039	0.17	0.062	0.27	0.034	0.15	-	-	0.023	0.10	0.034	0.15	0.073	0.32	0.041	0.18	0.066	0.29
C-03	C-03	0.97	4.23	0.59	2.6	0.039	0.17	0.062	0.27	0.034	0.15	-	-	0.023	0.10	0.034	0.15	0.073	0.32	0.041	0.18	0.066	0.29
C-04	C-04	0.97	4.23	0.59	2.6	0.039	0.17	0.062	0.27	0.034	0.15	-	-	0.023	0.10	0.034	0.15	0.073	0.32	0.041	0.18	0.066	0.29
C-05	C-05	0.97	4.23	0.59	2.6	0.039	0.17	0.062	0.27	0.034	0.15	-	-	0.023	0.10	0.034	0.15	0.073	0.32	0.041	0.18	0.066	0.29
C-06	C-06	0.97	4.23	0.59	2.6	0.039	0.17	0.062	0.27	0.034	0.15	-	-	0.023	0.10	0.034	0.15	0.073	0.32	0.041	0.18	0.066	0.29
C-07	C-07	0.97	4.23	0.59	2.6	0.039	0.17	0.062	0.27	0.034	0.15	-	-	0.023	0.10	0.034	0.15	0.073	0.32	0.041	0.18	0.066	0.29
C-08	C-08	0.97	4.23	0.59	2.6	0.039	0.17	0.062	0.27	0.034	0.15	-	-	0.023	0.10	0.034	0.15	0.073	0.32	0.041	0.18	0.066	0.29
C-09	C-09	0.97	0.24	0.59	0.15	0.039	0.01	0.062	0.015	0.034	0.0086	-	-	0.023	0.0057	0.034	0.0086	0.073	0.018	0.041	0.01	0.066	0.017
C-10	C-10	0.046	0.20	0.043	0.19	-	-	0.00055	0.0024	0.00037	0.0016	0.0013	0.0058	0.00032	0.0014	-	-	-	-	-	-	-	-
C-11	C-11	0.046	0.20	0.043	0.19	-	-	0.00055	0.0024	0.00037	0.0016	0.0013	0.0058	0.00032	0.0014	-	-	-	-	-	-	-	-
C-12	C-12	1.34	0.34	0.79	0.20	0.050	0.013	0.082	0.021	0.046	0.011	0.025	0.0063	0.032	0.0080	0.046	0.011	0.098	0.025	0.041	0.010	0.087	0.022
C-13	C-13	1.68	7.37	1.01	4.44	0.064	0.28	0.11	0.47	0.059	0.26	0.032	0.14	0.041	0.18	0.057	0.25	0.13	0.55	0.041	0.31	0.11	0.49
C-13A	C-13A	0.51	2.23	0.26	1.15	0.053	0.23	0.046	0.20	0.030	0.13	0.082	0.36	0.037	0.16	-	-	-	-	-	-	-	-
C-17A	C-17A	0.51	2.23	0.26	1.15	0.053	0.23	0.046	0.20	0.030	0.13	0.082	0.36	0.037	0.16	-	-	-	-	-	-	-	-
C-18A	C-18A	0.51	2.23	0.26	1.15	0.053	0.23	0.046	0.20	0.030	0.13	0.082	0.36	0.037	0.16	-	-	-	-	-	-	-	-
C-19	C-19	0.51	2.23	0.26	1.15	0.053	0.23	0.046	0.20	0.030	0.13	0.082	0.36	0.037	0.16	-	-	-	-	-	-	-	-
C-20	C-20	0.51	2.23	0.26	1.15	0.053	0.23	0.046	0.20	0.030	0.13	0.082	0.36	0.037	0.16	-	-	-	-	-	-	-	-
C-21	C-21	0.51	2.23	0.26	1.15	0.053	0.23	0.046	0.20	0.030	0.13	0.082	0.36	0.037	0.16	-	-	-	-	-	-	-	-
C-22	C-22	0.51	2.23	0.26	1.15	0.053	0.23	0.046	0.20	0.030	0.13	0.082	0.36	0.037	0.16	-	-	-	-	-	-	-	-
EC-1	EC-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EC-2	EC-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EC-3	EC-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-01	B-01	0.11	0.47	0.034	0.15	0.043	0.19	0.030	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-02	B-02	0.11	0.47	0.034	0.15	0.043	0.19	0.030	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH-W	RH-W	0.046	0.20	-	-	-	-	-	-	-	-	-	-	-	-	0.023	0.10	-	-	-	-	-	-
RH-E	RH-E	0.023	0.10	-	-	-	-	-	-	-	-	-	-	-	-	0.023	0.10	-	-	-	-	-	-
H-02	H-02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H-01	H-01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G-01	G-01	0.14	0.63	-	-	-	-	-	-	-	-	0.091	0.40	0.053	0.23	-	-	-	-	-	-	-	-
N/A	TK-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N/A	TK-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Stack No.	Unit No.(s)	Total HAPs		Formaldehyde ☑ HAP or ☐ TAP		Methanol ☑ HAP or ☐ TAP		Acetaldehyde ☑ HAP or ☐ TAP		Acrolein ☑ HAP or ☐ TAP		Benzene ☑ HAP or ☐ TAP		Toluene ☑ HAP or ☐ TAP		Xylenes ☑ HAP or ☐ TAP		Trimethylpentane ☑ HAP or ☐ TAP		n-Hexane ☑ HAP or ☐ TAP		Styrene ☑ HAP or ☐ TAP	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
F-01 ¹	F-01 ¹	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-02 ¹	F-02 ¹	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N/A	ME9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N/A	FG-01**	0.13	0.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.096	0.42	-	-
N/A	L-01	0.74	0.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N/A	L-02	0.74	0.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N/A	CT-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AM-01	AM-01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EG-01	EG-01	0.039	0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EG-02	EG-02	0.0055	0.0080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-02 ²	F-02 ²	21.41	0.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSM-VP	SSM-VP	25.53	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSM-CB	SSM-CB	2.08	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSM-PP	SSM-PP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSM-VRU	SSM-VRU	7.81	0.86	-	-	-	-	-	-	-	-	1.50	0.16	0.60	0.066	0.070	0.0077	-	-	5.60	0.61	-	-
SSM/M	SSM/M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FG-SEP	FG-SEP	0.03	0.12	-	-	-	-	-	-	-	-	0.00	0.02	-	-	-	-	-	-	0.01	0.06	-	-
FUG-02	FUG-02	0.00205	0.00898	-	-	-	-	-	-	-	-	0.00033	0.00146	-	-	-	-	-	-	0.00013	0.00056	-	-
Totals:		74.31	62.49	9.14	34.32	0.92	3.65	1.12	4.33	0.62	2.39	2.23	3.26	1.19	2.41	0.53	1.68	0.88	3.15	6.16	2.86	0.79	2.85

¹ Pilot-only emissions are represented here for these units² These emissions are SSM HAPs from Flare F-02

*** FG-01 includes fugitive emissions from Acid Gas Cooling (FUG-AGC).

Table 2-J: Fuel

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

Unit No.	Fuel Type (low sulfur Diesel, ultra low sulfur diesel, Natural Gas, Coal, ...)	Fuel Source: purchased commercial, pipeline quality natural gas, residue gas, raw/field natural gas, process gas (e.g. SRU tail gas) or other	Specify Units				
			Lower Heating Value	Hourly Usage	Annual Usage	% Sulfur	% Ash
C-01	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	9 Mscf	81 MMscf	5 gr/100 scf	N/A
C-02	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	9 Mscf	81 MMscf	5 gr/100 scf	N/A
C-03	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	9 Mscf	81 MMscf	5 gr/100 scf	N/A
C-04	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	9 Mscf	81 MMscf	5 gr/100 scf	N/A
C-05	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	9 Mscf	81 MMscf	5 gr/100 scf	N/A
C-06	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	9 Mscf	81 MMscf	5 gr/100 scf	N/A
C-07	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	9 Mscf	81 MMscf	5 gr/100 scf	N/A
C-08	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	9 Mscf	4.62 MMscf	5 gr/100 scf	N/A
C-09	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	9 Mscf	4.62 MMscf	5 gr/100 scf	N/A
C-10	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	10 Mscf	6.16 MMscf	5 gr/100 scf	N/A
C-11	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	10 Mscf	6.16 MMscf	5 gr/100 scf	N/A
C-12	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	10 Mscf	6.16 MMscf	5 gr/100 scf	N/A
C-13A	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	20 Mscf	138 MMscf	5 gr/100 scf	N/A
C-17A	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	9 Mscf	81 MMscf	5 gr/100 scf	N/A
C-18A	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	10 Mscf	74 MMscf	5 gr/100 scf	N/A
C-19	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	10 Mscf	74 MMscf	5 gr/100 scf	N/A
C-20	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	9 Mscf	81 MMscf	5 gr/100 scf	N/A
C-21	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	9 Mscf	81 MMscf	5 gr/100 scf	N/A

Unit No.	Fuel Type (low sulfur Diesel, ultra low sulfur diesel, Natural Gas, Coal, ...)	Fuel Source: purchased commercial, pipeline quality natural gas, residue gas, raw/field natural gas, process gas (e.g. SRU tail gas) or other	Specify Units				
			Lower Heating Value	Hourly Usage	Annual Usage	% Sulfur	% Ash
C-22	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	9 Mscf	81 MMscf	5 gr/100 scf	N/A
B-01	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	100 Mscf	876 MMscf	5 gr/100 scf	N/A
B-02	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	100 Mscf	876 MMscf	5 gr/100 scf	N/A
RH-W	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	100 Mscf	876 MMscf	5 gr/100 scf	N/A
RH-E	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	3.5 Mscf	30.7 MMscf	5 gr/100 scf	N/A
H-02	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	0.31 Mscf	2.7 MMscf	5 gr/100 scf	N/A
H-01	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	1.25 Mscf	11 MMscf	5 gr/100 scf	N/A
F-01	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	0.57 Mscf	5 MMscf	5 gr/100 scf	N/A
F-02	Natural Gas	Pipeline Quality Natural Gas	1,000 Btu/scf	2.63 Mscf	5 MMscf	5 gr/100 scf	N/A

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

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

[illegible]

Table 2-L2: Liquid Storage Tank Data Codes Reference Table

Roof Type	Seal Type, Welded Tank Seal Type		Seal Type, Riveted Tank Seal Type		Roof, Shell Color	Paint Condition
FX: Fixed Roof	Mechanical Shoe Seal	Liquid-mounted resilient seal	Vapor-mounted resilient seal	Seal Type	WH: White	Good
IF: Internal Floating Roof	A: Primary only	A: Primary only	A: Primary only	A: Mechanical shoe, primary only	AS: Aluminum (specular)	Poor
EF: External Floating Roof	B: Shoe-mounted secondary	B: Weather shield	B: Weather shield	B: Shoe-mounted secondary	AD: Aluminum (diffuse)	
P: Pressure	C: Rim-mounted secondary	C: Rim-mounted secondary	C: Rim-mounted secondary	C: Rim-mounted secondary	LG: Light Gray	
					MG: Medium Gray	
					BL: Black	
					OT: Other (specify)	

Note: 1.00 bbl = 0.159 M³ = 42.0 gal

Note: $1.00 \text{ bbl} = 0.159 \text{ M}^3 = 42.0 \text{ gal}$

Table 2-M: Materials Processed and Produced (Use additional sheets as necessary.)[illegible]

Table 2-N: CEM Equipment

Enter Continuous Emissions Measurement (CEM) Data in this table. If CEM data will be used as part of a federally enforceable permit condition, or used to satisfy the requirements of a state or federal regulation, include a copy of the CEM's manufacturer specification sheet in the Information Used to Determine Emissions attachment. Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary.

[illegible]

Table 2-O: Parametric Emissions Measurement Equipment

Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary.

[illegible]

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.	GWPs ¹	1	298	25	22,800	footnote 3												
C-01	mass GHG	3866.9		0.064													3867.0	-
	CO ₂ e	3866.9		1.3													-	3868.2
C-02	mass GHG	3331.5		0.056													3331.5	-
	CO ₂ e	3331.5		1.18													-	3332.7
C-03	mass GHG	3807.4		0.063													3807.5	-
	CO ₂ e	3807.4		1.32													-	3808.7
C-04	mass GHG	3807.4		0.063													3807.5	-
	CO ₂ e	3807.4		1.32													-	3808.7
C-05	mass GHG	1844.2		0.031													1844.2	-
	CO ₂ e	1844.2		0.65													-	1844.9
C-06	mass GHG	3093.5		0.052													3093.6	-
	CO ₂ e	3093.5		1.09													-	3094.6
C-07	mass GHG	2082.2		0.035													2082.2	-
	CO ₂ e	2082.2		0.74													-	2082.9
C-08	mass GHG	4104.9		0.068													4104.9	-
	CO ₂ e	4104.9		1.4													-	4106.3
C-09	mass GHG	270.0		0.0051													270.0	-
	CO ₂ e	270.0		0.13													-	270.1
C-10	mass GHG	421.0		0.0079													421.0	-
	CO ₂ e	421.0		0.20													-	421.2
C-11	mass GHG	421.0		0.0079													421.0	-
	CO ₂ e	421.0		0.20													-	421.2
C-12	mass GHG	421.0		0.0079													421.0	-
	CO ₂ e	421.0		0.20													-	421.2
C-13	mass GHG	6722.5		0.11													6722.6	-
	CO ₂ e	6722.5		2.4													-	6724.8
C-13A	mass GHG	178.5		0.0030													178.5	-
	CO ₂ e	178.5		0.063													-	178.5
C-17A	mass GHG	2677.1		0.045													2677.1	-
	CO ₂ e	2677.1		0.945													-	2678.0
C-18A	mass GHG	2439.1		0.041													2439.2	-
	CO ₂ e	2439.1		0.86													-	2440.0
C-19	mass GHG	1368.3		0.023													1368.3	-
	CO ₂ e	1368.3		0.48													-	1368.8
C-20	mass GHG	3985.9		0.066													3985.9	-
	CO ₂ e	3985.9		1.4													-	3987.3
C-21	mass GHG	2915.1		0.049													2915.1	-
	CO ₂ e	2915.1		1.03													-	2916.1
C-22	mass GHG	2141.7		0.036													2141.7	-
	CO ₂ e	2141.7		0.76													-	2142.4

Unit No.	GWP ¹	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 ³	Total CO ₂ e ton/yr ⁵
B-01	mass GHG	47402.2		0.79												47403.0	-
	CO ₂ e	47402.2		16.6												-	47418.8
B-02	mass GHG	47402.2		0.79												47403.01	-
	CO ₂ e	47402.2		16.6												-	47418.81
RH-W	mass GHG	5211.4		0.087												5211.5	-
	CO ₂ e	5211.4		2.18												-	5213.6
RH-E	mass GHG	1659.1		0.028												1659.108	-
	CO ₂ e	1659.1		0.59												-	1659.668
H-02	mass GHG	146.1		0.0020												146.1	-
	CO ₂ e	146.1		0.042												-	146.1
H-01	mass GHG	592.5		0.010												592.5	-
	CO ₂ e	592.5		0.21												-	592.7
F-01 ⁶	mass GHG	297.5		0.0050												297.5	-
	CO ₂ e	297.5		0.11												-	297.6
F-02 ⁶	mass GHG	297.5		0.0050												297.5	-
	CO ₂ e	297.5		0.11												-	297.6
FG-01*	mass GHG	131.9		1587.22												1719.1	-
	CO ₂ e	131.9		39680.51												-	39812.4
F-01 ⁷	mass GHG	18126.5	0.0431	108.79												18235.4	-
	CO ₂ e	18126.5	12.9	2719.84												-	20859.2
F-02 ⁷	mass GHG	7603.4	0.014	31.9												7635.3	-
	CO ₂ e	7603.4	4.22	797.6												-	8405.2
SSM-VP	mass GHG	0.00036		3.5												3.5	-
	CO ₂ e	0.00036		86.8												-	86.8
SSM-CB	mass GHG	0.49		4.96												5.46	-
	CO ₂ e	0.49		124.10												-	124.60
SSM-PP	mass GHG	-		0.00010												0.00010	-
	CO ₂ e	-		0.0025												-	0.0025
SSM-VRU	mass GHG	0.051		0.16												0.22	-
	CO ₂ e	0.076		4.1												-	4.18
SSM/M	mass GHG	-		-												-	-
	CO ₂ e	-		-												-	-
L-01/L-02	mass GHG	0.0077		0.0069												0.015	-
	CO ₂ e	0.0077		0.17												-	0.18
FUG-02	mass GHG	0.70908		0.4705												1.1796	-
	CO ₂ e	0.70908		11.76												-	12.47
FG-SEP**	mass GHG	0.70908		0.4705												1.1796	-
	CO ₂ e	0.70908		11.76												-	12.47
Total	mass GHG															180511.3	-
	CO ₂ e															-	222279.1

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.

⁶ Pilot-only emissions are represented here for these units

⁷ These emissions are SSM from Flares F-01 & F-02

* FG-01 includes fugitive emissions from Acid Gas Cooling (FUG-AGC).

** FG-01 includes fugitive emissions from Acid Gas Cooling (FUG-AGC).

Section 3

Application Summary

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

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

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

The Eunice Gas Processing Plant (Eunice) is owned by Versado Gas Processors, LLC and operated by Targa Midstream Services, LLC (Targa) and is located in Lea County, New Mexico. The facility is currently authorized to operate under NSR Permit No. 0067-M11-R8 and Title V Operating Permit No. P-109-R3M1. The Eunice facility processes natural gas through inlet separation, dehydration, acid gas removal, and separation of methane from natural gas liquids. With this application, Targa seeks to renew the current Title V permit, P-109-R3M1. This Title V renewal application is being submitted within twelve months of the current Title V permit expiration date of November 24, 2024, in accordance with 20.2.70.300.B.2. NMAC.

Targa is also submitting this application pursuant to 20.2.70.404.C.(1) NMAC, which requires a Title V Significant Permit Modification application within twelve (12) months after commencing operation. Targa is submitting a Title V Significant Permit Modification application so that the Title V Permit will incorporate changes to the facility that were incorporated in the following NSR Permits: 0067-M11-R4, 0067-M11-R5, 0067-M11-R6, 0067-M11-R7, and 0067-M11-R8. Below is a discussion of the Title V permitting actions since the most recent renewal and the updates made in the NSR revision applications.

Title V Operating Permit No. P-109-R3M1 Significant Modification

The following are changes made in the application for Operating Permit No. P-109-R3M1:

- Significant Modification to address and incorporate NSR actions 0067-M9R2, 0067-M10, 0067-M11, and 0067-M11-R1.

NSR Permit 0067-M11-R4 Revisions

The following are changes made in the application for NSR Permit 0067-M11-R4:

- Permit increased fugitive component emissions for the addition of redundant acid gas cooling (FG-01; FUG-AGC).

NSR Permit 0067-M11-R5 Revisions

The following are changes made in the application for NSR Permit 0067-M11-R5:

- Administrative Revision for a like-kind engine replacement.

NSR Permit 0067-M11-R6 Revisions

The following are changes made in the application for NSR Permit 0067-M11-R6:

- Permit authorized an additional inlet separator with associated gas and liquid fugitive components (FG-SEP)
- Permit increased downtime associated with the VRU controlling the tanks (TK-1 and TK-2) and condensate loading (L-01 and L-02) during SSM events (VRU-SSM).

NSR Permit 0067-M11-R7 Revisions

The following are changes made in the application for NSR Permit 0067-M11-R7:

- Permit the replacement of the 3rd Stage Fin-Fan Coolers and the installation of a heat exchanger on the amine system (FG-02).

NSR Permit 0067-M11-R8 Revisions

The following are changes made in the application for NSR Permit 0067-M11-R8:

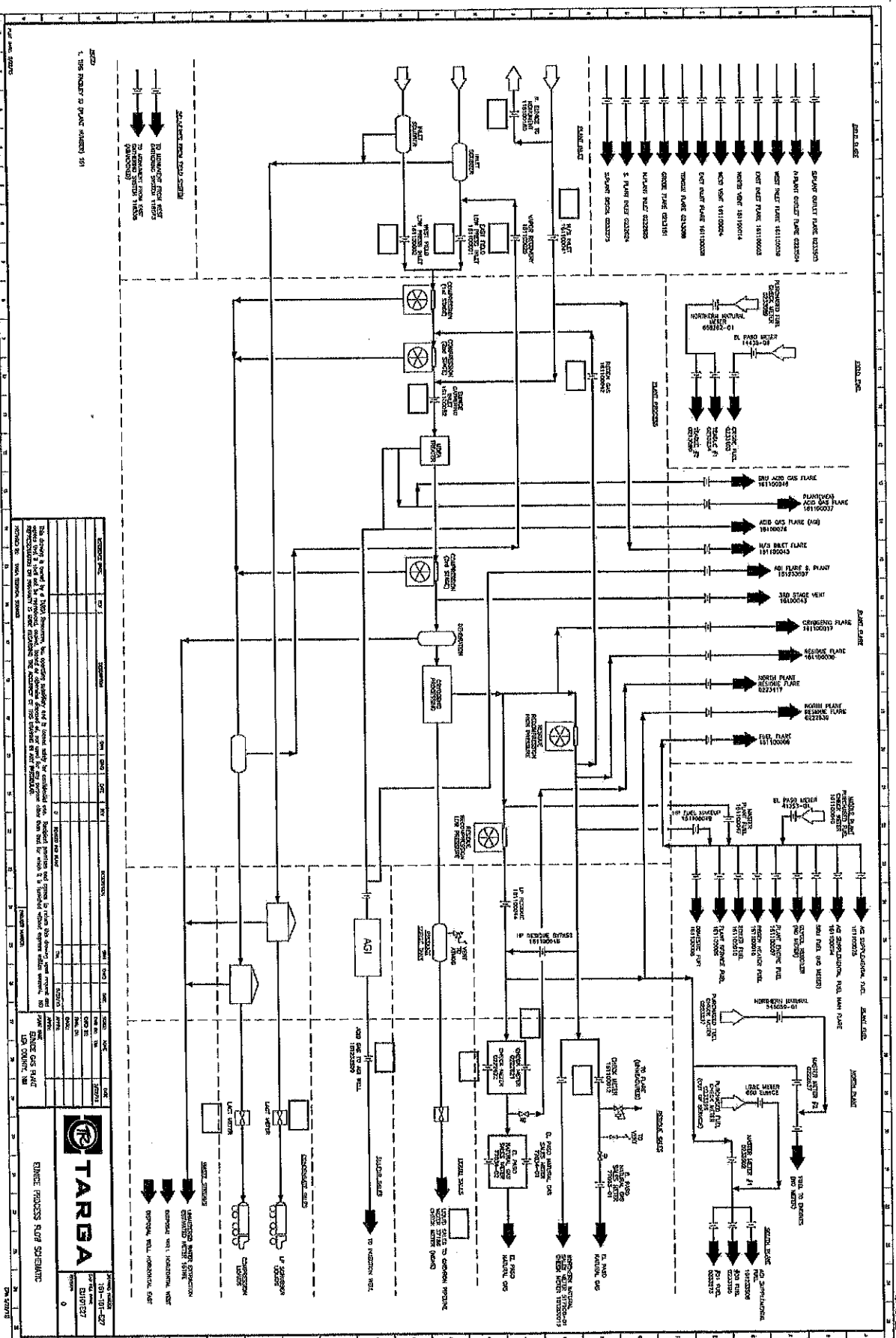
- Administrative Revision for a like-kind engine replacement.

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 included in this section.

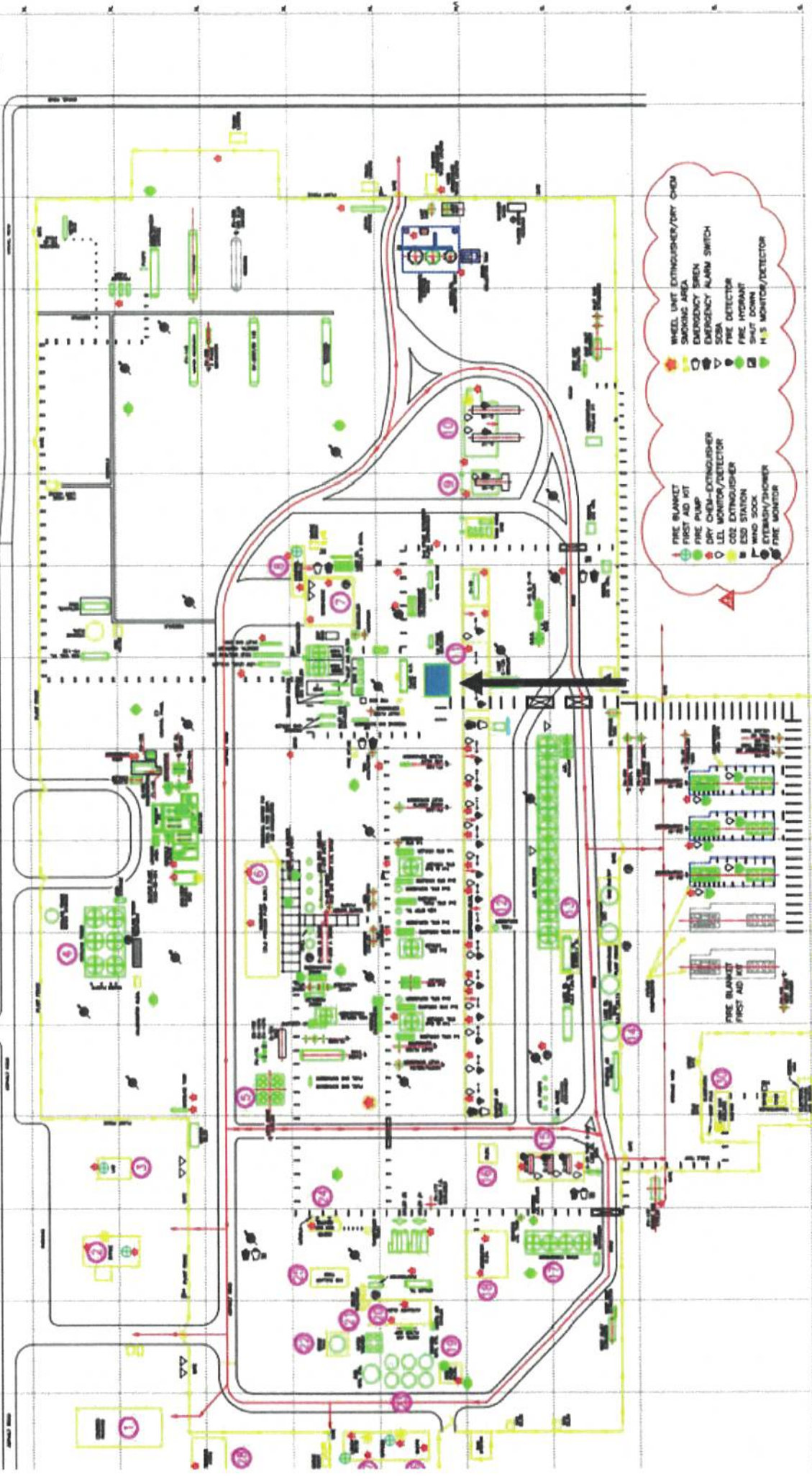
[illegible][illegible]

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 of the facility is included in this section.



- WHEEL UNIT EXTINGUISHER/DRY CHEM
- SMOKING AREA
- EMERGENCY SPREN
- EMERGENCY ALARM SWITCH
- SSBA
- CO2 DETECTOR
- FIRE HYDRANT
- SHUT DOWN
- H-3 MONITOR/DETECTOR
- FIRE BLANKET
- FIRST AID KIT
- DRY CHEM-EXTINGUISHER
- LEL MONITOR/DETECTOR
- CO2 EXTINGUISHER
- ESD STATION
- WIND SOOK
- EYEWASH/SHOWER
- FIRE MONITOR

TARGA		PIPING & INSTRUMENT DIAGRAM		PLOT PLAN		EUNICE MIDDLE GAS PLANT	
NO.	REV.	DATE	BY	CHKD.	APP'D.	NO.	REV.
1		11/14/14	WJ	WJ		1	
2		11/14/14	WJ	WJ		2	
3		11/14/14	WJ	WJ		3	
4		11/14/14	WJ	WJ		4	
5		11/14/14	WJ	WJ		5	
6		11/14/14	WJ	WJ		6	
7		11/14/14	WJ	WJ		7	
8		11/14/14	WJ	WJ		8	
9		11/14/14	WJ	WJ		9	
10		11/14/14	WJ	WJ		10	
11		11/14/14	WJ	WJ		11	
12		11/14/14	WJ	WJ		12	
13		11/14/14	WJ	WJ		13	
14		11/14/14	WJ	WJ		14	
15		11/14/14	WJ	WJ		15	
16		11/14/14	WJ	WJ		16	
17		11/14/14	WJ	WJ		17	
18		11/14/14	WJ	WJ		18	
19		11/14/14	WJ	WJ		19	
20		11/14/14	WJ	WJ		20	
21		11/14/14	WJ	WJ		21	
22		11/14/14	WJ	WJ		22	
23		11/14/14	WJ	WJ		23	
24		11/14/14	WJ	WJ		24	
25		11/14/14	WJ	WJ		25	

This drawing is prepared by TARGA Engineering, Inc. and is intended for informational use only. It is not to be used for construction or for any other purpose without the written consent of TARGA Engineering, Inc. The accuracy of the information shown on this drawing is not guaranteed. TARGA Engineering, Inc. is not responsible for any errors or omissions on this drawing. The user of this drawing is advised to verify the information shown on this drawing with the original data and specifications. TARGA Engineering, Inc. is not responsible for any errors or omissions on this drawing. The user of this drawing is advised to verify the information shown on this drawing with the original data and specifications.

Section 6

All Calculations

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

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

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

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

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

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

Significant Figures:

- A. All emissions standards are deemed to have at least two significant figures, but not more than three significant figures.
- B. At least 5 significant figures shall be retained in all intermediate calculations.
- C. In calculating emissions to determine compliance with an emission standard, the following rounding off procedures shall be used:

- (1) If the first digit to be discarded is less than the number 5, the last digit retained shall not be changed;
- (2) If the first digit discarded is greater than the number 5, or if it is the number 5 followed by at least one digit other than the number zero, the last figure retained shall be increased by one unit; and
- (3) If the first digit discarded is exactly the number 5, followed only by zeros, the last digit retained shall be rounded upward if it is an odd number, but no adjustment shall be made if it is an even number.
- (4) The final result of the calculation shall be expressed in the units of the standard.

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

Heaters

Emissions of NO_x, CO, VOC, particulates, and greenhouse gases from the heaters were calculated using emission factors from EPA AP-42 Tables 1.4-1 and 1.4-2. It was assumed that TSP = PM₁₀ = PM_{2.5}. SO₂ emissions are based on the conversion of H₂S to SO₂ during the combustion process and a 1:1 molar ratio conversion of H₂S to SO₂. The fuel gas concentration was based on 60 ppm of H₂S. HAP emissions were calculated using GRI-HAPCalc 3.01.

Engines

For the Clark and Cooper-Bessemer engines, 1994 test data plus a safety factor was used to determine NO_x, CO, and VOC emissions. SO₂ emissions were based on fuel H₂S content of 0.25 gr H₂S/100 scf. Particulate emissions were based on AP-42 factors.

For the Waukesha engines, catalyst manufacturer's data was used to determine NO_x, CO, and VOC emissions. SO₂ emissions were based on fuel H₂S content of 0.25 gr H₂S/100 scf. Particulate emissions were based on AP-42 factors.

For engines C-09, C-10, C-11 and C-12, the hourly emissions were carried forward from previous permits. The tons per year emissions were based on 500 hours of operation per year.

For all engines, HAPS were calculated using GRI-HAPCalc.

Dehydrator

Following changes authorized by NSR Permit 0067-M6, dehydrator still vent off gas is now routed through an existing VRU. Emissions from the dehy vent are now zero, since it will be routed to a VRU as a closed-loop system.

Diesel Generator (EG-01)

Manufacturer data for NO_x, CO, HC, and PM was used. Emission factors for HAP emissions and SO₂ were obtained from AP-42 Section 3.4, *Large Stationary Diesel and All Stationary Dual-Fuel Engines*, (10/96), were used to calculate potential emissions for the new diesel generator. Refer to the attached calculations for detailed documentation of emission factors.

Diesel Air Compressor (EG-02)

Manufacturer data for NO_x, CO, HC, and PM was used. Emission factors for HAP emissions and SO₂ were obtained from AP-42 Section 3.3, *Gasoline and Diesel Industrial Engines*, (10/96), were used to calculate potential emissions for the new diesel compressor. Refer to the attached calculations for detailed documentation of emission factors.

Methanol, Gasoline and Diesel Tanks (ME9, ME10, ME11, ME12, ME13)

Tanks 4.0.9d was used to estimate the working and breathing emissions from the methanol, gasoline and diesel tanks. The output is included in Section 7.

SSM Calculations

Pump Purging (Unit SSM-PP)

Inlet, outlet, and bore dimensions were used to calculate volumes of gas purged. A 15% safety factor was added to the volumes of gas purged. The total volumes were converted to weight values and the representative Y-grade gas analysis was used to determine the VOC emissions. Pump purges are planned maintenance activities. Emissions from the pump purging activities are calculated based on a mass balance as follows:

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of Gas Vented (scf/yr)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

Vessel Purging (Unit SSM-VP)

Emissions from purging vessels were estimated using the volumes of the piping and vessel and an average pressure and temperature during purging. Vessel purges are planned maintenance activities. A total volume of gas being purged is obtained for three separate groups which each have their own gas analyses (Inlet, rich, and propane gas). The volume of gas is converted to a weight value and the pounds of VOC and H₂S are calculated. The volume of the vessel was calculated using the following equations:

$$V_2 = \frac{P_1 V_1 T_2}{P_2 T_1}$$

Where:

V₂ = Total volume of the gas at atmospheric pressure and temperature

P₂ = Atmospheric pressure

T₂ = Atmospheric pressure

V₁ = Total volume of the pressurized gas

P₁ = Vessel pressure

T₁ = Vessel temperature

Once the volume from the vessel was calculated, the following equation was used to calculate the emissions from vessel blowdowns:

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of Gas Vented (scf/yr)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

Plant Shutdown to Inlet Flare (F-02)

Targa plant shutdown records and flare design capacities were used to determine an annual flow rate and blowdown volume to each flare. A 15% safety factor was added to this blowdown volume. The inlet analyses sampled October 4, 2013 was used to calculate emissions of SO₂, H₂S, and VOC from the flare. A 98% destruction efficiency of H₂S and VOC and a 1:1 molar ratio conversion of H₂S to SO₂ was assumed. Emissions of NO_x and CO were calculated using emission factors from the *Texas Natural Resource Conservation Commission's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers* (RG-109).

Title V Operating Permit No. P-109-R3M1 Significant Modification:

Section 6.1 – Steady State Addition

Condensate Tanks (TK-1 and TK-2)

The condensate tanks at the facility are control by a VRU which is 100% efficient when operating. Downtime emissions for the VRU are accounted for under SSM emissions. The total facility throughput of condensate is 7,080,395 gal/yr.

Truck Loading (L-01 and L-02)

U.S. EPA AP-42 emission factors are used to estimate emissions from condensate and produced water truck loading. The loading method will be submerged loading, dedicated normal service. The atmospheric tank condensate loading and produced water loading loss emission factors are calculated using the following equation.

$$L_L = \frac{12.46 \times SPM}{T}$$

where

L_L = loading loss (lb/1,000 gal loaded)

S = saturation factor (from AP-42, Section 5.2, Table 5.2-1) P

= true vapor pressure of loaded liquid (psia)

M = molecular weight of vapor (lb/lb-mol)

T = temperature of bulk liquid (°R = °F + 460)

This emission factor is multiplied by the maximum hourly loading rate and the annual production rates to determine hourly and annual emissions, respectively. The VOC emission estimates take into account the VOC content of the condensate.

Speciated emissions are based on the condensate analysis from the ProMax output. The total combined loadout for L-01 and L-02 will not exceed 7,080,395 gal/yr.

Haul Road Emissions (HAUL)

Per guidance listed above on haul road calculations, the facility transports product out of the facility and has PER of less than 0.5 tpy. The haul roads at the facility are an exempt unit. Below shows the calculation method used in determining the PER for the haul roads. The calculations are also attached to this section.

This unit is being added to reflect the particulate emissions produced from hauling condensate out of the facility by truck. Emissions were calculated using AP-42 Table 13.2.2-1, Figure 13.2.2-1, and equations 1a and 2 from 13.2.2.

Compressor Fugitives (FG-01)

Additional fugitive emissions were added to the existing fugitives at the facility. Emissions from new fugitive equipment leaks are calculated using fugitive component counts, the VOC content of each stream for which component counts are placed in service, and emission factors for each component type taken from the EPA Protocol for Equipment Leak Emission Estimates (11/95) Table 2-4. Also as a conservative estimate, Targa is assuming 100% VOC content in components in liquid service.

Section 6.2 – Updated SSM Calculations

Emissions from the following SSM activities are being accounted for in this application:

- Compressor blowdowns to atmosphere (Unit SSM-CB)
- VRU downtime (Unit SSM-VRU)
- VOC upset/malfunction emissions (Unit SSM/M)

These above SSM emissions are in addition to the permitted AGI SSM to acid gas flare F-01. Unchanged emissions are not included here. This application only seeks to add existing SSM emissions to the permit for the facility.

Compressor Blowdowns to Atmosphere (Unit SSM-CB)

It was assumed that there will be thirty blowdowns per year per compressor to the atmosphere. The volume of gas in each compressor was calculated using dimensions of the compressor components and the pressure and temperature of the gas inside the components. A yearly release volume is calculated by multiplying the unit release volume by 30 blowdowns per year, plus a 15% safety factor. The yearly combined compressor release volume is the sum of yearly releases for all compressors. The residue and inlet gas analyses were used to calculate the annual and hourly blowdown emissions. Emissions from the compressor activities are calculated based on a mass balance as follows:

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of Gas Vented (scf/yr)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

VRU Downtime (Unit SSM-VRU)

ProMax was used to calculate emissions from the tanks while the VRU is down. The VRU is 100% efficient while operating. For downtime (maintenance emissions), we assume the VRU operates 96.25% of the time with 3.75% downtime. The flash emissions are based on the throughput of 7,080,395 gal/year of condensate. The working and breathing losses for the tanks are based on 7,080,395 gal/yr per tank. The condensate analysis labeled North Booster was used in the ProMax run. The following equation was used to calculate the emissions from the VRU Downtime:

Maximum Uncontrolled Annual Emissions (tpy) = [ProMax Hourly Emissions] x [3.75 (%)] x [8,760 (hrs/yr)] / [2,000 (lb/ton)]

Please note that VRU downtime is the SSM emissions associated with the VRU controlling the condensate tanks. The TEG dehydrator has two VRUs to control emissions from the unit and is a closed system.

Upset/Malfunction Emissions (Unit SSM/M)

Targa has elected to Implement Section 2.e. of the "Implementation Guidance for Permitting SSM Emissions and Excess Emissions". The requested upset/malfunction emissions are in addition to the calculated SSM emissions.

AGI SSM to Acid Gas Flare F-01

When the AGI is inoperable, as it is during maintenance or upset conditions, acid gas will be flared for limited periods at unit F-01. SSM emissions from the AGI system, resulting in flaring, is included in NSR Permit 0067-M10.

Short term emissions in this application are based on the assumed hourly maximum flaring volume and H₂S and heat content of the gas. Long term emissions of H₂S and SO₂ are defined by an envelope bounded by the H₂S concentration and flare gas with assist gas. Long-term emissions are calculated based on the worst-case SSM hours and maximum volume and H₂S and heat content.

NSR Permit 0067-M11-R4 Revisions:**Fugitives Associated with Additional Components Installation (Unit FG-01; FUG-AGC)**

The emissions from fugitive components associated with this project are calculated using emission factors from Table 2-4 of the EPA Protocol for Equipment Leak Emission Estimates, November 1995. Representative gas analyses for the inlet gas, residue gas, and NGLs are used.

NSR Permit 0067-M11-R6 Revisions:**Fugitives Associated with Additional Inlet Separator Installation (Unit: FUG-SEP)**

The emissions from fugitive components associated with this project are calculated using emission factors from Table 2-4 of the EPA Protocol for Equipment Leak Emission Estimates, November 1995. A ProMax simulation was used to predict the hourly and annual VOC and HAPs percentages for the fugitive calculations.

SSM Emissions Associated with VRU Downtime (VRU-3)

Emissions for TK-1, TK-2, L-01, and L-02 are debottlenecked for PSD purposes (see Section 12) but will not require an increase in permitted emissions or throughput. VRU-3 consists of redundant VRUs. Therefore, routine emissions from TK-1 and TK-2 are assumed to be 100% captured. Emissions from L-01 and L-02 are assumed to be 70% captured due to vapor balance with the tanks. With this authorization, Targa reduced the authorized downtime for VRU maintenance from 3.75% annually to 2.5% annually. A ProMax simulation was used to predict the hourly and annual emissions from the two tanks (TK-1 and TK-2) and condensate loading (L-01 and L-02) at the facility.

Natural Gas Liquid Loadout (Unit: L-NGL, exempt pursuant 20.2.72.202.B.5 NMAC)

Natural gas liquids are loaded out using a pressurized truck. The emissions from natural gas liquid loadout, associated with an unrelated project, are a result of pressurized loadout with residual gas released during hose disconnects. A site specific analysis of the natural gas liquids was used to determine the molecular weight.

NSR Permit 0067-M11-R7 Revisions:**Fugitives Associated with the 3rd Stage Cooling Unit Replacement (Unit: FUG-02)**

The emissions from fugitive components associated with this project are calculated using emission factors from Table 2-4 of the EPA Protocol for Equipment Leak Emission Estimates, November 1995. A ProMax simulation was used to predict the hourly and annual VOC and HAPs percentages for the fugitive calculations.

Section 6.a

Green House Gas Emissions

(Submitting under 20.2.70, 20.2.72 20.2.74 NMAC)

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

Regeneration Gas Heater

Emission Unit: RH-W
 Source Description: Regeneration Gas Heater
 Manufacturer: Petrotherm

Fuel Consumption

Annual fuel usage: 87.6 MMscf/yr Operating capacity (MMBtu/hr) / Fuel heat value (Btu/scf) * Operating hours (hr/yr)
 Hourly fuel usage: 0.010 MMscf/hr Operating capacity (MMBtu/hr) / Fuel heat value (Btu/scf)
 Operating capacity: 10.0 MMBtu/hr Design
 Fuel heat value: 1000 Btu/scf Pipeline specification
 Operating hours: 8760 hrs/yr

Emission Calculations

	NOx	CO	VOC	HAPs	
Total HAPs				0.11 lb/hr	Total HAPs from HAPCalc 3.01
				0.47 tpy	
Current Permitted Rates	3.0	0.80	0.30	- lb/hr	Hourly emission rate
(based on historical data)	13.1	3.30	0.020	- tpy	Annual emission rate (8760 hrs/yr)

Targa Eunice Gas Processing Plant

Steam Boilers

Emission Unit: B-01, B-02
 Source Description: Steam Boilers
 Manufacturer: Wickes
 Model: Type A

Fuel Consumption

Annual fuel usage: 876.0 MMscf/yr Operating capacity (MMBtu/hr) / Fuel heat value (Btu/scf)
 Hourly fuel usage: 0.10 MMscf/hr Operating capacity (MMBtu/hr) / Fuel heat value (Btu/scf)
 Operating capacity: 100.0 MMBtu/hr Design
 Fuel heat value: 1000 Btu/scf Pipeline specification
 Operating hours: 8760 hrs/yr

Emission Calculations

	NOx	CO	VOC	HAPs	
Total HAPs				0.11 lb/hr	Total HAPs from HAPCalc 3.01
				0.47 tpy	
Current Permitted Rates	20.6	1.5	0.1	- lb/hr	Hourly emission rate
(based on historical data)	90.0	6.6	0.2	- tpy	Annual emission rate (8760 hrs/yr)

Regeneration Gas Heater

Emission Unit: RH-E
 Source Description: Regeneration Gas Heater
 Manufacturer: Born

Fuel Consumption

Annual fuel usage: 30.7 MMscf/yr Operating capacity (MMBtu/hr) / Fuel heat value (Btu/scf) * Operating hours (hr/yr)
 Hourly fuel usage: 0.004 MMscf/hr Operating capacity (MMBtu/hr) / Fuel heat value (Btu/scf)
 Operating capacity: 3.5 MMBtu/hr Design
 Fuel heat value: 1000 Btu/scf Pipeline specification
 Operating hours: 8760 hrs/yr

Emission Calculations

NOx	CO	VOC	SO2	PM	
100	84				lb/MMscf AP-42 Table 1.4-1
		5.5		7.6	lb/MMscf AP-42 Table 1.4-2
			5		grains/100 scf
0.35	0.29	0.019	0.050	0.027	lb/hr
1.5	1.3	0.084	0.22	0.12	tpy

Regeneration Heater

Emission Unit: H-02
 Source Description: Regeneration Heater
 Manufacturer: Entec

Fuel Consumption

Annual fuel usage: 23.7 MMscf/yr Operating capacity (MMBtu/hr) / Fuel heat value (Btu/scf) * Operating hours (hr/yr)
 Hourly fuel usage: 0.003 MMscf/hr Operating capacity (MMBtu/hr) / Fuel heat value (Btu/scf)
 Operating capacity: 2.7 MMBtu/hr Design
 Fuel heat value: 1000 Btu/scf Pipeline specification
 Operating hours: 8760 hrs/yr

Emission Calculations

NOx	CO	VOC	
100	84		lb/MMscf AP-42 Table 1.4-1
		5.5	lb/MMscf AP-42 Table 1.4-2
			grains/100 scf
0.27	0.23	0.015	lb/hr
1.2	1.0	0.065	tpy

Dehydrator

Emission unit(s): H-01
 Source description: Dehydrator with reboiler, condensor and combustion
 Reboiler fuel: natural gas, regenerator off-gas

Operating Rates

Reboiler (H-01) 1.25 MMBtu/hr

Fuel consumption

Natural Gas				
1.25	MMBtu/hr	Input heat rate	Design specification	
1000	Btu/scf	Fuel heat value	Nominal for natural gas; GLY-Calc	
1.25	Mscf/hr	Fuel rate	Input heat rate / Fuel heat value	
11.0	MMscf/yr	Annual fuel usage	Fuel rate *8760 hrs/yr	

Emission Rates

Uncontrolled emissions		NOx	CO	VOC	Units	
Reboiler		100	84	5.5	lb/MMscf	Unit emission factors from AP-42 Table 1.4-1 & 2
		9.8E-02	8.24E-02	5.4E-03	lb/MMBtu	Conversion to lb/MMBtu from AP-42 Table 1.4-1 & 2
		0.12	0.10	0.007	lb/hr	Unit emissions * Input heat rate
		0.54	0.45	0.030	tpy	

Reboiler Stack Exhaust Parameters

Site elevation:	3400 ft MSL	
Standard pressure:	29.92 in Hg	
Pressure at elevation:	26.4 in Hg	Hess, Introduction to Theoretical Meteorology, eqn. 6.8
Standard temperature:	528 R	
Exhaust temp:	212 °F	Eng. estimate
Stack height:	15 ft	Design specification
Stack diameter:	0.5 ft	Design specification
F factor:	10610 wscf/10e6 Btu	40 CFR 60 Appx A Method 19
Exhaust flow:	221 scfm	Heat input * F factor/60
Exhaust flow:	319 acfm	$V_a = V_s * (P_s/P_a) * (T_a/T_s)$
Exhaust velocity:	27 ft/sec	Exhaust flow / stack area

Clark BA-6

Emission Units: C-09
 Source Description: Natural gas engine
 Manufacturer: Clark
 Model: BA-6
 Type: 2 Stroke Lean Burn RICE

Engine Horsepower and RPM

Sea level hp: 1200 hp Mfg data
 Site hp: 1200 hp Permitted hp

Fuel Consumption

Annual fuel usage: 81.00 MMscf/yr Carried forward from previous applications
 Annual fuel usage: 4.62 MMscf/yr based on operation of 500 hours
 Operating capacity: 9.25 MMBtu/hr Annual fuel usage * Fuel heat value
 Fuel heat value: 1000 Btu/scf Pipeline specification

Exhaust Parameters

Exhaust temp (Tstk): 690 °F
 Stack height: 70 ft
 Stack diameter: 1.3 ft
 Exhaust velocity: 145 ft/sec

Emission Calculations*Uncontrolled Emissions*

	NOx	CO	VOC	TSP	SO ₂	HAPs	
				0.0126		lb/MMBtu	Emission factors calculated in the 2008 Title V renewal application
Stack Test Based	0.037	0.0019	0.00016			lb/hp-hr	Emission factors calculated in the 2008 Title V renewal application
Emissions	44.6	2.3	0.19	0.12	0.0066	lb/hr	
	195.5	9.9	0.8	0.51	0.028	tpy	
Total HAPs						1.0 lb/hr	Total HAPs from HAPCalc 3.01
						4.4 tpy	
Current Permitted Rate	53.6	8.4	0.40	0.14	0.0073	- lb/hr	Hourly emission rate
	234.8	36.9	1.6	0.60	0.032	- tpy	Annual emission rate (8760 hrs/yr)
Requested Permitted Rate	13.4	2.10	0.10	0.035	0.0017	0.25 tpy	Annual emission rate (500 hrs/yr)
	CO ₂ ⁵	CH ₄ as CO ₂ e ⁶	N ₂ O as CO ₂ e ⁷	lb/MMBtu	AP-42 Table 3.2-2		
	117.0	0.0022	0.00022	lb/MMBtu	40 CFR 98 Tables C-1, C-2		
	1081.6	0.51	0.61	lb/hr	Hourly emission rate		
	270	0.13	0.15	tpy	Annual emission rate (500 hrs/yr)		

Notes:

1 Total HAPs from HAPCalc 3.01

Clark HBA-8

Emission Units: C-10 and C-11
 Source Description: Natural gas engine
 Manufacturer: Clark
 Model: HBA-8
 Type: 2 Stroke Lean Burn RICE

Engine Horsepower and RPM

Engine speed: 330 rpm Mfg data
 Sea level hp: 1600 hp Mfg data
 Site hp: 1600 hp Permitted hp

Fuel Consumption

Annual fuel usage: 108.00 MMscf/yr Carried forward from previous applications
 Annual fuel usage: 6.16 MMscf/yr based on operation of 500 hours
 Operating capacity: 12.33 MMBtu/hr Annual fuel usage * Fuel heat value
 Fuel heat value: 1000 Btu/scf Pipeline specification

Exhaust Parameters

Exhaust temp (Tstk): 750 °F
 Stack height: 70 ft
 Stack diameter: 1.7 ft
 Exhaust velocity: 134 ft/sec

Emission Calculations*Uncontrolled Emissions*

	NOx	CO	VOC	PM	SO ₂	HAPs	
				0.0126		lb/MMBtu	
Stack Test Based	0.037	0.0038	0.00057			lb/hr	Emission factors calculated in the 2008 Title V renewal application
Emissions	60.0	6.1	0.92	0.16	8.81E-03	lb/hr	
	262.7	26.9	4.0	0.68	0.039	tpy	
Total HAPs						1.34 lb/hr	Total HAPs from HAPCalc 3.01
						5.9 tpy	
Current Permitted Rate	77.2	8.1	1.1	0.16	0.0088	- lb/hr	Hourly emission rate
	338.1	35.5	4.8	0.7	0.039	- tpy	Annual emission rate (8760 hrs/yr)
Requested Permitted Rate	19.3	2.03	0.28	0.039	2.20E-03	0.34 tpy	Annual emission rate (500 hrs/yr)
	CO ₂ ⁵	CH ₄ as CO ₂ e ⁶	N ₂ O as CO ₂ e ⁷	lb/MMBtu	AP-42 Table 3.2-2		
	117.0	0.0022	0.00022	lb/MMBtu	40 CFR 98 Tables C-1, C-2		
	1442.2	0.68	0.81	lb/hr	Hourly emission rate		
	361	0.17	0.20	tpy	Annual emission rate (500 hrs/yr)		

Notes:

- 1 Total HAPs from HAPCalc 3.01
- 2 TSP, PM10, PM2.5, SO₂ are calculated elsewhere

Clark HBA-8

Emission Units: C-12
 Source Description: Natural gas engine
 Manufacturer: Clark
 Model: HBA-8
 Type: 2 Stroke Lean Burn RICE

Engine Horsepower and RPM

Engine speed: 330 rpm Mfg data
 Sea level hp: 1600 hp Mfg data
 Site hp: 1600 hp Permitted hp

Fuel Consumption

10.5
 Annual fuel usage: 126.1 MMscf/yr Carried forward from previous applications
 Annual fuel usage: 7.20 MMscf/yr based on operation of 500 hours
 Operating capacity: 14.40 MMBtu/hr Annual fuel usage * Fuel heat value
 Fuel heat value: 1000 Btu/scf Pipeline specification

Exhaust Parameters

Exhaust temp (Tstk): 750 °F
 Stack height: 70 ft
 Stack diameter: 1.7 ft
 Exhaust velocity: 134 ft/sec

Emission Calculations**Uncontrolled Emissions**

	NOx	CO	VOC	TSP	SO ₂	HAPs	
				0.0126		lb/MMBtu	Emission factors calculated in the 2008 Title V renewal application
Stack Test Based	0.037	0.0038	0.00057			lb/hp-hr	Emission factors calculated in the 2008 Title V renewal application
Emissions	60.0	6.1	0.92	0.18	1.03E-02	lb/hr	
	262.7	26.9	4.0	0.80	0.045	tpy	
Total HAPs						1.34 lb/hr	Total HAPs from HAPCalc 3.01
						5.9 tpy	
Current Permitted Rate	77.2	8.1	1.1	0.18	0.0103	- lb/hr	Hourly emission rate
	338.1	35.5	4.8	0.80	0.045	- tpy	Annual emission rate (8760 hrs/yr)
Requested Permitted Rate	19.3	2.03	0.28	0.045	0.0026	0.34 tpy	Annual emission rate (500 hrs/yr)
	CO ₂ ⁵	CH ₄ as CO ₂ e ⁶	N ₂ O as CO ₂ e ⁷	lb/MMBtu	AP-42 Table 3.2-2		
	117.0	0.0022	0.00022	lb/MMBtu	40 CFR 98 Tables C-1, C-2		
	1684.5	0.79	0.95	lb/hr	Hourly emission rate		
	421	0.20	0.24	tpy	Annual emission rate (500 hrs/yr)		

Notes:

- 1 Total HAPs from HAPCalc 3.01
- 2 TSP, PM10, PM2.5, SO2 are calculated elsewhere

Clark BA-6

Emission Units: C-01 through C-07
 Source Description: Natural gas engine
 Manufacturer: Clark
 Model: BA-6
 Type: 2 Stroke Lean Burn RICE

Engine Horsepower and RPM

Engine speed: 330 rpm Mfg data
 Sea level hp: 1200 hp Mfg data
 Site hp: 1200 hp Permitted hp

Fuel Consumption

Annual fuel usage: 81.00 MMscf/yr Carried forward from previous applications
 Operating capacity: 9.25 MMBtu/hr Annual fuel usage * Fuel heat value
 Fuel heat value: 1000 Btu/scf Pipeline specification

Exhaust Parameters

Exhaust temp (Tstk): 690 °F
 Stack height: 70 ft
 Stack diameter: 1.33 ft
 Exhaust velocity: 145 ft/sec

Emission Calculations*Uncontrolled Emissions*

	NOx	CO	VOC	HAPs	
Total HAPs				1.01 lb/hr	Total HAPs from HAPCalc 3.01
				4.4 tpy	
Current Permitted Rates	53.6	8.4	0.4	- lb/hr	Hourly emission rate
(based on stack data)	234.8	36.9	1.6	- tpy	Annual emission rate (8760 hrs/yr)

Notes:

- 1 Total HAPs from HAPCalc 3.01
- 2 TSP, PM10, PM2.5, SO2 are calculated elsewhere

Clark HBA-T-8

Emission Units: C-13
 Source Description: Natural gas engine
 Manufacturer: Clark
 Model: HBA-T-8
 Type: 2 Stroke Lean Burn RICE

Engine Horsepower and RPM

Engine speed: 300 rpm Mfg data
 Sea level hp: 2050 hp Mfg data
 Site hp: 2050 hp Permitted hp

Fuel Consumption

Annual fuel usage: 108.00 MMscf/yr Carried forward from previous applications
 Operating capacity: 12.33 MMBtu/hr Annual fuel usage * Fuel heat value
 Fuel heat value: 1000 Btu/scf Pipeline specification

Exhaust Parameters

Exhaust temp (Tstk): 600 °F
 Stack height: 70 ft
 Stack diameter: 2.0 ft
 Exhaust velocity: 113 ft/sec

Emission Calculations

Uncontrolled Emissions

	NOx	CO	VOC	HAPs	
Total HAPs				1.72 lb/hr	Total HAPs from HAPCalc 3.01
				7.5 tpy	
Current Permitted Rate	61.1	27.6	1.0	- lb/hr	Hourly emission rate
(based on stack data)	267.5	120.9	4.4	- tpy	Annual emission rate (8760 hrs/yr)

Notes:

- 1 Total HAPs from HAPCalc 3.01
- 2 TSP, PM10, PM2.5, SO2 are calculated elsewhere

Targa Eunice Gas Processing Plant

Waukesha L 7042GSI

Emission Unit: C-13A, C-17A, C18A through C-22
Source Description: Natural gas engine
Manufacturer: Waukesha
Model: L 7042GSI
Type: 4-stroke, turbocharged, rich burn natural gas engine

Engine speed 1000 rpm Limited
Sea level hp 1232 hp Mfg data
Site hp 1200 hp Permitted hp

Emission Calculations

Uncontrolled Emissions (PER)

NOx	CO	VOC		
22	32	1.0	g/hp-hr	Mfg data, margin of safety for VOC
58.2	84.7	2.6	lb/hr	Hourly emission rate
254.9	370.8	11.6	tpy	Annual emission rate (8760 hrs/yr)

Controlled Emissions (PTE)

NOx	CO	VOC		
10	10	1	g/hp-hr	Mfg data for catalytic converter input
80%	70%	70%		Nominal % reduction
2.0	3.0	0.4	g/hp-hr	Controlled emission factor. From Johnson Matthey fax dated 5/24/95 to Shankar-controlled engine rate factors.
5.3	7.9	1.2	lb/hr	Hourly emission rate
23.2	34.8	5.1	tpy	Annual emission rate (8760 hrs/yr)

Fuel Consumption

Horsepower	1200 hp	Mfg data
Heat Rate	7581 Btu/hp-hr	Mfg data
Fuel heat value	900 Btu/scf	Estimated, Nominal
Heat input	9.1 MMBtu/hr	Heat Rate * hp
Fuel consumption	10.1 Mscf/hr	Heat input / fuel heat value
Annual fuel usage	88.5 MMcf/yr	8760 hrs/yr operation

Exhaust Parameters

Exhaust temp	940.0 deg F	Mfg data
Exhaust flow	7985.0 lb/hr	Mfg data
	4968.4 acfm	Mfg calculation
Stack diameter	0.83 ft	permitted
Exhaust velocity	180.0 ft/sec	Exhaust flow / stack area
Stack height	50 ft	permitted

TSP, PM10 and PM 2.5 Emissions

Unit	Type	Fuel	Heat value Btu/scf	Hourly usage			Annual Usage			Emission Factors						Emission Rates					
				Mscf/hr	Mscf/yr	MMBtu/hr	Mscf/yr	MMBtu/yr		TSP lb/10 ⁶ scf ¹	PM10 lb/10 ⁶ scf ¹	PM 2.5 lb/10 ⁶ scf ¹	TSP lb/hr	PM10 lb/hr	PM 2.5 lb/hr	TSP lb/yr	PM10 lb/yr	PM 2.5 lb/yr	TSP lb/yr	PM10 lb/yr	PM 2.5 lb/yr
C-01	Reciprocating Engine	Pipeline Quality Natural Gas	1000	9	0.0060	9	79	78940		1.28E-02	9.50E-03	9.50E-03	0.11	0.90	0.096	0.37	0.096	0.37	0.37	0.096	0.37
C-02	Reciprocating Engine	Pipeline Quality Natural Gas	1000	9	0.0060	9	79	78940		1.28E-02	9.50E-03	9.50E-03	0.11	0.90	0.096	0.37	0.096	0.37	0.37	0.096	0.37
C-03	Reciprocating Engine	Pipeline Quality Natural Gas	1000	9	0.0060	9	79	78940		1.28E-02	9.50E-03	9.50E-03	0.11	0.90	0.096	0.37	0.096	0.37	0.37	0.096	0.37
C-05	Reciprocating Engine	Pipeline Quality Natural Gas	1000	9	0.0060	9	79	78940		1.28E-02	9.50E-03	9.50E-03	0.11	0.90	0.096	0.37	0.096	0.37	0.37	0.096	0.37
C-06	Reciprocating Engine	Pipeline Quality Natural Gas	1000	9	0.0060	9	79	78940		1.28E-02	9.50E-03	9.50E-03	0.11	0.90	0.096	0.37	0.096	0.37	0.37	0.096	0.37
C-07	Reciprocating Engine	Pipeline Quality Natural Gas	1000	9	0.0060	9	79	78940		1.28E-02	9.50E-03	9.50E-03	0.11	0.90	0.096	0.37	0.096	0.37	0.37	0.096	0.37
C-08	Reciprocating Engine	Pipeline Quality Natural Gas	1000	9	0.0060	9	79	78940		1.28E-02	9.50E-03	9.50E-03	0.11	0.90	0.096	0.37	0.096	0.37	0.37	0.096	0.37
C-09	Reciprocating Engine	Pipeline Quality Natural Gas	1000	9	0.0060	9	79	78940		1.28E-02	9.50E-03	9.50E-03	0.11	0.90	0.096	0.37	0.096	0.37	0.37	0.096	0.37
C-10	Reciprocating Engine	Pipeline Quality Natural Gas	1000	9	0.0060	9	79	78940		1.28E-02	9.50E-03	9.50E-03	0.11	0.90	0.096	0.37	0.096	0.37	0.37	0.096	0.37
C-11	Reciprocating Engine	Pipeline Quality Natural Gas	1000	10	0.01	10	86	87600		1.28E-02	9.50E-03	9.50E-03	0.13	0.95	0.10	0.42	0.10	0.42	0.42	0.10	0.42
C-12	Reciprocating Engine	Pipeline Quality Natural Gas	1000	10	0.01	10	86	87600		1.28E-02	9.50E-03	9.50E-03	0.13	0.95	0.10	0.42	0.10	0.42	0.42	0.10	0.42
C-13	Reciprocating Engine	Pipeline Quality Natural Gas	1000	20	0.02	20	175	175200		1.28E-02	9.50E-03	9.50E-03	0.13	0.95	0.10	0.42	0.10	0.42	0.42	0.10	0.42
C-13A	Reciprocating Engine	Pipeline Quality Natural Gas	1000	10	0.01	10	86	87600		1.28E-02	9.50E-03	9.50E-03	0.13	0.95	0.10	0.42	0.10	0.42	0.42	0.10	0.42
C-17A	Reciprocating Engine	Pipeline Quality Natural Gas	1000	8.4	0.008447	8.4	72	74000		1.28E-02	9.50E-03	9.50E-03	0.11	0.47	0.08	0.36	0.08	0.36	0.36	0.08	0.36
C-18A	Reciprocating Engine	Pipeline Quality Natural Gas	1000	10.1	0.010108	10.1	89	86546		1.28E-02	9.50E-03	9.50E-03	0.13	0.56	0.10	0.42	0.10	0.42	0.42	0.10	0.42
C-19	Reciprocating Engine	Pipeline Quality Natural Gas	1000	10.1	0.010108	10.1	89	86546		1.28E-02	9.50E-03	9.50E-03	0.13	0.56	0.10	0.42	0.10	0.42	0.42	0.10	0.42
C-20	Reciprocating Engine	Pipeline Quality Natural Gas	1000	10.1	0.010108	10.1	89	86546		1.28E-02	9.50E-03	9.50E-03	0.13	0.56	0.10	0.42	0.10	0.42	0.42	0.10	0.42
C-21	Reciprocating Engine	Pipeline Quality Natural Gas	1000	10.1	0.010108	10.1	89	86546		1.28E-02	9.50E-03	9.50E-03	0.13	0.56	0.10	0.42	0.10	0.42	0.42	0.10	0.42
C-22	Reciprocating Engine	Pipeline Quality Natural Gas	1000	10.1	0.010108	10.1	89	86546		1.28E-02	9.50E-03	9.50E-03	0.13	0.56	0.10	0.42	0.10	0.42	0.42	0.10	0.42
B-01	Steam Boiler	Pipeline Quality Natural Gas	1000	100	0.1	100.0	676	676000					0.76	3.3	0.76	3.3	0.76	3.3	3.3	0.76	3.3
B-02	Regeneration Gas Heater	Pipeline Quality Natural Gas	1000	10	0.1	100.0	676	676000					0.76	3.3	0.76	3.3	0.76	3.3	3.3	0.76	3.3
RH-W	Regeneration Gas Heater	Pipeline Quality Natural Gas	1000	3.5	0.036	3.5	24	23652					0.021	0.027	0.021	0.027	0.021	0.027	0.12	0.027	0.12
RH-E	Regeneration Gas Heater	Pipeline Quality Natural Gas	1000	2.5	0.0027	2.5	24	23652					0.0095	0.042	0.0095	0.042	0.090	0.021	0.090	0.021	0.090
H-01	Glucose Dehydrator Heater	Pipeline Quality Natural Gas	1000	1.25	0.00125	1.25	11	10950					0.076	0.33	0.076	0.33	0.076	0.33	0.33	0.076	0.33
F-01	SRU Incinerator	Pipeline Quality Natural Gas	1000	10	0.001	10	86	87600					0.0008	0.003	0.0008	0.003	0.0008	0.003	0.0008	0.003	0.003
F-02	Acid Gas Flare	Pipeline Quality Natural Gas	1000	0.1	0.0001	0.1	1	60876					0.0008	0.003	0.0008	0.003	0.0008	0.003	0.0008	0.003	0.003
	Emergency Flare	Pipeline Quality Natural Gas	1000	0.1	0.0001	0.1	1	60876					0.0008	0.003	0.0008	0.003	0.0008	0.003	0.0008	0.003	0.003
Total										5.1	19.3	19.3	5.1	19.3	19.3	19.3	5.1	19.3	19.3	5.1	19.3

Notes

1 Emission factors for external combustion sources are from the following sources:

TSP, PM10 and PM 2.5 emission factors from AP-42 Table 14-2, PM Total

2 Emission factors for reciprocating engines from the following sources:

TSP = 1.37 PM10 = 0.10 PM2.5 = 0.10

PM10 and PM2.5 from Table 3.23, PM Total, Uncontrolled, 4 stroke rich burn, TSP = 1.37 PM10 = 0.10

Targa Emisor Gas Processing Plant
SO₂ and H₂S Calcs

Unit	Type	Fuel	Rated Capacity hp	Heat value Btu/lb	BSFC lb/hp-hr ¹	Hourly usage ²	Mscf/hr	MMscf/hr	MMBtu/hr	Annual Usage ³ MMscf/yr	Mscf/yr	MMBtu/yr	SO ₂ (0.25 gr/100scf) lb/yr
C-01	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	5000	10800	16.8	0.0108	10.8	94.6	94608	126144	7.7E-03
C-02	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	5000	10800	16.8	0.0108	10.8	94.6	94608	126144	7.7E-03
C-03	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	5000	10800	16.8	0.0108	10.8	94.6	94608	126144	7.7E-03
C-04	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	5000	10800	16.8	0.0108	10.8	94.6	94608	126144	7.7E-03
C-05	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	5000	10800	16.8	0.0108	10.8	94.6	94608	126144	7.7E-03
C-06	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	5000	10800	16.8	0.0108	10.8	94.6	94608	126144	7.7E-03
C-07	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	5000	10800	16.8	0.0108	10.8	94.6	94608	126144	7.7E-03
C-08	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	5000	10800	16.8	0.0108	10.8	94.6	94608	126144	7.7E-03
C-09	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	5000	10800	16.8	0.0108	10.8	94.6	94608	126144	7.7E-03
C-10	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	5000	10800	16.8	0.0108	10.8	94.6	94608	126144	7.7E-03
C-11	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	5000	10800	16.8	0.0108	10.8	94.6	94608	126144	7.7E-03
C-12	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	5000	10800	16.8	0.0108	10.8	94.6	94608	126144	7.7E-03
C-13	Reciprocating Engine	Pipeline Quality Natural Gas	2050	1000	9000	14400	14.4	0.0144	14.4	126.1	126144	161622	1.3E-02
C-13A	Reciprocating Engine	Pipeline Quality Natural Gas	2050	1000	9000	14400	14.4	0.0144	14.4	126.1	126144	161622	1.3E-02
C-14	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	5000	10800	16.8	0.0108	10.8	94.6	94608	126144	7.7E-03
C-15	Reciprocating Engine	Pipeline Quality Natural Gas	1100	1000	9500	10450	10.45	0.01045	10.5	91.5	91542	37230	7.3E-03
C-16	Reciprocating Engine	Pipeline Quality Natural Gas	500	1000	8500	4250	4.25	0.00425	4.25	37.2	37230	7290	3.0E-03
C-17A	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	8500	10200	10.2	0.0102	10.2	89.4	89352	89352	7.3E-03
C-18	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	8500	10200	10.2	0.0102	10.2	89.4	89352	89352	7.3E-03
C-19	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	8500	10200	10.2	0.0102	10.2	89.4	89352	89352	7.3E-03
C-20	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	8500	10200	10.2	0.0102	10.2	89.4	89352	89352	7.3E-03
C-21	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	8500	10200	10.2	0.0102	10.2	89.4	89352	89352	7.3E-03
C-22	Reciprocating Engine	Pipeline Quality Natural Gas	1200	1000	8500	10200	10.2	0.0102	10.2	89.4	89352	89352	7.3E-03
B-01	Steam Boiler	Pipeline Quality Natural Gas		1000		100000	100	0.10	100	876	876000	7.1E-02	3.1E-01
B-02	Steam Boiler	Pipeline Quality Natural Gas		1000		10000	10	0.10	100	876	876000	7.1E-02	3.1E-01
RH-E	Regeneration Gas Heater (standby)	Pipeline Quality Natural Gas		1000		10000	10	0.10	100	876	876000	7.1E-02	3.1E-01
RH-F	Regeneration Gas Heater	Pipeline Quality Natural Gas		1000		10000	10	0.10	100	876	876000	7.1E-02	3.1E-01
RH-01	SRU Regeneration Heater	Pipeline Quality Natural Gas		1000		2700	3	0.0003	3.3	27	2700	02700	4.9E-03
H-01	Glycol Dehydrator Heater	Pipeline Quality Natural Gas		1000		1250	1.25	0.00031	1.25	11	11000	11000	8.9E-03
F-01	Acid Gas Flare	Pipeline Quality Natural Gas		1000		100	0.1	0.1	100	876.0	876000	7.1E-05	3.1E-04
F-02	Emergency Flare	Pipeline Quality Natural Gas		1000		100	0.1	0.1	100	876.0	876000	7.1E-05	3.1E-04
													0.33 1.45

- Notes
- BSFC for engines based on nominal values for engines from Compilation of Emissions Data for Stationary Reciprocating Gas Engines and Gas Turbines in Use by the Natural Gas Pipeline Transmission Industry, May 1988.
 - BSFC data used here is conservative for these older engine types.
 - Hourly usage calculated assuming pipeline quality natural gas nominal 1000 Btu/scf.
 - SO₂ Emissions calculated based on 0.5 gr/100 SCF of pipeline quality natural gas (7.14e-4 lb SO₂/scf) * hourly fuel usage rate.
 - Annual emissions calculated based on 0.5 gr/100 SCF of purchased natural gas (7.14e-3 lbs/scf) * annual fuel usage rate.
 - H₂S Emissions factor based on maximum flaring rate, with assist gas.
 - emergency flare based on maximum flaring rate, with assist gas.
 - 1-01 SRU SO₂ calcs provided separately with previous permit application. Unit emissions are not re-calculated here.

Caterpillar Diesel Generator

Unit EG-01 - Caterpillar Diesel Generator ¹		
Continuous Power Rating	1,341	bhp
Hourly Fuel Usage	71.9	gal/hr
Annual Fuel Usage	630	Mgal/yr
Hours of Operation	8,760	hr/yr
Fuel Sulfur Content ²	0.0015	%

¹ Power rating and hourly fuel usage obtained from manufacturer spec sheet.

² Sulfur limit for nonroad diesel fuel [40 CFR 80.51(b)].

Potential Emissions - Per Engine

Pollutant	Emission Factors, Continuous Power			Potential Emissions	
	Value	Units ¹	Source	lb/hr	tpy
NO _x	4.93	g/hp-hr	Mfg. data	14.6	63.8
CO	0.13	g/hp-hr	Mfg. data	0.38	1.68
HC	0.01	g/hp-hr	Mfg. data	0.03	0.13
PM/PM ₁₀ ²	0.020	g/hp-hr	Mfg. data	0.06	0.26
SO ₂	1.21E-05	lb/hp-hr	AP-42 3.4-1	1.63E-02	7.13E-02
CO ₂	1.16	lb/hp-hr	AP-42 3.4-1	1.56E+03	6,813
Benzene	5.43E-06	lb/hp-hr	AP-42 3.4-3	7.28E-03	3.19E-02
Toluene	1.97E-06	lb/hp-hr	AP-42 3.4-3	2.64E-03	1.16E-02
Xylenes	1.35E-06	lb/hp-hr	AP-42 3.4-3	1.81E-03	7.94E-03
Propylene	1.95E-05	lb/hp-hr	AP-42 3.4-3	2.62E-02	1.15E-01
Formaldehyde	5.52E-07	lb/hp-hr	AP-42 3.4-3	7.41E-04	3.24E-03
Acetaldehyde	1.76E-07	lb/hp-hr	AP-42 3.4-3	2.37E-04	1.04E-03
Acrolein	5.52E-08	lb/hp-hr	AP-42 3.4-3	7.40E-05	3.24E-04

¹ Average BSFC of 7,000 Btu/hp-hr from AP-42 Section 3.4 to convert AP-42 3.4-3 emission factors from lb/MMBtu to lb/hp-hr.

² TSP = PM₁₀ = PM_{2.5}

John Deere Compression-Ignition Engine

Emission Source	EG-2		
Fuel Type	Diesel		
Maximum power rating	93	kW	Manufacturer spec sheet
	125	hp	1 kW = 1.34 hp
Hours of Operation	2920	hrs	Manufacturer spec sheet

Emissions

Pollutant	Emission Factors			Potential Emissions	
	Value	Units ¹	Source	lb/hr	tpy
NO _x	0.17	g/kW-hr	Manufacturer spec sheet	0.035	0.051
CO	1.5	g/kW-hr	Manufacturer spec sheet	0.31	0.45
HC	3.2	g/kW-hr	Manufacturer spec sheet	0.66	0.97
PM/PM ₁₀ ²	0.25	g/kW-hr	Manufacturer spec sheet	0.051	0.075
SO ₂	0.00205	lb/hp-hr	AP-42, Table 3.3-1	2.6E-01	0.37
CO ₂	1.15	lb/hp-hr	AP-42, Table 3.3-1	143.75	209.9
Benzene	6.5E-06	lb/hp-hr	AP-42, Table 3.3-2	8.2E-04	1.2E-03
Toluene	2.9E-06	lb/hp-hr	AP-42, Table 3.3-2	3.6E-04	5.2E-04
Xylenes	2.0E-06	lb/hp-hr	AP-42, Table 3.3-2	2.5E-04	3.6E-04
Propylene	1.8E-05	lb/hp-hr	AP-42, Table 3.3-2	2.3E-03	3.3E-03
Formaldehyde	8.3E-06	lb/hp-hr	AP-42, Table 3.3-2	1.0E-03	1.5E-03
Acetaldehyde	5.4E-06	lb/hp-hr	AP-42, Table 3.3-2	6.7E-04	9.8E-04
Acrolein	6.5E-07	lb/hp-hr	AP-42, Table 3.3-2	8.1E-05	1.2E-04

¹ Average BSFC of 7,000 Btu/hp-hr from AP-42 Section 3.3 to convert AP-42 3.3-2 emission factors from lb/MMBtu to lb/hp-hr

² For the NMHC + NO_x combined emission factor, assumed a breakdown of 5% and 95% for NMHC and NO_x, respectively

Condensate Tank Emissions

Emission unit number(s): TK-1 & TK-2

Source description: Condensate Tank Emissions

Number of units: 2

VRU Capture Efficiency: 100.0%

Tank Feed Rates and Composition						VRU Capture Efficiency (%)	Total Emissions Per Tank	
Component	ProMax Flash ¹ (lb/hr)	ProMax Working ¹ (lb/hr)	ProMax Breathing ¹ (lb/hr)	Total (lb/hr)	Total (tpy)		(lb/hr)	(tpy)
Nitrogen	1.57E-02	1.90E-05	4.22E-06	1.57E-02	6.87E-02	100.0%	0.00E+00	0.00E+00
Carbon Dioxide	4.49E-01	9.75E-03	2.16E-03	4.61E-01	2.02E+00	100.0%	0.00E+00	0.00E+00
Methane	1.49E+00	8.69E-03	1.93E-03	1.50E+00	6.55E+00	100.0%	0.00E+00	0.00E+00
Ethane	1.57E+01	5.31E-01	1.18E-01	1.64E+01	7.18E+01	100.0%	0.00E+00	0.00E+00
Propane	6.75E+01	2.49E+00	5.53E-01	7.06E+01	3.09E+02	100.0%	0.00E+00	0.00E+00
Isobutane	2.03E+01	8.63E-01	1.91E-01	2.14E+01	9.36E+01	100.0%	0.00E+00	0.00E+00
n-Butane	6.01E+01	2.88E+00	6.39E-01	6.36E+01	2.79E+02	100.0%	0.00E+00	0.00E+00
Cyclopentane	2.15E+00	1.03E-01	2.27E-02	2.28E+00	9.98E+00	100.0%	0.00E+00	0.00E+00
Isopentane	2.30E+01	1.20E+00	2.66E-01	2.44E+01	1.07E+02	100.0%	0.00E+00	0.00E+00
n-Pentane	2.50E+01	1.35E+00	2.99E-01	2.67E+01	1.17E+02	100.0%	0.00E+00	0.00E+00
Benzene	1.41E+00	5.30E-02	1.18E-02	1.48E+00	6.47E+00	100.0%	0.00E+00	0.00E+00
Cyclohexane	2.10E+00	1.01E-01	2.24E-02	2.22E+00	9.72E+00	100.0%	0.00E+00	0.00E+00
Methylcyclopentane	2.79E+00	1.47E-01	3.26E-02	2.97E+00	1.30E+01	100.0%	0.00E+00	0.00E+00
n-Hexane	5.10E+00	3.04E-01	6.74E-02	5.47E+00	2.39E+01	100.0%	0.00E+00	0.00E+00
2-Methylpentane	4.72E+00	2.68E-01	5.93E-02	5.05E+00	2.21E+01	100.0%	0.00E+00	0.00E+00
3-Methylpentane	2.77E+00	1.60E-01	3.54E-02	2.97E+00	1.30E+01	100.0%	0.00E+00	0.00E+00
Neohexane	2.06E-01	1.18E-02	2.62E-03	2.20E-01	9.64E-01	100.0%	0.00E+00	0.00E+00
Toluene	5.64E-01	2.33E-02	5.18E-03	5.92E-01	2.59E+00	100.0%	0.00E+00	0.00E+00
Cyclopentane, 1,3-Dimethyl-, cis-	3.24E-01	1.76E-02	3.90E-03	3.46E-01	1.51E+00	100.0%	0.00E+00	0.00E+00
Methylcyclohexane	1.13E+00	6.80E-02	1.51E-02	1.21E+00	5.30E+00	100.0%	0.00E+00	0.00E+00
2-Methylhexane	5.24E-01	2.98E-02	6.60E-03	5.60E-01	2.45E+00	100.0%	0.00E+00	0.00E+00
3-Methylhexane	7.59E-01	4.53E-02	1.00E-02	8.14E-01	3.57E+00	100.0%	0.00E+00	0.00E+00
2,3-Dimethylpentane	2.89E-01	1.69E-02	3.76E-03	3.09E-01	1.35E+00	100.0%	0.00E+00	0.00E+00
n-Heptane	1.47E+00	8.62E-02	1.91E-02	1.58E+00	6.91E+00	100.0%	0.00E+00	0.00E+00
Ethylbenzene	3.84E-02	1.81E-03	4.01E-04	4.06E-02	1.78E-01	100.0%	0.00E+00	0.00E+00
m-Xylene	5.16E-02	2.32E-03	5.15E-04	5.44E-02	2.38E-01	100.0%	0.00E+00	0.00E+00
o-Xylene	1.38E-02	5.71E-04	1.27E-04	1.45E-02	6.34E-02	100.0%	0.00E+00	0.00E+00
Cyclooctane	4.87E-03	2.52E-04	5.59E-05	5.18E-03	2.27E-02	100.0%	0.00E+00	0.00E+00
Ethylcyclohexane	4.25E-02	2.39E-03	5.31E-04	4.55E-02	1.99E-01	100.0%	0.00E+00	0.00E+00
2,5-Dimethylhexane	2.22E-02	1.32E-03	2.94E-04	2.38E-02	1.04E-01	100.0%	0.00E+00	0.00E+00
2-Methylheptane	1.51E-01	9.10E-03	2.02E-03	1.63E-01	7.12E-01	100.0%	0.00E+00	0.00E+00
n-Octane	3.83E-01	2.09E-02	4.64E-03	4.09E-01	1.79E+00	100.0%	0.00E+00	0.00E+00
1,2,4-Trimethylbenzene	1.85E-03	7.54E-05	1.67E-05	1.95E-03	8.53E-03	100.0%	0.00E+00	0.00E+00
Isopropylbenzene	1.93E-03	9.40E-05	2.08E-05	2.04E-03	8.94E-03	100.0%	0.00E+00	0.00E+00
n-Propylbenzene	1.28E-03	5.86E-05	1.30E-05	1.36E-03	5.94E-03	100.0%	0.00E+00	0.00E+00
n-Nonane	4.50E-02	2.26E-03	5.02E-04	4.78E-02	2.09E-01	100.0%	0.00E+00	0.00E+00
i-Butylbenzene	1.17E-04	4.96E-06	1.10E-06	1.23E-04	5.38E-04	100.0%	0.00E+00	0.00E+00
n-Butylbenzene	2.04E-04	9.16E-06	2.03E-06	2.15E-04	9.43E-04	100.0%	0.00E+00	0.00E+00
n-Decane	7.44E-03	3.29E-04	7.29E-05	7.85E-03	3.44E-02	100.0%	0.00E+00	0.00E+00
Undecane	8.30E-04	4.67E-05	1.04E-05	8.87E-04	3.89E-03	100.0%	0.00E+00	0.00E+00
Dodecane	4.16E-05	2.00E-06	4.45E-07	4.41E-05	1.93E-04	100.0%	0.00E+00	0.00E+00
Hydrogen Sulfide	2.47E+00	5.67E-02	1.26E-02	2.54E+00	1.11E+01	100.0%	0.00E+00	0.00E+00
Total	243.22	10.86	2.41	256.49	1,123.44	--	--	--
Total VOC	223.06	10.26	2.27	235.59	1,031.89	--	--	--
Total H₂S	2.47	0.057	0.013	2.54	11.11	--	--	--
Total HAP	7.18	0.39	0.085	7.65	33.49	--	--	--

¹ Flash, Working, and Breathing emissions from ProMax simulation of the process. '13 psia Gas', 'Working', and 'Breathing' streams referenced, respectively.² Condensate tank emissions are controlled by a vapor recovery unit with a capture efficiency of 100%.

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

Condensate Loading Emissions

Emission unit number(s): L-01 and L-02

Source description: Condensate Loading Emissions

Equation¹:

$$L_L = 12.46 \cdot \frac{SPM}{T}$$

Variables¹:L_L - Loading Loss (lbs/1000 gal loaded)

S - Saturation Factor (From Table 5.2-1 of AP-42, Section 5.2)

P - True Vapor Pressure of Loaded Liquid (psia)

M - Molecular Weight of Vapor (lb/lb mol)

T - Temperature of Bulk Liquid (°R = [°F + 460])

Inputs

Control Efficiency ²	70%	%
Max Hourly Throughput	8,000.00	gal/hr
Annual Throughput	7,980,395	gal/yr

Annual Condensate Loading Emissions

Emissions	ProMax Uncontrolled Emissions		ProMax Controlled Emissions ²	
	lb/hr ³	tn/yr	lb/hr ³	tn/yr
Nitrogen	1.15E-05	5.04E-05	3.45E-06	1.51E-05
Carbon Dioxide	5.89E-03	2.58E-02	1.77E-03	7.75E-03
Methane	5.25E-03	2.30E-02	1.58E-03	6.90E-03
Ethane	3.21E-01	1.40E+00	9.62E-02	4.21E-01
Propane	1.51E+00	6.59E+00	4.52E-01	1.98E+00
Isobutane	5.22E-01	2.28E+00	1.56E-01	6.85E-01
n-Butane	1.74E+00	7.63E+00	5.23E-01	2.29E+00
Cyclopentane	6.20E-02	2.71E-01	1.86E-02	8.14E-02
Isopentane	7.24E-01	3.17E+00	2.17E-01	9.51E-01
n-Pentane	8.14E-01	3.57E+00	2.44E-01	1.07E+00
Benzene	3.20E-02	1.40E-01	9.61E-03	4.21E-02
Cyclohexane	6.11E-02	2.68E-01	1.83E-02	8.03E-02
Methylcyclopentane	8.89E-02	3.89E-01	2.67E-02	1.17E-01
n-Hexane	1.84E-01	8.05E-01	5.51E-02	2.41E-01
2-Methylpentane	1.62E-01	7.08E-01	4.85E-02	2.12E-01
3-Methylpentane	9.66E-02	4.23E-01	2.90E-02	1.27E-01
Neohexane	7.15E-03	3.13E-02	2.14E-03	9.39E-03
Toluene	1.41E-02	6.18E-02	4.23E-03	1.85E-02
Cyclopentane, 1,3-Dimethyl	1.06E-02	4.66E-02	3.19E-03	1.40E-02
Methylcyclohexane	4.11E-02	1.80E-01	1.23E-02	5.40E-02
2-Methylhexane	1.80E-02	7.88E-02	5.40E-03	2.36E-02
3-Methylhexane	2.73E-02	1.20E-01	8.20E-03	3.59E-02
2,3-Dimethylpentane	1.02E-02	4.48E-02	3.07E-03	1.35E-02
n-Heptane	5.21E-02	2.28E-01	1.56E-02	6.84E-02
Ethylbenzene	1.09E-03	4.79E-03	3.28E-04	1.44E-03
m-Xylene	1.40E-03	6.15E-03	4.21E-04	1.85E-03
o-Xylene	3.45E-04	1.51E-03	1.03E-04	4.53E-04
Cyclooctane	1.52E-04	6.67E-04	4.57E-05	2.00E-04
Ethylcyclohexane	1.45E-03	6.34E-03	4.34E-04	1.90E-03
2,5-Dimethylhexane	8.00E-04	3.50E-03	2.40E-04	1.05E-03
2-Methylheptane	5.50E-03	2.41E-02	1.65E-03	7.23E-03
n-Octane	1.26E-02	5.54E-02	3.79E-03	1.66E-02
1,2,4-Trimethylbenzene	4.56E-05	2.00E-04	1.37E-05	5.99E-05
Isopropylbenzene	5.68E-05	2.49E-04	1.70E-05	7.46E-05
n-Propylbenzene	3.54E-05	1.55E-04	1.06E-05	4.65E-05
n-Nonane	1.37E-03	5.99E-03	4.10E-04	1.80E-03
i-Butylbenzene	2.99E-06	1.31E-05	8.98E-07	3.93E-06
n-Butylbenzene	5.54E-06	2.42E-05	1.66E-06	7.27E-06
n-Decane	1.99E-04	8.71E-04	5.96E-05	2.61E-04
Undecane	2.82E-05	1.24E-04	8.47E-06	3.71E-05
Dodecane	1.21E-06	5.31E-06	3.63E-07	1.59E-06
Hydrogen Sulfide	3.43E-02	1.50E-01	1.03E-02	4.51E-02
Total VOC	*	27.15	*	8.15
Total HAP	*	1.02	*	0.31
Total H₂S	*	0.15	*	0.045
Total CO₂e⁴	*	0.60	*	0.18

*Average hourly emission rates generated in ProMax Loading stream. See Max Hourly Emissions table below for ProMax calculated maximum hourly emission rates.

Max Hourly Condensate Loading Emissions³

Pollutant	ProMax HAP/H ₂ S to VOC Percentage	Uncontrolled Max Hourly Emissions (lb/hr)	Controlled Max Hourly Emissions (lb/hr) ²
Total VOC	-	65.48	19.65
Total HAP	3.8%	2.46	0.74
Total H₂S	0.55%	0.36	0.11

¹ Loading Loss Equation and Variables are from AP-42, Section 5.2. Transportation and Marketing of Petroleum Liquids, are used in a ProMax simulation of the facility to generate the above emissions.² Condensate loading emissions are controlled by vapor balancing. A collection efficiency of 70% is applied per AP-42 Section 5.2 for trucks not passing one of the NSPS-level annual test.³ Average hourly emission rates generated in ProMax Loading stream. Max Hourly Emissions table for ProMax calculated maximum hourly emission rates.⁴ Global Warming Potentials (GWP) are from Table A-1 of the EPA GHG MRR under 40 CFR Part 98.CH₄ GWP = 25
CO₂ GWP = 1

Haul Road Emissions

Emission unit number(s): HAUL

Source description: Haul Road Emissions

Input Data

Empty vehicle weight ¹	16	tons
Load weight ²	22.8	tons
Loaded vehicle ³	38.8	tons
Mean vehicle weight ⁴	27.4	tons
Condensate loadout	326	bbl/day
Loadout volume	326	bbl/day
Loadout volume	119048	bbl/yr
Vehicle size	190	bbl
Round-trip distance	0.30	mile/trip
Trip frequency ⁵	4.0	trips/hour
Trip frequency ⁶	625	trips/yr
Surface silt content ⁷	3.9	%
Annual wet days ⁸	60	days/yr
Vehicle miles traveled ⁹	1.20	mile/hr

Emission Factors and Constants

Parameter	PM ₃₀	PM ₁₀	PM _{2.5}
k, lb/VMT ¹⁰	4.9	1.5	0.15
a, lb/VMT ¹⁰	0.70	0.90	0.90
b, lb/VMT ¹⁰	0.45	0.45	0.45
Hourly EF, lb/VMT ¹¹	6.04	1.48	0.15
Annual EF, lb/VMT ¹²	5.04	1.23	0.12

Emission Calculations

PM ₃₀	PM ₁₀	PM _{2.5}	
7.2	1.8	0.18	lb/hr ¹³
0.47	0.12	0.012	ton/yr ¹⁴

Notes

¹ Empty vehicle weight includes driver and occupants and full fuel load.

² Cargo, transported materials, etc. (5.7 lb/gal RVP5 * 8000 gal truck/ 2000lb/ton)

³ Loaded vehicle weight = Empty + Load Size

⁴ Mean Vehicle weight = (Loaded Weight + Empty Weight) / 2

⁵ Trips per hour = Total loadout spots / Loading time

⁶ Trips per year = Total throughput (bbl/yr) / Truck size (bbl)

⁷ Unpaved Road Surface Material Silt Content Values Used in the 1999 NEI for New Mexico.

⁸ AP-42 Figure 13.2.2-1

⁹ VMT/hr = Vehicle Miles Traveled per hour = Trips per hour * Segment Length

¹⁰ Table 13.2.2-2, Industrial Roads

¹¹ AP-42 13.2.2, Equation 1a

¹² AP-42 13.2.2, Equation 2

¹³ lb/hr = Hourly EF (lb/VMT) * VMT (mile/hr)

¹⁴ ton/yr = Annual EF (lb/VMT) * VMT (mile/Trip) * Trips per year (Trip/yr) / 2000 (lb/tpy)



Targa Midstream Services, LLC
Eunice Gas Plant

Description: Summary of Project Emissions for NSR Permit 0067-M11-R4 Revisions (FG-01; FUG-AGC)

New Fugitive Components

Fugitive Safety Factor: 100%

Component	Component Count ¹	Component Counts w/Safety Factor
Connectors	-	-
Flanges	10	20
Open-Ended Lines	-	-
Pump Seals	-	-
Valves	3	6
Other	-	-

¹ Actual anticipated component counts.

Component	Emission Factors (kg/hr/source) ¹ Gas	Component Count ²	VOC Emissions ³		HAP Emissions ³		H ₂ S Emissions ³		Cyclohexane ³		CO ₂ ³		CH ₄ ³	
			lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Connectors	2.00E-04	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Flanges	3.90E-04	20	6.84E-05	2.99E-04	4.66E-05	2.04E-04	2.85E-03	1.25E-02	1.41E-06	6.19E-06	1.43E-02	6.24E-02	1.90E-05	8.32E-05
Open-Ended Lines	2.00E-03	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pump Seals	2.40E-03	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Valves	4.50E-03	6	2.37E-04	1.04E-03	1.61E-04	7.06E-04	9.85E-03	4.31E-02	4.89E-06	2.14E-05	4.93E-02	2.16E-01	6.57E-05	2.88E-04
Other	8.80E-03	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total			3.05E-04	1.34E-03	2.08E-04	9.10E-04	0.0127	0.056	6.30E-06	2.76E-05	6.36E-02	2.79E-01	8.47E-05	3.71E-04

Notes:

¹ Emission factors from Table 2-4 of the EPA Protocol for Equipment Leak Emission Estimates, November 1995

² Actual anticipated component counts with a safety factor of 100%

³ The following Acid Gas composition is applied for the fugitive stream based on a site specific analysis.

wt% VOC: 0.398%
wt% H₂S: 16.546%
wt% HAP: 0.271%
wt% cyclohexane: 0.008%
wt% CO₂: 82.901%
wt% CH₄: 0.110%

1 kg = 2.20462 lb



Targa Midstream Services, LLC
Enlace Gas Plant

Description: Summary of Project Emissions¹ or NSR Permit D067-M11-RS Revisions (FG-SEP)

New Fugitive Components
Fugitive Safety Factor:

10%

Component	Component Count ²	Component Counts w/ Safety Factor
Inlet	70	77
Condensate		
Flanges	75	83
Inlet	25	28
Condensate	25	28
Inlet	6	7
Condensate		0

¹ Actual anticipated component counts.

Component	Emission Factors (kg/hr/source) ¹	Component Count ²	VOC Emissions ³ lb/hr	HAP Emissions ³ lb/hr	H ₂ S Emissions ³ lb/hr	n-Hexane ³ lb/hr	Benzene ³ lb/hr	CO ₂ ³ lb/hr	CH ₄ ³ lb/hr
Inlet	3.90E-04	77	0.015	0.067	7.46E-04	0.00	0.00	0.0043	0.036
Condensate	1.10E-04	83	0.020	0.0029	2.13E-05	0.00155	0.00044	0.000	0.000
Flanges	4.50E-03	28	0.064	0.0015	0.0031	0.00	0.00	0.018	0.15
Inlet	2.50E-03	28	0.15	0.67	1.63E-04	0.0119	0.0033	0.000	0.000
Condensate	8.80E-03	7	0.031	0.14	0.0015	0.00	0.00	0.0089	0.073
Inlet	7.50E-03	0	0.00	0.000	0.000	0.00	0.00	0.000	0.000
Condensate									
Other									
Total			0.28	1.24	0.0056	0.0135	0.0041	0.031	0.26

Notes:

¹ Emission Factors from Table 2-4 of the EPA Protocol for Equipment Leak Emission Estimates, November 1995

² Actual anticipated component counts with a safety factor of 10%

³ The inlet and condensate analysis is applied for the fugitive stream based on a site specific analysis.

	Condensate
Inlet Gas	59.03%
wt% VOC:	23.11%
wt% H ₂ S:	1.13%
wt% HAP:	0.55%
wt% n-Hexane:	0.00%
wt% Benzene:	0.07%
wt% CO ₂ :	6.53%
wt% CH ₄ :	55.83%

1 kg = 2.20462 lb



Targa Midstream Services, LLC

Enrich Gas Plant

Description: Summary of Project Emissions for NSR Permit D067-M11-87 Revisions (FG-02)

New Fugitive Components
Fugitive Safety Factor:

10%		Component Count	Component Count w/Safety Factor
Component			
Connectors	Inlet	2	3
	Sour	-	0
	Condensate	5	7
Flanges	Inlet	31	35
	Sour	25	28
	Condensate	5	6
Valves	Inlet	15	17
	Sour	13	15
	Condensate	-	0
Other	Inlet	-	0
	Condensate	-	0

¹ Actual anticipated component counts.

Component	Emission Factors (kg/hr/Source) ¹	Component Count ²	VOC Emissions ³ lb/hr	HAP Emissions ³ lb/hr	H ₂ S Emissions ³ lb/hr	n-Heptane ³ lb/hr	Benzene ³ lb/hr	CO ₂ ³ lb/hr	CH ₄ ³ lb/hr
Connectors	Inlet	3	3.06E-04	7.24E-06	1.49E-05	4.88E-06	9.98E-07	8.64E-05	7.22E-04
	Sour	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Condensate	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Flanges	Inlet	35	3.21E-03	4.70E-04	3.42E-06	2.55E-04	7.01E-05	3.07E-03	3.45E-03
	Sour	28	6.93E-03	1.69E-04	3.39E-04	1.11E-06	2.22E-05	2.95E-03	3.42E-03
	Condensate	6	5.18E-04	1.09E-04	2.78E-05	1.01E-06	4.49E-06	2.07E-03	8.04E-03
Valves	Inlet	17	1.44E-03	2.11E-04	1.54E-06	5.35E-06	1.15E-05	3.52E-03	2.30E-04
	Sour	15	3.90E-02	8.23E-04	7.92E-03	2.77E-05	1.31E-04	1.10E-02	9.28E-03
	Condensate	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Other	Inlet	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Sour	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Condensate	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total			0.051	0.0021	0.0090	1.27E-04	3.52E-04	0.16	0.11

Notes:

¹ Emission factors from Table 2.4 of the EPA Protocol for Equipment Leak Emission Estimation, November 1995

² Actual anticipated component counts with a safety factor of 10%

³ The inlet and condensate analysis is applied for the fugitive stream based on a site specific analysis.

Inlet Gas		Condensate	
wt% VOC:	23.11%	wt% VOC:	99.09%
wt% H ₂ S:	1.13%	wt% H ₂ S:	0.11%
wt% HAP:	0.55%	wt% HAP:	34%
wt% n-Heptane:	0.00%	wt% n-Heptane:	7.72%
wt% Benzene:	0.07%	wt% Benzene:	2.16%
wt% CO ₂ :	5.59%	wt% CO ₂ :	0.024%
wt% CH ₄ :	53.89%	wt% CH ₄ :	0.16%

1 kg =

2.20462 lb

Targa, Eunice Gas Plant
Cooling Tower Emissions
Source Description: CT-1

Controlled Emissions

	Cooling Water Recirculation Rate ¹ (gpm)	Circulating Water Total Dissolved Solids ² (mg/l)	Circulating Water Total Dissolved Solids ² (ppm _w)	Drift Rate fraction of Circulating Flow ³ %	Hourly Uncontrolled Particulate Emissions ⁴ (lb/hr)	Annual Uncontrolled Particulate Emissions ⁴ (tpy)	Hourly Uncontrolled TSP Emissions ⁵ (lb/hr)	Annual Uncontrolled TSP Emissions ⁵ (tpy)	Hourly Uncontrolled PM ₁₀ Emissions ⁵ (lb/hr)	Annual Uncontrolled PM ₁₀ Emissions ⁵ (tpy)
Cooling Tower near SRU	14,100	5.3E+03	5.3E+03	0.01%	3.75	16.41	3.48	15.26	0.977	4.28

Total

1 Cooling Tower Water Recirc rate based on site data (3 pumps x 4700 gpm = 14,100 gpm)

2 TDS = 0.9 x conductivity (5900 umhos), per Cooling Tower Mfg. Guidance

3 Uncontrolled circulating water flow percent drift estimated based on engineering estimate; Controlled drift rate based on Mfg. Data, 0.01%

4 Total particulate emission calculated using procedure described in Section 13.4 of AP-42 (01/95), Wet Cooling Towers

PM = Water Circulation Rate * Drift Rate * TDS

Particulate Hourly Emissions:

$$\frac{14,100 \text{ gal}}{\text{min}} \times \frac{60 \text{ min}}{\text{hr}} \times \frac{0.0001 \text{ gal drift}}{\text{gal recirculation}} \times \frac{8.34 \text{ lb PM}}{\text{gal drift}} \times \frac{5310 \text{ lb PM}}{10^6 \text{ lb drift}} = \frac{3.75 \text{ lb}}{\text{hr}}$$

Particulate annual emissions = Hourly emissions (lb/hr) * 8760 (hrs/yr) / 2000 (lb/ton)

5 Particle size distribution based on the following distribution (from Frisbie data)

Particle Distribution

Particle	Mass % of Total Particulates	
TSP (PM 30)	93.0	Frisbie data
PM10	26.1	Frisbie data



TARGA

Targa Midstream Services, LLC
Eunice Gas Processing Plant

Pressurized Liquid Loading Emissions

L-NGL is exempt per 20.2.72.202.B.5

Emission unit number(s): L-NGL

Source description: Pressurized Liquid Loading Emissions

Equation:

$$L_L = \frac{(P+14.7)*(V_{Hose})*MW*}{14.7*(359 \text{ scf/lbmol})}$$

Variables:

L_L - Loading Loss (lbs)

P - Pressure of Tank (psig)

V_{Hose} - Volume of Hose (ft³) = $\pi D^2 H/4$

MW - Molecular Weight of Vapor (lb/lb mol)

Material Loaded	Loading Method	L (ft)	D (ft)	P (psig)	MW (lb/lbmol)	Max Loads per Hour	Max Hourly Emissions (lb/hr)
NGL	Pressurized	6.0	0.1667	100	86.71	1	0.25

Material Loaded	Loading Method	L (ft)	D (ft)	P (psig)	MW (lb/lbmol)	Loads per Year ¹	Annual Emissions (tpy)
NGL	Pressurized	6.0	0.1667	100	86.71	2,190	0.27

¹Loading losses from pressurized loading occur when the line between the pressurized tank and tank-truck is disconnected.

AGI SSM Flare - Full Capacity

Emission Unit: Acid Gas Flare
 Source Description: AGI SSM

Flow Rate: 4.24 MMscf/d proposed
 4,239 Mscf/d MMscf/d * 1000
 177 Mscf/hr Mcf/d / 24
 42.2 MMBtu/hr scfh * mixture heating value / 1000
 24.46 MMscf/yr Maximum annual total flare volume

Acid Gas

Component	Wet vol/mol%	Mass Fraction
Hydrogen Sulfide	20.06	16.49078
Carbon Dioxide	70.63	74.9758
Nitrogen	0.00	0.000441
Methane	0.30	0.115149
Ethane	0.09	0.068783
Propane	0.19	0.197036
n-Butane	0.23	0.316084
n-Pentane	0.20	0.35384
n-Hexane	0.18	0.3707
DGA	0.00	8.41E-12
Water	6.30	2.737401
Isobutane	0.06	0.079423
Isopentane	0.14	0.24221
Neohexane	0.00	0.007459
Cyclopentane	0.03	0.050659
2-Methylpentane	0.10	0.217374
3-Methylpentane	0.07	0.148136
Methylcyclopentane	0.09	0.186451
Benzene	0.10	0.18492
Cyclohexane	0.10	0.199885
2-Methylhexane	0.13	0.315288
Cyclopentane, 1,3-Dimethyl-, cis-	0.09	0.208973
n-Heptane	0.11	0.274901
Methylcyclohexane	0.15	0.360257
Cyclopentane, 1,1,2-Trimethyl-	0.01	0.034839
Toluene	0.10	0.222066
2-Methylheptane	0.10	0.287816
Cyclohexane, 1,1-Dimethyl-	0.06	0.149099
n-Octane	0.04	0.120913
Ethylbenzene	0.01	0.017846
m-Xylene	0.04	0.104058
o-Xylene	0.02	0.03955
n-Nonane	0.13	0.386716
n-Decane	0.02	0.062946
Undecane	0.13	0.472198
Total	100	100
NMEHC (VOC)	2.62	5.61
HAPs	0.44	0.94

Residue Gas

Component	MW	mol %	MW *	HHV	HHV *	Specific	Weighted	Mass	Spec. Vol.
			mol %	(Btu/scf)	mol %	Volume	Spec. Vol.	Fraction	VOC (ft ³ /lb)
						(ft ³ /lb)	(ft ³ /lb)		
Hydrogen Sulfide	34.076	0	0.000	637	0.0	11.136	0.000	0.000	
Nitrogen	28.013	2.1852	0.612	0	0	13.547	0.30	0.035	
Carbon Dioxide	44.01	0	0.000	0	0	8.623	0.00	0.000	
Methane	16.043	92.019	14.763	1009.7	929.1	23.65	21.8	0.856	
Ethane	30.07	5.3305	1.603	1768.7	94.3	12.62	0.7	0.093	
Propane	44.097	0.3087	0.136	2517.2	7.8	8.606	0.03	0.008	4.3
Iso-Butane	58.124	0.0164	0.010	3252.6	0.5	6.529	0.001	0.001	0.2
Nor-Butane	58.124	0.0306	0.018	3262	1.0	6.529	0.00	0.001	0.4
Iso-Pentane	72.151	0.0069	0.005	3999.7	0.3	5.26	0.000	0.000	0.1
Nor-Pentane	72.151	0.0076	0.005	4008.7	0.3	5.26	0.000	0.000	0.1
N-Hexane	86.178	0.0024	0.002	4756.1	0.1	4.404	0.0001	0.000	0.0
Benzene	78.114	0.0006	0.000	3741.9	0.02	4.858	0.0000	0.000	0.0
Toluene	92.141	0.0008	0.001	4474.8	0.04	4.119	0.00003	0.000	0.0
Ethylbenzene	106.168	0.0008	0.001	5222.1	0.042	3.574	2.859E-05	0.000	0.0
M-Xylene	106.168	0.0011	0.001	5207.8	0.06	3.574	0.00004	0.000	0.0
O-Xylene	106.168	0.0006	0.001	5208.6	0.031	3.574	2.14E-05	0.000	0.0
Other Hexanes+	86.178	0.1104	0.095	4756.1	5.3	4.404	0.005	0.006	1.5
Total	Total	100.022	17.3		1038.8		22.77	1.0	6.7
Dry total	VOC	0.5%	mixture MW		mixture HHV		Mass fraction VOC:	1.59%	
	HAP	0.01%					Mass Fraction HAPs:	0.0003	

Targa Midstream Services LLC - Eunice Gas Plant

AGI SSM Flare - Full Capacity

Emission Unit: Acid Gas Flare
Source Description: AGI SSM

Fuel Data

Flare Pilot

575 scf/hr Engineering Estimate
0.575 Mscf/hr
5.037 MMscf/yr
1000 Btu/scf nominal
575.0 MBtu/hr Pilot heat input Btu/scf * dscf/hr / 1000
0.58 MMBtu/hr MBtu/hr / 1000

Assist Gas

238.74 Btu/scf Higher calorific value of gas
976.00 Btu/scf Target Heat Content
1039 Btu/scf Assist gas heat content
2073 Mscf/hr Assist gas volume
2153176 MBtu/hr Assist as heat input
2153 MMBtu/hr
49.7 MMscf/d Assist gas volume
2072687.9 scf/hr Assit gas valume

Flaring

176644 scf/hr (dry) volumetric throughput
42.2 MMBtu/hr Total hourly plant throughput (dry)

Total

2195.9 MMBtu/hr Pilot + Flare + Assist
17.7 MMBtu/hr Acid +Pilot

Emission Rates

Normal (Pilot Only)

NOx	CO	VOC	H ₂ S	SO ₂	Units	
0.0680	0.3100				lb/MMBtu	AP-42 Section 13 Table 13-5.1 & Table 13
			3.57E-04		lb H ₂ S/Mscf	Purchased sweet natural gas fuel, 0.25 gr l
			2.05E-04		lb H ₂ S/hr	H ₂ S rate * fuel usage
				7.14E-03	lb S/Mscf	Purchased sweet natural gas fuel, 5 gr S/1
				7.73E-03	lb SO ₂ /hr*	SO ₂ rate * fuel usage
		-			mol%	Assume no VOC content in purchased fuel
		-			ft ³ /lb	specific volume
		-			lb/hr	vol. Gas * mole fraction / specific volume
100%	100%	100%	100%	100%	%	Safety Factor
0.14	0.62				lb/MMBtu	Unit emission rate with Safety Factor
0.08	0.36				lb/hr	lb/MMBtu * MMBtu/hr
		-	4.11E-04	1.70E-02	lb/hr	98% combustion H ₂ S; 100% conversion to
0.34	1.6	-	1.80E-03	7.45E-02	tpy	8760 hrs/yr

AGI SSM Flare - Full Capacity

Emission Unit: Acid Gas Flare
Source Description: AGI SSM

Acid Gas Flaring

NOx	CO	VOC	H ₂ S	SO ₂	Units	
0.0680	0.3100				lb/MMBtu	AP-42 Section 13 Table 13-5.1 & Table 13 Flare Gas specific volume vol. Gas * mole fraction / specific volume lb/MMBtu * MMBtu/hr 98% combustion H ₂ S and VOC; 100% con baseline (15 ltd Sulfur; 67-M4-R1) increment-consuming lb/hr * (based on planned/anticipated oper 138.5 hrs of flaring
			20%		mol%	
			11.136		ft ³ /lb	
		1082.93	3182.0		lb/hr	
1.20	5.48				lb/hr	
		21.66	63.64	5869.93	lb/hr	
				2800.00	lb/hr	
				3069.93	lb/hr	
0.08	0.38	1.50	4.41	406.39	tpy	

Residue Gas Flaring

NOx	CO	VOC	H ₂ S	SO ₂	Units	
0.0680	0.3100				lb/MMBtu	AP-42 Section 13 Table 13-5.1 & Table 13
		0.49%	0.00%		mol%	
		6.7	11.136		ft ³ /lb	
		1502	0.0		lb/hr	
146.42	667.48				lb/hr	
		30.04	0.00	0.00	lb/hr	
10.14	46.21	2.08	0.00	0.00	tpy	
NOx	CO	VOC	H ₂ S	SO ₂	Units	
147.62	672.96	51.69	63.64	5869.93	lb/hr	
10.22	46.59	3.58	4.41	406.39	tpy	

NOTES: *Pilot, Flare and Assist Gas

Stack Parameters

	1000 °C	Exhaust temperature	Per NMAQB guidelines
	20 m/sec	Exhaust velocity	Per NMAQB guidelines
	165 ft	Flare height	Estimated
<i>Normal</i>			
	16.04 g/mol	Fuel gas molecular weight	Mol. wt. of methane, the dominant species
	40,250 cal/sec	Heat release (q)	MMBtu/hr * 10 ⁶ * 252 cal/Btu + 3600 sec/hr
	32,512	q _n	q _n = q(1-0.048(MW) ^{1/2})
	0.180 m	Effective stack diameter (D)	D = (10 ⁻⁶ q _n) ^{1/2}
<i>Flaring</i>			
	19.15 g/mol	Fuel gas molecular weight	Mol. wt. of acid gas/assist gas
	153,714,582 cal/sec	Heat release (q)	MMBtu/hr * 10 ⁶ * 252 cal/Btu + 3600 sec/hr
	121,423,680	q _n	q _n = q(1-0.048(MW) ^{1/2})
	11.019 m	Effective stack diameter (D)	D = (10 ⁻⁶ q _n) ^{1/2}

Flared Gas MW

41.46 MW flare gas
17.25 MW assist gas

4.24 vol flare gas
49.74 vol assist gas

3.26 vol. weighted % flare gas
15.90 vol. weighted % assist gas

19.15 weighted-averaged MW

AGI SSM Flare - Half Capacity

Emission Unit: Acid Gas Flare
 Source Description: AGI SSM

Flow Rate: 2.50 MMscf/d proposed
 2,500 Mscf/d MMscf/d * 1000
 104 Mscf/hr Mcf/d / 24
 24.9 MMBtu/hr scfh * mixture heating value / 1000
 14.42 MMscf/yr Maximum annual total flare volume

Acid Gas

Component	Wet vol/mol%	Mass Fraction
Hydrogen Sulfide	20.06	16.49078
Carbon Dioxide	70.63	74.9758
Nitrogen	0.00	0.000441
Methane	0.30	0.115149
Ethane	0.09	0.068783
Propane	0.19	0.197036
n-Butane	0.23	0.316084
n-Pentane	0.20	0.35384
n-Hexane	0.18	0.3707
DGA	0.00	8.41E-12
Water	6.30	2.737401
Isobutane	0.06	0.079423
Isopentane	0.14	0.24221
Neohexane	0.00	0.007459
Cyclopentane	0.03	0.050659
2-Methylpentane	0.10	0.217374
3-Methylpentane	0.07	0.148136
Methylcyclopentane	0.09	0.186451
Benzene	0.10	0.18492
Cyclohexane	0.10	0.199885
2-Methylhexane	0.13	0.315288
Cyclopentane, 1,3-Dimethyl-, cis-	0.09	0.208973
n-Heptane	0.11	0.274901
Methylcyclohexane	0.15	0.360257
Cyclopentane, 1,1,2-Trimethyl-	0.01	0.034839
Toluene	0.10	0.222066
2-Methylheptane	0.10	0.287816
Cyclohexane, 1,1-Dimethyl-	0.06	0.149099
n-Octane	0.04	0.120913
Ethylbenzene	0.01	0.017846
m-Xylene	0.04	0.104058
o-Xylene	0.02	0.03955
n-Nonane	0.13	0.386716
n-Decane	0.02	0.062946
Undecane	0.13	0.472198
Total	100	100
NMEHC (VOC)	2.62	5.61
HAPs	0.44	0.94

Residue Gas

Component	MW	mol %	MW * mol %	HHV (Btu/scf)	HHV * mol %	Specific Volume (ft ³ /lb)	Weighted Spec. Vol. (ft ³ /lb)	Mass Fraction	Spec. Vol. VOC (ft ³ /lb)
Hydrogen Sulfide	34.076	0	0.000	637	0.0	11.136	0.000	0.000	
Nitrogen	28.013	2.1852	0.612	0	0	13.547	0.30	0.035	
Carbon Dioxide	44.01	0	0.000	0	0	8.623	0.00	0.000	
Methane	16.043	92.019	14.763	1009.7	929.1	23.65	21.8	0.856	
Ethane	30.07	5.3305	1.603	1768.7	94.3	12.62	0.7	0.093	
Propane	44.097	0.3087	0.136	2517.2	7.8	8.606	0.03	0.008	4.3
Iso-Butane	58.124	0.0164	0.010	3252.6	0.5	6.529	0.001	0.001	0.2
Nor-Btane	58.124	0.0306	0.018	3262	1.0	6.529	0.00	0.001	0.4
Iso-Pentane	72.151	0.0069	0.005	3999.7	0.3	5.26	0.000	0.000	0.1
Nor-Pentane	72.151	0.0076	0.005	4008.7	0.3	5.26	0.000	0.000	0.1
N-Hexane	86.178	0.0024	0.002	4756.1	0.1	4.404	0.0001	0.000	0.0
Benzene	78.114	0.0006	0.000	3741.9	0.02	4.858	0.0000	0.000	0.0
Toluene	92.141	0.0008	0.001	4474.8	0.04	4.119	0.00003	0.000	0.0
Ethylbenzene	106.168	0.0008	0.001	5222.1	0.042	3.574	2.859E-05	0.000	0.0
M-Xylene	106.168	0.0011	0.001	5207.8	0.06	3.574	0.00004	0.000	0.0
O-Xylene	106.168	0.0006	0.001	5208.6	0.031	3.574	2.14E-05	0.000	0.0
Other Hexanes+	86.178	0.1104	0.095	4756.1	5.3	4.404	0.005	0.006	1.5
Total	Total	100.022	17.3		1038.8		22.77	1.0	6.7
Dry total	VOC	0.5%	mixture MW		mixture HHV	Mass fraction VOC:	1.59%		
	HAP	0.01%				Mass Fraction HAPs:	0.0003		

AGI SSM Flare - Half Capacity

Emission Unit: Acid Gas Flare
Source Description: AGI SSM

Fuel Data*Flare Pilot*

575 scf/hr Engineering Estimate
0.575 Mscf/hr
5.037 MMscf/yr
1000 Btu/scf nominal
575.0 MBtu/hr Pilot heat input Btu/scf * dscf/hr / 1000
0.58 MMBtu/hr MBtu/hr / 1000

Assist Gas

238.74 Btu/scf Higher calorific value of gas
993.00 Btu/scf target heat content
1039 Btu/scf Assist gas-assumed (Residue Gas)
1714 Mscf/hr Assist gas volume
1780824 MBtu/hr Assist as heat input
1781 MMBtu/hr
41.1 MMscf/d Assist gas volume
1714255.2 scf/hr Assit gas valume

Flaring

104167 scf/hr (dry) volumetric throughput
24.9 MMBtu/hr Total hourly plant throughput (dry)

Total

1806.3 MMBtu/hr Pilot + Flare + Assist
10.4 MMBtu/hr Acid +Pilot

Emission Rates*Normal (Pilot Only)*

NOx	CO	VOC	H ₂ S	SO ₂	Units	
0.0680	0.3100				lb/MMBtu	AP-42 Section 13 Table 13-5.1 & Table 13
			3.57E-04		lb H ₂ S/Mscf	Purchased sweet natural gas fuel, 0.25 gr l
			2.05E-04		lb H ₂ S/hr	H ₂ S rate * fuel usage
				7.14E-03	lb S/Mscf	Purchased sweet natural gas fuel, 5 gr S/1
				7.73E-03	lb SO ₂ /hr*	SO ₂ rate * fuel usage
		-			mol%	Assume no VOC content in purchased fuel
		-			ft ³ /lb	specific volume
		-			lb/hr	vol. Gas * mole fraction / specific volume
100%	100%	100%	100%	100%	%	Safety Factor
0.14	0.62				lb/MMBtu	Unit emission rate with Safety Factor
0.08	0.36				lb/hr	lb/MMBtu * MMBtu/hr
		-	4.11E-04	1.70E-02	lb/hr	98% combustion H ₂ S; 100% conversion to
0.34	1.6	-	1.80E-03	7.45E-02	tpy	8760 hrs/yr

AGI SSM Flare - Half Capacity

Emission Unit: Acid Gas Flare
 Source Description: AGI SSM

Acid Gas Flaring

NOx	CO	VOC	H ₂ S	SO ₂	Units	
0.0680	0.3100		20%		lb/MMBtu	AP-42 Section 13 Table 13-5.1 & Table 13 Flare Gas specific volume vol. Gas * mole fraction / specific volume lb/MMBtu * MMBtu/hr 98% combustion H ₂ S and VOC; 100% con baseline (15 ltd Sulfur; 67-M4-R1) increment-consuming lb/hr * (based on planned/anticipated oper 138.5 hrs of flaring
			11.136		mol%	
		1082.93	1876.4		ft ³ /lb	
					lb/hr	
0.71	3.23				lb/hr	
		21.66	37.53	3461.50	lb/hr	
				2800.00	lb/hr	
				661.50	lb/hr	
0.05	0.22	1.50	2.60	239.65	tpy	

Residue Gas Flaring

NOx	CO	VOC	H ₂ S	SO ₂	Units	
0.0680	0.3100				lb/MMBtu	AP-42 Section 13 Table 13-5.1 & Table 13
		0.49%	0.00%		mol%	
		6.7	11.136		ft ³ /lb	
		1242	0.0		lb/hr	
121.10	552.06				lb/hr	
		24.84	0.00	0.00	lb/hr	
8.38	38.22	1.72	0.00	0.00	tpy	
NOx	CO	VOC	H ₂ S	SO ₂	Units	
121.80	555.28	46.50	37.53	3461.50	lb/hr	
8.43	38.44	3.22	2.60	239.65	tpy	

NOTES: *Pilot, Flare and Assist Gas

Stack Parameters

1000 °C	Exhaust temperature	Per NMAQB guidelines
20 m/sec	Exhaust velocity	Per NMAQB guidelines
165 ft	Flare height	Estimated

Normal

16.04 g/mol	Fuel gas molecular weight	Mol. wt. of methane, the dominant species
40,250 cal/sec	Heat release (q)	MMBtu/hr * 10 ⁶ * 252 cal/Btu + 3600 sec/hr
32,512	q _n	q _n = q(1-0.048(MW) ^{1/2})
0.180 m	Effective stack diameter (D)	D = (10 ⁻⁶ q _n) ^{1/2}

Flaring

18.64 g/mol	Fuel gas molecular weight	Mol. wt. of acid gas/assist gas
126,438,751 cal/sec	Heat release (q)	MMBtu/hr * 10 ⁶ * 252 cal/Btu + 3600 sec/hr
100,236,726	q _n	q _n = q(1-0.048(MW) ^{1/2})
10.012 m	Effective stack diameter (D)	D = (10 ⁻⁶ q _n) ^{1/2}

Flared Gas MW

41.46 MW flare gas
17.25 MW assist gas
2.50 vol flare gas
41.14 vol assist gas
2.37 vol. weighted % flare gas
16.26 vol. weighted % assist gas
18.64 weighted-averaged MW

Inlet Flaring (Plant Flare) - Half Capacity

Emission Unit: Inlet Flare (Plant Flare)
 Source Description: F-02

Flow Rate:

Plant Blowdown	90.4 MMscf/yr	Maximum Plant Blowdown to Flare based on SSM records
	104.0 MMscf/yr	Maximum Plant Blowdown with 15% safety factor
	40.00 MMscf/d	Flare design capacity
	1.67 MMscf/hr	Flare design capacity
	1,666.7 Mscf/hr	24-hr average
	2041.3 MMBtu/hr	scfh * mixture heating value / 1000
Pilot	570.8 scf/hr	flare pilot Based on permitted pilot capacity of 5 MMscf/yr
	0.0137 MMscf/d	scf/hr * 24 (hr/day) / 1e6 SCF/MMscf
	1000 BTU/scf	Nominal, sweet natural gas
	0.571 MMBtu/hr	#NAME?
Plant Blowdown + Pilot	2041.88 MMBtu/hr	

Component	MW	mol %	MW * mol %	HHV (Btu/scf)	HHV * mol %	Specific Volume (ft ³ /lb)	Weighted Spec. Vol. (ft ³ /lb)	Mass Fraction	Spec. Vol. VOC (ft ³ /lb)	Spec. Vol. HAPs (ft ³ /lb)
Hydrogen Sulfide	34.08	0.736	0.251	637	4.7	11.136	0.082	0.011		
Nitrogen	28.01	1.606	0.450	0	0	13.547	0.22	0.020		
Carbon Dioxide	44.01	3.305	1.455	0	0	8.623	0.28	0.065		
Methane	16.04	74.744	11.989	1009.7	754.7	23.65	17.7	0.538		
Ethane	30.07	9.918	2.982	1768.7	175.4	12.62	1.3	0.134		
Propane	44.097	5.552	2.448	2517.2	139.8	8.606	0.48	0.110	4.1	
Iso-Butane	58.123	0.711	0.413	3252.6	23.1	6.529	0.046	0.019	0.52	
Nor-Butane	58.123	1.897	1.103	3262	61.9	6.529	0.12	0.050	1.4	
Iso-Pentane	72.15	0.47	0.339	3999.7	18.8	5.26	0.025	0.015	0.35	
Nor-Pentane	72.15	0.506	0.365	4008.7	20.3	5.26	0.027	0.016	0.37	
N-Hexane	86.178	0.095	0.082	4756.1	4.5	4.404	0.0042	0.0037	0.070	2.959
Benzene	78.114	0.0213	0.017	3741.9	0.80	4.858	0.0010	0.00075	0.016	0.663
Toluene	92.141	0.0204	0.019	4474.8	0.91	4.119	0.00084	0.00084	0.015	0.635
Ethylbenzene	106.168	0.0004	0.000	5222.1	0.021	3.574	1.4296E-05	1.91E-05	0.00029	0.012
m-Xylene	106.168	0.0031	0.003	5207.8	0.16	3.574	0.00011	0.00015	0.00229	0.097
p-Xylene	106.168	0.0006	0.001	5208.6	0.031	3.574	2.14E-05	2.86E-05	0.00044	0.019
o-Xylene	106.168	0.0002	0.000	5209.7	0.010	3.574	7.15E-06	9.53E-06	0.00015	0.006
Other Hexanes+	86.177	0.414	0.357	4756.1	19.7	4.404	0.018	0.016	0.31	
Total		100	22.3		1224.8		20.24	1.0	7.1	4.4
Dry total		VOC 9.7%	mixture MW		mixture HHV		Mass fraction VOC: 23.11%			
		HAP 0.14%					Mass Fraction HAPs: 0.0055			

* Component higher heat values and specific volumes obtained from Physical Properties of Hydrocarbons, API Research Project 44, Fig. 16-1, Rev. 1981

Emission Calculations

Pilot Emissions	NO _x	CO	SO ₂	H ₂ S	VOC	HAPs	Units	
	0.1380	0.2755		3.6E-04			lb/MMBtu	TNRCC RG-109 (high Btu; other)
				2.0E-04			lb H ₂ S/Mscf	Purchased sweet natural gas fuel, 0.25 gr H ₂ S/100scf
			7.1E-03				lb H ₂ S/hr	H ₂ S rate * fuel usage
			4.1E-03				lb S/Mscf	Purchased sweet natural gas fuel, 5 gr S/100scf
					0.00%	0.00%	lb SO ₂ /hr*	SO ₂ rate * fuel usage
							mol%	Assume no VOC content in purchased fuel (methane)
					7.1	4.4	ft ³ /lb	Specific volume (VOC)
	0.079	0.157					lb/hr	lb/MMBtu * MMBtu/hr
			0.0041	4.1E-06	-	-	lb/hr	98% combustion H ₂ S; 100% conversion to SO ₂
Plant Blowdown to Flare SSM	NO _x	CO	SO ₂	H ₂ S	VOC	HAPs		
	0.1380	0.2755		0.74%	9.7%	0.14%	lb/MMBtu	RG-109 Emission Factors for high-Btu, non-steam assisted
				11.14	7.15	4.39	mol %	Flare Gas
				1,101.5	22,604.2	535.2	ft ³ /lb	Specific volume
				98%	98%	98%	lb/hr	vol. Gas * mole fraction / specific volume
			98%				%	Estimated control efficiency for H ₂ S and VOC
							%	Estimated 98% conversion of combusted H ₂ S to SO ₂
	281.7	562.4	2,032.0	22.0	452.1	10.7	lb/hr	Based on pilot plus flared gas
Total Pilot + Flaring	NO _x	CO	SO ₂	H ₂ S	VOC	HAPs		
	281.78	562.54	2032.0	22.03	452.1	10.7	lb/hr	

Fuel gas molecular weight 22.3 g/mol Mol. wt. of methane, the dominant species
 Heat release (q) 142,931,453 cal/sec MMBtu/hr * 10⁶ * 252 cal/Btu ÷ 3600 sec/hr
 $q_n = q(1 - 0.048(MW)^{1/2})$
 q_n 110,552,522 $q_n = (10^{-6} q_n)^{1/2}$
 Effective stack diameter (D) 10.514 m $D = (10^{-6} q_n)^{1/2}$

Inlet Flaring (Plant Flare) - Full Capacity

Emission Unit: Inlet Flare (Plant Flare)

Source Description: F-02

Flow Rate:

Plant Blowdown	90.4 MMscf/yr	Maximum Plant Blowdown to Flare based on SSM records
	104.0 MMscf/yr	Maximum Plant Blowdown with 15% safety factor
	80.00 MMscf/d	Flare design capacity
	3.33 MMscf/hr	Flare design capacity
	3,333.3 Mscf/hr	24-hr average
Pilot	4082.6 MMBtu/hr	scfh * mixture heating value / 1000
	570.8 scf/hr	flare pilot Based on permitted pilot capacity of 5 MMscf/yr
	0.0137 MMscf/d	scf/hr * 24 (hr/day) / 1e6 SCF/MMscf
	1000 BTU/scf	Nominal, sweet natural gas
	0.571 MMBtu/hr	
Plant Blowdown + Pilot	4083.19 MMBtu/hr	

Component	MW	mol %	MW * mol %	HHV (Btu/scf)	HHV * mol %	Specific Volume (ft ³ /lb)	Weighted Spec. Vol. (ft ³ /lb)	Mass Fraction	Spec. Vol. VOC (ft ³ /lb)	Spec. Vol. HAPs (ft ³ /lb)
Hydrogen Sulfide	34.08	0.736	0.251	637	4.7	11.136	0.082	0.011		
Nitrogen	28.01	1.606	0.450	0	0	13.547	0.22	0.020		
Carbon Dioxide	44.01	3.305	1.455	0	0	8.623	0.28	0.065		
Methane	16.04	74.744	11.989	1009.7	754.7	23.65	17.7	0.538		
Ethane	30.07	9.918	2.982	1768.7	175.4	12.62	1.3	0.134		
Propane	44.097	5.552	2.448	2517.2	139.8	8.606	0.48	0.110	4.1	
Iso-Butane	58.123	0.711	0.413	3252.6	23.1	6.529	0.046	0.019	0.52	
Nor-Butane	58.123	1.897	1.103	3262	61.9	6.529	0.12	0.050	1.4	
Iso-Pentane	72.15	0.47	0.339	3999.7	18.8	5.26	0.025	0.015	0.35	
Nor-Pentane	72.15	0.506	0.365	4008.7	20.3	5.26	0.027	0.016	0.37	
N-Hexane	86.178	0.095	0.082	4756.1	4.5	4.404	0.0042	0.0037	0.070	2.959
Benzene	78.114	0.0213	0.017	3741.9	0.80	4.858	0.0010	0.00075	0.016	0.663
Toluene	92.141	0.0204	0.019	4474.8	0.91	4.119	0.00084	0.00084	0.015	0.635
Ethylbenzene	106.168	0.0004	0.000	5222.1	0.021	3.574	1.4296E-05	1.91E-05	0.00029	0.012
m-Xylene	106.168	0.0031	0.003	5207.8	0.16	3.574	0.00011	0.00015	0.00229	0.097
p-Xylene	106.168	0.0006	0.001	5208.6	0.031	3.574	2.14E-05	2.86E-05	0.00044	0.019
O-Xylene	106.168	0.0002	0.000	5209.7	0.010	3.574	7.15E-06	9.53E-06	0.00015	0.006
Other Hexanes+	86.177	0.414	0.357	4756.1	19.7	4.404	0.018	0.016	0.31	
Total	Total	100	22.3		1224.8		20.24	1.0	7.1	4.4
Dry total	VOC	9.7%	mixture MW		mixture HHV		Mass fraction VOC:	23.11%		
	HAP	0.14%					Mass Fraction HAPs:	0.0055		

* Component higher heat values and specific volumes obtained from Physical Properties of Hydrocarbons, API Research Project 44, Fig. 16-1, Rev. 1981

Emission Calculations

Pilot Emissions	NO _x	CO	SO ₂	H ₂ S	VOC	HAPs	Units	
0.1380	0.2755			3.6E-04			lb/MMBtu	TNRCC RG-109 (high Btu; other)
				2.0E-04			lb H ₂ S/Mscf	Purchased sweet natural gas fuel, 0.25 gr H ₂ S/100scf
			7.1E-03				lb H ₂ S/hr	H ₂ S rate * fuel usage
			4.1E-03				lb S/Mscf	Purchased sweet natural gas fuel, 5 gr S/100scf
					0.00%	0.00%	lb SO ₂ /hr*	SO ₂ rate * fuel usage
					7.1	4.4	mol%	Assume no VOC content in purchased fuel (methane)
							ft ³ /lb	Specific volume (VOC)
0.079	0.157						lb/hr	lb/MMBtu * MMBtu/hr
		0.0041	4.1E-06	-	-	-	lb/hr	98% combustion H ₂ S; 100% conversion to SO ₂
0.35	0.69	0.018	1.8E-05	-	-	-	tpy	8760 hrs/yr
Plant Blowdown to Flare SSM	NO _x	CO	SO ₂	H ₂ S	VOC	HAPs		
0.1380	0.2755			0.74%	9.7%	0.14%	lb/MMBtu	RG-109 Emission Factors for high-Btu, non-steam assisted
				11.14	7.15	4.39	mol %	Flare Gas
				2,203.1	45,208.4	1,070.4	ft ³ /lb	Specific volume
				98%	98%	98%	lb/hr	vol. Gas * mole fraction / specific volume
							%	Estimated control efficiency for H ₂ S and VOC
							%	Estimated 98% conversion of combusted H ₂ S to SO ₂
	563.4	1124.8	4,064.0	44.1	904.2	21.4	lb/hr	Based on pilot plus flared gas
	8.79	17.5	63.4	0.69	14.11	0.33	tpy	
Total Pilot + Flaring	NO _x	CO	SO ₂	H ₂ S	VOC	HAPs		
563.48	1124.92	4064.0	44.06	904.2	21.4	lb/hr		
9.1	18.2	63.4	0.69	14.1	0.33	tpy		

Fuel gas molecular weight 22.3 g/mol Mol. wt. of methane, the dominant species

Heat release (q) 285,822,951 cal/sec MMBtu/hr * 10⁶ * 252 cal/Btu ÷ 3600 sec/hrq_n 221,074,142 q_n = q(1-0.048(MW)^{1/2})Effective stack diameter (D) 14.869 m D = (10⁻⁶ q_n)^{1/2}

Residue Flaring (Plant Flare)

Emission Unit: Inlet Flare (Plant Flare)

Source Description: F-02

Flow Rate:

Plant Blowdown	90.4 MMsct/yr	Maximum Plant Blowdown to Flare based on SSM records
	104.0 MMsct/yr	Maximum Plant Blowdown with 15% safety factor
	80.00 MMsct/d	Flare design capacity
	3.33 MMsct/hr	Flare design capacity
	3,333.3 Mscf/hr	24-hr average
	3462.8 MMBtu/hr	scfh * mixture heating value / 1000
Pilot	570.8 scf/hr	flare pilot Based on permitted pilot capacity of 5 MMsct/yr
	0.0137 MMsct/d	scf/hr * 24 (hr/day) / 1e6 SCF/MMsct
	1000 BTU/scf	Nominal, sweet natural gas
	0.571 MMBtu/hr	
Plant Blowdown + Pilot	3463.35 MMBtu/hr	

Component	MW	mol %	MW * mol %	HHV (Btu/scf)	HHV * mol %	Specific Volume (ft ³ /lb)	Weighted Spec. Vol. (ft ³ /lb)	Mass Fraction	Spec. Vol. VOC (ft ³ /lb)	Spec. Vol. HAPs (ft ³ /lb)
Hydrogen Sulfide	34.08	0	0.000	637	0.0	11.136	0.000	0.000		
Nitrogen	28.01	2.1852	0.612	0	0	13.547	0.30	0.035		
Carbon Dioxide	44.01	0	0.000	0	0	8.623	0.00	0.000		
Methane	16.04	92.019	14.760	1009.7	929.1	23.65	21.8	0.856		
Ethane	30.07	5.3305	1.603	1768.7	94.3	12.62	0.7	0.093		
Propane	44.097	0.3087	0.136	2517.2	7.8	8.606	0.03	0.008	4.3	
Iso-Butane	58.123	0.0164	0.010	3252.6	0.5	6.529	0.001	0.001	0.23	
Nor-Butane	58.123	0.0306	0.018	3262	1.0	6.529	0.00	0.001	0.4	
Iso-Pentane	72.15	0.0069	0.005	3999.7	0.3	5.26	0.000	0.000	0.10	
Nor-Pentane	72.15	0.0076	0.005	4008.7	0.3	5.26	0.000	0.000	0.10	
N-Hexane	86.178	0.0024	0.002	4756.1	0.1	4.404	0.0001	0.0001	0.033	1.536
Benzene	78.114	0.0006	0.000	3741.9	0.02	4.858	0.0000	0.00003	0.008	0.384
Toluene	92.141	0.0008	0.001	4474.8	0.04	4.119	0.00003	0.00004	0.011	0.512
Ethylbenzene	106.168	0.0008	0.001	5222.1	0.042	3.574	2.8592E-05	4.92E-05	0.01104	0.512
m-Xylene	106.168	0.0011	0.001	5207.8	0.06	3.574	0.00004	0.00007	0.01518	0.704
o-Xylene	106.168	0.0006	0.001	5209.7	0.031	3.574	2.14E-05	3.69E-05	0.00828	0.384
Other Hexanes+	86.177	0.1104	0.095	4756.1	5.3	4.404	0.005	0.006	1.52	
Total		100.0216	17.2		1038.8		22.77	1.0	6.7	4.0
Dry total		VOC 0.5%	mixture MW		mixture HHV		Mass fraction VOC:	1.59%		
		HAP 0.01%					Mass Fraction HAPs:	0.0003		

¹ Component higher heat values and specific volumes obtained from Physical Properties of Hydrocarbons, API Research Project 44, Fig. 16-1, Rev. 1981**Emission Calculations**

Pilot Emissions	NO _x	CO	SO ₂	H ₂ S	VOC	HAPs	Units	
	0.1380	0.2755		3.6E-04			lb/MMBtu	TNRC RG-109 (high Btu; other)
				2.0E-04			lb H ₂ S/Mscf	Purchased sweet natural gas fuel, 0.25 gr H ₂ S/100scf
			7.1E-03				lb H ₂ S/hr	H ₂ S rate * fuel usage
			4.1E-03				lb S/Mscf	Purchased sweet natural gas fuel, 5 gr S/100scf
					0.00%	0.00%	lb SO ₂ /hr*	SO ₂ rate * fuel usage
					6.7	4.0	mol%	Assume no VOC content in purchased fuel (methane)
							ft ³ /lb	Specific volume (VOC)
	0.079	0.157					lb/hr	lb/MMBtu * MMBtu/hr
			0.0041	4.1E-06	-	-	lb/hr	98% combustion H ₂ S; 100% conversion to SO ₂
Plant Blowdown to Flare SSM	NO _x	CO	SO ₂	H ₂ S	VOC	HAPs		
	0.1380	0.2755		0.00%	0.5%	0.01%	lb/MMBtu	RG-109 Emission Factors for high-Btu, non-steam assisted
				11.14	6.72	4.03	mol %	Flare Gas
				0.0	2,415.2	52.1	ft ³ /lb	Specific volume
				98%	98%	98%	lb/hr	vol. Gas * mole fraction / specific volume
			98%				%	Estimated control efficiency for H ₂ S and VOC
							%	Estimated 98% conversion of combusted H ₂ S to SO ₂
	477.9	954.0	0.0	0.0	48.3	1.0	lb/hr	Based on pilot plus flared gas
Total Pilot + Flaring	NO _x	CO	SO ₂	H ₂ S	VOC	HAPs		
	477.94	954.15	0.0	0.0	48.3	1.0	lb/hr	

Fuel gas molecular weight	17.2 g/mol	Mol. wt. of methane, the dominant species
Heat release (q)	242,434,247 cal/sec	MMBtu/hr * 10 ⁶ * 252 cal/Btu ÷ 3600 sec/hr
q _n	194,103,115	q _n = q(1-0.048(MW) ^{1/2})
Effective stack diameter (D)	13.932 m	D = (10 ⁶ q _n) ^{1/2}

AGI Flare GHG Emissions (Acid Gas)**598,233(m) Flare stack GHG emissions.**

Step 1. Calculate contribution of un-combusted CH₄ emissions from the regenerator combustion gas vent (actual conditions).

$$E_{\text{ACH}} (\text{un-combusted}) = V_g \cdot (1 - \eta) \cdot X_{\text{CH}_4} \quad (\text{Equation W-39B})$$

where:

E_{ACH} = contribution of annual un-combusted CH₄ emissions from regenerator in cubic feet under actual conditions.

V_g = volume of gas sent to combustion unit during the year (cf)

η = Fraction of gas combusted by a burning flare (or regenerator), default value from Subpart W = 0.98

For gas sent to an utility flare, η is zero.

X_{CH_4} = Mole fraction of CH₄ in gas to the flare = 0.0023 (Client gas analysis)

Step 2. Calculate contribution of un-combusted CO₂ emissions from the regenerator combustion gas vent (actual conditions).

$$E_{\text{ACD}} = V_g \cdot X_{\text{CO}_2} \quad (\text{Equation W-20})$$

where:

E_{ACD} = contribution of annual un-combusted CO₂ emissions from regenerator in cubic feet under actual conditions.

V_g = volume of gas sent to combustion unit during the year (cf)

X_{CO_2} = Mole fraction of CO₂ in gas to the flare = 0.746

Step 3. Calculate contribution of combusted CO₂ emissions from the regenerator combustion gas vent (actual conditions).

$$E_{\text{ACC}} (\text{combusted}) = \sum (\eta \cdot V_g \cdot Y_j \cdot R_j) \quad (\text{Equation W-21})$$

where:

η = Fraction of gas combusted by a burning flare (or regenerator) = 0.98

For gas sent to an utility flare, η is zero.

V_g = volume of gas sent to combustion unit during the year (cf)

Y_j = mole fraction of gas hydrocarbon constituents j:

Constituent j, Methane = 0.0023 (Client gas analysis)

Constituent j, Ethane = 0.0007

Constituent j, Propane = 0.0014

Constituent j, Butane = 0.00209

Constituent j, Pentanes Plus = 0.043

R_j = number of carbon atoms in the gas hydrocarbon constituent j:

Constituent j, Methane = 1

Constituent j, Ethane = 2

Constituent j, Propane = 3

Constituent j, Butane = 4

Constituent j, Pentanes Plus = 5

Step 4. Calculate GHG volumetric emissions at standard conditions (scf).

$$E_{\text{sp}} = E_{\text{ACH}} \cdot (459.67 + T_g) \cdot P_a \quad (\text{Equation W-33})$$

$$(459.67 + T_g) \cdot P_a$$

where:

E_{sp} = GHG i volumetric emissions at standard temperature and pressure (STP) in cubic feet

E_{ACH} = GHG i volumetric emissions at actual conditions (cf)

T_g = Temperature at standard conditions (F) = 60 F

T_a = Temperature at actual conditions (F) = 76 F

(Based on Annual Avg Max Temperature for Hobbs, NM from Western Regional Climate Center)

P_a = Absolute pressure at standard conditions (psia) = 14.7 psia

P_g = Absolute pressure at actual conditions (psia) = 14.7 psia (Assumption)

Constant = 459.67 (temperature conversion from F to R)

Step 5. Calculate annual CH₄ and CO₂ mass emissions (ton).

$$\text{Mass}_{\text{CH}_4} = E_{\text{ACH}} \cdot \rho_{\text{CH}_4} \cdot 0.0011023 \quad (\text{Equation W-36})$$

where:

$\text{Mass}_{\text{CH}_4}$ = GHG i (CO₂, CH₄, or N₂O) mass emissions at standard conditions in tons (tpy)

E_{ACH} = GHG i (CO₂, CH₄, or N₂O) volumetric emissions at standard conditions (cf)

ρ_i = Density of GHG i Use:

CH₄: 0.0192 kg/m³ (at 60F and 14.7 psia)

CO₂: 0.0526 kg/m³ (at 60F and 14.7 psia)

Step 6. Calculate annual N₂O emissions from portable or stationary fuel combustion sources under actual conditions (cf) using Equation W-40.

$$\text{Mass}_{\text{N}_2\text{O}} = 0.0011023 \cdot \text{Fuel} \cdot \text{HHV} \cdot \text{EF} \quad (\text{Equation W-40})$$

where:

$\text{Mass}_{\text{N}_2\text{O}}$ = annual N₂O emissions from combustion of a particular type of fuel (tons).

Fuel = mass or volume of the fuel combusted

HHV = High heat value of the fuel

Field gas HHV = 1.235E-03 MMBtu/scf (Default provided in Subpart W Final Amendment)

EF = 1.00E-04 kg N₂O/MMBtu

10⁻³ = conversion factor from kg to metric tons.

Step 7. Calculate total annual emission from flare (regenerator) by summing Equations W-40, W-19, W-20, and W-21.

Gas Sent to Flare (cf/yr)	CH ₄ Un-Combust ed, E_{ACH} (cf)	CO ₂ Un-Combusted, E_{ACD} (cf)	CO ₂ Combusted, E_{ACC} (cf)	CH ₄ Un-Combust ed, E_{ACH} (scf)	CO ₂ Un-Combusted, E_{ACD} (scf)	CO ₂ Combusted, E_{ACC} (scf)	CH ₄ Un-Combusted, E_{ACH} (tpy)	CO ₂ Un-Combusted, E_{ACH} (tpy)	CO ₂ Combusted, E_{ACH} (tpy)	N ₂ O Mass Emissions (tpy)
24,459,223	1143	18,251,290	5,496,112	1,109	17,696,229	5,328,963	0.02	1,026.04	308.98	0.00333

AGI Flare GHG Emissions (residue gas)**§98.233(n) Flare stack GHG emissions.**

Step 1. Calculate contribution of un-combusted CH₄ emissions from the regenerator combustion gas vent (actual conditions).

$$E_{\text{CH}_4}(\text{un-combusted}) = V_g \cdot (1 - \eta) \cdot X_{\text{CH}_4} \quad (\text{Equation W-20B})$$

where:

E_{CH_4} = contribution of annual un-combusted CH₄ emissions from regenerator in cubic feet under actual conditions.

V_g = volume of gas sent to combustion unit during the year (cf)

η = Fraction of gas combusted by a burning flare (or regenerator), default value from Subpart W = 0.98

For gas sent to an unlit flare, η is zero.

X_{CH_4} = Mole fraction of CH₄ in gas to the flare = 0.9202 (Client gas analysis)

Step 2. Calculate contribution of un-combusted CO₂ emissions from the regenerator combustion gas vent (actual conditions).

$$E_{\text{CO}_2} = V_g \cdot X_{\text{CO}_2} \quad (\text{Equation W-20})$$

where:

E_{CO_2} = contribution of annual un-combusted CO₂ emissions from regenerator in cubic feet under actual conditions.

V_g = volume of gas sent to combustion unit during the year (cf)

X_{CO_2} = Mole fraction of CO₂ in gas to the flare = 0.000

Step 3. Calculate contribution of combusted CO₂ emissions from the regenerator combustion gas vent (actual conditions).

$$E_{\text{CO}_2}(\text{combusted}) = \sum (\eta \cdot V_g \cdot Y_j \cdot R_j) \quad (\text{Equation W-21})$$

where:

η = Fraction of gas combusted by a burning flare (or regenerator) = 0.98

For gas sent to an unlit flare, η is zero.

V_g = volume of gas sent to combustion unit during the year (cf)

Y_j = mole fraction of gas hydrocarbon constituents j:

Constituent j, Methane = 0.9202 (Client gas analysis)
 Constituent j, Ethane = 0.0533
 Constituent j, Propane = 0.0031
 Constituent j, Butane = 0.00016
 Constituent j, Pentanes Plus = 0.001

R_j = number of carbon atoms in the gas hydrocarbon constituent j:

Constituent j, Methane = 1
 Constituent j, Ethane = 2
 Constituent j, Propane = 3
 Constituent j, Butane = 4
 Constituent j, Pentanes Plus = 5

Step 4. Calculate GHG volumetric emissions at standard conditions (scf).

$$E_{\text{scf}} = \frac{E_{\text{scf}} \cdot (459.67 + T_s)}{(459.67 + T_a)} \cdot P_s \quad (\text{Equation W-33})$$

where:

E_{scf} = GHG volumetric emissions at standard temperature and pressure (STP) in cubic feet

E_{scf} = GHG volumetric emissions at actual conditions (cf)

T_s = Temperature at standard conditions (F) = 60 F

T_a = Temperature at actual conditions (F) = 76 F

(Based on Annual Avg Max Temperature for Hobbs, NM from Western Regional Climate Center)

P_s = Absolute pressure at standard conditions (psia) = 14.7 psia

P_a = Absolute pressure at actual conditions (psia) = 14.7 psia (Assumption)

Constant = 459.67 (temperature conversion from F to R)

Step 5. Calculate annual CH₄ and CO₂ mass emissions (ton).

$$\text{Mass}_{\text{CH}_4} = E_{\text{CH}_4} \cdot \rho_{\text{CH}_4} \cdot 0.0011023 \quad (\text{Equation W-36})$$

where:

$\text{Mass}_{\text{CH}_4}$ = GHG i (CO₂, CH₄, or N₂O) mass emissions at standard conditions in tons (tpy)

E_{CH_4} = GHG i (CO₂, CH₄, or N₂O) volumetric emissions at standard conditions (cf)

ρ_i = Density of GHG i. Use:

CH₄: 0.0192 kg/m³ (at 60°F and 14.7 psia)

CO₂: 0.0326 kg/m³ (at 60°F and 14.7 psia)

Step 6. Calculate annual N₂O emissions from portable or stationary fuel combustion sources under actual conditions (cf) using Equation W-40.

$$\text{Mass}_{\text{N}_2\text{O}} = 0.0011023 \cdot \text{Fuel} \cdot \text{HHV} \cdot \text{EF} \quad (\text{Equation W-40})$$

where:

$\text{Mass}_{\text{N}_2\text{O}}$ = annual N₂O emissions from combustion of a particular type of fuel (tons).

Fuel = mass or volume of the fuel combusted

HHV = high heat value of the fuel

Field gas HHV = 1.235E+03 MMBtu/scf (Default provided in Subpart W Final Amendment.)

EF = 1.00E-04 kg N₂O/MMBtu

10⁻³ = conversion factor from kg to metric tons.

Step 7. Calculate total annual emission from flare (regenerator) by summing Equations W-40, W-19, W-20, and W-21.

Gas Sent to Flare (cf/yr)	CH ₄ Un-Combusted, E_{CH_4} (cf)	CO ₂ Un-Combusted, E_{CO_2} (cf)	CO ₂ Combusted, E_{CO_2} (cf)	CH ₄ Un-Combusted, E_{CH_4} (cf)	CO ₂ Un-Combusted, E_{CO_2} (cf)	CO ₂ Combusted, E_{CO_2} (cf)	CH ₄ Un-Combusted, E_{CH_4} (tpy)	CO ₂ Un-Combusted, E_{CO_2} (tpy)	CO ₂ Combusted, E_{CO_2} (tpy)	N ₂ O Mass Emissions (tpy)
286,997,841	5281851	0	293,429,882	5,121,218	0	284,505,048	108.39	0.00	16,495.94	0.03907

Inlet Flare GHG Emissions

§98.233(n) Flare stack GHG emissions.

Step 1. Calculate contribution of un-combusted CH₄ emissions from the regenerator combustion gas vent (actual conditions).

$$E_{a,CH_4}(\text{un-combusted}) = V_g \cdot (1 - \eta) \cdot X_{CH_4} \quad (\text{Equation W-39B})$$

where:

E_{a,CH_4} = contribution of annual un-combusted CH₄ emissions from regenerator in cubic feet under actual conditions.

V_g = volume of gas sent to combustion unit during the year (cf)

η = Fraction of gas combusted by a burning flare (or regenerator), default value from Subpart W = 0.98

For gas sent to an unlit flare, η is zero.

X_{CH_4} = Mole fraction of CH₄ in gas to the flare = 0.75 (Client gas analysis)

Step 2. Calculate contribution of un-combusted CO₂ emissions from the regenerator combustion gas vent (actual conditions).

$$E_{a,CO_2} = V_g \cdot X_{CO_2} \quad (\text{Equation W-20})$$

where:

E_{a,CO_2} = contribution of annual un-combusted CO₂ emissions from regenerator in cubic feet under actual conditions.

V_g = volume of gas sent to combustion unit during the year (cf)

X_{CO_2} = Mole fraction of CO₂ in gas to the flare = 0.033

Step 3. Calculate contribution of combusted CO₂ emissions from the regenerator combustion gas vent (actual conditions).

$$E_{a,CO_2}(\text{combusted}) = \sum (\eta \cdot V_g \cdot Y_j \cdot R_j) \quad (\text{Equation W-21})$$

where:

η = Fraction of gas combusted by a burning flare (or regenerator) = 0.98

For gas sent to an unlit flare, η is zero.

V_g = volume of gas sent to combustion unit during the year (cf)

Y_j = mole fraction of gas hydrocarbon constituents j:

Constituent j, Methane =	0.7474	(Client gas analysis)
Constituent j, Ethane =	0.0992	
Constituent j, Propane =	0.0553	
Constituent j, Butane =	0.02608	
Constituent j, Pentanes Plus =	0.015	

R_j = number of carbon atoms in the gas hydrocarbon constituent j:

Constituent j, Methane =	1
Constituent j, Ethane =	2
Constituent j, Propane =	3
Constituent j, Butane =	4
Constituent j, Pentanes Plus =	5

Step 4. Calculate GHG volumetric emissions at standard conditions (scf).

$$E_{st} = E_{a,i} \cdot (459.67 + T_a) \cdot P_a \quad (\text{Equation W-33})$$

where:

E_{st} = GHG i volumetric emissions at standard temperature and pressure (STP) in cubic feet

$E_{a,i}$ = GHG i volumetric emissions at actual conditions (cf)

T_a = Temperature at standard conditions (F) = 60 F

T_a = Temperature at actual conditions (F) = 76 F

(Based on Annual Avg Max Temperature for Hobbs, NM from Western Regional Climate Center)

P_a = Absolute pressure at standard conditions (psia) = 14.7 psia

P_a = Absolute pressure at actual conditions (psia) = 14.7 psia (Assumption)

Constant = 459.67 (temperature conversion from F to R)

Step 5. Calculate annual CH₄ and CO₂ mass emissions (ton).

$$\text{Mass}_{st,i} = E_{st,i} \cdot \rho_i \cdot 0.0011023 \quad (\text{Equation W-36})$$

where:

$\text{Mass}_{st,i}$ = GHG i (CO₂, CH₄, or N₂O) mass emissions at standard conditions in tons (tpy)

$E_{st,i}$ = GHG i (CO₂, CH₄, or N₂O) volumetric emissions at standard conditions (cf)

ρ_i = Density of GHG i. Use:

CH ₄ :	0.0192 kg/ft ³ (at 60F and 14.7 psia)
CO ₂ :	0.0526 kg/ft ³ (at 60F and 14.7 psia)

Step 6. Calculate annual N₂O emissions from portable or stationary fuel combustion sources under actual conditions (cf) using Equation W-40.

$$\text{Mass}_{N_2O} = 0.0011023 \cdot \text{Fuel} \cdot \text{HHV} \cdot \text{EF} \quad (\text{Equation W-40})$$

where:

Mass_{N_2O} = annual N₂O emissions from combustion of a particular type of fuel (tons).

Fuel = mass or volume of the fuel combusted

HHV = high heat value of the fuel

Field gas HHV = 1.235E-03 MMBtu/scf (Default provided in Subpart W Final Amendment;)

EF = 1.00E-04 kg N₂O/MMBtu

10⁻³ = conversion factor from kg to metric tons.

Step 7. Calculate total annual emission from flare (regenerator) by summing Equations W-40, W-19, W-20, and W-21.

Gas Sent to Flare (cf/yr)	CH ₄ Un-Combusted, E_{a,CH_4} (cf)	CO ₂ Un-Combusted, E_{a,CO_2} (cf)	CO ₂ Combusted, E_{a,CO_2} (cf)	CH ₄ Un-Combusted, E_{a,CH_4} (scf)	CO ₂ Un-Combusted, E_{a,CO_2} (scf)	CO ₂ Combusted, E_{a,CO_2} (scf)	CH ₄ Un-Combusted, E_{a,CH_4} (tpy)	CO ₂ Un-Combusted, E_{a,CO_2} (tpy)	CO ₂ Combusted, E_{a,CO_2} (tpy)	N ₂ O Mass Emissions (tpy)
104,004,850	1554748	3,437,360	131,812,148	1,507,464	3,332,823	127,803,458	31.90	193.24	7,410.17	0.01416

Targa Midstream Services LLC - Eunice Gas Plant

Vessel SSM Emissions

	Annual Volume of Gas Sent to Atmosphere (ft ³)	Hourly Volume of Gas Sent to Atmosphere (ft ³)	Mass Percent VOC	Molecular Wt (lb/lb-mol)	VOC (lb/hr)	VOC (lb/yr)	VOC (ton/yr)
VOC Emissions							
Rich Gas	207,319	25,915	22.8%	21	325.6	2605.1	1.30
Residue Gas	-	-	-	-	-	-	-
Propane	29,004	3,625	100%	44	421.3	3370.4	1.7
Total					746.9	5975.4	3.0

	Annual Volume of Gas Sent to Atmosphere (ft ³)	Hourly Volume of Gas Sent to Atmosphere (ft ³)	Mass Percent HAPs	Molecular Wt (lb/lb-mol)	HAP (lb/hr)	HAP (lb/yr)	HAP (ton/yr)
HAP Emissions							
Rich Gas	207,319	25,915	1.79%	21	25.5	204.3	0.1021
Residue Gas	-	-	-	-	-	-	-
Propane	-	-	-	-	-	-	-
Total					25.5	204.3	0.102

	Annual Volume of Gas Sent to Atmosphere (ft ³)	Hourly Volume of Gas Sent to Atmosphere (ft ³)	Mass Percent CO ₂	Molecular Wt (lb/lb-mol)	CO ₂ (lb/hr)	CO ₂ (lb/yr)	CO ₂ (ton/yr)
CO ₂ Emissions							
Rich Gas	207,319	25,915	0.01%	21	0.1	0.7	3.6E-04
Residue Gas	-	-	-	-	-	-	-
Propane	-	-	-	-	-	-	-
Total					0.1	0.7	0.00

	Annual Volume of Gas Sent to Atmosphere (ft ³)	Hourly Volume of Gas Sent to Atmosphere (ft ³)	Mass Percent CH ₄	Molecular Wt (lb/lb-mol)	CH ₄ (lb/hr)	CH ₄ (lb/yr)	CH ₄ (ton/yr)
CH ₄ Emissions							
Rich Gas	207,319	25,915	60.7%	21	868.2	6945.5	3.5
Residue Gas	-	-	-	-	-	-	-
Propane	-	-	-	-	-	-	-
Total					868.2	6945.5	3.47

Basis of Calculation:

Emissions from vessel maintenance activities are calculated based on a mass balance as follows:

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of Gas Vented (scf/yr)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

Compressor Blowdowns

VOC Emissions	Hourly Volume of Gas Sent to Atmosphere (ft ³)	Annual Volume of Gas Sent to Atmosphere (ft ³)	Mass Percent VOC	Molecular Wt (lb/lb-mol)	VOC (lb/hr)	VOC (lb/yr)	VOC (ton/yr)
Inlet Gas	6,472	223,285	23.1%	22	87.8	3028.3	1.5
Residue Gas	1,290	44,520	0.51%	16	0.3	10.0	5.0E-03
Total					88.07	3038.3	1.52

Compressor Blowdowns

	Hourly Volume of Gas Sent to Atmosphere (ft ³)	Annual Volume of Gas Sent to Atmosphere (ft ³)	Mass Percent HAPs	Molecular Wt (lb/lb-mol)	HAP (lb/hr)	HAP (lb/yr)	HAP (ton/yr)
HAP Emissions							
Inlet Gas	6,472	223,285	0.55%	22	2.1	71.7	3.6E-02
Residue Gas	-	-	-	-	-	-	-
Total	-	-	-	-	2.1	71.7	0.036

	Hourly Volume of Gas Sent to Atmosphere (ft ³)	Annual Volume of Gas Sent to Atmosphere (ft ³)	Mass Percent H ₂ S	Molecular Wt (lb/lb-mol)	H ₂ S (lb/hr)	H ₂ S (lb/yr)	H ₂ S (ton/yr)
H ₂ S Emissions							
Inlet Gas	6,472	223,285	1.1%	22	4.3	147.6	0.074
Residue Gas	-	44,520	-	-	-	-	-
Total	-	-	-	-	4.3	147.6	0.074

	Annual Volume of Gas Sent to Atmosphere (ft ³)	Hourly Volume of Gas Sent to Atmosphere (ft ³)	Mass Percent CO ₂	Molecular Wt (lb/lb-mol)	CO ₂ (lb/hr)	CO ₂ (lb/yr)	CO ₂ (ton/yr)
CO ₂ Emissions							
Inlet Gas	6,472	223,285	6.5%	22	24.8	855.8	0.428
Residue Gas	-	-	-	-	-	-	-
Total	-	-	-	-	24.8	855.8	0.43

	Annual Volume of Gas Sent to Atmosphere (ft ³)	Hourly Volume of Gas Sent to Atmosphere (ft ³)	Mass Percent CH ₄	Molecular Wt (lb/lb-mol)	CH ₄ (lb/hr)	CH ₄ (lb/yr)	CH ₄ (ton/yr)
CH ₄ Emissions							
Inlet Gas	6,472	223,285	53.8%	22	204.5	7053.9	3.527
Residue Gas	1,290	44,520	94.0%	16	52.7	1819.3	0.910
Total	-	-	-	-	257.2	8873.2	4.44

Basis of Calculation:
Emissions from compressor maintenance activities are calculated based on a mass balance as follows:
Maximum Uncontrolled Annual Emissions (tpy) = [Volume of Gas Ventd (scf/yr)] x [MW of stream (lb/lb-mol)] x [wt %
VOC or specified constituent] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

Pump SSM Emissions

Pump Blowdowns

Pump Unit Number	Hourly Release Including 15% Safety Factor (scf/hr)	Yearly Release Including 15% Safety Factor (scf/yr)	Mass Percent VOC	Molecular Wt (lb/lb-mol)	VOC (lb/hr)	VOC (lb/yr)	VOC (tpy)	Type of Gas Vented (Inlet, Residue, Acid Gas etc)
P-PP	11.9	85.3	62.5%	40.7	0.80	5.7	0.0029	Refrigerant
P-PB	2.0	15.8	62.5%	40.7	0.13	1.1	0.00053	Refrigerant
P-DP	3.0	24.1	62.5%	40.7	0.20	1.6	0.0081	Refrigerant
AP	2.3	4.6	62.5%	40.7	0.15	0.3	0.00015	Refrigerant
Totals	19.2	129.7			1.3	8.7	0.012	

Pump Unit Number	Hourly Release Including 15% Safety Factor (scf/hr)	Yearly Release Including 15% Safety Factor (scf/yr)	Mass Percent CH ₄	Molecular Wt (lb/lb-mol)	CH ₄ (lb/hr)	CH ₄ (lb/yr)	CH ₄ (tpy)	Type of Gas Vented (Inlet, Residue, Acid Gas etc)
P-PP	11.9	85.3	0.5%	40.7	6.91E-03	4.9E-02	2.5E-05	Refrigerant
P-PB	2.0	15.8	0.5%	40.7	1.14E-03	9.1E-03	4.6E-06	Refrigerant
P-DP	3.0	24.1	0.5%	40.7	1.74E-03	1.4E-02	7.0E-05	Refrigerant
AP	2.3	4.6	0.5%	40.7	1.34E-03	2.7E-03	1.3E-06	Refrigerant
Totals	19.2	129.7			1.1E-02	7.5E-02	1.0E-04	

Basis of Calculation:

Emissions from pump maintenance activities are calculated based on a mass balance as follows:

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of Gas Vented (scf/yr)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

VRU Downtime Emissions

Emission unit number(s): SSM-VRU

Source description: VRU Downtime Emissions

VRU Capture Efficiency: 100%

Loading Vapor Balance 70%

Capture Efficiency:

VRU Downtime: 2.50%

Component	VRU Feed Rates and Composition						VRU Annual Downtime (%)	VRU SSM (tpy)
	ProMax Flash ^{1,2} (lb/hr)	ProMax Working ^{1,2} (lb/hr)	ProMax Breathing ^{1,2} (lb/hr)	ProMax Loading ^{1,3} (lb/hr)	Total (lb/hr)	Total (tpy)		
Nitrogen	1.57E-02	1.90E-05	4.22E-06	8.06E-06	1.57E-02	6.87E-02	2.50%	1.72E-03
Carbon Dioxide	4.49E-01	9.75E-03	2.16E-03	4.13E-03	4.65E-01	2.04E+00	2.50%	5.09E-02
Methane	1.49E+00	8.69E-03	1.93E-03	3.68E-03	1.50E+00	6.57E+00	2.50%	1.64E-01
Ethane	1.57E+01	5.31E-01	1.18E-01	2.24E-01	1.66E+01	7.28E+01	2.50%	1.82E+00
Propane	6.75E+01	2.49E+00	5.53E-01	1.05E+00	7.16E+01	3.14E+02	2.50%	7.85E+00
Isobutane	2.03E+01	8.63E-01	1.91E-01	3.65E-01	2.17E+01	9.52E+01	2.50%	2.38E+00
n-Butane	6.01E+01	2.88E+00	6.39E-01	1.22E+00	6.48E+01	2.84E+02	2.50%	7.10E+00
Cyclopentane	2.15E+00	1.03E-01	2.27E-02	4.34E-02	2.32E+00	1.02E+01	2.50%	2.54E-01
Isopentane	2.30E+01	1.20E+00	2.66E-01	5.07E-01	2.50E+01	1.09E+02	2.50%	2.73E+00
n-Pentane	2.50E+01	1.35E+00	2.99E-01	5.70E-01	2.73E+01	1.19E+02	2.50%	2.99E+00
Benzene	1.41E+00	5.30E-02	1.18E-02	2.24E-02	1.50E+00	6.57E+00	2.50%	1.64E-01
Cyclohexane	2.10E+00	1.01E-01	2.24E-02	4.28E-02	2.26E+00	9.91E+00	2.50%	2.48E-01
Methylcyclopentane	2.79E+00	1.47E-01	3.26E-02	6.22E-02	3.03E+00	1.33E+01	2.50%	3.32E-01
n-Hexane	5.10E+00	3.04E-01	6.74E-02	1.29E-01	5.60E+00	2.45E+01	2.50%	6.13E-01
2-Methylpentane	4.72E+00	2.68E-01	5.93E-02	1.13E-01	5.16E+00	2.26E+01	2.50%	5.65E-01
3-Methylpentane	2.77E+00	1.60E-01	3.54E-02	6.76E-02	3.04E+00	1.33E+01	2.50%	3.32E-01
Neohexane	2.06E-01	1.18E-02	2.62E-03	5.00E-03	2.25E-01	9.86E-01	2.50%	2.47E-02
Toluene	5.64E-01	2.33E-02	5.18E-03	9.87E-03	6.02E-01	2.64E+00	2.50%	6.59E-02
Cyclopentane, 1,3-Dimethyl-, cis-	3.24E-01	1.76E-02	3.90E-03	7.44E-03	3.53E-01	1.55E+00	2.50%	3.87E-02
Methylcyclohexane	1.13E+00	6.80E-02	1.51E-02	2.88E-02	1.24E+00	5.43E+00	2.50%	1.36E-01
2-Methylhexane	5.24E-01	2.98E-02	6.60E-03	1.26E-02	5.73E-01	2.51E+00	2.50%	6.27E-02
3-Methylhexane	7.59E-01	4.53E-02	1.00E-02	1.91E-02	8.34E-01	3.65E+00	2.50%	9.13E-02
2,3-Dimethylpentane	2.89E-01	1.69E-02	3.76E-03	7.17E-03	3.16E-01	1.39E+00	2.50%	3.46E-02
n-Heptane	1.47E+00	8.62E-02	1.91E-02	3.65E-02	1.61E+00	7.07E+00	2.50%	1.77E-01
Ethylbenzene	3.84E-02	1.81E-03	4.01E-04	7.65E-04	4.13E-02	1.81E-01	2.50%	4.53E-03
m-Xylene	5.16E-02	2.32E-03	5.15E-04	9.83E-04	5.54E-02	2.43E-01	2.50%	6.07E-03
o-Xylene	1.38E-02	5.71E-04	1.27E-04	2.41E-04	1.47E-02	6.44E-02	2.50%	1.61E-03
Cyclooctane	4.87E-03	2.52E-04	5.59E-05	1.07E-04	5.29E-03	2.31E-02	2.50%	5.79E-04
Ethylcyclohexane	4.25E-02	2.39E-03	5.31E-04	1.01E-03	4.65E-02	2.04E-01	2.50%	5.09E-03
2,5-Dimethylhexane	2.22E-02	1.32E-03	2.94E-04	5.60E-04	2.44E-02	1.07E-01	2.50%	2.67E-03
2-Methylheptane	1.51E-01	9.10E-03	2.02E-03	3.85E-03	1.66E-01	7.29E-01	2.50%	1.82E-02
n-Octane	3.83E-01	2.09E-02	4.64E-03	8.85E-03	4.18E-01	1.83E+00	2.50%	4.57E-02
1,2,4-Trimethylbenzene	1.85E-03	7.54E-05	1.67E-05	3.19E-05	1.98E-03	8.67E-03	2.50%	2.17E-04
Isopropylbenzene	1.93E-03	9.40E-05	2.08E-05	3.97E-05	2.08E-03	9.12E-03	2.50%	2.28E-04
n-Propylbenzene	1.28E-03	5.86E-05	1.30E-05	2.48E-05	1.38E-03	6.05E-03	2.50%	1.51E-04
n-Nonane	4.50E-02	2.26E-03	5.02E-04	9.58E-04	4.88E-02	2.14E-01	2.50%	5.34E-03
i-Butylbenzene	1.17E-04	4.96E-06	1.10E-06	2.10E-06	1.25E-04	5.47E-04	2.50%	1.37E-05
n-Butylbenzene	2.04E-04	9.16E-06	2.03E-06	3.87E-06	2.19E-04	9.60E-04	2.50%	2.40E-05
n-Decene	7.44E-03	3.29E-04	7.29E-05	1.39E-04	7.99E-03	3.50E-02	2.50%	8.74E-04
Undecene	8.30E-04	4.67E-05	1.04E-05	1.98E-05	9.07E-04	3.97E-03	2.50%	9.93E-05
Dodecene	4.16E-05	2.00E-06	4.45E-07	8.48E-07	4.49E-05	1.97E-04	2.50%	4.92E-06
Hydrogen Sulfide	2.47E+00	5.67E-02	1.26E-02	2.40E-02	2.56E+00	1.12E+01	2.50%	2.80E-01
Total	243.22	10.86	2.41	4.60	261.09	1,143.57	--	28.59
Total VOC	223.06	10.26	2.27	4.34	239.93	1,050.90	--	26.27
Total H₂S	2.47	0.057	0.013	0.024	2.56	11.22	--	0.28
Total HAP	7.18	0.39	0.085	0.163	7.81	34.21	--	0.86

¹ Flash, Working, Breathing, and Loading emissions from ProMax simulation of the process. '13 psia Gas', 'Working', 'Breathing', and 'Loading' streams referenced, respectively.² Condensate tank emissions are controlled by a vapor recovery unit with a capture efficiency of 100%. The emissions here represent the 100% captured.³ Condensate loading emissions are controlled by vapor balancing. A collection efficiency of 70% is applied per AP-42 Section 5.2 for trucks not passing one of the NSPS-level annual test. The emissions here represent the 70% captured. The 30% uncaptured emissions are represented at units L-01/L-02.

Targa Midstream Services, LLC
Eunice Gas Plant

Description: AGI-C2 Compressor Purging Emissions
Unit: SSM-CB (For AGI-C2 Only)

Inputs

Parameter	Value	Units	Notes
Number of Compressors	1	-	Facility design
Blowdowns per year	6	per unit	Facility design
Duration of blowdown	1	hours	Facility design, no simultaneous events

Vessel	Volume ft ³	Emissions routed to...	Volume to Atmosphere	
			ft ³ /hr	ft ³ /yr
Redundant AGI Compressor	352.50	Atmosphere	352.50	2,432.25
Total			352.50	2,432.25

Vessel	Volume routed to atmosphere		Mass Percent VOC	Molecular Wt lb/lb-mol	VOC	
	ft ³ /hr	ft ³ /yr			lb/hr	ton/yr
Redundant AGI Compressor	352.50	2,432.25	1.6%	17.3	2.6E-01	8.8E-04
Total					2.6E-01	8.8E-04

	Volume routed to atmosphere		CO ₂ wt %	Molecular wt	CO ₂	
	hour (ft ³ /hr)	year (ft ³ /yr)			(lb/hr)	(ton/yr)
CH ₄ Emissions	353	2,432.25	0.00%	17.3	-	0.00E+00
Total					-	0.00E+00

	Volume routed to atmosphere		CH ₄ wt %	Molecular wt	CH ₄	
	hour (ft ³ /hr)	year (ft ³ /yr)			(lb/hr)	(ton/yr)
CH ₄ Emissions	353	2,432.25	85.57%	17.3	-	0.047
Total					-	0.047

Basis of Calculation:

Emissions from compressor maintenance activities are calculated based on a mass balance as follows:

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of Gas Vented (scf/yr)] x [MW of stream (lb/lb-mol)]
x [wt % VOC or speciated constituent] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

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.
-

- **External Combustion Devices (Heaters and Reboiler)**
 - AP-42 Tables 1.4-1 and 1.4-2
 - GRI-HAPCalc 3.01
- **Engines (Unit C-9, C-10, C-11 and C-12)**
 - GRI-HAPCalc 3.01
 - Stack Tests
 - AP-42 Section 3.2 Tables
- **Generator (Unit EG-01)**
 - Technical Data Sheet
 - AP-42, 5th Edition, Table 3.4-3 and Table 3.4-1
- **Air Compressor (Unit EG-02)**
 - Technical Data Sheet
 - AP-42, 5th Edition, Table 3.3-2 and Table 3.3-1
 - Policy: CARB Emission Factors for CI Diesel Engines – Percent HC in Relation to NMHC + NOx
- **Methanol, Gasoline and Diesel Tanks**
 - TANKS 4.0.9

Title V Operating Permit No. P-109-R3M1 Significant Modification:

- **Loading (Unit L-01 and L-02)**
 - EPA AP-42 Section 5.2 for Condensate Truck Loading
- **Haul Road (Unit HAUL)**
 - AP-42 Section 13.2.2 for Unpaved Haul Roads
- **Flare (Unit F-01)**
 - TNRCC RG-109
 - Acid gas analysis – Acid Gas SRU Inlet, 12/17/2008
- **Flare (Unit F-02)**
 - TNRCC RG-109

- Inlet gas analysis - Targa Eunice Plant Green Gas, 10/04/2013
- **Startup, Shutdown, and Maintenance Emissions (SSM-CB, SSM-VRU)**
 - Gas analyses
 - Inlet gas analysis – Targa Eunice Plant Green Gas, 4/17/2019
 - Rich gas analysis – Rich Gas East Contactor, 4/17/2019
 - Residue gas analysis – Residue Gas, 4/17/2019
 - Y-grade analysis – Eunice, 2/13/2020
 - Liquids Analysis – Eunice, 2/13/2020
 - ProMax
 - Tanks – Updated in March 2020 based on Liquids Analysis from 2/13/2020
 - Amine – Updated in July 2019 based on Inlet gas analysis from 4/17/2019

NSR Permit 0067-M11-R4 Revisions:*Fugitives Associated with Additional Components Installation (Unit FG-01; FUG-AGC)*

- Table 2-4 of the EPA Protocol for Equipment Leak Emission Estimates, November 1995
- Facility Acid Gas Analysis dated 10/21/2021

NSR Permit 0067-M11R6 Revisions:*Fugitives Associated with Additional Components Installation (Unit: FUG-SEP)*

- Table 2-4 of the EPA Protocol for Equipment Leak Emission Estimates, November 1995
- Inlet analysis dated 10/4/2023.

VRU Downtime (SSM-VRU)

- BR&E Promax

NSR Permit 0067-M11R7 Revisions:*Fugitives Associated with Additional Components Installation (Unit FG-02)*

- Table 2-4 of the EPA Protocol for Equipment Leak Emission Estimates, November 1995
- Facility Acid Gas Analysis dated 10/21/2021

Table 1.4-1. EMISSION FACTORS FOR NITROGEN OXIDES (NO_x) AND CARBON MONOXIDE (CO)
FROM NATURAL GAS COMBUSTION^a

Combustor Type (MMBtu/hr Heat Input) [SCC]	NO _x ^b		CO	
	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating
Large Wall-Fired Boilers (>100) [1-01-006-01, 1-02-006-01, 1-03-006-01]				
Uncontrolled (Pre-NSPS) ^c	280	A	84	B
Uncontrolled (Post-NSPS) ^c	190	A	84	B
Controlled - Low NO _x burners	140	A	84	B
Controlled - Flue gas recirculation	100	D	84	B
Small Boilers (<100) [1-01-006-02, 1-02-006-02, 1-03-006-02, 1-03-006-03]				
Uncontrolled	100	B	84	B
Controlled - Low NO _x burners	50	D	84	B
Controlled - Low NO _x burners/Flue gas recirculation	32	C	84	B
Tangential-Fired Boilers (All Sizes) [1-01-006-04]				
Uncontrolled	170	A	24	C
Controlled - Flue gas recirculation	76	D	98	D
Residential Furnaces (<0.3) [No SCC]				
Uncontrolled	94	B	40	B

^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. Emission factors are based on an average natural gas higher heating value of 1,020 Btu/scf. To convert from lb/10⁶ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. SCC = Source Classification Code. ND = no data. NA = not applicable.

^b Expressed as NO₂. For large and small wall fired boilers with SNCR control, apply a 24 percent reduction to the appropriate NO_x emission factor. For tangential-fired boilers with SNCR control, apply a 13 percent reduction to the appropriate NO_x emission factor.

^c NSPS=New Source Performance Standard as defined in 40 CFR 60 Subparts D and Db. Post-NSPS units are boilers with greater than 250 MMBtu/hr of heat input that commenced construction modification, or reconstruction after August 17, 1971, and units with heat input capacities between 100 and 250 MMBtu/hr that commenced construction modification, or reconstruction after June 19, 1984.



TABLE 1.4-2. EMISSION FACTORS FOR CRITERIA POLLUTANTS AND GREENHOUSE GASES FROM NATURAL GAS COMBUSTION^a

Pollutant	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating
CO ₂ ^b	120,000	A
Lead	0.0005	D
N ₂ O (Uncontrolled)	2.2	E
N ₂ O (Controlled-low-NO _x burner)	0.64	E
PM (Total) ^c	7.6	D
PM (Condensable) ^c	5.7	D
PM (Filterable) ^c	1.9	B
SO ₂ ^d	0.6	A
TOC	11	B
Methane	2.3	B
VOC	5.5	C

^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. To convert from lb/10⁶ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. TOC = Total Organic Compounds. VOC = Volatile Organic Compounds.

^b Based on approximately 100% conversion of fuel carbon to CO₂. CO₂[lb/10⁶ scf] = (3.67) (CON) (C)(D), where CON = fractional conversion of fuel carbon to CO₂, C = carbon content of fuel by weight (0.76), and D = density of fuel, 4.2x10⁴ lb/10⁶ scf.

^c All PM (total, condensable, and filterable) is assumed to be less than 1.0 micrometer in diameter. Therefore, the PM emission factors presented here may be used to estimate PM₁₀, PM_{2.5} or PM₁ emissions. Total PM is the sum of the filterable PM and condensable PM. Condensable PM is the particulate matter collected using EPA Method 202 (or equivalent). Filterable PM is the particulate matter collected on, or prior to, the filter of an EPA Method 5 (or equivalent) sampling train.

^d Based on 100% conversion of fuel sulfur to SO₂.

Assumes sulfur content is natural gas of 2,000 grains/10⁶ scf. The SO₂ emission factor in this table can be converted to other natural gas sulfur contents by multiplying the SO₂ emission factor by the ratio of the site-specific sulfur content (grains/10⁶ scf) to 2,000 grains/10⁶ scf.

TABLE 3.2-1 UNCONTROLLED EMISSION FACTORS FOR 2-STROKE LEAN-BURN ENGINES^a
(SCC 2-02-002-52)

Pollutant	Emission Factor (lb/MMBtu) ^b (fuel input)	Emission Factor Rating
Criteria Pollutants and Greenhouse Gases		
NO _x ^c 90 - 105% Load	3.17 E+00	A
NO _x ^c <90% Load	1.94 E+00	A
CO ^c 90 - 105% Load	3.86 E-01	A
CO ^c <90% Load	3.53 E-01	A
CO ₂ ^d	1.10 E+02	A
SO ₂ ^e	5.88 E-04	A
TOC ^f	1.64 E+00	A
Methane ^g	1.45 E+00	C
VOC ^h	1.20 E-01	C
PM10 (filterable) ⁱ	3.84 E-02	C
PM2.5 (filterable) ⁱ	3.84 E-02	C
PM Condensable ^j	9.91 E-03	E
Trace Organic Compounds		
1,1,2,2-Tetrachloroethane ^k	6.63 E-05	C
1,1,2-Trichloroethane ^k	5.27 E-05	C
1,1-Dichloroethane	3.91 E-05	C
1,2,3-Trimethylbenzene	3.54 E-05	D
1,2,4-Trimethylbenzene	1.11 E-04	C
1,2-Dichloroethane	4.22 E-05	D
1,2-Dichloropropane	4.46 E-05	C
1,3,5-Trimethylbenzene	1.80 E-05	D
1,3-Butadiene ^k	8.20 E-04	D
1,3-Dichloropropene ^k	4.38 E-05	C
2,2,4-Trimethylpentane ^k	8.46 E-04	B
2-Methylnaphthalene ^k	2.14 E-05	C
Acenaphthene ^k	1.33 E-06	C

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 1 Cont.
Summary of Results
Unit Number 5**

Plant: Eunice Plant No. 161
Owner: Warren Petroleum Company
Unit: Clark BA-6
Unit Number: 5
Technicians: KRK/ DWH
Date: 5/10/94

Run Number	R-10	R-11	R-12	
Start Time	15:45	16:24	17:02	
Stop Time	16:15	16:54	17:32	
Engine/Compressor Operation				
Red Pen	4.0	4.0	4.0	
Blue Pen	8.5	8.5	8.5	
Fuel Gas Pressure (psig)	21	21	21	
Fuel Flow (MSCFD)	243	243	243	
Horsepower (hp)	1094	1094	1094	
Engine Speed (rpm)	303	303	303	
Ignition Timing (°BTDC)	15.0	15.0	15.0	
Suction Pressure (psig)	12.0	12.0	12.0	
1st Interstage Pressure (psig)	82	82	82	
2nd Interstage Pressure (psig)	256	260	258	
Discharge Pressure (psig)	830	870	845	
1st Stage Rod Load (psig)	69	70	69	
2nd Stage Rod Load (psig)	176	180	178	
3rd Stage Rod Load (psig)	600	635	610	
Ambient Conditions				
Barometric Pressure (absolute in. Hg)	26.62	26.62	26.62	
Temperature Dry (°F)	75	73	72	
Temperature Wet (°F)	66	66	65	
Humidity (lb H ₂ O/lb Air)	0.0130	0.0135	0.0130	
Humidity (Vol %)	2.09%	2.16%	2.08%	
Exhaust Flow Data				
Stoichiometric Exhaust Flow (DSCFH)	2.87E+05	2.58E+05	2.62E+05	
O ₂ F factor (DSCF/MMBTU)	8664	8664	8664	
Fuel Heating Value (Gross Btu/SCF)	1000	1000	1000	
Fuel Consumption (Btu/hp-hr)	9259	9259	9259	
Fo factor (0.209*O ₂ F/CO ₂ F)	1.79	1.79	1.79	
Exhaust Gas Concentrations				AVERAGES
NO _x (ppmv, dry)	1120	1124	1145	1130
CO (ppmv, dry)	289	304	309	301
O ₂ (% dry)	14.5	13.8	13.9	14.1
THC (ppmv as C ₃)	256	256	261	258
NMNEVOC (ppmv as C ₃)	7.8	7.8	8.0	7.9
CO ₂ (calculated %, dry)	3.58	3.97	3.91	3.82
Emission Rates				
NO _x (lbs/hr)	38.3	34.7	35.8	36.3
CO (lbs/hr)	6.02	5.70	5.88	5.87
NMNEVOC (lb/hr, estimated from fuel)	0.26	0.23	0.24	0.24
NO _x (TPY)	168	152	157	159
CO (TPY)	26.4	25.0	25.7	25.7
NMNEVOC (TPY, estimated from fuel)	1.12	1.01	1.04	1.06
NO _x (g/hp-hr)	15.9	14.4	14.9	15.1
CO (g/hp-hr)	2.50	2.37	2.44	2.43
NMNEVOC (g/hp-hr, estimated from fuel)	0.11	0.10	0.10	0.10

**Table 1 Cont.
Summary of Results
Unit Number 13**

Plant: Eunice Plant No. 161
Owner: Warren Petroleum Company
Unit: Clark HBA-T-8
Unit Number: 13
Technicians: KRK/ DWH
Date: 5/11/94

Run Number	R-22	R-23	R-24
Start Time	14:10	14:48	15:27
Stop Time	14:40	15:18	15:57
Engine/Compressor Operation			
Red Pen	5.0	5.0	5.0
Blue Pen	10.5	10.5	10.5
Fuel Gas Pressure (psig)	21	21	21
Fuel Flow (MSCFD)	375	375	375
Horsepower (hp)	2050	2050	2050
Engine Speed (rpm)	300	300	296
Ignition Timing (°BTDC)	15.0	15.0	15.0
Suction Pressure (psig)	11.5	11.5	11.5
1st Interstage Pressure (psig)	83	80	82
2nd Interstage Pressure (psig)	262	260	260
Discharge Pressure (psig)	890	890	900
1st Stage Rod Load (psig)	71	68	70
2nd Stage Rod Load (psig)	180	180	182
3rd Stage Rod Load (psig)	655	650	655
Ambient Conditions			
Barometric Pressure (absolute in. Hg)	26.62	26.62	26.62
Temperature Dry (°F)	71	71	75
Temperature Wet (°F)	64	66	68
Humidity (lb H2O/lb Air)	0.0125	0.0140	0.0146
Humidity (Vol %)	2.00%	2.24%	2.34%
Exhaust Flow Data			
Stoichiometric Exhaust Flow (DSCFH)	3.45E+05	3.50E+05	3.41E+05
O2 F factor (DSCF/MMBTU)	8664	8664	8664
Fuel Heating Value (Gross Btu/SCF)	1000	1000	1000
Fuel Consumption (Btu/hp-hr)	7630	7630	7630
Fo factor (0.209*O2 F/CO2 F)	1.79	1.79	1.79
Exhaust Gas Concentrations			
NOx (ppmv, dry)	1235	1202	1204
CO (ppmv, dry)	896	908	955
O2 (% dry)	12.7	12.8	12.6
THC (ppmv as C3)	700	679	690
NMNEVOC (ppmv as C3)	21.4	20.7	21.0
CO2 (calculated %, dry)	4.58	4.53	4.64
Emission Rates			
NOx (lbs/hr)	50.9	50.2	49.1
CO (lbs/hr)	22.5	23.0	23.7
NMNEVOC (lb/hr, estimated from fuel)	0.84	0.83	0.82
NOx (TPY)	223	220	215
CO (TPY)	98.5	101.0	103.6
NMNEVOC (TPY, estimated from fuel)	3.69	3.62	3.59
NOx (g/hp-hr)	11.3	11.1	10.9
CO (g/hp-hr)	4.98	5.10	5.24
NMNEVOC (g/hp-hr, estimated from fuel)	0.19	0.18	0.18



Johnson Matthey

EMISSION CONTROL EQUIPMENT - SPECIFICATION SUMMARY (RICH-BURN)

CUSTOMER: Warren Petroleum
PROPOSAL #: 463-95-019
ADDRESS: 1350 S. Border Street
Tulsa, OK 74119

DATE: May 24, 1995
CONTACT: A.S. Shankar
PHONE#: 918-560-4137
FAX#: 918-560-4544

ENGINE DATA	CASE#
MFG:	Waukesha
MODEL:	L7042GSIU
FUEL:	Natural Gas
BHP:	1200
RPM:	1000
EXH TEMP:	1093°F
EXH FLOW:	5829 acfm
ALT:	3400 feet
EXH PIPE SIZE:	10 inch
SCOPE OF SUPPLY:	ES-ASA-10
LIST PRICE:	\$15,030.00 each
LENGTH:	48.00 inches
DIAMETER:	27.25 inches
WEIGHT:	315 pounds
DELIVERY:	1 to 2 weeks

EMISSION DATA	UNCONTROLLED ENGINE EMISSIONS (grams/Bhp-hr)	CONTROLLED ENGINE EMISSIONS REQUIRED (grams/Bhp-hr)
EMITTANT		
NOx	11.0	2.0
CO	8.0	3.0
THC	1.7	1.0
NMHC	1.0	0.44

PRE CONVERTER: As reported in engine manufacturers product bulletin corresponding to catalyst converter carburetor settings. A slightly rich to stoichiometric air fuel ratio is required (Oxygen content in exhaust of 0.20% to 0.70%; oxygen sensor millivolts approximately 700 to 800; or lambda of 0.97 to 0.99).

TEMPERATURE: Maximum continuous service temperature is 1,350°F. Normal operating temperature ranges are 750°F to 1250°F. A high temperature limit shut-down controller is required in the outlet of the converter.

DELTA BACK PRESSURE: Expected across the catalyst system ~ 3.0" H₂O.

LUBE OIL SPECIFICATION: Sulfated ash < 0.50% by weight; phosphorous < 900 ppm; zinc < 400 ppm; Consumption rate < 0.0015 lb/Bhp-hr.

WARRANTY: 15 Months from the date of shipment or 12 months from the date of start-up; written notice required.

TERMS: Price firm for thirty (30) days from date of quotation. Payment net thirty (30) days from invoice. JMI credit approval required.

Bob Bittner, Sr. Inside Sales Engineer (610-971-3192)

CATALYTIC SYSTEMS DIVISION

STATIONARY ENGINE DIVISION

GRI-HAPCalc® 3.0
Engines Report

Facility ID: EUNICE MID
Operation Type: GAS PLANT
Facility Name:
User Name:
Units of Measure: U.S. STANDARD

Notes:

*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".*

Engine Unit

Unit Name: BAG

Hours of Operation: 8,760 Yearly
Rate Power: 1,200 hp
Fuel Type: NATURAL GAS
Engine Type: 2-Stroke, Lean Burn
Emission Factor Set: FIELD > EPA > LITERATURE
Additional EF Set: 2SLB CLARK

Units 1 thru 9

Calculated Emissions (ton/yr)

<u>Chemical Name</u>	<u>Emissions</u>	<u>Emission Factor</u>	<u>Emission Factor Set</u>
Ethyl Benzene	0.3647	0.03150000 g/bhp-hr	2SLB CLARK
HAPs			
Formaldehyde	2.6011	0.22488051 g/bhp-hr	2SLB CLARK
Methanol	0.1650	0.01424984 g/bhp-hr	2SLB CLARK
Acetaldehyde	0.2736	0.02363404 g/bhp-hr	2SLB CLARK
1,3-Butadiene	0.0339	0.00292727 g/bhp-hr	2SLB CLARK
Acrolein	0.1500	0.01295807 g/bhp-hr	2SLB CLARK
Benzene	0.0796	0.00687384 g/bhp-hr	2SLB CLARK
Toluene	0.1039	0.00887272 g/bhp-hr	2SLB CLARK
Ethylbenzene	0.0027	0.00023000 g/bhp-hr	2SLB CLARK
Xylenes(m,p,o)	0.1463	0.01263900 g/bhp-hr	2SLB CLARK
2,2,4-Trimethylpentane	0.3200	0.02764000 g/bhp-hr	2SLB CLARK
n-Hexane	0.1820	0.01572000 g/bhp-hr	2SLB CLARK
Phenol	0.0041	0.00035000 g/bhp-hr	2SLB CLARK
Styrene	0.2876	0.02483800 g/bhp-hr	2SLB CLARK
Naphthalene	0.0065	0.00056000 g/bhp-hr	2SLB CLARK
2-Methylnaphthalene	0.0030	0.00026000 g/bhp-hr	2SLB CLARK
Acenaphthylene	0.0005	0.00004000 g/bhp-hr	2SLB CLARK
Biphenyl	0.0003	0.00003000 g/bhp-hr	2SLB CLARK
Acenaphthene	0.0002	0.00001700 g/bhp-hr	2SLB CLARK
Fluorene	0.0003	0.00002400 g/bhp-hr	2SLB CLARK
Anthracene	0.0001	0.00000960 g/bhp-hr	2SLB CLARK
Phenanthrene	0.0005	0.00004600 g/bhp-hr	2SLB CLARK
Fluoranthene	0.0000	0.00000320 g/bhp-hr	2SLB CLARK

Pyrene	0.0001	0.00000610 g/bhp-hr	2SLB CLARK
Benz(a)anthracene	0.0000	0.00000430 g/bhp-hr	2SLB CLARK
Chrysene	0.0001	0.00000760 g/bhp-hr	2SLB CLARK
Propanal	0.0488	0.00420000 g/bhp-hr	2SLB CLARK

Total 4.4100

Criteria Pollutants

CO	13.6784	1.17285218 g/bhp-hr	2SLB CLARK
NMHC	24.9187	2.16260000 g/bhp-hr	2SLB CLARK
NMEHC	22.2858	1.92500000 g/bhp-hr	2SLB CLARK
NOx	162.5333	13.17644484 g/bhp-hr	2SLB CLARK
SO2	0.0263	0.00226800 g/bhp-hr	EPA

Other Pollutants

Cyclohexane	0.0747	0.00845500 g/bhp-hr	GRI Field
Methane	38.3796	3.31512507 g/bhp-hr	2SLB CLARK
Acetylene	0.0136	0.00117847 g/bhp-hr	2SLB CLARK
Ethylene	0.6042	0.04356058 g/bhp-hr	2SLB CLARK
Ethane	4.2661	0.36849600 g/bhp-hr	2SLB CLARK
Propylene	0.3304	0.02805639 g/bhp-hr	2SLB CLARK
Propane	1.6087	0.13014381 g/bhp-hr	2SLB CLARK
Isobutane	0.1180	0.00976000 g/bhp-hr	2SLB CLARK
Butane	0.1501	0.01288828 g/bhp-hr	2SLB CLARK
Cyclopentane	0.1232	0.01084000 g/bhp-hr	2SLB CLARK
Butyrald/Isobutyraldehyde	0.0483	0.00426000 g/bhp-hr	2SLB CLARK
Butyraldehyde	0.0284	0.00244940 g/bhp-hr	EPA
Pentane	0.7608	0.06484811 g/bhp-hr	2SLB CLARK
n-Pentane	0.1336	0.01164000 g/bhp-hr	2SLB CLARK
Cyclohexane	0.1431	0.01285830 g/bhp-hr	2SLB CLARK
Methylcyclohexane	0.2378	0.02054200 g/bhp-hr	2SLB CLARK
n-Octane	0.9176	0.02742400 g/bhp-hr	2SLB CLARK
1,2,3-Trimethylbenzene	0.3774	0.03260000 g/bhp-hr	2SLB CLARK
1,2,4-Trimethylbenzene	0.3781	0.03268200 g/bhp-hr	2SLB CLARK
1,3,5-Trimethylbenzene	0.3774	0.03260000 g/bhp-hr	2SLB CLARK
n-Nonane	0.4028	0.03480000 g/bhp-hr	2SLB CLARK
CO2	4,673.6484	403.88777000 g/bhp-hr	EPA

Unit Name: F9520

Hours of Operation: 8,760 Yearly
 Rate Power: 500 hp
 Fuel Type: NATURAL GAS
 Engine Type: 4-Stroke, Rich Burn
 Emission Factor Set: FIELD > EPA > LITERATURE
 Additional EF Set: -NONE-

Unit 16

Calculated Emissions (ton/yr)

<u>Chemical Name</u>	<u>Emissions</u>	<u>Emission Factor</u>	<u>Emission Factor Set</u>
HAPs			
Formaldehyde	0.4798	0.08942890 g/bhp-hr	GRI Field
Methanol	0.0868	0.02000000 g/bhp-hr	GRI Field
Acetaldehyde	0.0853	0.01769010 g/bhp-hr	EPA

Ethane	1.2831	0.22166670 g/bhp-hr	GRI Field
Propane	0.6946	0.12000000 g/bhp-hr	GRI Field
Isobutane	0.0923	0.01422140 g/bhp-hr	GRI Field
Bulane	0.1053	0.01819410 g/bhp-hr	GRI Field
Cyclopentane	0.0231	0.00399600 g/bhp-hr	GRI Field
Butyraldehyde	0.0142	0.00244940 g/bhp-hr	EPA
n-Pentane	0.0491	0.00847600 g/bhp-hr	GRI Field
Cyclohexane	0.0074	0.00127010 g/bhp-hr	EPA
Methylcyclohexane	0.0482	0.00832260 g/bhp-hr	GRI Field
n-Octane	0.0586	0.01011200 g/bhp-hr	GRI Field
1,2,3-Trimethylbenzene	0.0888	0.01207750 g/bhp-hr	GRI Field
1,2,4-Trimethylbenzene	0.0718	0.01241130 g/bhp-hr	GRI Field
1,3,5-Trimethylbenzene	0.0688	0.01202240 g/bhp-hr	GRI Field
n-Nonane	0.0739	0.01276800 g/bhp-hr	GRI Field
CO2	2,836,8232	403.69777000 g/bhp-hr	EPA

Unit Name: HBA 8

Hours of Operation: 8,760 Yearly
 Rate Power: 1,600 hp
 Fuel Type: NATURAL GAS
 Engine Type: 2-Stroke, Lean Burn
 Emission Factor Set: FIELD > EPA > LITERATURE
 Additional EF Set: 2SLB CLARK

Units 10, 11 & 12

Calculated Emissions (ton/yr)

Chemical Name	Emissions	Emission Factor	Emission Factor Set
Ethyl Benzene	0.4862	0.03160000 g/bhp-hr	2SLB CLARK
HAPs			
Formaldehyde	3.4682	0.22468051 g/bhp-hr	2SLB CLARK
Methanol	0.2200	0.01424964 g/bhp-hr	2SLB CLARK
Acetaldehyde	0.3948	0.02383404 g/bhp-hr	2SLB CLARK
1,3-Butadiene	0.0452	0.00292727 g/bhp-hr	2SLB CLARK
Acrolein	0.2000	0.01205807 g/bhp-hr	2SLB CLARK
Benzene	0.1061	0.00687364 g/bhp-hr	2SLB CLARK
Toluene	0.1386	0.00897272 g/bhp-hr	2SLB CLARK
Ethylbenzene	0.0036	0.00023000 g/bhp-hr	2SLB CLARK
Xylenes(m,p,o)	0.1881	0.01263900 g/bhp-hr	2SLB CLARK
2,2,4-Trimethylpentane	0.4267	0.02784000 g/bhp-hr	2SLB CLARK
n-Hexane	0.2427	0.01572000 g/bhp-hr	2SLB CLARK
Phenol	0.0064	0.00035000 g/bhp-hr	2SLB CLARK
Styrene	0.3834	0.02483800 g/bhp-hr	2SLB CLARK
Naphthalene	0.0088	0.00056000 g/bhp-hr	2SLB CLARK
2-Methylnaphthalene	0.0040	0.00026000 g/bhp-hr	2SLB CLARK
Acenaphthylene	0.0006	0.00004000 g/bhp-hr	2SLB CLARK
Biphenyl	0.0005	0.00003000 g/bhp-hr	2SLB CLARK
Acenaphthene	0.0003	0.00001700 g/bhp-hr	2SLB CLARK
Fluorene	0.0004	0.00002400 g/bhp-hr	2SLB CLARK
Anthracene	0.0001	0.00000960 g/bhp-hr	2SLB CLARK
Phenanthrene	0.0007	0.00004600 g/bhp-hr	2SLB CLARK
Fluoranthene	0.0000	0.00000320 g/bhp-hr	2SLB CLARK

Pyrene	0.0091	0.00000610 g/bhp-hr	2SLB CLARK
Benz(a)anthracene	0.0091	0.00000490 g/bhp-hr	2SLB CLARK
Chrysene	0.0091	0.00000760 g/bhp-hr	2SLB CLARK
Propanal	0.0648	0.00420000 g/bhp-hr	2SLB CLARK

Total 5.8800

Criteria Pollutants

CO	18.1058	1.17285218 g/bhp-hr	2SLB CLARK
NMHC	33.2283	2.15250000 g/bhp-hr	2SLB CLARK
NMHC	29.7145	1.92500000 g/bhp-hr	2SLB CLARK
NOx	203.3778	13.17544484 g/bhp-hr	2SLB CLARK
SO2	0.0350	0.00226800 g/bhp-hr	EPA

Other Pollutants

Cyclohexane	0.0998	0.00845500 g/bhp-hr	GRI Field
Methane	51.1727	3.31512507 g/bhp-hr	2SLB CLARK
Acetylene	0.0182	0.00117647 g/bhp-hr	2SLB CLARK
Ethylene	0.6723	0.04355059 g/bhp-hr	2SLB CLARK
Ethane	5.6881	0.36849800 g/bhp-hr	2SLB CLARK
Propylene	0.4486	0.02905839 g/bhp-hr	2SLB CLARK
Propane	2.0089	0.13014361 g/bhp-hr	2SLB CLARK
Isobutane	0.1507	0.00978000 g/bhp-hr	2SLB CLARK
Butane	0.2002	0.01298828 g/bhp-hr	2SLB CLARK
Cyclopentane	0.1642	0.01064000 g/bhp-hr	2SLB CLARK
Butyrald/isobutyraldehyde	0.0658	0.00428000 g/bhp-hr	2SLB CLARK
Butyraldehyde	0.0378	0.00244940 g/bhp-hr	EPA
Pentane	1.0010	0.06484811 g/bhp-hr	2SLB CLARK
n-Pentane	0.1781	0.01154000 g/bhp-hr	2SLB CLARK
Cyclohexane	0.1907	0.01235838 g/bhp-hr	2SLB CLARK
Methylcyclohexane	0.3171	0.02054200 g/bhp-hr	2SLB CLARK
n-Octane	0.4233	0.02742400 g/bhp-hr	2SLB CLARK
1,2,3-Trimethylbenzene	0.5032	0.03260000 g/bhp-hr	2SLB CLARK
1,2,4-Trimethylbenzene	0.5042	0.03260200 g/bhp-hr	2SLB CLARK
1,3,5-Trimethylbenzene	0.5032	0.03260000 g/bhp-hr	2SLB CLARK
n-Nonane	0.5372	0.03480000 g/bhp-hr	2SLB CLARK
CO2	6,251,5286	403.89777000 g/bhp-hr	EPA

Unit Name: HBA T 8

Hours of Operation: 8,760 Yearly
 Rate Power: 2,050 hp
 Fuel Type: NATURAL GAS
 Engine Type: 2-Stroke, Lean Burn
 Emission Factor Set: FIELD > EPA > LITERATURE
 Additional EF Set: 2SLB CLARK

Unit 13

Calculated Emissions (ton/yr)

<u>Chemical Name</u>	<u>Emissions</u>	<u>Emission Factor</u>	<u>Emission Factor Set</u>
Ethyl Benzene	0.8230	0.09150000 g/bhp-hr	2SLB CLARK
HAPs			
Formaldehyde	4.4438	0.22468061 g/bhp-hr	2SLB CLARK
Methanol	0.2018	0.01424964 g/bhp-hr	2SLB CLARK

Acrolein	0.0526	0.01088820 g/bhp-hr	EPA
Benzene	0.1510	0.03129790 g/bhp-hr	EPA
Toluene	0.0481	0.00997900 g/bhp-hr	EPA
Ethylbenzene	0.0012	0.00024040 g/bhp-hr	EPA
Xylenes(m,p,o)	0.0198	0.00281230 g/bhp-hr	EPA
Styrene	0.0009	0.00018600 g/bhp-hr	EPA
Naphthalene	0.0042	0.00086180 g/bhp-hr	EPA
Ethylene Dibromide	0.0018	0.00033110 g/bhp-hr	EPA
Vinyl Chloride	0.0005	0.00011940 g/bhp-hr	EPA
Methylene Chloride	0.0035	0.00072570 g/bhp-hr	EPA
1,1-Dichloroethane	0.0009	0.00017890 g/bhp-hr	EPA
1,3-Dichloropropene	0.0010	0.00019980 g/bhp-hr	EPA
Chlorobenzene	0.0010	0.00019980 g/bhp-hr	EPA
Chloroform	0.0018	0.00021320 g/bhp-hr	EPA
1,1,2-Trichloroethane	0.0009	0.00018050 g/bhp-hr	EPA
1,1,2,2-Tetrachloroethane	0.0014	0.00028840 g/bhp-hr	EPA
Carbon Tetrachloride	0.0013	0.00027870 g/bhp-hr	EPA

Total 0.9480

Criteria Pollutants

PM	0.2144	0.04445210 g/bhp-hr	EPA
CO	69.9449	14.50000000 g/bhp-hr	GRI Field
NMEHC	1.0503	0.21772480 g/bhp-hr	EPA
NOx	68.2763	18.30000000 g/bhp-hr	GRI Field
SO2	0.0120	0.00249480 g/bhp-hr	EPA

Other Pollutants

Methane	0.1285	1.27000040 g/bhp-hr	EPA
Butyraldehyde	0.0008	0.00018780 g/bhp-hr	EPA
1,2-Dichloroethane	0.0008	0.00017690 g/bhp-hr	EPA
1,2-Dichloropropane	0.0010	0.00019960 g/bhp-hr	EPA
CO2	2,408,8404	498.85230000 g/bhp-hr	EPA

Unit Name: GMV

Hours of Operation: 8,760 Yearly
 Rate Power: 1,100 hp
 Fuel Type: NATURAL GAS
 Engine Type: 2-Stroke, Lean Burn
 Emission Factor Set: FIELD > EPA > LITERATURE
 Additional EF Set: 28LB COOPER

Unit 15

Calculated Emissions (ton/yr)

<u>Chemical Name</u>	<u>Emissions</u>	<u>Emission Factor</u>	<u>Emission Factor Set</u>
HAPs			
Formaldehyde	1.3927	0.13123430 g/bhp-hr	28LB COOPER
Methanol	0.1202	0.01132980 g/bhp-hr	GRI Field
Acetaldehyde	1.1549	0.10882330 g/bhp-hr	GRI Field
1,3-Butadiene	0.0249	0.00235000 g/bhp-hr	GRI Field
Acrolein	0.4428	0.04173060 g/bhp-hr	EPA
Benzene	0.0826	0.00777960 g/bhp-hr	GRI Field
Toluene	0.0918	0.00866820 g/bhp-hr	GRI Field

Ethylbenzene	0.0997	0.00938500 g/bhp-hr	GRI Field
Xylenes(m,p,o)	0.1018	0.00968830 g/bhp-hr	GRI Field
2,2,4-Trimethylpentane	0.1224	0.01163760 g/bhp-hr	GRI Field
n-Hexane	0.0790	0.00762500 g/bhp-hr	GRI Field
Phenol	0.0011	0.00010850 g/bhp-hr	GRI Field
Styrene	0.0974	0.00918130 g/bhp-hr	GRI Field
Naphthalene	0.0014	0.00013050 g/bhp-hr	GRI Field
2-Methylnaphthalene	0.0007	0.00006500 g/bhp-hr	GRI Field
Acenaphthylene	0.0001	0.00000890 g/bhp-hr	GRI Field
Biphenyl	0.0001	0.00001150 g/bhp-hr	GRI Field
Acenaphthene	0.0000	0.00000430 g/bhp-hr	GRI Field
Fluorene	0.0000	0.00000080 g/bhp-hr	GRI Field
Anthracene	0.0000	0.00000180 g/bhp-hr	GRI Field
Phenanthrene	0.0001	0.00000980 g/bhp-hr	GRI Field
Fluoranthene	0.0000	0.00000130 g/bhp-hr	GRI Field
Pyrene	0.0000	0.00000180 g/bhp-hr	GRI Field
Benz(a)anthracene	0.0000	0.00000070 g/bhp-hr	GRI Field
Chrysene	0.0000	0.00000150 g/bhp-hr	GRI Field
Propanal	0.0264	0.00249000 g/bhp-hr	GRI Field
Total	3.8412		
<u>Criteria Pollutants</u>			
CO	8.8194	0.82374407 g/bhp-hr	2SLB COOPER
NMHC	11.9108	1.12238860 g/bhp-hr	GRI Field
NMEHC	9.2820	0.87181820 g/bhp-hr	GRI Field
NOx	114.5522	10.79424804 g/bhp-hr	2SLB COOPER
SO2	0.0241	0.00226800 g/bhp-hr	EPA
<u>Other Pollutants</u>			
Cyclohexane	0.0895	0.00846500 g/bhp-hr	GRI Field
Methane	26.0854	2.45803028 g/bhp-hr	2SLB COOPER
Ethylene	0.5880	0.05521797 g/bhp-hr	2SLB COOPER
Ethane	2.3524	0.22166670 g/bhp-hr	GRI Field
Propane	1.2735	0.12000000 g/bhp-hr	GRI Field
Isobutane	0.1508	0.01422140 g/bhp-hr	GRI Field
Butane	0.1931	0.01819410 g/bhp-hr	GRI Field
Cyclopentane	0.0424	0.00399500 g/bhp-hr	GRI Field
Butyraldehyde	0.0280	0.00244940 g/bhp-hr	EPA
n-Pentane	0.0899	0.00847500 g/bhp-hr	GRI Field
Cyclohexane	0.0185	0.00127010 g/bhp-hr	EPA
Methylcyclohexane	0.0883	0.00832250 g/bhp-hr	GRI Field
n-Octane	0.1078	0.01011250 g/bhp-hr	GRI Field
1,2,3-Trimethylbenzene	0.1282	0.01207750 g/bhp-hr	GRI Field
1,2,4-Trimethylbenzene	0.1317	0.01241130 g/bhp-hr	GRI Field
1,3,5-Trimethylbenzene	0.1278	0.01202240 g/bhp-hr	GRI Field
n-Nonane	0.1355	0.01276800 g/bhp-hr	GRI Field
CO2	4,284.1759	408.68777000 g/bhp-hr	EPA

1,3,5-Trimethylbenzene	0.8447	0.03260000 g/bhp-hr	2SLB CLARK
m-Nonane	0.6883	0.03480000 g/bhp-hr	2SLB CLARK
CO2	7,984,1480	403.89777000 g/bhp-hr	EPA

Unit Name: WAUKESHA

Hours of Operation: 8,760 Yearly

Rate Power: 1,200 hp

Fuel Type: NATURAL GAS

Engine Type: 4-Stroke, Rich Burn

Emission Factor Set: FIELD > EPA > LITERATURE

Additional EF Set: -NONE-

Units 13A, 17, 18, 19
20, 21 and 22

Calculated Emissions (ton/yr)

Chemical Name	Emissions	Emission Factor	Emission Factor Set
HAPs			
Formaldehyde	1.1511	0.09942890 g/bhp-hr	GRI Field
Methanol	0.2315	0.02000000 g/bhp-hr	GRI Field
Acetaldehyde	0.2048	0.01769010 g/bhp-hr	EPA
Acrolein	0.1260	0.01088620 g/bhp-hr	EPA
Benzene	0.3623	0.03129780 g/bhp-hr	EPA
Toluene	0.1155	0.00997980 g/bhp-hr	EPA
Ethylbenzene	0.0028	0.00024040 g/bhp-hr	EPA
Xylenes(m,p,o)	0.0328	0.00281230 g/bhp-hr	EPA
Styrene	0.0022	0.00018600 g/bhp-hr	EPA
Naphthalene	0.0100	0.00086180 g/bhp-hr	EPA
Ethylene Dichloride	0.0038	0.00033110 g/bhp-hr	EPA
Vinyl Chloride	0.0013	0.00011840 g/bhp-hr	EPA
Methylene Chloride	0.0084	0.00072570 g/bhp-hr	EPA
1,1-Dichloroethane	0.0020	0.00017690 g/bhp-hr	EPA
1,3-Dichloropropene	0.0023	0.00019960 g/bhp-hr	EPA
Chlorobenzene	0.0023	0.00019960 g/bhp-hr	EPA
Chloroform	0.0025	0.00021320 g/bhp-hr	EPA
1,1,2-Trichloroethane	0.0022	0.00018050 g/bhp-hr	EPA
1,1,2,2-Tetrachloroethane	0.0036	0.00029940 g/bhp-hr	EPA
Carbon Tetrachloride	0.0032	0.00027670 g/bhp-hr	EPA

Total 2.2708

Criteria Pollutants

PM	0.5148	0.04445210 g/bhp-hr	EPA
CO	167.5678	14.50000000 g/bhp-hr	GRI Field
NMEHC	2.5208	0.21772460 g/bhp-hr	EPA
NOx	211.8608	18.30000000 g/bhp-hr	GRI Field
SO2	0.0288	0.00249480 g/bhp-hr	EPA

Other Pollutants

Methane	14.7936	1.27008040 g/bhp-hr	EPA
Butyraldehyde	0.0019	0.00016780 g/bhp-hr	EPA
1,2-Dichloroethane	0.0020	0.00017690 g/bhp-hr	EPA
1,2-Dichloropropane	0.0023	0.00019960 g/bhp-hr	EPA
CO2	5,776.4188	498.95230000 g/bhp-hr	EPA

GRI-HAPCalc® 3.0
External Combustion Devices Report

Facility ID:	EUNICE MID	Notes:
Operation Type:	GAS PLANT	
Facility Name:		
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".*

External Combustion Devices

Unit Name: BOILER

Hours of Operation: 8,760 Yearly
 Heat Input: 100.00 MMBtu/hr
 Fuel Type: NATURAL GAS
 Device Type: BOILER
 Emission Factor Set: FIELD > EPA > LITERATURE
 Additional EF Set: -NONE-

B-01
 B-02

Calculated Emissions (ton/yr)

Chemical Name	Emissions	Emission Factor	Emission Factor Set
HAPs			
3-Methylchloranthrene	0.0000	0.0000000018 lb/MMBtu	EPA
7,12-Dimethylbenz(a)anthracene	0.0000	0.0000000157 lb/MMBtu	EPA
Formaldehyde	0.1543	0.0003622500 lb/MMBtu	GRI Field
Methanol	0.1898	0.0004383330 lb/MMBtu	GRI Field
Acetaldehyde	0.1274	0.0002808000 lb/MMBtu	GRI Field
1,3-Butadiene	0.0001	0.0000001830 lb/MMBtu	GRI Field
Benzene	0.0027	0.0000062550 lb/MMBtu	GRI Field
Toluene	0.0024	0.0000053670 lb/MMBtu	GRI Field
Ethylbenzene	0.0000	0.0000000720 lb/MMBtu	GRI Field
Xylenes(m,p,o)	0.0005	0.0000010810 lb/MMBtu	GRI Field
2,2,4-Trimethylpentane	0.0141	0.0000323000 lb/MMBtu	GRI Field
n-Hexane	0.1408	0.0003214790 lb/MMBtu	GRI Field
Phenol	0.0000	0.0000000950 lb/MMBtu	GRI Field
Naphthalene	0.0001	0.0000002850 lb/MMBtu	GRI Field
2-Methylnaphthalene	0.0000	0.0000000700 lb/MMBtu	GRI Field
Acenaphthylene	0.0000	0.0000000550 lb/MMBtu	GRI Field
Biphenyl	0.0005	0.0000011500 lb/MMBtu	GRI Field
Acenaphthene	0.0000	0.0000000800 lb/MMBtu	GRI Field
Fluorene	0.0000	0.0000000700 lb/MMBtu	GRI Field
Anthracene	0.0000	0.0000000750 lb/MMBtu	GRI Field
Phenanthrene	0.0000	0.0000000550 lb/MMBtu	GRI Field
Fluoranthene	0.0000	0.0000000800 lb/MMBtu	GRI Field
Pyrene	0.0000	0.0000000750 lb/MMBtu	GRI Field
Benz(a)anthracene	0.0000	0.0000000750 lb/MMBtu	GRI Field

Chrysene	0.0000	0.0000001000 lb/MMBtu	GRI Field
Benzo(a)pyrene	0.0000	0.0000000800 lb/MMBtu	GRI Field
Benzo(b)fluoranthene	0.0001	0.0000001350 lb/MMBtu	GRI Field
Benzo(k)fluoranthene	0.0002	0.0000004400 lb/MMBtu	GRI Field
Benzo(g,h,i)perylene	0.0001	0.0000001600 lb/MMBtu	GRI Field
Indeno(1,2,3-c,d)pyrene	0.0000	0.0000001000 lb/MMBtu	GRI Field
Dibenz(a,h)anthracene	0.0000	0.0000000950 lb/MMBtu	GRI Field
Lead	0.0002	0.0000004902 lb/MMBtu	EPA
Total	0.6333		

Criteria Pollutants

VOG	2.3618	0.0063921589 lb/MMBtu	EPA
PM	3.2836	0.0074509804 lb/MMBtu	EPA
PM, Condensable	2.4476	0.005682359 lb/MMBtu	EPA
PM, Filterable	0.8159	0.0018627451 lb/MMBtu	EPA
CO	13.4688	0.0307275000 lb/MMBtu	GRI Field
NMHC	3.7369	0.0085294118 lb/MMBtu	EPA
NOx	36.6558	0.0882553330 lb/MMBtu	GRI Field
SO2	0.2575	0.0005880000 lb/MMBtu	EPA

Other Pollutants

Dichlorobenzene	0.0005	0.0000011765 lb/MMBtu	EPA
Methane	2.5780	0.0068790650 lb/MMBtu	GRI Field
Acetylene	2.3352	0.0059314000 lb/MMBtu	GRI Field
Ethylene	0.2906	0.0005264000 lb/MMBtu	GRI Field
Ethane	0.7380	0.0018904650 lb/MMBtu	GRI Field
Propylene	0.4088	0.0009393330 lb/MMBtu	GRI Field
Propane	0.5284	0.0012018050 lb/MMBtu	GRI Field
Butane	0.6073	0.0013888350 lb/MMBtu	GRI Field
Cyclopentane	0.0177	0.0000405000 lb/MMBtu	GRI Field
Pentane	0.9048	0.0020656400 lb/MMBtu	GRI Field
n-Pentane	0.8760	0.0020000000 lb/MMBtu	GRI Field
Cyclohexane	0.0198	0.0000451000 lb/MMBtu	GRI Field
Methylcyclohexane	0.0741	0.0001691000 lb/MMBtu	GRI Field
n-Octane	0.0222	0.0000506000 lb/MMBtu	GRI Field
n-Nonane	0.0022	0.0000050000 lb/MMBtu	GRI Field
CO2	51,629.4118	117.0470688235 lb/MMBtu	EPA

Unit Name: **H-01**

Hours of Operation: 8,760 Yearly
Heat Input: 12.00 MMBtu/hr
Fuel Type: NATURAL GAS
Device Type: BOILER
Emission Factor Set: FIELD > EPA > LITERATURE
Additional EF Set: NONE

01

Calculated Emissions (ton/yr)

<u>Chemical Name</u>	<u>Emissions</u>	<u>Emission Factor</u>	<u>Emission Factor Set</u>
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Benzo(g,h,i)perylene	0.0000	0.0000001500 lb/MMBtu	GRI Field
Indeno(1,2,3-c,d)pyrene	0.0000	0.0000001000 lb/MMBtu	GRI Field
Dibenz(a,h)anthracene	0.0000	0.0000000950 lb/MMBtu	GRI Field
Lead	0.0000	0.0000004902 lb/MMBtu	EPA

Total

0.0079

Criteria Pollutants

VOC	0.0295	0.0058921589 lb/MMBtu	EPA
PM	0.0408	0.0074509804 lb/MMBtu	EPA
PM, Condensable	0.0308	0.0058882353 lb/MMBtu	EPA
PM, Filterable	0.0102	0.0018627451 lb/MMBtu	EPA
CO	0.1682	0.0307275000 lb/MMBtu	GRI Field
NMHC	0.0487	0.0085294118 lb/MMBtu	EPA
NOx	0.4832	0.0882553330 lb/MMBtu	GRI Field
SO2	0.0032	0.0005880000 lb/MMBtu	EPA

Other Pollutants

Dichlorobenzene	0.0000	0.0000011785 lb/MMBtu	EPA
Methane	0.0322	0.0058790850 lb/MMBtu	GRI Field
Acetylene	0.0292	0.0053314000 lb/MMBtu	GRI Field
Ethylene	0.0028	0.0005284000 lb/MMBtu	GRI Field
Ethane	0.0092	0.0018804850 lb/MMBtu	GRI Field
Propylene	0.0051	0.0009333330 lb/MMBtu	GRI Field
Propane	0.0088	0.0012019050 lb/MMBtu	GRI Field
Butane	0.0076	0.0013888380 lb/MMBtu	GRI Field
Cyclopentane	0.0002	0.0000405000 lb/MMBtu	GRI Field
Pentane	0.0118	0.0020656400 lb/MMBtu	GRI Field
n-Pentane	0.0110	0.0020000000 lb/MMBtu	GRI Field
Cyclohexane	0.0002	0.0000451000 lb/MMBtu	GRI Field
Methylcyclohexane	0.0009	0.0001891000 lb/MMBtu	GRI Field
n-Octane	0.0003	0.0000608000 lb/MMBtu	GRI Field
n-Nonane	0.0000	0.0000050000 lb/MMBtu	GRI Field
CO2	644.1176	117.6470588235 lb/MMBtu	EPA

Unit Name: REGEN

Hours of Operation: 8,760 Yearly
Heat Input: 10.00 MMBtu/hr
Fuel Type: NATURAL GAS
Device Type: HEATER
Emission Factor Set: FIELD > EPA > LITERATURE
Additional EF Set: -NONE-

RH-W

Calculated Emissions (ton/yr)

Chemical Name	Emissions	Emission Factor	Emission Factor Set
HAPs			
3-Methylchloranthrene	0.0000	0.0000000018 lb/MMBtu	EPA
7,12-Dimethylbenz(a)anthracene	0.0000	0.0000000167 lb/MMBtu	EPA
Formaldehyde	0.0370	0.0008440080 lb/MMBtu	GRI Field
Methanol	0.0422	0.0008836360 lb/MMBtu	GRI Field

Acetaldehyde	0.0323	0.0007375920 lb/MMBtu	GRI Field
1,3-Butadiene	0.0150	0.0003423350 lb/MMBtu	GRI Field
Benzene	0.0328	0.0007480470 lb/MMBtu	GRI Field
Toluene	0.0445	0.0010163310 lb/MMBtu	GRI Field
Ethylbenzene	0.0925	0.0021128220 lb/MMBtu	GRI Field
Xylenes(m,p,o)	0.0578	0.0013205140 lb/MMBtu	GRI Field
2,2,4-Trimethylpentane	0.1245	0.0028417680 lb/MMBtu	GRI Field
n-Hexane	0.0818	0.0014070660 lb/MMBtu	GRI Field
Phenol	0.0000	0.0000001070 lb/MMBtu	GRI Field
Styrene	0.0911	0.0020788980 lb/MMBtu	GRI Field
Naphthalene	0.0000	0.0000005100 lb/MMBtu	GRI Field
2-Methylnaphthalene	0.0000	0.0000001470 lb/MMBtu	GRI Field
Acenaphthylene	0.0000	0.0000000670 lb/MMBtu	GRI Field
Biphenyl	0.0000	0.0000004730 lb/MMBtu	GRI Field
Acenaphthene	0.0000	0.0000000900 lb/MMBtu	GRI Field
Fluorene	0.0000	0.0000000800 lb/MMBtu	GRI Field
Anthracene	0.0000	0.0000000870 lb/MMBtu	GRI Field
Phenanthrene	0.0000	0.0000000800 lb/MMBtu	GRI Field
Fluoranthene	0.0000	0.0000000900 lb/MMBtu	GRI Field
Pyrene	0.0000	0.0000000860 lb/MMBtu	GRI Field
Benz(a)anthracene	0.0000	0.0000000870 lb/MMBtu	GRI Field
Chrysene	0.0000	0.0000001170 lb/MMBtu	GRI Field
Benzo(a)pyrene	0.0000	0.0000000700 lb/MMBtu	GRI Field
Benzo(b)fluoranthene	0.0000	0.0000001500 lb/MMBtu	GRI Field
Benzo(k)fluoranthene	0.0000	0.0000007600 lb/MMBtu	GRI Field
Benzo(g,h,i)perylene	0.0000	0.0000002800 lb/MMBtu	GRI Field
Indeno(1,2,3-c,d)pyrene	0.0000	0.0000001200 lb/MMBtu	GRI Field
Dibenz(a,h)anthracene	0.0000	0.0000001030 lb/MMBtu	GRI Field
Lead	0.0000	0.0000004802 lb/MMBtu	EPA

Total 0.6313

Criteria Pollutants

VOC	0.2382	0.0059821509 lb/MMBtu	EPA
PM	0.3284	0.0074509804 lb/MMBtu	EPA
PM, Condensable	0.2448	0.0065882359 lb/MMBtu	EPA
PM, Filterable	0.0816	0.0018627451 lb/MMBtu	EPA
CO	1.4175	0.0323836380 lb/MMBtu	GRI Field
NMHC	0.3738	0.0086294118 lb/MMBtu	EPA
NOx	4.2493	0.0970167730 lb/MMBtu	GRI Field
SO2	0.0258	0.0005880000 lb/MMBtu	EPA

Other Pollutants

Dichlorobenzene	0.0001	0.0000011705 lb/MMBtu	EPA
Methane	0.4808	0.0105212610 lb/MMBtu	GRI Field
Acetylene	0.6132	0.0140000000 lb/MMBtu	GRI Field
Ethylene	0.0415	0.0009478310 lb/MMBtu	GRI Field
Ethane	0.1152	0.0026312210 lb/MMBtu	GRI Field
Propylene	0.1027	0.0023454550 lb/MMBtu	GRI Field
Propane	0.0468	0.0010888280 lb/MMBtu	GRI Field
Isobutane	0.0641	0.0014840770 lb/MMBtu	GRI Field
Butane	0.0803	0.0018788890 lb/MMBtu	GRI Field
Cyclopentane	0.0495	0.0011304940 lb/MMBtu	GRI Field

Pentane	0.1519	0.0034671850 lb/MMBtu	GRI Field
n-Pentane	0.0923	0.0014221310 lb/MMBtu	GRI Field
Cyclohexane	0.0402	0.0009163330 lb/MMBtu	GRI Field
Methylcyclohexane	0.0994	0.0022011420 lb/MMBtu	GRI Field
n-Octane	0.1250	0.0028538830 lb/MMBtu	GRI Field
1,2,3-Trimethylbenzene	0.1499	0.0034224540 lb/MMBtu	GRI Field
1,2,4-Trimethylbenzene	0.1499	0.0034224540 lb/MMBtu	GRI Field
1,3,5-Trimethylbenzene	0.1499	0.0034224540 lb/MMBtu	GRI Field
n-Nonane	0.1803	0.0036804170 lb/MMBtu	GRI Field
CO2	5,152.9412	117.6470588235 lb/MMBtu	EPA

Unit Name: RHE

Hours of Operation: 8,760 Yearly
Heat Input: 3.50 MMBtu/hr
Fuel Type: NATURAL GAS
Device Type: BOILER
Emission Factor Set: FIELD > EPA > LITERATURE
Additional EF Set: -NONE-

RH-E

Calculated Emissions (ton/yr)

Chemical Name	Emissions	Emission Factor	Emission Factor Set
HAPs			
3-Methylchloranthrene	0.0000	0.0000000016 lb/MMBtu	EPA
7,12-Dimethylbenz(a)anthracene	0.0000	0.0000000157 lb/MMBtu	EPA
Formaldehyde	0.0054	0.0003522500 lb/MMBtu	GRI Field
Methanol	0.0068	0.0004333330 lb/MMBtu	GRI Field
Acetaldehyde	0.0045	0.0002909000 lb/MMBtu	GRI Field
1,3-Butadiene	0.0000	0.0000001830 lb/MMBtu	GRI Field
Benzene	0.0001	0.0000062550 lb/MMBtu	GRI Field
Toluene	0.0001	0.0000053870 lb/MMBtu	GRI Field
Ethylbenzene	0.0000	0.0000000720 lb/MMBtu	GRI Field
Xylenes(m,p,o)	0.0000	0.0000010910 lb/MMBtu	GRI Field
2,2,4-Trimethylpentane	0.0005	0.0000329000 lb/MMBtu	GRI Field
n-Hexane	0.0049	0.0003214790 lb/MMBtu	GRI Field
Phenol	0.0000	0.0000000950 lb/MMBtu	GRI Field
Naphthalene	0.0000	0.0000002950 lb/MMBtu	GRI Field
2-Methylnaphthalene	0.0000	0.0000000700 lb/MMBtu	GRI Field
Acenaphthylene	0.0000	0.0000000550 lb/MMBtu	GRI Field
Biphenyl	0.0000	0.0000011600 lb/MMBtu	GRI Field
Acenaphthene	0.0000	0.0000000800 lb/MMBtu	GRI Field
Fluorene	0.0000	0.0000000700 lb/MMBtu	GRI Field
Anthracene	0.0000	0.0000000760 lb/MMBtu	GRI Field
Phenanthrene	0.0000	0.0000000550 lb/MMBtu	GRI Field
Fluoranthene	0.0000	0.0000000600 lb/MMBtu	GRI Field
Pyrene	0.0000	0.0000000750 lb/MMBtu	GRI Field
Benz(a)anthracene	0.0000	0.0000000750 lb/MMBtu	GRI Field
Chrysene	0.0000	0.0000001000 lb/MMBtu	GRI Field
Benzo(a)pyrene	0.0000	0.0000000800 lb/MMBtu	GRI Field
Benzo(b)fluoranthene	0.0000	0.0000001350 lb/MMBtu	GRI Field
Benzo(k)fluoranthene	0.0000	0.0000004400 lb/MMBtu	GRI Field

Benzo(g,h,i)perylene	0.0000	0.0000001500 lb/MMBtu	GRI Field
Indeno(1,2,3-c,d)pyrene	0.0000	0.0000001000 lb/MMBtu	GRI Field
Dibenz(a,h)anthracene	0.0000	0.0000000850 lb/MMBtu	GRI Field
Lead	0.0000	0.0000004502 lb/MMBtu	EPA

Total 0.0221

Criteria Pollutants

VOO	0.0827	0.0053021569 lb/MMBtu	EPA
PM	0.1142	0.0074609804 lb/MMBtu	EPA
PM, Condensable	0.0857	0.0055882363 lb/MMBtu	EPA
PM, Filterable	0.0286	0.0018627451 lb/MMBtu	EPA
CO	0.4711	0.0307275000 lb/MMBtu	GRI Field
NMHC	0.1308	0.0085294118 lb/MMBtu	EPA
NOx	1.3630	0.0882553330 lb/MMBtu	GRI Field
SO2	0.0090	0.0005880000 lb/MMBtu	EPA

Other Pollutants

Dichlorobenzene	0.0000	0.0000011765 lb/MMBtu	EPA
Methane	0.0001	0.0058790650 lb/MMBtu	GRI Field
Acetylene	0.0817	0.0053314000 lb/MMBtu	GRI Field
Ethylene	0.0081	0.0005284000 lb/MMBtu	GRI Field
Ethane	0.0258	0.0013804650 lb/MMBtu	GRI Field
Propylene	0.0143	0.0009333320 lb/MMBtu	GRI Field
Propane	0.0184	0.0012019050 lb/MMBtu	GRI Field
Butane	0.0213	0.0013886350 lb/MMBtu	GRI Field
Cyclopentane	0.0008	0.0000406000 lb/MMBtu	GRI Field
Pentane	0.0317	0.0020866400 lb/MMBtu	GRI Field
n-Pentane	0.0307	0.0020000000 lb/MMBtu	GRI Field
Cyclohexane	0.0007	0.0000451000 lb/MMBtu	GRI Field
Methylcyclohexane	0.0026	0.0001691000 lb/MMBtu	GRI Field
n-Octane	0.0008	0.0000509000 lb/MMBtu	GRI Field
n-Nonane	0.0001	0.0000050000 lb/MMBtu	GRI Field
CO2	1,803,6294	117,8470588235 lb/MMBtu	EPA

Unit Name: SRU REGEN

Hours of Operation: 8,760 Yearly
Heat Input: 2.70 MMBtu/hr
Fuel Type: NATURAL GAS
Device Type: HEATER
Emission Factor Set: FIELD > EPA > LITERATURE
Additional EF Set: -NONE-

RH 01

Calculated Emissions (ton/yr)

<u>Chemical Name</u>	<u>Emissions</u>	<u>Emission Factor</u>	<u>Emission Factor Set</u>
HAPs			
3-Methylchloranthrene	0.0000	0.0000000018 lb/MMBtu	EPA
7,12-Dimethylbenz(a)anthracene	0.0000	0.0000000157 lb/MMBtu	EPA
Formaldehyde	0.0100	0.0008440080 lb/MMBtu	GRI Field
Methanol	0.0114	0.0005636380 lb/MMBtu	GRI Field

Acetaldehyde	0.0087	0.0007375920 lb/MMBtu	GRI Field
1,3-Butadiene	0.0040	0.0003423350 lb/MMBtu	GRI Field
Benzene	0.0088	0.0007480470 lb/MMBtu	GRI Field
Toluene	0.0120	0.0010163310 lb/MMBtu	GRI Field
Ethylbenzene	0.0260	0.0021128220 lb/MMBtu	GRI Field
Xylenes(m,p,o)	0.0155	0.0013206140 lb/MMBtu	GRI Field
2,2,4-Trimethylpentane	0.0336	0.0028417580 lb/MMBtu	GRI Field
n-Hexane	0.0186	0.0014070860 lb/MMBtu	GRI Field
Phenol	0.0000	0.0000001070 lb/MMBtu	GRI Field
Styrene	0.0246	0.0020788960 lb/MMBtu	GRI Field
Naphthalene	0.0000	0.0000005100 lb/MMBtu	GRI Field
2-Methylnaphthalene	0.0000	0.0000001470 lb/MMBtu	GRI Field
Acenaphthylene	0.0000	0.0000000670 lb/MMBtu	GRI Field
Biphenyl	0.0000	0.0000004730 lb/MMBtu	GRI Field
Acenaphthene	0.0000	0.0000000900 lb/MMBtu	GRI Field
Fluorene	0.0000	0.0000000600 lb/MMBtu	GRI Field
Anthracene	0.0000	0.0000000870 lb/MMBtu	GRI Field
Phenanthrene	0.0000	0.0000000600 lb/MMBtu	GRI Field
Fluoranthene	0.0000	0.0000000900 lb/MMBtu	GRI Field
Pyrene	0.0000	0.0000000880 lb/MMBtu	GRI Field
Benz(a)anthracene	0.0000	0.0000000870 lb/MMBtu	GRI Field
Chrysene	0.0000	0.0000001170 lb/MMBtu	GRI Field
Benzo(a)pyrene	0.0000	0.0000000700 lb/MMBtu	GRI Field
Benzo(b)fluoranthene	0.0000	0.0000001600 lb/MMBtu	GRI Field
Benzo(k)fluoranthene	0.0000	0.0000000780 lb/MMBtu	GRI Field
Benzo(g,h,i)perylene	0.0000	0.0000002600 lb/MMBtu	GRI Field
Indeno(1,2,3-c,d)pyrene	0.0000	0.0000001200 lb/MMBtu	GRI Field
Dibenz(a,h)anthracene	0.0000	0.0000001030 lb/MMBtu	GRI Field
Lead	0.0000	0.0000004902 lb/MMBtu	EPA

Total

0.1703

Criteria Pollutants

VOC	0.0838	0.0053921569 lb/MMBtu	EPA
PM	0.0861	0.0074609804 lb/MMBtu	EPA
PM, Condensable	0.0861	0.0055882353 lb/MMBtu	EPA
PM, Filterable	0.0220	0.0018627451 lb/MMBtu	EPA
CO	0.3827	0.0323635360 lb/MMBtu	GRI Field
NMHC	0.1009	0.0085284118 lb/MMBtu	EPA
NOx	1.1473	0.0870167730 lb/MMBtu	GRI Field
SO2	0.0070	0.0005880000 lb/MMBtu	EPA

Other Pollutants

Dichlorobenzene	0.0000	0.0000011785 lb/MMBtu	EPA
Methane	0.1244	0.0105212610 lb/MMBtu	GRI Field
Acetylene	0.1658	0.0140000000 lb/MMBtu	GRI Field
Ethylene	0.0112	0.0008476310 lb/MMBtu	GRI Field
Ethane	0.0311	0.0026312210 lb/MMBtu	GRI Field
Propylene	0.0277	0.0023454550 lb/MMBtu	GRI Field
Propane	0.0128	0.0010886280 lb/MMBtu	GRI Field
Isobutane	0.0173	0.0014640770 lb/MMBtu	GRI Field
Butane	0.0168	0.0013768990 lb/MMBtu	GRI Field
Cyclopentane	0.0134	0.0011304940 lb/MMBtu	GRI Field

GRI-HAPCalc[®] 3.01
Engines Report

Facility ID: EUNICE GP
Operation Type: GAS PLANT
Facility Name: EUNICE GAS PLANT
User Name:
Units of Measure: U.S. STANDARD

Notes:

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".

Engine Unit

Unit Name: 10 AND 11

Hours of Operation: 500 Yearly

Rate Power: 1,600 hp

Fuel Type: NATURAL GAS

Engine Type: 2-Stroke, Lean Burn

Emission Factor Set: GRI LITERATURE DATA

Additional EF Set: 2SCB CLARK

Calculated Emissions (ton/yr)

<u>Chemical Name</u>	<u>Emissions</u>	<u>Emission Factor</u>	<u>Emission Factor Set</u>
<u>HAPs</u>			
Formaldehyde	0.1895	0.21509252 g/bhp-hr	2SCB CLARK
Acetaldehyde	0.0024	0.00270000 g/bhp-hr	GRI Literature
Acrolein	0.0016	0.00180000 g/bhp-hr	GRI Literature
Benzene	0.0058	0.00660000 g/bhp-hr	GRI Literature
Toluene	0.0014	0.00160000 g/bhp-hr	GRI Literature
Total	0.2007		
<u>Criteria Pollutants</u>			
CO	1.5759	1.78864764 g/bhp-hr	2SCB CLARK
NOx	1.4882	1.68906478 g/bhp-hr	2SCB CLARK
<u>Other Pollutants</u>			
Methane	3.2305	3.66666219 g/bhp-hr	2SCB CLARK
Ethylene	0.0688	0.07804508 g/bhp-hr	2SCB CLARK

STANDBY 1000 ekW 1250 kVA

60 Hz 1800 rpm 480 Volts



Technical Data

Open Generator Set - 1800 rpm/60 Hz/480 Volts	DM9933-03	
EPA Certified for Stationary Emergency Applications (EPA Tier 2 emissions levels)		
Generator Set Package Performance		
Genset Power rating @ 0.8 pf	1250 kVA	
Genset Power Rating with fan	1000 ekW	
Fuel Consumption		
100% Load with fan	272.1 L/hr	71.9 Gal/hr
75% Load with fan	213.5 L/hr	56.4 Gal/hr
50% Load with fan	144.6 L/hr	38.2 Gal/hr
Cooling System ¹		
Air flow restriction (system)	0.12 kPa	0.48 in. water
Air flow (max @ rated speed for radiator arrangement)	987.1 m ³ /min	34855 cfm
Engine coolant capacity with radiator	403.5 L	106.6 gal
Engine coolant capacity	233.2 L	61.6 gal
Radiator coolant capacity	170.3 L	45.0 gal
Inlet Air		
Combustion air inlet flow rate	87.6 m ³ /min	3094.1 cfm
Exhaust System		
Exhaust stack gas temperature (engine out)	476.4 °C	889.5 °F
Exhaust gas flow rate	228.4 m ³ /min	8065.3 cfm
Exhaust flange size	203.2 mm	8 in
Exhaust system backpressure (maximum allowable)	10 kPa	40.2 in. water
Heat Rejection		
Heat rejection to coolant	352.3 kW	20033 Btu/min
Heat rejection to exhaust (total)	1023.7 kW	58206 Btu/min
Heat rejection to aftercooler	288.2 kW	16385 Btu/min
Heat rejection to atmosphere from engine	127.3 kW	7238 Btu/min
Heat rejection to atmosphere from generator	54.9 kW	3125 Btu/min
Alternator ²		
Motor starting capability @30% voltage dip	2734 skVA	
Frame	1402	
Temperature Rise	125 °C	225 °F
Lube System		
Sump refill with filter	68 L	18.0 gal
Emissions (Nominal) ³		
NOx g/hp-hr	4.93 g/hp-hr	
CO g/hp-hr	0.13 g/hp-hr	
HC g/hp-hr	0.01 g/hp-hr	
PM g/hp-hr	0.02 g/hp-hr	

¹ For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

² Generator temperature rise is based on a 40 degree C ambient per NEMA MG1-32. UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics.

³ Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx.

Data shown is based on steady state operating conditions of 77°F, 28.42 in HG and number 2 diesel fuel with 36°API and LHV of 18,390 btu/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

Table 3.3-1. EMISSION FACTORS FOR UNCONTROLLED GASOLINE AND DIESEL INDUSTRIAL ENGINES^a

Pollutant	Gasoline Fuel (SCC 2-02-003-01, 2-03-003-01)		Diesel Fuel (SCC 2-02-001-02, 2-03-001-01)		EMISSION FACTOR RATING
	Emission Factor (lb/hp-hr) (power output)	Emission Factor (lb/MMBtu) (fuel input)	Emission Factor (lb/hp-hr) (power output)	Emission Factor (lb/MMBtu) (fuel input)	
NO _x	0.011	1.63	0.031	4.41	D
CO	6.96 E-03 ^d	0.99 ^d	6.68 E-03	0.95	D
SO _x	5.91 E-04	0.084	2.05 E-03	0.29	D
PM-10 ^b	7.21 E-04	0.10	2.20 E-03	0.31	D
CO ₂ ^c	1.08	154	1.15	164	B
Aldehydes	4.85 E-04	0.07	4.63 E-04	0.07	D
TOC					
Exhaust	0.015	2.10	2.47 E-03	0.35	D
Evaporative	6.61 E-04	0.09	0.00	0.00	E
Crankcase	4.85 E-03	0.69	4.41 E-05	0.01	E
Refueling	1.08 E-03	0.15	0.00	0.00	E

^a References 2,5-6,9-14. When necessary, an average brake-specific fuel consumption (BSFC) of 7,000 Btu/hp-hr was used to convert from lb/MMBtu to lb/hp-hr. To convert from lb/hp-hr to kg/kw-hr, multiply by 0.608. To convert from lb/MMBtu to ng/J, multiply by 430. SCC = Source Classification Code. TOC = total organic compounds.

^b PM-10 = particulate matter less than or equal to 10 µm aerodynamic diameter. All particulate is assumed to be ≤ 1 µm in size.

^c Assumes 99% conversion of carbon in fuel to CO₂ with 87 weight % carbon in diesel, 86 weight % carbon in gasoline, average BSFC of 7,000 Btu/hp-hr, diesel heating value of 19,300 Btu/lb, and gasoline heating value of 20,300 Btu/lb.

^d Instead of 0.439 lb/hp-hr (power output) and 62.7 lb/mmBtu (fuel input), the correct emissions factors values are 6.96 E-03 lb/hp-hr (power output) and 0.99 lb/mmBtu (fuel input), respectively. This is an editorial correction. March 24, 2009

Table 3.3-2. SPECIATED ORGANIC COMPOUND EMISSION FACTORS FOR UNCONTROLLED DIESEL ENGINES^a

EMISSION FACTOR RATING: E

Pollutant	Emission Factor (Fuel Input) (lb/MMBtu)
Benzene ^b	9.33 E-04
Toluene ^b	4.09 E-04
Xylenes ^b	2.85 E-04
Propylene 	2.58 E-03
1,3-Butadiene ^{b,c}	<3.91 E-05
Formaldehyde ^b	1.18 E-03
Acetaldehyde ^b	7.67 E-04
Acrolein ^b	<9.25 E-05
Polycyclic aromatic hydrocarbons (PAH)	
Naphthalene ^b	8.48 E-05
Acenaphthylene	<5.06 E-06
Acenaphthene	<1.42 E-06
Fluorene	2.92 E-05
Phenanthrene	2.94 E-05
Anthracene	1.87 E-06
Fluoranthene	7.61 E-06
Pyrene	4.78 E-06
Benzo(a)anthracene	1.68 E-06
Chrysene	3.53 E-07
Benzo(b)fluoranthene	<9.91 E-08
Benzo(k)fluoranthene	<1.55 E-07
Benzo(a)pyrene	<1.88 E-07
Indeno(1,2,3-cd)pyrene	<3.75 E-07
Dibenz(a,h)anthracene	<5.83 E-07
Benzo(g,h,i)perylene	<4.89 E-07
TOTAL PAH	1.68 E-04

^a Based on the uncontrolled levels of 2 diesel engines from References 6-7. Source Classification Codes 2-02-001-02, 2-03-001-01. To convert from lb/MMBtu to ng/J, multiply by 430.

^b Hazardous air pollutant listed in the *Clean Air Act*.

^c Based on data from 1 engine.

5.2 Transportation And Marketing Of Petroleum Liquids¹⁻³

5.2.1 General

The transportation and marketing of petroleum liquids involve many distinct operations, each of which represents a potential source of evaporation loss. Crude oil is transported from production operations to a refinery by tankers, barges, rail tank cars, tank trucks, and pipelines. Refined petroleum products are conveyed to fuel marketing terminals and petrochemical industries by these same modes. From the fuel marketing terminals, the fuels are delivered by tank trucks to service stations, commercial accounts, and local bulk storage plants. The final destination for gasoline is usually a motor vehicle gasoline tank. Similar distribution paths exist for fuel oils and other petroleum products. A general depiction of these activities is shown in Figure 5.2-1.

5.2.2 Emissions And Controls

Evaporative emissions from the transportation and marketing of petroleum liquids may be considered, by storage equipment and mode of transportation used, in four categories:

1. Rail tank cars, tank trucks, and marine vessels: loading, transit, and ballasting losses.
2. Service stations: bulk fuel drop losses and underground tank breathing losses.
3. Motor vehicle tanks: refueling losses.
4. Large storage tanks: breathing, working, and standing storage losses. (See Chapter 7, "Liquid Storage Tanks".)

Evaporative and exhaust emissions are also associated with motor vehicle operation, and these topics are discussed in AP-42 *Volume II: Mobile Sources*.

5.2.2.1 Rail Tank Cars, Tank Trucks, And Marine Vessels -

Emissions from these sources are from loading losses, ballasting losses, and transit losses.

5.2.2.1.1 Loading Losses -

Loading losses are the primary source of evaporative emissions from rail tank car, tank truck, and marine vessel operations. Loading losses occur as organic vapors in "empty" cargo tanks are displaced to the atmosphere by the liquid being loaded into the tanks. These vapors are a composite of (1) vapors formed in the empty tank by evaporation of residual product from previous loads, (2) vapors transferred to the tank in vapor balance systems as product is being unloaded, and (3) vapors generated in the tank as the new product is being loaded. The quantity of evaporative losses from loading operations is, therefore, a function of the following parameters:

- Physical and chemical characteristics of the previous cargo;
- Method of unloading the previous cargo;
- Operations to transport the empty carrier to a loading terminal;
- Method of loading the new cargo; and
- Physical and chemical characteristics of the new cargo.

The principal methods of cargo carrier loading are illustrated in Figure 5.2-2, Figure 5.2-3, and Figure 5.2-4. In the splash loading method, the fill pipe dispensing the cargo is lowered only part way into the cargo tank. Significant turbulence and vapor/liquid contact occur during the splash

loading operation, resulting in high levels of vapor generation and loss. If the turbulence is great enough, liquid droplets will be entrained in the vented vapors.

A second method of loading is submerged loading. Two types are the submerged fill pipe method and the bottom loading method. In the submerged fill pipe method, the fill pipe extends almost to the bottom of the cargo tank. In the bottom loading method, a permanent fill pipe is attached to the cargo tank bottom. During most of submerged loading by both methods, the fill pipe opening is below the liquid surface level. Liquid turbulence is controlled significantly during submerged loading, resulting in much lower vapor generation than encountered during splash loading.

The recent loading history of a cargo carrier is just as important a factor in loading losses as the method of loading. If the carrier has carried a nonvolatile liquid such as fuel oil, or has just been cleaned, it will contain vapor-free air. If it has just carried gasoline and has not been vented, the air in the carrier tank will contain volatile organic vapors, which will be expelled during the loading operation along with newly generated vapors.

Cargo carriers are sometimes designated to transport only one product, and in such cases are practicing "dedicated service". Dedicated gasoline cargo tanks return to a loading terminal containing air fully or partially saturated with vapor from the previous load. Cargo tanks may also be "switch loaded" with various products, so that a nonvolatile product being loaded may expel the vapors remaining from a previous load of a volatile product such as gasoline. These circumstances vary with the type of cargo tank and with the ownership of the carrier, the petroleum liquids being transported, geographic location, and season of the year.

One control measure for vapors displaced during liquid loading is called "vapor balance service", in which the cargo tank retrieves the vapors displaced during product unloading at bulk plants or service stations and transports the vapors back to the loading terminal. Figure 5.2-5 shows a tank truck in vapor balance service filling a service station underground tank and taking on displaced gasoline vapors for return to the terminal. A cargo tank returning to a bulk terminal in vapor balance service normally is saturated with organic vapors, and the presence of these vapors at the start of submerged loading of the tanker truck results in greater loading losses than encountered during nonvapor balance, or "normal", service. Vapor balance service is usually not practiced with marine vessels, although some vessels practice emission control by means of vapor transfer within their own cargo tanks during ballasting operations, discussed below.

Emissions from loading petroleum liquid can be estimated (with a probable error of ± 30 percent)⁴ using the following expression:

$$L_L = 12.46 \frac{SPM}{T} \quad (1)$$

where:

L_L = loading loss, pounds per 1000 gallons (lb/10³ gal) of liquid loaded

S = a saturation factor (see Table 5.2-1)

P = true vapor pressure of liquid loaded, pounds per square inch absolute (psia)
(see Figure 7.1-5, Figure 7.1-6, and Table 7.1-2)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole) (see Table 7.1-2)

T = temperature of bulk liquid loaded, °R (°F + 460)

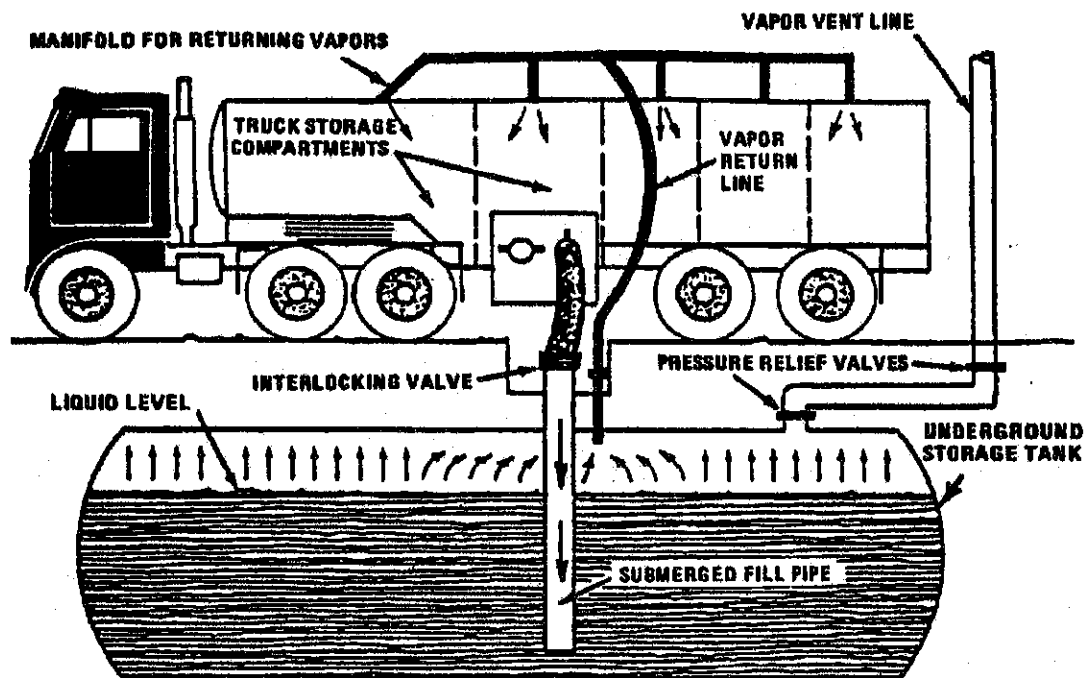


Figure 5.2-5. Tank truck unloading into a service station underground storage tank and practicing "vapor balance" form of emission control.

Table 5.2-1. SATURATION (S) FACTORS FOR CALCULATING PETROLEUM LIQUID LOADING LOSSES

Cargo Carrier	Mode Of Operation	S Factor
Tank trucks and rail tank cars	Submerged loading of a clean cargo tank	0.50
	Submerged loading: dedicated normal service	0.60
	Submerged loading: dedicated vapor balance service	1.00
	Splash loading of a clean cargo tank	1.45
	Splash loading: dedicated normal service	1.45
	Splash loading: dedicated vapor balance service	1.00
Marine vessels ^a	Submerged loading: ships	0.2
	Submerged loading: barges	0.5

^a For products other than gasoline and crude oil. For marine loading of gasoline, use factors from Table 5.2-2. For marine loading of crude oil, use Equations 2 and 3 and Table 5.2-3.

Table 13.2.2-2. CONSTANTS FOR EQUATIONS 1a AND 1b

Constant	Industrial Roads (Equation 1a)			Public Roads (Equation 1b)		
	PM-2.5	PM-10	PM-30*	PM-2.5	PM-10	PM-30*
k (lb/VMT)	0.15	1.5	4.9	0.18	1.8	6.0
a	0.9	0.9	0.7	1	1	1
b	0.45	0.45	0.45	-	-	-
c	-	-	-	0.2	0.2	0.3
d	-	-	-	0.5	0.5	0.3
Quality Rating	B	B	B	B	B	B

*Assumed equivalent to total suspended particulate matter (TSP)

"-" = not used in the emission factor equation

Table 13.2.2-2 also contains the quality ratings for the various size-specific versions of Equation 1a and 1b. The equation retains the assigned quality rating, if applied within the ranges of source conditions, shown in Table 13.2.2-3, that were tested in developing the equation:

Table 13.2.2-3. RANGE OF SOURCE CONDITIONS USED IN DEVELOPING EQUATION 1a AND 1b

Emission Factor	Surface Silt Content, %	Mean Vehicle Weight		Mean Vehicle Speed		Mean No. of Wheels	Surface Moisture Content, %
		Mg	ton	km/hr	mph		
Industrial Roads (Equation 1a)	1.8-25.2	1.8-260	2-290	8-69	5-43	4-17 ^a	0.03-13
Public Roads (Equation 1b)	1.8-35	1.4-2.7	1.5-3	16-88	10-55	4-4.8	0.03-13

^a See discussion in text.

As noted earlier, the models presented as Equations 1a and 1b were developed from tests of traffic on unpaved surfaces. Unpaved roads have a hard, generally nonporous surface that usually dries quickly after a rainfall or watering, because of traffic-enhanced natural evaporation. (Factors influencing how fast a road dries are discussed in Section 13.2.2.3, below.) The quality ratings given above pertain to the mid-range of the measured source conditions for the equation. A higher mean vehicle weight and a higher than normal traffic rate may be justified when performing a worst-case analysis of emissions from unpaved roads.

The emission factors for the exhaust, brake wear and tire wear of a 1980's vehicle fleet (C) was obtained from EPA's MOBILE6.2 model²³. The emission factor also varies with aerodynamic size range



October 2000
RG-109 (Draft)

Air Permit Technical Guidance for Chemical Sources:

Flares and Vapor Oxidizers

printed on
recycled paper

Air Permits Division

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION



TNRCC

Barry R. McBee, Chairman

R. B. "Ralph" Marquez, Commissioner

John M. Baker, Commissioner

Jeffrey A. Saitas, P.E., Executive Director

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Technical Disclaimer

This document is intended as guidance to explain the specific requirements for new source review permitting of flares and vapor oxidizers; it does not supersede or replace any state or federal law, regulation, or rule. References to abatement equipment technologies are not intended to represent minimum or maximum levels of Best Available Control Technology (BACT). Determinations of BACT are made on a case-by-case basis as part of the New Source Review of permit applications. BACT determinations are always subject to adjustment in consideration of specific process requirements, air quality concerns, and recent developments in abatement technology. Additionally, specific health effects concerns may indicate stricter abatement than required by the BACT determination.

The represented calculation methods are intended as an aid in the completion of acceptable submittals; alternate calculation methods may be equally acceptable if they are based upon, and adequately demonstrate, sound engineering assumptions or data.

These guidelines are applicable as of this document's publication date but are subject to revision during the permit application preparation and review period. It is the responsibility of the applicants to remain abreast of any guideline or regulation developments that may affect their industries.

The electronic version of this document may not contain attachments or forms (such as the PI-1, Standard Exemptions, or tables) that can be obtained electronically elsewhere on the TNRCC Web site.

The special conditions included with these guidelines are for purposes of example only. Special conditions included in an actual permit are written by the reviewing engineer to address specific permit requirements and operating conditions.

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Chapter 2—Types of Flare and Oxidizer Systems

This document provides guidance for two classes of vapor combustion control devices: flares and vapor oxidizers. While there may be some overlap between the two, flares have generally been treated separately by the EPA and the TNRCC, in large part because flares have an open flame and often cannot be sampled, so emissions are estimated based on the results of flare testing performed in the early 1980s. Each of the two classes will be dealt with separately in each of the chapters of this document.

Combustion Control Devices NOT Discussed. This document will not cover permitting of RCRA or BIF units because the requirements for these units often go beyond the requirements for state air permitting. Incinerators used to treat solid wastes are covered in another technical guidance document, *Incinerators*. Guidance for combustion control devices associated with spray paint booths, coatings operations, and semiconductor facilities should be obtained by calling the TNRCC New Source Review Permits Division at (512) 239-1250.

Flares

Flare systems generally are open-flame control devices used for disposing of waste gas streams during both routine process and emergency or upset conditions. In addition to simple, unassisted flares, typical smokeless flare systems include, but are not limited to, the following:

- **Enclosed Flares/Vapor Combustors.** Enclosed flares are used in disposing of waste gas streams in instances where a visible flame is unacceptable. Applications include chemical processing, petroleum refining and production, and municipal waste gas treatment. These may be referred to as vapor combustors and can have more than one burner in the stack.
- **Steam-Assisted Flares.** Steam-assisted flares are used in disposing of low-pressure waste gas streams when steam is available and practical to minimize smoking from the flare. Applications are similar to those of enclosed flares. Flares might also be assisted with natural gas if readily available on site; these flares would undergo a case-by-case review.
- **Air-Assisted Flares.** Air-assisted flares are used in disposing of low-pressure waste gas streams when practical or when steam utilities are not available to minimize smoking from the flare. Applications include chemical processing, petroleum refining and production, and pipeline transportation.
- **Sonic Flares.** Sonic flares are used in disposing of high-pressure waste gas streams. Applications include gas production, pipeline transportation, and treatment plants.

- **Multipoint Flare Systems.** Multipoint flare systems are used in disposing of both high- and low-pressure waste gas streams. Multiple burner tips in conjunction with a staged control system provide for controlled combustion. Applications are similar to those of air-assisted flares.

Vapor Oxidizers

These devices generally do not have an open flame but have an exhaust stack which allows for sampling and monitoring of exhaust emissions. The most common type, thermal, relies on the combustion heat of the waste gas and assist fuel (if required) to oxidize the waste gas air contaminants. Other types include:

- **Recuperative.** In this case, the waste gas is directed to a heat exchanger to be preheated by the exhaust gas, to minimize the need for additional assist fuel. Recuperative oxidizers are considered a subset of thermal oxidizers in this document.
- **Regenerative.** Combustion takes place in a chamber with a heat sink, such as ceramic saddles, which retains the heat of combustion, allowing for combustion of more dilute vapor streams (which have a low heat of combustion) at a lower cost. These units generally have multiple chambers, which allow for the preheat of one chamber by exhaust gases while combustion takes place in another chamber.
- **Catalytic.** Combustion takes place over a catalyst that allows for combustion at a lower temperature (in the range of 600 to 800°F as opposed to greater than 1400°F for many thermal oxidizers). Catalytic oxidizers function best with a waste stream with constant flow and composition.

Chapter 5—Emission Factors, Efficiencies, and Calculations

This chapter provides detailed instructions for the calculations necessary to verify BACT and estimate emissions from flares and vapor oxidizers. Flares must be checked to determine whether they will satisfy the flow and thermal requirements of 40 CFR § 60.18, and their emissions are determined by the use of emission factors. Example calculations are provided for these flare calculations.

Oxidizer emissions are determined by using previous sampling results or emission factors from the manufacturer or AP-42. These calculations are very similar to the flare calculations and are only discussed in general terms.

Flares: Introduction

Although emissions from emergency flares are not included in a permit when it is issued, emissions should be estimated for both routine process flares and emergency flares. Sometimes, emissions of routine pilot gas combustion may be included in an issued permit for emergency flares (although not required).

In this section, the *flare* emission factors and destruction efficiencies are presented first. This information is followed by sample *calculations* that demonstrate how to ensure that the requirements of 40 CFR § 60.18 are satisfied and how to estimate emissions from a flare. Flare data in Attachment B (typical refinery flare) will be used as a basis in most of the following calculations. Flare data in Attachment C (acid gas flare) will be used as a basis in the example calculations for SO₂ emissions.

Flare Emission Factors

The usual flare destruction efficiencies and emission factors are provided in Table 4. The high-Btu waste streams referred to in the table have a heating value greater than 1,000 Btu/scf.

Flare Destruction Efficiencies

Claims for destruction efficiencies greater than those listed in Table 4 will be considered on a case-by-case basis. The applicant may make one of the three following demonstrations to justify the higher destruction efficiency: (1) general method, (2) 99.5 percent justification, or (3) flare stack sampling.

Table 4. Flare Factors

Waste Stream	Destruction/Removal Efficiency (DRE)		
VOC	98 percent (generic)		
	99 percent for compounds containing no more than 3 carbons that contain no elements other than carbon and hydrogen in addition to the following compounds: methanol, ethanol, propanol, ethylene oxide and propylene oxide		
H ₂ S	98 percent		
NH ₃	case by case		
CO	case by case		
Air Contaminants	Emission Factors		
thermal NO _x	steam-assist:	high Btu	0.0485 lb/MMBtu
		low Btu	0.068 lb/MMBtu
	other:	high Btu	0.138 lb/MMBtu
		low Btu	0.0641 lb/MMBtu
fuel NO _x	NO _x is 0.5 wt percent of inlet NH ₃ , other fuels case by case		
CO	steam-assist:	high Btu	0.3503 lb/MMBtu
		low Btu	0.3465 lb/MMBtu
	other:	high Btu	0.2755 lb/MMBtu
		low Btu	0.5496 lb/MMBtu
PM	none, required to be smokeless		
SO ₂	100 percent S in fuel to SO ₂		

*The only exception of this is if inorganics might be emitted from the flare. In the case of landfills, the AP-42 PM factor may be used. In other cases, the emissions should be based on the composition of the waste stream routed to the flare.

CHARGE..... 100 - 1
REC. NO. 0
TEST NUMBER.. 19121

DATE SAMPLED..... 10-04-13
DATE RUN..... 10-07-13
EFFECT. DATE..... --

STATION NO. ... 161-100052

SAMPLE NAME.... TARGA - EUNICE PLANT GREEN GAS
RECEIVED FROM.. LABORATORY SERVICES
LOCATION HOBBS N.M.

FLOWING PRESSURE 226 PSIG

FLOWING TEMPERATURE 83 F

SAMPLED BY: BS

CYLINDER NO. ...

FRACTIONAL ANALYSIS
CALCULATED @ 14.650 PSIA AND 60F

	MOL%	GPM (REAL)
HYDROGEN SULFIDE...	0.736	
NITROGEN.....	1.606	
CARBON DIOXIDE.....	3.305	
METHANE.....	74.744	
ETHANE.....	9.918	2.6475
PROPANE.....	5.552	1.5267
ISO-BUTANE.....	0.711	0.2322
NOR-BUTANE.....	1.897	0.5970
ISO-PENTANE.....	0.470	0.1716
NOR-PENTANE.....	0.506	0.1831
HEXANES +.....	0.555	0.2417
TOTALS	100.000	5.5998

H2S PPMV = 7358

'Z' FACTOR (DRY) = 0.9962

'Z' FACTOR (WET) = 0.9958

..CALCULATED SPECIFIC GRAVITIES..

IDEAL, DRY..... 0.7704
IDEAL, WET 0.7678
REAL, DRY 0.7730
REAL, WET 0.7707

..CALCULATED GROSS HEATING VALUES..

BTU/CF - IDEAL, DRY 1218.9
BTU/CF - IDEAL, WET 1198.4
BTU/CF - REAL, DRY 1223.5
BTU/CF - REAL, WET 1203.5

DISTRIBUTION AND REMARKS:

D. ARMSTRONG

ANALYZED BY: JT

APPROVED: Kc

A SAMPLE OF 161-100052 TARGA EUNICE PLANT - GREEN GAS

CAPILLARY EXTENDED
C-6+ ANALYSIS

PAGE NO. 1

COMPONENT	MOL%	LIQ%	WT%
NEOHXANE	0.0027	0.0000	0.0000
2,3DMC4+CYC5	0.0240	0.0000	0.0000
2MPENTANE	0.0771	0.0000	0.0000
3MPENTANE	0.0462	0.0000	0.0000
N-HEXANE	0.0950	0.0000	0.0000
2,2 DMPENTANE	0.0007	0.0000	0.0000
MCYCLOPENTANE	0.0508	0.0000	0.0000
2,4 DMPENTANE	0.0000	0.0000	0.0000
2,2,3 TMBUTANE	0.0001	0.0000	0.0000
BENZENE	0.0213	0.0000	0.0000
3,3 DMPENTANE	0.0005	0.0000	0.0000
CYCLOHEXANE	0.0398	0.0000	0.0000
2MHXANE	0.0119	0.0000	0.0000
2,3 DMPENTANE	0.0086	0.0000	0.0000
3MHXANE	0.0211	0.0000	0.0000
DIMCYCPCENTANES(GROUPED)	0.0225	0.0000	0.0000
N-HEPTANE	0.0242	0.0000	0.0000
MCYCLOHEXANE	0.0317	0.0000	0.0000
2,2DMHEXANE	0.0059	0.0000	0.0000
2,3,3TMPENTANE	0.0000	0.0000	0.0000
TOLUENE	0.0204	0.0000	0.0000
2,3DMHEXANE	0.0017	0.0000	0.0000
2M3EPENTANE	0.0000	0.0000	0.0000
2MHPTANE	0.0088	0.0000	0.0000
4MHPTANE	0.0006	0.0000	0.0000
3,4DMHEXANE	0.0000	0.0000	0.0000
3MHPTANE	0.0044	0.0000	0.0000
TRIMCYCPCENTANES(GROUPED)	0.0006	0.0000	0.0000
DIMCYCHEXANES(GROUPED)	0.0067	0.0000	0.0000
N-OCTANE	0.0047	0.0000	0.0000
2,3,5TRIMHEXANE	0.0005	0.0000	0.0000
2,2,4TRIMHEXANE	0.0001	0.0000	0.0000
2,2DIMHEPTANE	0.0001	0.0000	0.0000
2,2,3TRIMHEXANE	0.0001	0.0000	0.0000
2,5DIMHEPTANE	0.0000	0.0000	0.0000
1-NONANE	0.0000	0.0000	0.0000
2,4DIMHEPTANE	0.0000	0.0000	0.0000
E-CYCHEXANE	0.0017	0.0000	0.0000
3,3DIMHEPTANE	0.0009	0.0000	0.0000
2,6DIMHEPTANE	0.0003	0.0000	0.0000
E-BENZENE	0.0004	0.0000	0.0000
2,3DIMHEPTANE	0.0000	0.0000	0.0000
M-XYLENE	0.0031	0.0000	0.0000
P-XYLENE	0.0006	0.0000	0.0000
3,4DIMHEPTANE	0.0001	0.0000	0.0000
3EHEPTANE	0.0000	0.0000	0.0000

A SAMPLE OF 161-100052 TARGA EUNICE PLANT - GREEN GAS

CAPILLARY EXTENDED
C-6+ ANALYSIS

PAGE NO. 2

COMPONENT	MOL%	LIQ%	WT%
4MOCTANE	0.0006	0.0000	0.0000
3MOCTANE	0.0003	0.0000	0.0000
O-XYLENE	0.0002	0.0000	0.0000
IC4CYCPENTANE	0.0001	0.0000	0.0000
N-NONANE	0.0009	0.0000	0.0000
I-DECANE	0.0001	0.0000	0.0000
1E1MCYC6	0.0002	0.0000	0.0000
IC3BENZENE	0.0004	0.0000	0.0000
2,3DMOCTANE	0.0012	0.0000	0.0000
3EOCTANE	0.0023	0.0000	0.0000
NC4CYCC6	0.0000	0.0000	0.0000
NC3BENZENE	0.0004	0.0000	0.0000
M+P E-TOLUENE	0.0004	0.0000	0.0000
O-E-TOLUENE	0.0013	0.0000	0.0000
2,2DMOCTANE	0.0012	0.0000	0.0000
TERTBUTYLBENZENE	0.0004	0.0000	0.0000
1,3,5TMBENZENE	0.0002	0.0000	0.0000
3,6DMOCTANE	0.0002	0.0000	0.0000
IC4BENZENE	0.0009	0.0000	0.0000
N-DECANE	0.0014	0.0000	0.0000
UNKNOWN C-6'S	0.0000	0.0000	0.0000
UNKNOWN C-7'S	0.0000	0.0000	0.0000
UNKNOWN C-8'S	0.0000	0.0000	0.0000
UNKNOWN C-9'S	0.0020	0.0000	0.0000
UNK C10'S THRU C14'S	0.0003	0.0000	0.0000
UNK C15'S THRU C16'S	0.0000	0.0000	0.0000
UNK C17'S THRU C20'S	0.0000	0.0000	0.0000
TOTAL	0.5550	0.0000	0.0000

COMPONENT GROUPINGS (PARAFFINS-NAPTHENES-AROMATICS)

	MOL%	LIQ%	WT%
TOTAL C-6'S	0.357	0.000	0.000
TOTAL C-7'S	0.142	0.000	0.000
TOTAL C-8'S	0.039	0.000	0.000
TOTAL C-9'S	0.009	0.000	0.000
TOTAL C-10'S	0.008	0.000	0.000
TOTAL C-11 THRU C-14	0.000	0.000	0.000
TOTAL C-15 THRU C-16	0.000	0.000	0.000
TOTAL C-17 THRU C-20	0.000	0.000	0.000
TOTAL	0.555	0.000	0.000



Targa Midstream Services Limited Partnership
LOOP 207 1 MILE N. OF CITY
EUNICE NM 88231
505.394.2516

Sample ID: STA1;TARGA

Sample Ran Date: 1/24/2014

Lease: RICH GAS EAST CONTACTOR

Effective Date: 2/1/2014

Location:

ID: Plant 161 at Eunice, New Mexico

Sample Type: Spot

Fractional Gas Analysis
at 14.65 and 60° F

Compound	Mol. %	GPM	Sp. Gr.
Carbon Dioxide:	0.0030		0.0000
Nitrogen:	1.7766		0.0172
Hydrogen Sulfide:	0.0000		0.0000
Methane:	79.2636		0.4390
Ethane:	9.8635	2.6218	0.1024
Propane:	5.3843	1.4744	0.0820
Iso-Butane:	0.6710	0.2183	0.0135
N-Butane:	1.7716	0.5555	0.0356
Iso-Pentane:	0.3959	0.1441	0.0099
N-Pentane:	0.4366	0.1573	0.0109
Hexane Plus:	0.4339	0.1774	0.0129
	100.0000	5.3488	0.7233

Specific Gravity

Field Gravity	0.726
Real, dry:	0.7256
Real, wet:	0.7216

Molecular Weight 20.949

B.T.U./CU. Foot
(H2S Free)

Real - Dry Basis	1,245
Real - Wet Basis:	1,223

Pentane Plus

GPM: 0.4788

H2S PPM 0

Compressibility Factor

Z dry:	0.9965
Z wet:	0.9962

Pressure 21 psig.
Temperature 90 F.

Sampled and Analyzed by: Raul

Comments: Notes:

MOBILE ANALYTICAL LABS, INC.

P.O. BOX 69210
ODESSA, TEXAS 79769

GAS EXTENDED ANALYSIS

11/05/13

LAB # 18798

TARGA RESOURCES MIDDLE PLANT RESIDUE GAS

	MOL %	GPM
HYDROGEN SULFIDE	0.0000	0.000
NITROGEN	1.9309	0.000
METHANE	96.6864	0.000
CARBON DIOXIDE	0.0000	0.000
ETHANE	1.2149	0.324
PROPANE	0.1130	0.031
ISO-BUTANE	0.0100	0.003
N-BUTANE	0.0260	0.008
ISO-PENTANE	0.0060	0.002
N-PENTANE	0.0070	0.003
NEOHXANE	0.0001	0.000
CYCLOPENTANE	0.0005	0.000
2-METHYLPENTANE	0.0012	0.000
3-METHYLPENTANE	0.0007	0.000
N-HEXANE	0.0013	0.001
METHYLCYCLOPENTANE	0.0006	0.000
BENZENE	0.0002	0.000
CYCLOHEXANE	0.0004	0.000
2-METHYLHEXANE	0.0001	0.000
3-METHYLHEXANE	0.0002	0.000
DIMETHYLCYCLOPENTANES	0.0002	0.000
N-HEPTANE	0.0001	0.000
METHYLCYCLOHEXANE	0.0002	0.000
TRIMETHYLCYCLOPENTANES	0.0000	0.000
TOLUENE	0.0000	0.000
2-METHYLHEPTANE	0.0000	0.000
3-METHYLHEPTANE	0.0000	0.000
DIMETHYLCYCLOHEXANES	0.0000	0.000
N-OCTANE	0.0000	0.000
ETHYL BENZENE	0.0000	0.000
M&P-KYLENES	0.0000	0.000
O-XYLENE	0.0000	0.000
C9 NAPHTHENES	0.0000	0.000
C9 PARAFFINS	0.0000	0.000
N-NONANE	0.0000	0.000
N-DECANE	0.0000	0.000
UNDECANE PLUS	0.0000	0.000
TOTALS	100.0000	0.372

SPECIFIC GRAVITY 0.571
GROSS DRY BTU/CU.FT. 1001.7
GROSS WET BTU/CU.FT. 984.5
TOTAL MOL. WT. 16.502
MOL. WT. C6+ 86.654
SP. GRAVITY C6+ 3.317
MOL. WT. C7+ 99.194
SP. GRAVITY C7+ 4.104

BASIS: 14.65 PSIA @ 60 °F

NOTES:
SAMPLED 10/29/13 BY: SR
140 PSIG @ 81 °F
H2S = 0 PPM
CYLINDER NO. 613
SPOT

DISTRIBUTION:
MR. FRANK BRAINARD

MANLEY GAS TESTING, INC.
120 DOCK ROAD - ODESSA, TEXAS 432-367-3024

CHARGE..... 80 - 24
TEST NUMBER.. 38301

DATE SAMPLED..... 03-01-14
DATE RUN 03-03-14

METER NUMBER .. 37166

A SAMPLE OF EUNICE
RECEIVED FROM: WEST TEXAS LPG PIPELINE L.P.
LOCATION: BELLAIRE TEXAS

Manley Gas Testing
Dated: 3-4-14

TICKET NUMBERS = 19009
COMPOSITE DATES = 02-24-14 TO 02-28-14

W: File, F.Brainard, J.Lambert,
R.Woodell, G.Jenkins, B.Little

BEFORE BACK PRESSURE = 225 CC's
AFTER BACK PRESSURE = 225 CC's

FRACTIONAL ANALYSIS
CALCULATED @ 14.696 PSIA AND 60F

	MOLES	LIQUIDS	WEIGHT%	WEIGHT%	
			(2)	(4)	
NITROGEN.....	0.04	0.02	0.03	0.0000	TOT. SP. GRAVITY... 0.4576
CARBON DIOXIDE.	0.00	0.00	0.00	0.0000	TOT. VAPOR PRESS. 533.507
METHANE.....	1.37	0.82	0.54	0.5380	TOT. MOLECULAR WT. 40.749
ETHANE.....	50.04	47.43	36.93	36.9383	
PROPANE.....	28.81	28.13	31.18	31.1874	TOT. VAPOR PRESS. @ 100F
ISO-BUTANE.....	3.60	4.18	5.14	5.1387	
NOR-BUTANE.....	9.30	10.37	13.24	13.2493	H2S PPM 0 ✓
ISO-PENTANE....	2.20	2.85	3.89	3.8891	MERCAPTANS PPM .. 130
NOR-PENTANE....	2.34	3.00	4.14	4.1452	TOTAL PPM 130
HEXANES+	2.30	3.20	4.91	4.9140	
	100.00	100.00	100.00	100.0000	

**** CAPILLARY EXTENDED HEXANES+ CALCULATIONS ****

SP. GRAVITY C6+ .. 0.7014	VAPOR PRESS C6+ .. 5.221	CF/GAL C6+ .. 25.980
MOLECULAR WT C6+ .. 86.709		LB/GAL C6+ .. 5.848

ANALYSIS BASED ON GPA STANDARDS 2177-03 & 2186-02

DISTRIBUTION / REMARKS :

CPL - LINDA BUCKLAND
FAXES: EUNICE PLANT / TARGA - KAREN DEES

~~LIQUID VOL% C1/C2 HIGH = 1.73~~ (LIQUID VOL% C1/C2 SPEC = 1.50%)

RUN BY K. CASWELL

APPROVED

[*R] [-I-R-]

MOBILE ANALYTICAL LABS, INC.

P.O. BOX 69210
 ODESSA, TEXAS 79769

SPECIAL LIQUID EXTENDED ANALYSIS

05/09/14

LAB # 21066

TARGA RESOURCES NORTH BOOSTER CONDENSATE OFF TANKS

	MOL %	LV %	WT %
METHANE	0.0092	0.0039	0.0017
CARBON DIOXIDE	0.0093	0.0040	0.0047
ETHANE	0.3695	0.2489	0.1281
PROPANE	4.0343	2.8002	2.0513
ISO-BUTANE	2.3091	1.9037	1.5476
N-BUTANE	9.9963	7.9399	6.6996
ISO-PENTANE	7.2973	6.7237	6.0710
N-PENTANE	10.2383	9.3522	8.5195
NEOHEXANE	0.1713	0.1801	0.1702
CYCLOPENTANE	1.7174	1.2815	1.3889
2-METHYLPENTANE	4.9180	5.1388	4.8871
3-METHYLPENTANE	3.3271	3.4190	3.3062
N-HEXANE	7.5724	7.8452	7.5246
METHYLCYCLOPENTANE	4.3411	3.8682	4.2129
BENZENE	1.5611	1.0998	1.4061
CYCLOHEXANE	3.9206	3.3600	3.8048
2-METHYLHEXANE	2.0256	2.3699	2.3405
3-METHYLHEXANE	2.7528	3.1815	3.1807
DIMETHYLCYCLOPENTANES	4.3576	4.5155	4.9337
N-HEPTANE	4.3425	5.0476	5.0175
METHYLCYCLOHEXANE	5.2270	5.2909	5.9180
TRIMETHYLCYCLOPENTANES	1.1639	1.3841	1.5060
TOLUENE	2.5396	2.1416	2.6983
2-METHYLHEPTANE	2.3223	3.0138	3.0589
3-METHYLHEPTANE	0.7673	0.9849	1.0107
DIMETHYLCYCLOHEXANES	1.9120	2.1804	2.4740
N-OCTANE	2.0535	2.6504	2.7048
ETHYL BENZENE	0.7330	0.7123	0.8973
M&P-XYLENES	1.1857	1.1582	1.4515
O-XYLENE	0.2896	0.2773	0.3545
C9 NAPHTHENES	1.4610	1.8741	2.1267
C9 PARAFFINS	1.7290	2.6531	2.8368
N-NONANE	0.6919	0.9809	1.0232
N-DECANE	0.2478	0.3832	0.4066
UNDECANE PLUS	2.4056	4.0312	4.3360
TOTALS	100.0000	100.0000	100.0000

SPECIFIC GRAVITY	0.692
SP.GR. C6+	0.731
SP.GR. C7+	0.746
TOTAL MOL. WT.	86.721
MOL. WT. C6+	98.912
MOL. WT. C7+	109.575
TOTAL CU.FT./GAL	25.246
CU.FT./GAL C6+	23.382
POUNDS/GALLON	5.769
POUNDS/GALLON C5+	5.936
VAPOR PRESSURE (psia)	22.97

NOTES:
 SAMPLED 04/09/14 BY: SR
 SPOT
 CYLINDER NO. 5726
 RVP: 13.2 PSI
 H2S: 129 PPM-WT
 DISTRIBUTION:
 MR. FRANK BRAINARD

NOTE: CU.FT./GAL @ 14.696 PSIA

United States
Environmental Protection
Agency

Office of Air Quality
Planning and Standards
Research Triangle Park NC 27711

EPA-453/R-95-017
November 1995

Air



Protocol for Equipment Leak Emission Estimates

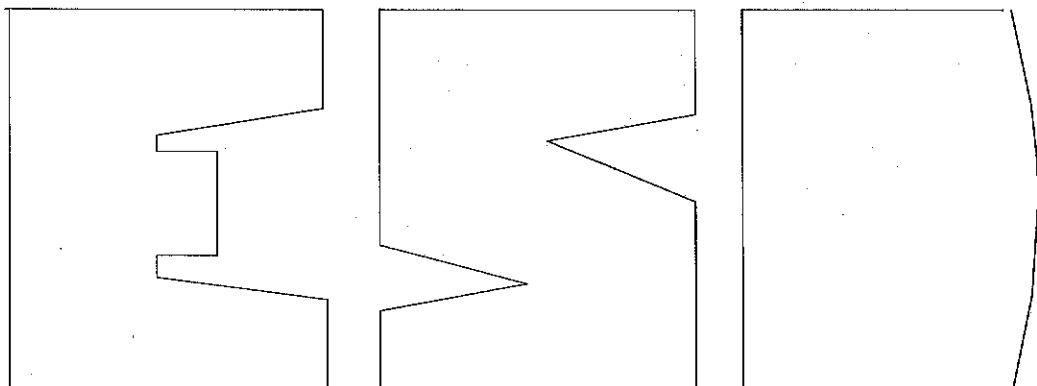


TABLE 2-4. OIL AND GAS PRODUCTION OPERATIONS AVERAGE EMISSION FACTORS (kg/hr/source)

Equipment Type	Service ^a	Emission Factor (kg/hr/source) ^b
Valves	Gas	4.5E-03
	Heavy Oil	8.4E-06
	Light Oil	2.5E-03
	Water/Oil	9.8E-05
Pump seals	Gas	2.4E-03
	Heavy Oil	NA
	Light Oil	1.3E-02
	Water/Oil	2.4E-05
Others ^c	Gas	8.8E-03
	Heavy Oil	3.2E-05
	Light Oil	7.5E-03
	Water/Oil	1.4E-02
Connectors	Gas	2.0E-04
	Heavy Oil	7.5E-06
	Light Oil	2.1E-04
	Water/Oil	1.1E-04
Flanges	Gas	3.9E-04
	Heavy Oil	3.9E-07
	Light Oil	1.1E-04
	Water/Oil	2.9E-06
Open-ended lines	Gas	2.0E-03
	Heavy Oil	1.4E-04
	Light Oil	1.4E-03
	Water/Oil	2.5E-04

^aWater/Oil emission factors apply to water streams in oil service with a water content greater than 50%, from the point of origin to the point where the water content reaches 99%. For water streams with a water content greater than 99%, the emission rate is considered negligible.

^bThese factors are for total organic compound emission rates (including non-VOC's such as methane and ethane) and apply to light crude, heavy crude, gas plant, gas production, and off shore facilities. "NA" indicates that not enough data were available to develop the indicated emission factor.

^cThe "other" equipment type was derived from compressors, diaphragms, drains, dump arms, hatches, instruments, meters, pressure relief valves, polished rods, relief valves, and vents. This "other" equipment type should be applied for any equipment type other than connectors, flanges, open-ended lines, pumps, or valves.

SHIPPING ADDRESS:
2800 WESTOVER STREET
ODESSA, TEXAS 79764

MOBILE ANALYTICAL

LABORATORIES, INC.

BILLING ADDRESS:
P.O. BOX 69210
ODESSA, TEXAS 79769-0210

LABORATORY IN ODESSA
PHONE (432) 337-4744 | FAX (432) 337-8781

10/21/21

EXTENDED GAS ANALYSIS

LAB 61637

**TARGA: EUNICE
ACID GAS**

	MOL %	GPM
HYDROGEN SULFIDE	14.2848	0.000
NITROGEN	0.0146	0.000
METHANE	0.6926	0.000
CARBON DIOXIDE	83.8593	0.000
ETHANE	0.1269	0.034
PROPANE	0.0849	0.023
ISO-BUTANE	0.0094	0.003
N-BUTANE	0.0386	0.012
ISO-PENTANE	0.0077	0.003
N-PENTANE	0.0094	0.003
NEOHXANE	0.0000	0.000
CYCLOPENTANE	0.0014	0.000
2-METHYLPENTANE	0.0010	0.000
3-METHYLPENTANE	0.0009	0.000
N-HEXANE	0.0021	0.001
METHYLCYCLOPENTANE	0.0030	0.001
BENZENE	0.0483	0.014
CYCLOHEXANE	0.0062	0.002
2-METHYLHEXANE	0.0086	0.004
3-METHYLHEXANE	0.0204	0.009
DIMETHYLCYCLOPENTANES	0.0250	0.010
N-HEPTANE	0.1385	0.064
METHYLCYCLOHEXANE	0.1808	0.073
TRIMETHYLCYCLOPENTANES	0.0270	0.013
TOLUENE	0.1291	0.043
2-METHYLHEPTANE	0.0979	0.050
3-METHYLHEPTANE	0.0221	0.011
DIMETHYLCYCLOHEXANES	0.0305	0.014
N-OCTANE	0.0343	0.018
ETHYL BENZENE	0.0096	0.004
M&P-XYLENES	0.0141	0.005
O-XYLENE	0.0027	0.001
C9 NAPHTHENES	0.0143	0.008
C9 PARAFFINS	0.0414	0.024
N-NONANE	0.0044	0.003
N-DECANE	0.0009	0.001
UNDECANE PLUS	0.0073	0.005
TOTALS	100.0000	0.456

SPECIFIC GRAVITY 1.490
GROSS DRY BTU/CU.FT. 151.6
GROSS WET BTU/CU.FT. 149.0
TOTAL MOL. WT. 42.903
MOL. WT. C6+ 102.948
SP. GRAVITY C6+ 4.320
MOL. WT. C7+ 104.784
SP. GRAVITY C7+ 4.440
BASIS: 14.65 PSIA @ 60 °F

SAMPLED: 10/19/21
5 PSI @ 72 °F
RUN: 10/20/21
SPOT SR
CYLINDER: 823
DISTRIBUTION: MR ZAC MASON
142848.06 PPM H2S

CHARGE..... 100 - 1
REC. NO. 0
TEST NUMBER.. 19121

DATE SAMPLED..... 10-04-13
DATE RUN..... 10-07-13
EFFECT. DATE..... --

STATION NO. ... 161-100052

SAMPLE NAME.... TARGA - EUNICE PLANT GREEN GAS
RECEIVED FROM.. LABORATORY SERVICES
LOCATION HOBBS N.M.

FLOWING PRESSURE 226 PSIG

FLOWING TEMPERATURE 83 F

SAMPLED BY: BS

CYLINDER NO. ...

FRACTIONAL ANALYSIS
CALCULATED @ 14.650 PSIA AND 60F

	MOL%	GPM (REAL)
HYDROGEN SULFIDE...	0.736	
NITROGEN.....	1.606	
CARBON DIOXIDE.....	3.305	
METHANE.....	74.744	
ETHANE.....	9.918	2.6475
PROPANE.....	5.552	1.5267
ISO-BUTANE.....	0.711	0.2322
NOR-BUTANE.....	1.897	0.5970
ISO-PENTANE.....	0.470	0.1716
NOR-PENTANE.....	0.506	0.1831
HEXANES +.....	0.555	0.2417
TOTALS	100.000	5.5998

H2S PPMV = 7358

'Z' FACTOR (DRY) = 0.9962

'Z' FACTOR (WET) = 0.9958

..CALCULATED SPECIFIC GRAVITIES..

IDEAL, DRY..... 0.7704
IDEAL, WET 0.7678
REAL, DRY 0.7730
REAL, WET 0.7707

..CALCULATED GROSS HEATING VALUES..

BTU/CF - IDEAL, DRY 1218.9
BTU/CF - IDEAL, WET 1198.4
BTU/CF - REAL, DRY 1223.5
BTU/CF - REAL, WET 1203.5

DISTRIBUTION AND REMARKS:

D. ARMSTRONG

ANALYZED BY: JT

APPROVED: *Kc*

CAPILLARY EXTENDED
C-6+ ANALYSIS

PAGE NO. 1

COMPONENT	MOL%	LIQ%	WT%
NEOHEXANE	0.0027	0.0000	0.0000
2,3DMC4+CYC5	0.0240	0.0000	0.0000
2MPENTANE	0.0771	0.0000	0.0000
3MPENTANE	0.0462	0.0000	0.0000
N-HEXANE	0.0950	0.0000	0.0000
2,2 DMPENTANE	0.0007	0.0000	0.0000
MCYCLOPENTANE	0.0508	0.0000	0.0000
2,4 DMPENTANE	0.0000	0.0000	0.0000
2,2,3 TMBUTANE	0.0001	0.0000	0.0000
BENZENE	0.0213	0.0000	0.0000
3,3 DMPENTANE	0.0005	0.0000	0.0000
CYCLOHEXANE	0.0398	0.0000	0.0000
2MHEXANE	0.0119	0.0000	0.0000
2,3 DMPENTANE	0.0086	0.0000	0.0000
3MHEXANE	0.0211	0.0000	0.0000
DIMCYCPENTANES(GROUPED)	0.0225	0.0000	0.0000
N-HEPTANE	0.0242	0.0000	0.0000
MCYCLOHEXANE	0.0317	0.0000	0.0000
2,2DMHEXANE	0.0059	0.0000	0.0000
2,3,3TMPENTANE	0.0000	0.0000	0.0000
TOLUENE	0.0204	0.0000	0.0000
2,3DMHEXANE	0.0017	0.0000	0.0000
2M3EPENTANE	0.0000	0.0000	0.0000
2MHEPTANE	0.0088	0.0000	0.0000
4MHEPTANE	0.0006	0.0000	0.0000
3,4DMHEXANE	0.0000	0.0000	0.0000
3MHEPTANE	0.0044	0.0000	0.0000
TRIMCYCPENTANES(GROUPED)	0.0006	0.0000	0.0000
DIMCYCHEXANES(GROUPED)	0.0067	0.0000	0.0000
N-OCTANE	0.0047	0.0000	0.0000
2,3,5TRIMHEXANE	0.0005	0.0000	0.0000
2,2,4TRIMHEXANE	0.0001	0.0000	0.0000
2,2DIMHEPTANE	0.0001	0.0000	0.0000
2,2,3TRIMHEXANE	0.0001	0.0000	0.0000
2,5DIMHEPTANE	0.0000	0.0000	0.0000
1-NONANE	0.0000	0.0000	0.0000
2,4DIMHEPTANE	0.0000	0.0000	0.0000
E-CYCHEXANE	0.0017	0.0000	0.0000
3,3DIMHEPTANE	0.0009	0.0000	0.0000
2,6DIMHEPTANE	0.0003	0.0000	0.0000
E-BENZENE	0.0004	0.0000	0.0000
2,3DIMHEPTANE	0.0000	0.0000	0.0000
M-XYLENE	0.0031	0.0000	0.0000
P-XYLENE	0.0006	0.0000	0.0000
3,4DIMHEPTANE	0.0001	0.0000	0.0000
3EHEPTANE	0.0000	0.0000	0.0000

A SAMPLE OF 161-100052 TARGA EUNICE PLANT - GREEN GAS

CAPILLARY EXTENDED
C-6+ ANALYSIS

PAGE NO. 2

COMPONENT	MOL%	LIQ%	WT%
4MOCTANE	0.0006	0.0000	0.0000
5MOCTANE	0.0003	0.0000	0.0000
O-XYLENE	0.0002	0.0000	0.0000
IC4CYCPENTANE	0.0001	0.0000	0.0000
N-NONANE	0.0009	0.0000	0.0000
I-DECANE	0.0001	0.0000	0.0000
1E1MCYC6	0.0002	0.0000	0.0000
IC3BENZENE	0.0004	0.0000	0.0000
2,3DMOCTANE	0.0012	0.0000	0.0000
3EOCTANE	0.0023	0.0000	0.0000
NC4CYCC6	0.0000	0.0000	0.0000
NC3BENZENE	0.0004	0.0000	0.0000
M+P E-TOLUENE	0.0004	0.0000	0.0000
O-E-TOLUENE	0.0013	0.0000	0.0000
2,2DMOCTANE	0.0012	0.0000	0.0000
TERTBUTYLBENZENE	0.0004	0.0000	0.0000
1,3,5TMBENZENE	0.0002	0.0000	0.0000
3,6DMOCTANE	0.0002	0.0000	0.0000
IC4BENZENE	0.0009	0.0000	0.0000
N-DECANE	0.0014	0.0000	0.0000

UNKNOWN C-6'S	0.0000	0.0000	0.0000
UNKNOWN C-7'S	0.0000	0.0000	0.0000
UNKNOWN C-8'S	0.0000	0.0000	0.0000
UNKNOWN C-9'S	0.0020	0.0000	0.0000
UNK C10'S THRU C14'S	0.0003	0.0000	0.0000
UNK C15'S THRU C16'S	0.0000	0.0000	0.0000
UNK C17'S THRU C20'S	0.0000	0.0000	0.0000

TOTAL 0.5550 0.0000 0.0000

COMPONENT GROUPINGS (PARAFFINS-NAPTHENES-AROMATICS)

	MOL%	LIQ%	WT%
TOTAL C-6'S	0.357	0.000	0.000
TOTAL C-7'S	0.142	0.000	0.000
TOTAL C-8'S	0.039	0.000	0.000
TOTAL C-9'S	0.009	0.000	0.000
TOTAL C-10'S	0.008	0.000	0.000
TOTAL C-11 THRU C-14	0.000	0.000	0.000
TOTAL C-15 THRU C-16	0.000	0.000	0.000
TOTAL C-17 THRU C-20	0.000	0.000	0.000

TOTAL 0.555 0.000 0.000

Sample ID: STA1;TARGA

Sample Ran Date: 1/24/2014

Lease: RICH GAS EAST CONTACTOR

Effective Date: 2/1/2014

Location:

ID: Plant 161 at Eunice, New Mexico

Sample Type: Spot

Fractional Gas Analysis

at 14.65 and 60° F

Compound	Mol. %	GPM	Sp. Gr.
Carbon Dioxide:	0.0030		0.0000
Nitrogen:	1.7766		0.0172
Hydrogen Sulfide:	0.0000		0.0000
Methane:	79.2636		0.4390
Ethane:	9.8635	2.6218	0.1024
Propane:	5.3843	1.4744	0.0820
Iso-Butane:	0.6710	0.2183	0.0135
N-Butane:	1.7716	0.5555	0.0356
Iso-Pentane:	0.3959	0.1441	0.0099
N-Pentane:	0.4366	0.1573	0.0109
Hexane Plus:	0.4339	0.1774	0.0129
	100.0000	5.3488	0.7233

Specific Gravity

Field Gravity	0.726
Real, dry:	0.7256
Real, wet:	0.7216

Molecular Weight 20.949

B.T.U./CU. Foot
(H2S Free)

Real - Dry Basis	1,245
Real - Wet Basis:	1,223

Pentane Plus

GPM: 0.4788

H2S PPM 0

Compressibility Factor

Z dry:	0.9965
Z wet:	0.9962

Pressure 21 psig.
Temperature 90 F.

MANLEY GAS TESTING, INC.
120 DOCK ROAD - CORPORA, TEXAS 432-367-3024

CHARGE..... 80 - 24
TEST NUMBER.. 38301

DATE SAMPLED..... 03-01-14
DATE RUN 03-03-14

METER NUMBER .. 37166

A SAMPLE OF RECEIVED FROM: EUNICE
LOCATION: WEST TEXAS LPG PIPELINE L.P.
BELLARE TEXAS

Manley Gas Testing
Dated 3-4-14

TICKET NUMBERS = 19009
COMPOSITE DATES = 02-24-14 TO 02-26-14

W. Fils, F. Brainerd, J. Lambert.
K. Woodell, G. Jenkins, B. Little

BEFORE BACK PRESSURE = 225 CC's
AFTER BACK PRESSURE = 225 CC's

FRACTIONAL ANALYSIS
CALCULATED @ 14.696 PSIA AND 60F

	MOLES	LIQUID WEIGHTS	WEIGHTS (2)	WEIGHTS (4)	
NITROGEN.....	0.04	0.02	0.03	0.0000	TOT. SP. GRAVITY... 0.4576
CARBON DIOXIDE..	0.00	0.00	0.00	0.0000	TOT. VAPOR PRESS. 533.507
METHANE.....	1.37	0.82	0.54	0.5380	TOT. MOLECULAR WT. 40.749
ETHANE.....	50.04	47.43	36.93	36.9383	
PROPANE.....	28.81	28.13	21.18	21.1874	TOT. VAPOR PRESS. @ 100F
ISO-BUTANE.....	3.60	4.18	5.14	5.1387	
NOR-BUTANE.....	9.30	10.37	13.24	13.2493	H2S PPM 0 ✓
ISO-PENTANE.....	2.20	2.85	3.89	3.8893	MERCAPTANS PPM .. 130
NOR-PENTANE.....	2.34	3.00	4.14	4.1452	TOTAL PPM 130
HEXANES+	2.30	3.20	4.91	4.9140	
	100.00	100.00	100.00	100.0000	

**** CAPILLARY EXTENDED BEHAVIOR CALCULATIONS ****

SP. GRAVITY C6+ .. 0.7014 VAPOR PRESS C6+ .. 5.221 CF/GAL C6+ .. 25.980
MOLECULAR WT C6+.. 86.709 LB/GAL C6+ .. 5.848

ANALYSIS BASED ON GPA STANDARDS 2177-03 & 2186-02

DISTRIBUTION / REMARKS :

CPL - LINDA BUCKLAND
FAES: EUNICE PLANT / TARGA - KAREN DRES

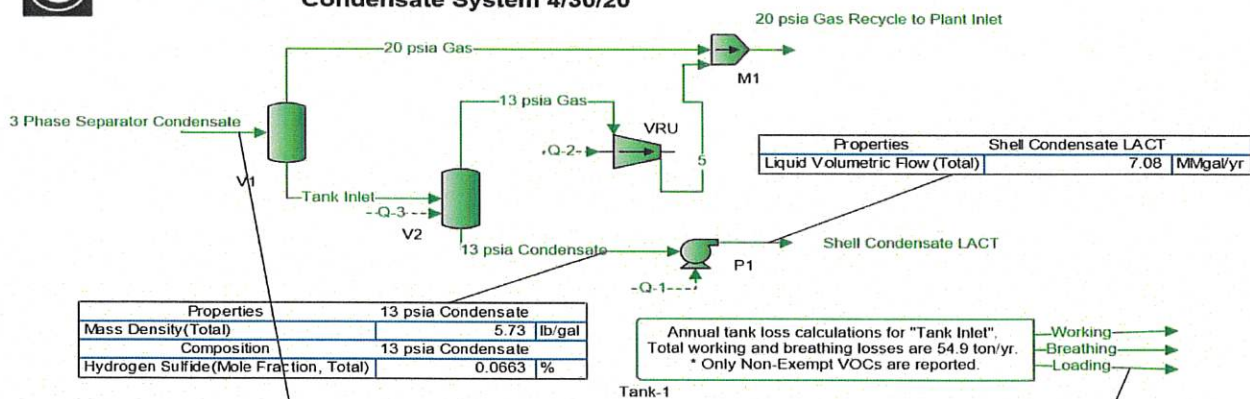
~~LIQUID VOLS C1/C2 HIGH = 1.73 (LIQUID VOLS C1/C2 SPEC = 1.508)~~

RUN BY E. CASWELL

APPROVED

me

[*R] [1-R]

**TARGA****Eunice Middle Plant
Condensate System 4/30/20**

Composition		3 Phase Separator Condensate	
Nitrogen(Mole Fraction, Total)		0.015*	%
Carbon Dioxide(Mole Fraction, Total)		0.0439*	%
Methane(Mole Fraction, Total)		0.787*	%
Ethane(Mole Fraction, Total)		1.8*	%
Propane(Mole Fraction, Total)		6.8*	%
Isobutane(Mole Fraction, Total)		2.83*	%
n-Butane(Mole Fraction, Total)		11.7*	%
Cyclopentane(Mole Fraction, Total)		1.48*	%
Isopentane(Mole Fraction, Total)		8.27*	%
n-Pentane(Mole Fraction, Total)		12*	%
Benzene(Mole Fraction, Total)		2.21*	%
Cyclohexane(Mole Fraction, Total)		3.77*	%
Methylcyclopentane(Mole Fraction, Total)		3.9*	%
n-Hexane(Mole Fraction, Total)		7.15*	%
2-Methylpentane(Mole Fraction, Total)		4.54*	%
3-Methylpentane(Mole Fraction, Total)		3.02*	%
Neohexane(Mole Fraction, Total)		0.135*	%
Toluene(Mole Fraction, Total)		2.75*	%
Cyclopentane, 1,3-Dimethyl-, cis-(Mole Fraction, Total)		0.824*	%
Methylcyclohexane(Mole Fraction, Total)		4.55*	%
2-Methylhexane(Mole Fraction, Total)		1.38*	%
3-Methylhexane(Mole Fraction, Total)		2.24*	%
2,3-Dimethylpentane(Mole Fraction, Total)		0.747*	%
n-Heptane(Mole Fraction, Total)		5.77*	%
Ethylbenzene(Mole Fraction, Total)		0.566*	%
m-Xylene(Mole Fraction, Total)		0.832*	%
o-Xylene(Mole Fraction, Total)		0.257*	%
Cyclooctane(Mole Fraction, Total)		0.126*	%
Ethylcyclohexane(Mole Fraction, Total)		0.517*	%
2,5-Dimethylhexane(Mole Fraction, Total)		0.118*	%
2-Methylheptane(Mole Fraction, Total)		1.2*	%
n-Octane(Mole Fraction, Total)		4.46*	%
1,2,4-Trimethylbenzene(Mole Fraction, Total)		0.101*	%
Isopropylbenzene(Mole Fraction, Total)		0.0549*	%
n-Propylbenzene(Mole Fraction, Total)		0.0449*	%
n-Nonane(Mole Fraction, Total)		1.61*	%
i-Butylbenzene(Mole Fraction, Total)		0.00599*	%
n-Butylbenzene(Mole Fraction, Total)		0.0209*	%
n-Decane(Mole Fraction, Total)		0.762*	%
Undecane(Mole Fraction, Total)		0.263*	%
Dodecane(Mole Fraction, Total)		0.0369*	%
Hydrogen Sulfide(Mole Fraction, Total)		0.247*	%

Properties		Loading	
Temperature(Total)		539	R
Molecular Weight(Total)		56.2	lb/lbmol

"13 psia Gas" Component Sums			
BTEX	9.111		ton/yr
GHGs	8.472		ton/yr
HAPs	42.25		ton/yr
VOCs	977		ton/yr

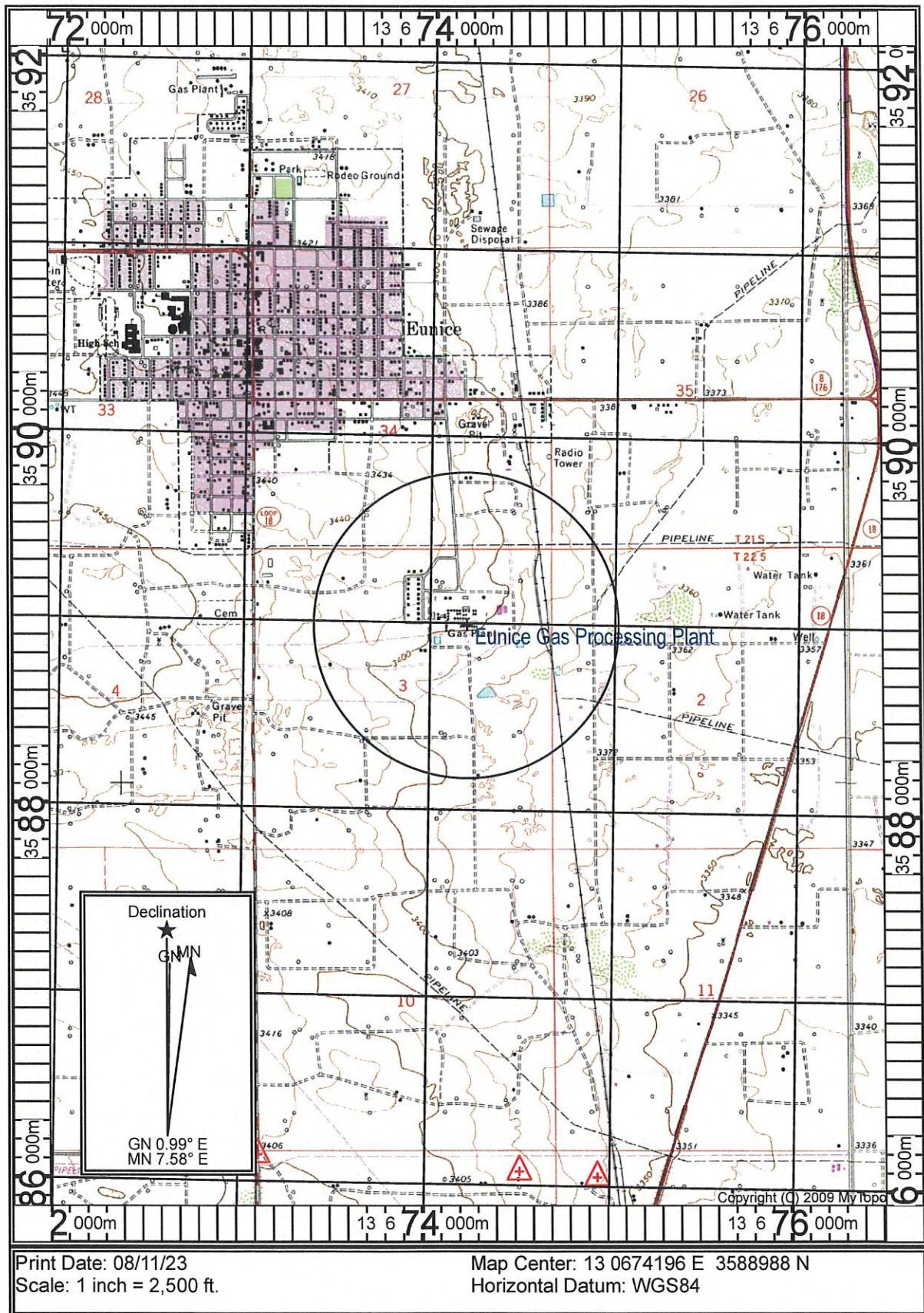
Section 8

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 map of the facility is included in this section.



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.

This application is being submitted under 20.2.70 NMAC, therefore, public notice is not required.

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.

Field natural gas entering the plant is sent through an inlet separator designed to remove entrained solids and dissolved liquids from the field gas stream. Condensate from the inlet is separated (gunbarrel Unit TK-3) and stored (Units TK-1 and TK-2) prior to loadout via truck (Units L-01 and L-02). Working and breathing losses and flash losses from the tanks are controlled by a VRU. Loadout emissions are controlled by vapor balancing with the condensate tanks, TK-1 and TK-2.

Once the field gas passes through the inlet separators, it is routed to the inlet compressors (Units C-01 to C-13, C-20 to C-22, EC-1, EC-2, and EC-3) to increase the pressure of the gas. The stream will then be sent to an amine treater (Unit AM-01) for the purpose of removing carbon dioxide and hydrogen sulfide entrained in the field gas stream. The supply of steam used as the heat source to regenerate the rich amine is created by the two boilers located at the facility (Units B-01 and B-02). Emissions from the amine still overheads are routed to the AGI well (Unit AGI, AGI-C, and proposed AGI-C2) or the emergency acid gas flare (Unit F-01). The inlet/residue flare (Unit F-02) and the acid gas flare (Unit F-01) are used for SSM and malfunction emissions.

After the amine treating, the field gas is sent to a TEG dehydration system (Unit G-01) for the purpose of removing water from the gas stream. A TEG regeneration heater (Unit RH-E) is used to regenerate the rich TEG. Please note Unit RH-W is used as a standby regeneration heater for the dehydration system. TEG regenerator emissions are re-routed to the inlet. The TEG dehydrator system is a completely closed system and has two vapor recovery units controlling the emissions from the unit. When one VRU goes down the second VRU will control the TEG dehydrator. The gas is then sent to multiple mole sieve adsorption towers for additional water removal. One or more towers will be in dehydration mode while one or more are in regeneration mode. The towers contain a solid desiccant material that removes the moisture contained within the field gas stream prior to entrance into the cryogenic unit.

Natural gas liquids (NGL) recovery is achieved through a cryogenic process where the liquid-rich field gas temperature is dropped drastically. This rapid temperature drop condenses out the ethane and heavier NGL's while at the same time maintaining methane in gas form (residue gas). The resulting condensed liquid consists of a marketable NGL Y-Grade product that will be sent to via truck loadout (L-NGL)

The dry, pipeline quality residue gas (consisting of primarily methane) from the top of the de-methanizer tower is sent to the suction header of high-pressure pipeline compressors (Units C-13A and C-17A to C-19) and low-pressure pipeline compressors (Units C-20-22). The residue gas is then compressed up to a pressure high enough for delivery into a high-pressure and low-pressure natural gas (sales) pipeline.

The large boilers (B-01 and B-02) and the regenerator heater (H-02) send heat to multiple processes at the facility.

Section 11

Source Determination

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

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

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

A. Identify the emission sources evaluated in this section (list and describe):

Units described in 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. 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.

A PSD applicability determination is not required as this application is being submitted pursuant to 20.2.70 NMAC. A PSD applicability determination was submitted as part of the applications to modify NSR Permit 0067-M11R7.

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 for State Regulations:

<u>State Regulation Citation</u>	<u>Title</u>	<u>Applies? Enter Yes or No</u>	<u>Unit(s) or Facility</u>	<u>Justification:</u>
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. The facility meets maximum allowable concentrations of the TSP, SO ₂ , H ₂ S, NO _x , and CO 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.
20.2.23 NMAC	Fugitive Dust Control	No for permitted facilities, possible for NOIs	Facility	<p>This regulation may apply if,</p> <p>this is an application for a notice of intent (NOI) per 20.2.73 NMAC,</p> <p>if the activity or facility is a fugitive dust source listed at 20.2.23.108.A NMAC, and</p> <p>if the activity or facility is located in an area subject to a mitigation plan pursuant to 40 CFR 51.930.</p> <p>As of January 2019, the only areas of the State subject to a mitigation plan per 40 CFR 51.930 are in Doña Ana and Luna Counties.</p> <p>Sources exempt from 20.2.23 NMAC are activities and facilities subject to a permit issued pursuant to the NM Air Quality Control Act, the Mining Act, or the Surface Mining Act (20.2.23.108.B NMAC).</p> <p>20.2.23.108 APPLICABILITY:</p> <p>A. This part shall apply to persons owning or operating the following fugitive dust sources in areas requiring a mitigation plan in accordance with 40 CFR Part 51.930:</p> <p>(1) disturbed surface areas or inactive disturbed surface areas, or a combination thereof, encompassing an area equal to or greater than one acre;</p> <p>(2) any commercial or industrial bulk material processing, handling, transport or storage operations.</p> <p>B. The following fugitive dust sources are exempt from this part:</p> <p>(1) agricultural facilities, as defined in this part;</p> <p>(2) roadways, as defined in this part;</p> <p>(3) operations issued permits pursuant to the state of New Mexico Air Quality Control Act, Mining Act or Surface Mining Act; and</p> <p>(4) lands used for state or federal military activities.</p> <p>[20.2.23.108 NMAC - N, 01/01/2019]</p>
20.2.33 NMAC	Gas Burning Equipment - Nitrogen Dioxide	No	N/A	This facility does not have existing gas burning equipment having a heat input of greater than 1,000,000 million British Thermal Units per year per unit. The facility is not subject to this regulation and does not have emissions sources that meet the applicability requirements under 20.2.33.108 NMAC.
20.2.34 NMAC	Oil Burning Equipment: NO ₂	No	N/A	This facility does not have oil burning equipment having a heat input of greater than 1,000,000 million British Thermal Units per year per unit. 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 could apply to existing (prior to July 1, 1974) or new (on or after July 1, 1974) natural gas processing plants that use a Sulfur Recovery Unit to reduce sulfur emissions. The facility is not subject to this regulation since it has an AGI well.

<u>State Regulation Citation</u>	<u>Title</u>	<u>Applies? Enter Yes or No</u>	<u>Unit(s) or Facility</u>	<u>Justification:</u>
20.2.37 and 20.2.36 NMAC	Petroleum Processing Facilities and Petroleum Refineries	N/A	N/A	These regulations were repealed by the Environmental Improvement Board. If you had equipment subject to 20.2.37 NMAC before the repeal, your combustion emission sources are now subject to 20.2.61 NMAC.
20.2.38 NMAC	Hydrocarbon Storage Facility	Yes	TK-1, TK-2	The purpose of this regulation is to minimize hydrogen sulfide emissions from hydrocarbon storage facilities. The condensate tanks, TK-1 and TK-2 are new hydrocarbon storage facilities as they were constructed after July 1, 1975. TK-1 and TK-2 are in the Permian-Pecos AQS. Part 20.2.38.109 applies to these tanks. Targa is compliant with this regulation.
20.2.39 NMAC	Sulfur Recovery Plant - Sulfur	N/A	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 Eunice does not have a sulfur recovery plant.
20.2.50 NMAC	Oil and Gas Sector – Ozone Precursor Pollutants	Yes	Facility	This regulation establishes emission standards for volatile organic compounds (VOC) and oxides of nitrogen (NO _x) for oil and gas production, processing, compression, and transmission sources. 20.2.50 NMAC subparts below: Check the box for the subparts that are applicable: ☒ 113 – Engines and Turbines ☒ 114 – Compressor Seals ☒ 115 – Control Devices and Closed Vent Systems ☒ 116 – Equipment Leaks and Fugitive Emissions ☐ 117 – Natural Gas Well Liquid Unloading ☒ 118 – Glycol Dehydrators ☒ 119 – Heaters ☒ 120 – Hydrocarbon Liquid Transfers ☒ 121 – Pig Launching and Receiving ☒ 122 – Pneumatic Controllers and Pumps ☒ 123 – Storage Vessels ☐ 124 – Well Workovers ☐ 125 – Small Business Facilities ☐ 126 – Produced Water Management Unit ☐ 127 – Flowback Vessels and Preproduction Operations
20.2.61.109 NMAC	Smoke & Visible Emissions	Yes	C-01 to C-22, B01, B- 02, RH- W, RH- E, H-01, H-02, EG-01, EG-02, F-01 and F- 02	This regulation that limits opacity to 20% applies to Stationary Combustion Equipment, such as engines, boilers, heaters, and flares unless your equipment is subject to another state regulation that limits particulate matter such as 20.2.19 NMAC (see 20.2.61.109 NMAC). If equipment at your facility was subject to the repealed regulation 20.2.37 NMAC it is now subject to 20.2.61 NMAC.
20.2.70 NMAC	Operating Permits	Yes	Facility	This regulation establishes requirements for obtaining an operating permit. This facility is a Title V major source of NO _x , CO, VOC, SO ₂ , and HAPs. The facility is permitted under Title V Permit P109-R3M1.
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. The facility is a stationary source that has potential emission rates greater than 10 pounds per hour or 25 tons per year of any regulated air contaminant for which there is a National or New Mexico Air Quality Standard. The facility has a

<u>State Regulation Citation</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
				construction permit (NSR Permit) 0067-M11R5 to meet the requirements of this regulation.
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.
20.2.74 NMAC	Permits – Prevention of Significant Deterioration (PSD)	Yes	Facility	This regulation establishes requirements for obtaining a PSD permit. This facility is a major source for PSD purposes and is in compliance with the applicable requirements of this regulation.
20.2.75 NMAC	Construction Permit Fees	Yes	Facility	This regulation establishes the guidelines and requirements for construction permitting fees. This facility is subject to 20.2.72 NMAC and is in turn subject to 20.2.75 NMAC. This facility is exempt from annual fees under this part (20.2.75.11.E NMAC) as it is subject to fees pursuant to 20.2.71 NMAC.
20.2.77 NMAC	New Source Performance	Yes	Units subject to 40 CFR 60	<p>This regulation applies to all sources subject to a 40 CFR 60 regulation, as amended through September 23, 2013. The facility is subject to this regulation because Units FG01 (portions), FUG-02, and L-01 are subject to NSPS KKK. Units EC-1 and EC-2 compressors and unit L-02 are subject to NSPS OOOO. Units AGI-C2, EC-3 and portions of FG01 are subject to NSPS OOOOa. The fugitives in propane service are also subject to NSPS OOOOa (associated with project FG-01-RSC). Units EG-01 and EG-02 are subject to NSPS IIII.</p> <p>The fugitives associated with the Cryo Process Unit added for the inlet gas line re-route project will be subject to NSPS OOOOa, based on the results of the Capital Expenditure Equation completed.</p> <p>The fugitives associated with the redundant acid gas cooling (FUG-AGC) will not be subject to NSPS OOOOa as the VOC content will never exceed 10.0 percent by weight per 60.5400a(f).</p>
20.2.78 NMAC	Emission Standards for HAPS	No	Units Subject to 40 CFR 61	This regulation applies to all sources subject to a 40 CFR 61 regulation, as amended through December 31, 2010. Although this standard does not apply to this facility under routine operating conditions, in the case of asbestos demolition, Subpart M would apply.
20.2.79 NMAC	Permits – Nonattainment Areas	No	N/A	This regulation establishes the requirements for obtaining a nonattainment area permit. The 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. This regulation does not apply as all stacks at the facility follow good engineering practice.
20.2.82 NMAC	MACT Standards for source categories of HAPS	Yes	Units Subject to 40 CFR 63	<p>This regulation established state authority to implement MACT Standards for source categories of HAPs. This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 63, as amended through August 29, 2013. The following units are subject to MACT subparts as amended through December 31, 2010:</p> <ul style="list-style-type: none"> Units EG-01 and EG-02, C-01 to C-13 are existing 2SLB engines and are subject to limited requirements under MACT ZZZZ. The engines do not have to meet the requirements of MACT 63 Subpart ZZZZ and of Subpart A, including initial notification requirements. [63.6590(b)(3)(i) and 63.6590(b)(3)(ii)]. C13A, C17 to C22 are subject as 4SRB existing RICE >500 hp at major HAP source. Emission standards at 63.6600(a), Tables 1a and 1b limit formaldehyde emissions. Compliance requirements include stack testing to measure formaldehyde at 63.6610, Table 4. Unit G-01 is subject to MACT HH. Units B-01, B-02, RH-W, RH-E, H-02, and H-01 are subject to MACT DDDDD.

Table for Applicable Federal Regulations:

<u>Federal Regulation 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. The facility meets all applicable national ambient air quality standards for NO _x , CO, SO ₂ , H ₂ S, PM ₁₀ , and PM _{2.5} under this regulation.
NSPS 40 CFR 60, Subpart A	General Provisions	Yes	Units subject to 40 CFR 60	<p>This regulation defines general provisions for relevant standards that have been set under this part and is applicable to any stationary source constructing or modifying which is subject to the requirements of 40 CFR Part 60. The facility is subject to this regulation because Units FG-01 and L-01 are subject to NSPS KKK. Units EG-01 and EG-02 are subject to NSPS IIII.</p> <p>Units FG-01 (portions), FUG-02, and L-01 are subject to NSPS KKK. Units EC-1 and EC-2 compressors and unit L-02 are subject to NSPS OOOO. Units AGI-C2, EC-3 and portions of FG-01 are subject to NSPS OOOOa. The fugitives in propane service are also subject to NSPS OOOOa (associated with project FG-01-RSC).</p> <p>The fugitives associated with the Cryo Process Unit added for the inlet gas line re-route project will be subject to NSPS OOOOa, based on the results of the Capital Expenditure Equation completed.</p> <p>The fugitives associated with the redundant acid gas cooling (FUG-AGC) will not be subject to NSPS OOOOa as the VOC content will never exceed 10.0 percent by weight per 60.5400a(f).</p>
NSPS 40 CFR 60.40a, 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 the facility does not operate any electric utility steam generating units.
NSPS 40 CFR 60.40b 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 the facility does not operate any industrial-commercial-institutional steam generating units with heat inputs greater than 100 MMBtu/hr.
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 industrial-commercial, institutional steam generating units. This regulation does not apply because units RH-W, B-01, and B-02 commenced construction before June 9, 1989. The regulation does not apply to units H-01, H-02, or RW-E since these units all have a heat input capacity of less than 10 MMBtu/hr.
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 affected facility is each storage vessel with a storage capacity greater than 40,000 gallons used to store petroleum liquids. Tanks TK-1 and TK-2 do not meet this storage capacity threshold; each tank has a capacity of 21,000 gallons (500 bbl). This regulation does not apply.
NSPS 40 CFR 60, Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage	Yes	TK-1, TK-2	This regulation establishes performance standards for storage vessels for volatile organic liquids for which construction, reconstruction, or modification commenced after July 23, 1984. Tanks TK-1 and TK-2 each have storage capacities of 79.5 m ³ ,

<u>Federal Regulation Citation</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
	Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984			which is greater than the 75 m ³ applicability threshold, and are located after the point of custody transfer.
NSPS 40 CFR 60.330 Subpart GG	Stationary Gas Turbines	No	N/A	This regulation establishes standards of performance for certain stationary gas turbines. This regulation does not apply as there are no turbines at Eunice Gas Processing Plant.
NSPS 40 CFR 60, Subpart KKK	Leaks of VOC from Onshore Gas Plants	Yes	Facility	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. Any affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after January 20, 1984, is subject to the requirements of this subpart. The group of all equipment (each pump, pressure relief device, open-ended valve or line, valve, compressor, and flange or other connector that is in VOC service or in wet gas service, and any device or system required by this subpart) except compressors (defined in § 60.631) within a process unit is an affected facility. A compressor station, dehydration unit, sweetening unit, underground storage tank, field gas gathering system, or liquefied natural gas unit is covered by this subpart if it is located at an onshore natural gas processing plant.
NSPS 40 CFR Part 60 Subpart LLL	Standards of Performance for Onshore Natural Gas Processing: SO₂ 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. The amine unit at the facility is not subject to this regulation as it was constructed before the January 20, 1984 applicability date.
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	Yes	EC-1, EC-2, L-02	This regulation establishes standards of performance for crude oil and natural gas production, transmission, and distribution. The rule applies to "affected" facilities that are constructed, modified, or reconstructed after Aug 23, 2011. The storage vessels and compressors located at the facility were constructed prior to August 23, 2011. Units EC-1 and EC-2 will each have a compressor constructed after August 23, 2011 and before September 18, 2015 and will be subject to NSPS OOOO. Unit L-02 will have fugitive emissions associated with the units.
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	Yes	EC-3, FG-01 (portion s), FUG-02, FG-01- RSC, FUG-SEP, AGI-C2	This regulation establishes emission standards and compliance schedules for the control of the pollutant greenhouse (GHG). The greenhouse gas standard in this subpart is in the form of a limitation on emissions for methane from affected facilities in the crude oil and natural gas source category that commence construction, modification, or reconstruction after September 18, 2015. This subpart also establishes emissions standards and compliance schedules for the control of volatile organic compounds (VOC), and sulfur dioxide (SO ₂) emissions from affected facilities. The facility will follow all fugitive requirements under

<u>Federal Regulation Citation</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
	September 18, 2015			60.5400a The fugitives associated with project FG-01-RSC and FUG-02 are subject to NSPS OOOOa fugitive requirements under 60.5400a. These components are the fugitives associated with propane service at the facility. AGI-C2 compressor is subject to NSPS OOOOa. The fugitives associated with the Cryo Process Unit will be subject to NSPS OOOOa based on the results of the Capital Expenditure calculations. The fugitives associated with the redundant acid gas cooling (FUG-AGC) will not be subject to NSPS OOOOa as the VOC content will never exceed 10.0 percent by weight per 60.5400a(f). The new fugitives associated with the additional inlet separator will be subject to NSPS OOOOa.
NSPS 40 CFR 60 Subpart IIII	Standards of performance for Stationary Compression Ignition Internal Combustion Engines	Yes	EG-01, EG-02	This regulation establishes standards of performance for stationary compression ignition internal combustion engines. This rule applies to IC engines (diesel engines) that commenced construction after July 11, 2005. Both diesel engines are subject to emission standards under this subpart. Unit EG-02 is a Tier 3 diesel engine and meets standards on Table 1 of 40 CFR 89.112. EG-01 is a diesel engine subject to 60.4200(a)(1)(i).
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 compression ignition internal combustion engines. All engines at this facility commenced construction prior to June 12, 2006. 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 subpart establishes emission standards and compliance schedules for the control of greenhouse gas (GHG) emissions from a steam generating unit, IGCC, or a stationary combustion turbine that commences construction after January 8, 2014 or commences modification or reconstruction after June 18, 2014. This site does not contain the affected facility. 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 subpart establishes emission guidelines and approval criteria for State or multi-State plans that establish emission standards limiting greenhouse gas (GHG) emissions from an affected steam generating unit, integrated gasification combined cycle (IGCC), or stationary combustion turbine. This site does not contain the affected facility. 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	The facility is not a municipal solid waste landfill. This regulation does not apply.
NESHAP 40 CFR 61 Subpart A	General Provisions	No	N/A	This part applies to the owner or operator of any stationary source for which a standard is prescribed under this part. Although this standard does not apply to this facility under routine operating conditions, in the case of asbestos demolition, Subpart M would apply.
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 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.

<u>Federal Regulation Citation</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
MACT 40 CFR 63, Subpart A	General Provisions	Yes	Units Subject to 40 CFR 63	<p>This regulation defines general provisions for relevant standards that have been set under this part. This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 63. The following units are subject to MACT subparts:</p> <ul style="list-style-type: none"> Units EG-01 and EG-02, C-01 to C-13 are existing 2SLB engines are subject to limited requirements under MACT ZZZZ. The engines do not have to meet the requirements of MACT 63 Subpart ZZZZ and of Subpart A, including initial notification requirements. [63.6590(b)(3)(i) and 63.6590(b)(3)(ii)]. C13A, C17 to C22 are subject as 4SRB existing RICE >500 hp at major HAP source. Emission standards at 63.6600(a), Tables 1a and 1b limit formaldehyde emissions. Compliance requirements include stack testing to measure formaldehyde at 63.6610, Table 4. Unit G-01 is subject to MACT HH. Units B-01, B-02, RH-W, RH-E, H-02, and H-01 are subject to MACT DDDDD.
MACT 40 CFR 63.760 Subpart HH	Oil and Natural Gas Production Facilities	Yes	G-01	<p>This regulation establishes national emission standards for hazardous air pollutants from oil and natural gas production facilities. The glycol dehydrator, unit G-01, is subject to this regulation. There are no control requirements under this subpart as the benzene emissions from this unit are less than 0.9 Mg/yr. Recordkeeping and reporting requirements apply.</p>
MACT 40 CFR 63 Subpart HHH	Natural Gas Transmission and Storage Facilities	No	N/A	<p>This subpart applies to owners and operators of natural gas transmission and storage facilities that transport or store natural gas prior to entering the pipeline to a local distribution company or to a final end user (if there is no local distribution company), and that are major sources of hazardous air pollutants (HAP) emissions as defined in §63.1271. This facility is not a natural gas transmission and storage facility as defined in this subpart. This regulation does not apply.</p>
MACT 40 CFR 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Major Industrial, Commercial, and Institutional Boilers & Process Heaters	Yes	B-01, B-02, RH-W, RH-E, H-02, H-01	<p>Units RH-W, B-01 and B-02 are subject to MACT 40 CFR 63 Subpart DDDDD as existing sources since they were constructed before the June 4, 2010 applicability date. The boilers combust clean gas (ie natural gas) and have the following requirements in regard to MACT DDDDD:</p> <ul style="list-style-type: none"> Per 63.7510 (e) - Complete initial tune-ups by 1/31/2016 NO numeric emission limits in Table 1 Per 63.7510 (e) - One-time energy assessment to be completed by 1/31/2016 Per 63.75450 (c) - Submit initial notification of applicability by 5/31/2013 Per 63.7550 (b) - Compliance certification 1st report submitted by January 31, 2017. Annual or 5-year compliance reports submitted by January 31. <p>Units RH-E, H-02, and H-01 are subject to MACT 40 CFR 63 Subpart DDDDD as existing sources since they were constructed before the June 4, 2010 applicability date. The heaters are less than 5 mmbtu/hr and combust clean gas (i.e., natural gas). The units have the following requirements in regard to MACT DDDDD:</p> <ul style="list-style-type: none"> Per 63.7500 (e) - Boilers and process heaters in the units designed to burn gas 1 fuels subcategory with a heat input capacity of less than or equal to 5 million Btu per hour must complete a tune-up every 5 years as specified in § 63.7540.
MACT 40 CFR 63 Subpart UUUUU	National Emission Standards for Hazardous Air Pollutants Coal & Oil Fire Electric Utility Steam Generating Unit	No	N/A	<p>This subpart establishes national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted from coal- and oil-fired electric utility steam generating units (EGUs) as defined in §63.10042 of this subpart. This facility does not contain an affected source under this regulation. This regulation does not apply.</p>
MACT 40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air	Yes	C-01 to C-13, C-13A, C-	<p>This regulation defines national emissions standards for HAPs for stationary Reciprocating Internal Combustion Engines. Units EG-01 and EG-02, and C-01 to C-13 are existing 2SLB engines and are subject to limited requirements under</p>

<u>Federal Regulation Citation</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
	Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE MACT)		17A to C-22, EG-01, EG-02	MACT ZZZZ. The engines do not have to meet the requirements of MACT 63 Subpart ZZZZ and of Subpart A, including initial notification requirements. [63.6590(b)(3)(i) and 63.6590(b)(3)(ii)]. Units EG-01 is a CI engine subject to MACT ZZZZ emission limits on Table 2a of MACT ZZZZ. Unit EG-02 is a Tier 3 diesel engine subject to MACT ZZZZ and meets applicable requirements. C13A, C17 to C22 are subject as 4SRB existing RICE >500 hp at major HAP source. Emission standards at 63.6600(a), Tables 1a and 1b limit formaldehyde emissions. Compliance requirements include stack testing to measure formaldehyde at 63.6610, Table 4.
40 CFR 64	Compliance Assurance Monitoring	Yes	AM-01, AGI, F-01, and C-13A, C-17A, C18A, C19, C20, C21, and C-22	The dehydrator (unit G-01) at Eunice Gas Processing Plant has pre-control VOC emissions greater than 100 tpy VOC, is subject to a VOC emission limitation in NSR Permit 0067-M6-R2 and uses a control device (the VRU) to achieve compliance with this limit. However, the dehydrator is subject to MACT Subpart HH (proposed by EPA on 2/6/98), so it is exempt from CAM requirements pursuant to 40 CFR 64.2(b)(1)(i). The amine unit (AM-01) at the facility is not directly subject to any permit emission limitations or standards. It is controlled by both the acid gas injection well (AGI), and the acid gas flare (F-01). The AGI and the acid gas flare are subject to CAM.
40 CFR 68	Chemical Accident Prevention	Yes	Facility	Eunice has more than a threshold quantity of a regulated substance in a process, as determined under §68.115. Accordingly, this regulation applies. The facility maintains a current RMP.
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 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 75	Continuous Emissions Monitoring	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 76	Acid Rain Nitrogen Oxides Emission Reduction Program	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 VI – 40 CFR 82	Protection of Stratospheric Ozone	Yes	Facility	Targa owns appliances containing CFCs and is therefore technically subject to this requirement. Targa uses only certified technicians for the maintenance, service, repair, and disposal of appliances and maintains the appropriate records for this requirement. Note: Disposal definition in 82.152: Disposal means the process leading to and including: (1) The discharge, deposit, dumping or placing of any discarded appliance into or on any land or water; (2) The disassembly of any appliance for discharge, deposit, dumping or placing of its discarded component parts into or on any land or water; or (3) The disassembly of any appliance for reuse of its component parts. "Major maintenance, service, or repair means" any maintenance, service, or repair that involves the removal of any or all of the following appliance components: compressor, condenser, evaporator, or auxiliary heat exchange coil; or any maintenance, service, or repair that involves uncovering an opening of more than four (4) square inches of "flow area" for more than 15 minutes.

Section 14

Operational Plan to Mitigate Emissions

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

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- ☒ **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.
-

Startup and shutdown procedures are performed according to guidelines which dictate proper procedural sequence to minimize emissions from the facility during such activities.

Equipment located at the plant is equipped with various safety devices that aid in preventing excess emissions to the atmosphere in the event of an operational emergency. In the event of a malfunction, startup, shutdown, or scheduled maintenance in which emission rates from the facility exceed permitted allowables, Targa will notify the AQB in accordance with 20.2.7 NMAC and the equipment responsible for the exceedance will be repaired as soon as possible.

During periods when the AGI well is inoperable, gas in the pipeline leading to the well will be briefly flared; then acid gas may be flared at the plant site.

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: www.env.nm.gov/air-quality/permitting-section-procedures-and-guidance/. 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.

When electricity is down for the electric compressors (units EC-1, EC-2, and EC-3) and they cannot operate, backup natural gas engines (units C-09, C-10, C-11 and C-12) will operate instead.

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.	☒
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.

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	Test Description	Test Date
C-1 through 12, C-15	Tested in accordance with EPA test methods for NOx and CO as required in NSR Permit 0067-M11.	C8, C9, C10, C11, C12, C15 – Down NN C1, C2, C7 – 7/26/21 C3, C5, C6 – 7/27/21 C4 – 7/28/21	Tested in accordance with PEA test methods as required in NSR Permit 0067-M11.	C8, C9, C10, C11, C12, C15 – Down NN C1, C3, C4, C5, C6 – 7/18/23 C2 – 7/11/22 C7 – 7/08/22
C-13A	Tested in accordance with EPA test methods for NOx and CO as required in NSR Permit 0067-M11.	10/26/23	Tested in accordance with PEA test methods as required in NSR Permit 0067-M11.	10/27/23
C-17A	Tested in accordance with EPA test methods for NOx and CO as required in NSR Permit 0067-M11.	9/21/21	Tested in accordance with PEA test methods as required in NSR Permit 0067-M11.	10/26/23
C-18A	Tested in accordance with EPA test methods for NOx and CO as required in NSR Permit 0067-M11.	10/25/23	Tested in accordance with PEA test methods as required in NSR Permit 0067-M11.	10/26/23
C-19	Tested in accordance with EPA test methods for NOx and CO as required in NSR Permit 0067-M11.	10/25/23	Tested in accordance with PEA test methods as required in NSR Permit 0067-M11.	10/26/23
C-20	Tested in accordance with EPA test methods for NOx and CO as required in NSR Permit 0067-M11.	10/26/23	Tested in accordance with PEA test methods as required in NSR Permit 0067-M11.	10/27/2023
C-21	Tested in accordance with EPA test methods for NOx and CO as required in NSR Permit 0067-M11.	10/25/23	Tested in accordance with PEA test methods as required in NSR Permit 0067-M11.	10/27/23
C-22	Tested in accordance with EPA test methods for NOx and CO as required in NSR Permit 0067-M11.	9/15/22	Tested in accordance with PEA test methods as required in NSR Permit 0067-M11.	10/27/23

Section 19

Requirements for Title V Program

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 an 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 www.env.nm.gov/air-quality/air-quality-title-v-operating-permits-guidance-page/. 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.
-

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.

The dehydrator (unit G-01) at Eunice Gas Processing Plant has pre-control VOC emissions greater than 100 tpy VOC, is subject to a VOC emission limitation in NSR Permit 0067-M6-R2 and uses a control device (the VRU) to achieve compliance with this limit. However, the dehydrator is subject to MACT Subpart HH (proposed by EPA on 2/6/98), so it is exempt from CAM requirements pursuant to 40 CFR 64.2(b)(1)(i).

The amine unit (AM-01) at the facility is not directly subject to any permit emission limitations or standards. It is controlled by both the acid gas injection well (AGI), and the acid gas flare (F-01). The AGI and the acid gas flare are subject to CAM.

Engines C-13A, C-17A, C-18A, C-19, C-20, C-21, and C-22 are subject to CAM. The CAM plan for the engines was submitted with the Title V Significant modification to Title V Permit P109-M2R1.

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.

As described in Section 13, and based on the information and belief formed after reasonable inquiry, Targa believes that the Eunice Gas Processing Plant is in compliance with each requirement applicable to the facility.

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 Sections 13 and 19.2 and based on information and belief formed after reasonable inquiry, Targa states that Eunice Gas Processing Plant will continue to be operated in compliance with applicable requirements for which it is in compliance as of the date of submittal of this application.

In addition, Targa 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 that Targa should discover new information affecting the compliance status of the facility, Targa 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.B of Operating Permit P109-R2 specifies that Targa must submit compliance certification reports every 12 months. The 12-month reporting period starts on December 1st 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
 4. Cite and describe which Title VI requirements are applicable to your facility (i.e. 40 CFR Part 82, Subpart A through G.)
-

Based on information and belief formed after reasonable inquiry, Targa Midstream Services, LP (Targa) states that Title VI, Section 608 (National Recycling and Emissions Reduction Program) of the Clean Air Act may apply to this facility, as Targa

may own CFC-containing refrigeration equipment meeting the criteria of this Section, specifically, 40 CFR 82, Subpart F, which applies to owners of CFC-containing appliances (40 CFR 82.150 (b) and 40 CFR 82.152). Targa may own appliances affected by this subpart, and abides by this regulation. Targa is in compliance with the requirements of this Section.

Targa does not service motor vehicle air conditioners at this facility and therefore Section 609 does not apply. Eunice Gas Processing Plant will continue to be operated in compliance with the requirements of Title VI, Section 608 of the Clean Air Act as they apply to this facility.

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 www.env.nm.gov/air-quality/air-quality-title-v-operating-permits-guidance-page/. Sources that are subject to both the Title V and Acid Rain regulations are **encouraged** to submit both applications **simultaneously**.

Based on information and belief formed after reasonable inquiry and as described in Section 19.2, and with this filing, Targa states that Eunice Gas Processing Plant is in compliance with applicable requirements. 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.

Eunice Gas Processing Plant has stationary sources that have more than the threshold quantity of a flammable mixture and propane in the process, as determined under 40 CFR 68.115. A Risk Management Plan was most recently submitted to EPA in February of 2019.

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.)

Yes, this facility is 7 km from Texas.

19.9 - Responsible Official

Provide the Responsible Official as defined in 20.2.70.7.AD NMAC:

R.O. : Jimmy Oxford
R.O. Title: Vice President Operations
R.O. Address: 401 North I-35 Suite 303, Denton, Texas, 76207
R.O. Phone: (713) 220-2493
R.O. Email: JOxford@targaresources.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.

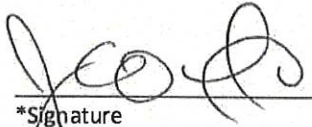
There is no other relevant information.

Section 22: Certification

Company Name: Targa Midstream Services, LLC

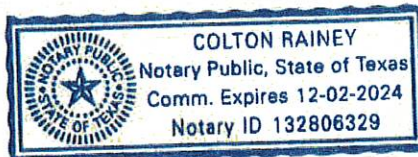
I, Jimmy Oxford, hereby certify that the information and data submitted in this application are true and as accurate as possible, to the best of my knowledge and professional expertise and experience.

Signed this 28th day of November, 2023, upon my oath or affirmation, before a notary of the State of

Texas
*SignatureJimmy F Oxford
Printed Name11/28/23
DateVP operations
Title

Scribed and sworn before me on this 28 day of November, 2023.

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

2nd day of December, 2024.
Notary's SignatureColton Rainey
Notary's Printed Name11-28-2023
Date

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